

Do they read your research? An investigation of practitioners' use of IT outsourcing and cloud sourcing research

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Abstract

Significant concerns have been raised in the Information Systems (IS) field about a research-practice gap and the limited impact of IS research on the practice world. Theory-practice inconsistencies in the field of IT outsourcing (ITO) prompted the investigation of the use of academic-generated knowledge by ITO practitioners. We conducted interviews and a survey and found academic research is the least used source of decision-making knowledge among ITO practitioners. Practitioners preferred to seek advice from their peers, IT vendors and consultants. We identified two communities of *users* and *non-users* of academic research in our sample of ITO practitioners, with non-users forming the majority. We found six factors that may influence the use of academic research by practitioners. Non-users of academic research held perceptions that academic research was not timely, required too much time to read, was far from the real world and that it was not a commonly used knowledge source for practitioners. In addition, they read academic research less frequently and did not perceive themselves as an audience for academic research.

Keywords Knowledge adoption/acquisition, IT outsourcing, research-practice gap, Information Systems research, decision making

1 Introduction

The IT outsourcing (ITO) industry continues to expand, shaped by intricate multi-sourced environments and disruptive technologies such as cloud computing. As a result, ITO has become increasingly complicated (Liang et al. 2016). While empirical research suggests that a rational and formalized decision-making process results in better decision outcomes (Sven and Björn 2011; Westphal and Sohal 2016), the lack of a structured and systematic approach to ITO decision making in practice is frequently highlighted in the literature (Brannemo 2006; De Loeff 1995; McIvor 2000; Palvia 1995; Westphal and Sohal 2016). Moreover concerns have been raised about a possible relevance gap (Benbasat and Zmud 1999) in ITO research field. Recent discussions of IS scholars on the ISWorld mailing list (AISWorld 2016) indicated that awareness and concerns about the relevance gap and impact of IS research on the practice world are not limited to a specific IS research field. Those discussions also show the desire of IS researchers to find solutions to bridge the gap between research and practice.

Over an extended period of time, various aspects of IT outsourcing and cloud sourcing have been studied by academic researchers, resulting in an extensive body of literature in this field (Dibbern et al. 2004; Lacity et al. 2010; Liang et al. 2016). Prior research in this field includes not only empirical research that describes or explains the IT sourcing decisions of the organisation, but also research that explicitly suggests implications for practice as well as decision support models and frameworks to support ITO

decision making in practice. In this paper we use the term IT outsourcing in its broad definition that includes cloud sourcing (Yigitbasioglu et al. 2013).

On one hand, the need for decision support for IT outsourcing is evident. In hindsight, some organisations have rued their ITO decisions. For instance, after 13 years, Kellwood realised its multimillion dollar ITO deal was not cost-saving and terminated the ITO and returned to insourcing (Overby 2010). On the other hand, there is a claim that the extensive body of academic research-generated knowledge has afforded a considerable understanding and theoretical grounding of IS outsourcing decisions (Dibbern et al. 2012). However, empirical research into ITO in practice has highlighted several inconsistencies between ITO decision making in theory and practice and called for investigation of this problem (e.g. Kramer et al. 2013; Rajaeian et al. 2015; Sven and Björn 2011). The need to investigate the ways of gaining knowledge to guide the governance and management of ITO decision processes was raised by Sven and Björn (2011). To date, no study has been found that investigates the extent to which ITO practitioners use this research-generated knowledge. To address this research problem, we focused on answering the following research questions:

RQ1. To what extent are practitioners' IT sourcing decisions informed by academic research compared to rival external sources of decision-making knowledge?

RQ2. What factors may hinder the adoption of research-generated knowledge by IT practitioners?

Our study contributes to the research-practice gap literature within the Information Systems and Management fields. This study is significant because it empirically investigates the adoption and relevance a niche domain of management and information systems research. Despite persistent concerns about research-practice gap in these disciplines (Becker et al. 2015; Benbasat & Zmud 1999; Rosemann & Vessey 2008), empirical studies that investigate the research relevance to practice and research-practice gap are scarce in both the management and information systems fields (Bartunek and Rynes 2014; Jabagi et al. 2016; Kieser et al. 2015). In addition, our study contributes to the knowledge adoption literature by identifying the external sources that ITO practitioners use to acquire decision making knowledge.

This paper is organized as follows. In section 2, the literature with regard to knowledge adoption/acquisition and research-practice gap is reviewed. In section 3, the mixed methodology employed in the study is briefly described. In section 4, the results of the data analysis are presented. Then, the main findings of the study are discussed in relation to each of the research questions. Finally, conclusions and implications for academic researchers, research policy-makers and IT practitioners as well as further research directions are presented.

2 Research Background

Knowledge is a source of competitive advantage for companies (Grant 1996). The value of knowledge for organisations is due to its ability to provide organisations with a basis for better decision making and informed actions (Davenport and Prusak 1998). This knowledge can be acquired from a 'knowledge source' (Tsai 2001) or it can be generated by the company itself (Nonaka and Takeuchi 1995). External knowledge sources include, but are not limited to, universities and academic research institutions (Agrawal 2001), consultants (either as individual or firm) (Ko et al. 2005) or other companies acting in different roles such as 'supplier' (Kotabe et al. 2003) or 'competitor' (Darr and Kurtzberg 2000). Nevertheless, there has been a persistent debate on the practical relevance of the *academic* research-generated knowledge in the fields of Information Systems (Benbasat and Zmud 1999; Rosemann and Vessey 2008) and Management (Kieser et al. 2015; Pfeffer 2007).

A variety of theoretical perspectives exist which are useful to investigate the adoption of academic-generated knowledge by industry practitioners. Numerous studies have adopted diffusion of innovation (DoI) theory (Rogers 1995) assuming academic-generated knowledge is an innovation that is communicated through certain channels over time among industry practitioners. DoI theory recognises five qualities that determine the success of an innovation: relative advantage; compatibility with existing values and practices, simplicity and ease of use; trial-ability; and observable results. DoI theory has been applied to the academic knowledge transfer/adoption field but with limited success. To overcome those limitations, multi-theory approaches that incorporate theories and frameworks of knowledge dissemination and utilization have been suggested as a promising research strategy in the literature (Green et al. 2014).

There are many factors suggested in the literature that may hinder adoption of academic research by industry practitioners. A comprehensive review of these factors is provided by Kieser et al. (2015). Some

of these factors relate to the knowledge production side, such as undertaking research that overlooks the uniqueness of organizations, or the academic incentive system that does not adequately reward research that is relevant to industry. Other factors relate to the intermediary environment, including the channels to transfer scholarly research to practice. In addition, prior research suggests some factors that can be related to both knowledge producers and knowledge consumers (i.e. industry practitioner), such as the use of technical language and jargon in academic journals that makes them less understandable for industry practitioners. While the literature on non-adoption of academic research (including e.g. research-practice gap/divide, relevance-gap) comprises more than 50 years of numerous debates and discussions, a recent analysis of the literature showed that the majority of this literature is based on normative opinions rather than on empirical grounds (Bartunek and Rynes 2014) and lacks scientific rigour (Kieser et al. 2015).

Among the few theories focused on non-adoption (we call them ‘non-adoption theories’), two communities theory (Caplan 1979) is the oldest and possibly the most widespread referenced in the literature. According to the ‘two communities theory’ (Caplan 1979) “... social scientists and policy makers live in separate worlds with different and often conflicting values, different reward systems, and different languages”. Caplan argued that particular attention should therefore be given to theories that “... stress the lack of interaction between social scientists and policy makers as a major reason for non-use” (Caplan 1979). Because of the lack of clearly defined terms, concepts and propositions that can be empirically tested, the ‘two communities theory’ has been considered to be a ‘metaphor’ rather than a theory (Dunn 1980). A recent study (Newman et al. 2016) used data from a survey of 2,084 public servants from the state and federal government levels in Australia to test the relationship between some personal and professional characteristics (e.g. gender, age, work experience). They concluded that the ‘two communities’ metaphor is not an accurate description of the relationship between the practice world (policy) and academia and posed the view that the real ‘two communities’ exist *within* the practitioners: i.e. users and non-users of academic-generated knowledge.

Institutional theory (Scott 1995) has been widely applied to various domains of IS research and provides another lens for the study of knowledge adoption. From an institutional theory perspective, the choice of knowledge acquisition source could be viewed as a response to institutional forces that influence the individual or organisation to conform to the prevailing ideas of what is a legitimate and useful source of knowledge. These forces can act through three mechanisms: mimetic (e.g. following the leader and hoping the same result), coercive (e.g. legal requirement) or normative (e.g. copy policies offered by consultants) (Bjorck 2004).

3 Research Methodology

A mixed methodology (Creswell and Clark 2011) was used in this exploratory study comprising semi-structured interviews (Phase 1) and a survey (Phase 2). Mixed methods are highly appropriate in this study because the integration of qualitative and quantitative data collection techniques and analysis methods provides deeper understanding (Saunders et al. 2011) about the adoption of ITO decision-making knowledge in the organisations.

The purpose of Phase 1 was to obtain an in-depth understanding about the research questions. Ten semi-structured face-to-face interviews were conducted with senior IT managers (e.g. CIOs, IT directors) of four large Australian organisations between August 2015 and September 2015. The questions focused on four themes: characteristics of ITO decision-making process (e.g. formality, degree of structure), practitioners’ confidence with their ITO decision-making knowledge, sources to obtain ITO decision-making knowledge, experiences with and perceptions about ITO academic research. The interviews were audio-recorded and transcribed. NVivo software was used to support thematic coding prior to analysis. The findings from the interviews provided valuable insights into the research problem and were used to develop a survey instrument that was administered in phase 2 of the study. The space limitation of this paper do not allow us to include the detailed results of the interview phase.

The purpose of Phase 2 was to examine the generalizability of Phase 1 findings. In Phase 2 a questionnaire was developed based on the relevant literature together with themes that emerged from the analysis of the interview data collected in Phase 1. Content validity of the questionnaire was ensured by means of careful definition of the survey questions through literature review as well as using expert judgment (Saunders et al. 2011). The questionnaire was reviewed by three IT managers who had been involved in IT outsourcing decisions, and their feedback was incorporated into the questionnaire instrument. The survey was administered online in March 2016.

An email invitation was sent to a mailing list of 'IT decision makers' and asked members to participate in the survey if they had been involved in making IT sourcing decisions. In total, 65 responses were received, however four responses were excluded from data analysis because the respondents were from small organisations (organisations with less than 20 employees) thus out of scope of the study, or the responses were inconsistent.

4 Survey Results

The 61 useable responses to each of the survey questions are summarised and key findings are discussed in this section.

4.1 Demographic information of the survey participants

IT outsourcing practitioners from 10 countries participated in the survey. The majority of participants (73.8 %) were from the USA, followed by Australia (10%) and Canada (5%). Other countries included United Kingdom, France, Germany, Japan, Denmark, Switzerland, and Spain.

All participants had a higher education degree. The most frequent education level was masters degree which was held by 51 percent of the participants, followed by bachelor degree (38%), doctorate (6%) and higher education diploma (5%). Approximately two thirds of the participants worked in the private sector, nearly 20 percent in the public or government sector and the remaining 15 percent in non-profit or NGO organisations. Participants represented a wide-range of industries such as Manufacturing, Real Estate, Construction, Higher Education, Information and Communication Technology, Oil & Gas, Healthcare, Pharmaceutical, Insurance, etc. The size of participants' organisation was large (200 or more employee) for 85 percent of the participants and medium (20 to 200) for the rest. Most of the participants (80%) had an IT related job at managerial level (e.g. Chief Information Officer, IT Director, etc.). Three percent of the participants were Chief Executive Officers and 16 percent had various non-managerial positions. Two participants did not indicate their organisational positions.

The vast majority of respondents (93.4%) identified their role as a practitioner who has been involved in making IT outsourcing decisions at the organisations where they worked. The remaining four respondents were IT consultants who provided consultancy services to organisations for their IT outsourcing decisions. The length of experience of participants in dealing with IT sourcing decisions was more than 10 years for 79 percent of the participants, five to ten years for 13 percent, and less than 5 years for 8 percent of respondents.

4.2 Level of structure and formality of the ITO decision making in the organisation

To indicate the level of structure and formality of the ITO sourcing decision making in their organisations, participants were asked to identify whether any of the four elements shown in Figure 1 exist in their organisational ITO decision-making process.

As shown in Figure 1, more than half of the respondents reported the existence of an established decision criteria for making ITO decisions in their organisations. The ITO decision-making process/framework was predefined and documented in almost 40 percent of respondent organisations. Use of decision support systems for ITO decisions was reported by about 10 percent of the participants.

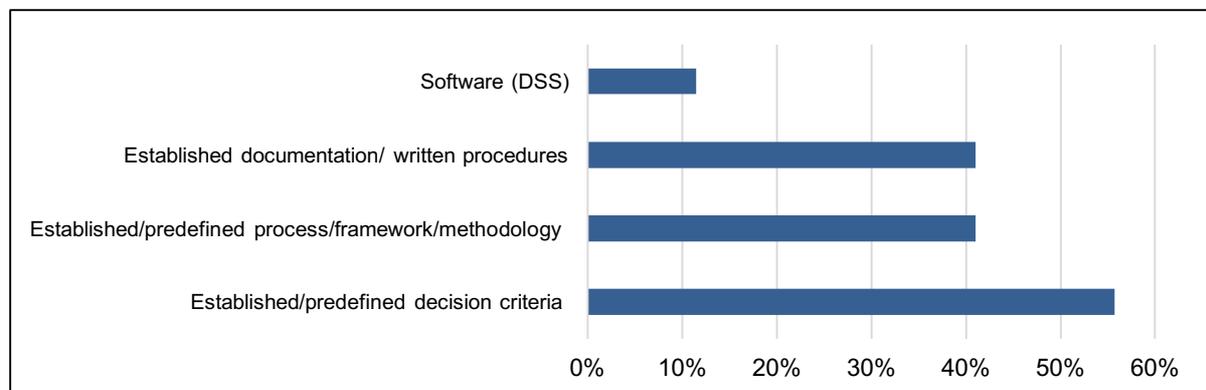


Figure 1. Formality and level of structure of the ITO decision making in the participants' organisations

4.3 External sources of obtaining IT outsourcing decision-making knowledge

Participants were asked the extent that they perceived five different sources had informed their knowledge of making IT outsourcing decisions. Figures 2.a to 2.e show the distribution of responses for each of the five sources. For the purpose of comparison, a numerical value was assigned to each category of response, ranging from zero for ‘no effect’ to five for ‘very high effect’. The result of this quantification ranked ‘peer practitioners’ as the most influential source, followed by IT vendors/service providers and then consultants (Figure 2.f). This method of quantification introduces some degree of approximation to the analysis, because it necessitates the assumption that the intervals between categories are equal. Nevertheless, without such an approximation approach, ranking alternative sources is practically impossible.

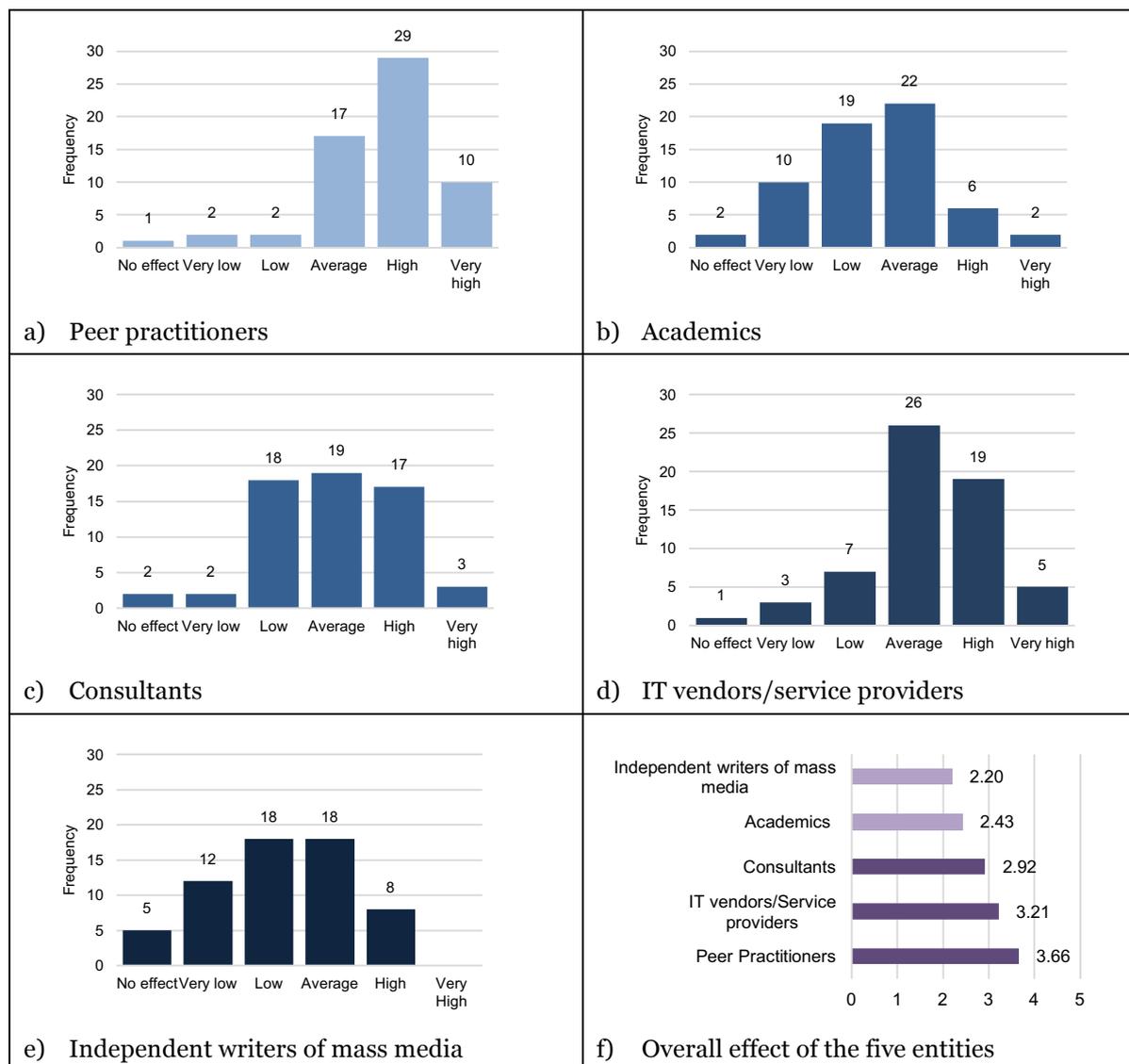


Figure 2. External sources of obtaining IT outsourcing decision-making knowledge

To draw generalisable conclusions on the overall preferences of practitioners with regard to the influence of each of the five sources, the six-point scale was converted to a dichotomous scale of ‘No effect to Low’ or ‘Average to Very High’. We found the majority of ITO practitioners perceived ‘Peer practitioners’, ‘IT vendors/Service providers’ and ‘Consultants’ as having an ‘Average to Very High’ effect on their ITO decision making (binomial test, cut point =2, test proportion= 0.5, confidence interval (CI)=95%). With regard to the influence of ‘academics’ and ‘independent writers of mass media’, the distribution of responses was not significantly skewed towards either ‘No effect to Low’ or ‘Average to Very High’.

The survey also revealed that the majority of participants (70%) had not received any training with regard to making ITO decisions, and in fact, about half of the participants had not read any ITO books.

4.4 Adoption of academic research for IT sourcing decision-making?

Almost half of the respondents (44%) did not consider themselves as an audience for academic research papers (journal or conference papers) (Figure 3.a). As shown in Figure 3.b the majority of respondents (72%) read academic research papers ‘occasionally’. A binomial test indicated that the proportion of ITO practitioners who read academic research ‘Frequently’ or ‘Regularly’ was lower than 50 percent ($p=0.000$ 2-sided).

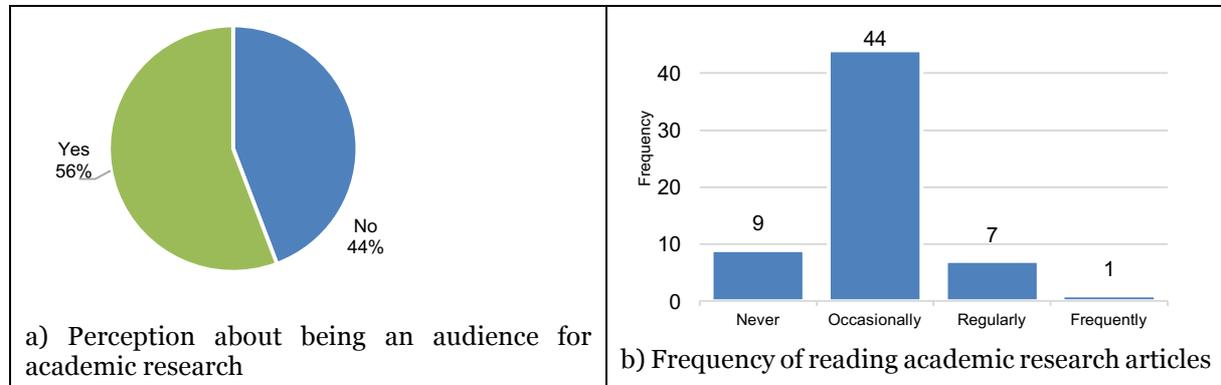


Figure 3. Reading Academic research papers

To identify the level of adoption of academic research, participants were asked if they have ever used academic research papers or consulted an academic to inform their IT sourcing decision-making. The majority of respondents (70%) did not use academic research papers as a source of support for their ITO decision making. Only 21 percent of the participants had consulted an academic/faculty member to advice on IT outsourcing decision-making.

Considering either ‘using a research paper’ or ‘consulting an academic’ as an instance of use of academic ITO research, approximately one third of the respondents (32.8%) can be considered as research users. Based on binomial tests (test proportion= 0.5, CI=95%), it can be concluded that adoption of ITO research through reading academic articles or seeking consultation from academics was not prevalent in the majority of ITO practitioners (2-tailed significance 0.002 and 0.000 respectively).

Model/framework source	Not likely (0)	Very low (1)	Low (2)	Average (3)	High (4)	Distribution	Overall weighted average score (0-4)	Exact Significance (2-tailed) for Binomial test, Cut point=2, test proportion= 0.5, CI=95%
A well-known IT consultancy firm	5	3	13	32	8		2.57	0.020
An organisation with similar characteristics	2	2	21	34	2		2.52	0.020
A leading organisation in the same sector	7	3	17	29	5		2.36	0.443
Academics	3	13	29	16	0		1.95	0.000

Table 1. Likelihood of adoption of decision support models, frameworks or methodologies based on their sources

Participants considered four potential sources of decision support models, frameworks or methodologies for making IT sourcing decisions and rated the likelihood of using each source as shown in Table 1. A weighted average of responses provided an approximate measure to rank the level of tendency to use decision models/frameworks from the four sources. The most popular (first ranked) source was ‘well-known IT consultancy firms’ and a binomial test indicated that the proportion of ‘Average or High’ responses (0.66) was significantly more than 50 percent for this source. The second and third most popular sources were ‘organisations with similar characteristics’ and ‘a leading organisation in the same sector’ respectively. However, for these two sources no clear tendency of ITO practitioners towards either of ‘Average or High’ or ‘Low or below low’ categories was found. Academic

research was reported as the least likely source of decision models/frameworks and according to a binomial test the proportion of ‘Low or below low’ responses (74%) was significantly more than 50 percent for this source (see Table 1 for details of the statistical tests).

4.5 Perceptions of barriers on adoption of academic research

Participants were asked to indicate their level of agreement with 12 statements about academic research and its application in practice. Table 2 lists the statements and presents the distribution and analysis of the responses. A weighted average scoring method was used to provide an approximate overall perception of the participants for each statement.

Statement	Strongly Disagree (-2)	Disagree (-1)	Neutral (0)	Agree (+1)	Strongly Agree (+2)	Distribution	Overall weighted average score (-2 to 2)	Binomial Test Test Proportion 0.50 Exact Sig. (2-tailed)	Generalised Overall Perception
a) Academic research is not experience-based and proven to be effective in practice	2	19	<u>26</u>	12	2		-0.11	.3105	Neutral
b) Academic research-based frameworks/models are far from real world (e.g. too generalised, are based on too many assumptions ...)	1	13	19	<u>25</u>	3		0.26	.0436	Agreement
c) Academic research lacks timeliness and is not up-to-date enough to inform practice	1	16	<u>24</u>	17	3		0.08	.7428	Neutral
d) Academic research is not practical	6	22	<u>27</u>	3	3		-0.41	.0002	Disagreement
e) Practitioners do not adopt academic research because they lack time to search for relevant academic research	0	8	13	<u>30</u>	10		0.69	.0000	Agreement
f) Practitioners do not adopt academic research because reading academic research publications demands too much time for practitioners	1	8	13	<u>31</u>	8		0.61	.0000	Agreement
g) The language of academic research publications is complex (e.g. uses jargon, mathematical formulae), thus not easily understandable by practitioners	4	9	22	<u>24</u>	2		0.18	.0533	Neutral
h) If practitioners have sufficient access (e.g. free or through workplace subscription) to academic research, they will read more academic publications	0	5	21	<u>32</u>	3		0.54	.0000	Agreement
i) Practitioners do not adopt academic research because they lack awareness of available academic research	1	7	7	<u>39</u>	7		0.72	.0000	Agreement
j) Practitioners lack the skill/knowledge to implement academic research	6	<u>24</u>	17	12	2		-0.33	.0226	Disagreement
k) Academic research is not a commonly used source for practitioners to acquire decision-making knowledge	0	7	12	<u>33</u>	9		0.72	.0000	Agreement
l) Academic research is more suitable for leading organisations (early adopters) than followers	3	<u>22</u>	17	18	1		-0.13	.4514	Neutral

Table 2. Participants' perceptions about academic research

As reported in Table 2, four statements focused on different aspects of perceived usefulness (to be exact, perceived uselessness) of academic research in practice (a-d). The result of the data analysis did not show a dominant negative view of the practical usefulness of academic research in general, among the participants. Nevertheless, in relation to the usefulness of ‘academic research-based frameworks/models’, the majority of ITO practitioners believed that those frameworks/models are ‘far from real world (e.g. too generalised, are based on too many assumptions)’ (b).

The majority of the ITO practitioners perceived 'lack of time to search for relevant academic research' (e), 'too much time required for practitioners to read academic research publications' (f), 'lack of awareness' (i) and 'limited accessibility' (h) hindered adoption of academic research. However, the majority disagreed that 'practitioners lack the skill/knowledge to implement the findings of academic research' (j).

There was broad agreement with the statement that 'academic research is not a commonly used source for practitioners to acquire decision-making knowledge' (69%). Participants' perceptions on the remaining statements (a, c, g and l as shown in Table 2) were not proven to be skewed towards agreement or disagreement.

4.6 Identification of factors that hinder adoption of academic research

Responses were divided into two groups according to whether participants did or did not use academic research. A Chi-square test for independence indicated significant associations between six factors and 'use of academic research' with medium to large effect sizes as shown in Table 3. According to this analysis, practitioners who read academic research regularly or frequently were 21.5 times more likely to use academic research than those who read occasionally or never. Also, practitioners who perceived themselves as an audience for academic research were 14.1 times more likely to use academic research than those who did not. The other four factors that were negatively associated with use of academic research included: a perception that 'academic research-based frameworks/models are far from real world', a perception that academic research lacks timeliness, a perception that 'reading academic research publications demands too much time for practitioners', and a perception that 'academic research is not a commonly used source for practitioners to acquire decision-making knowledge'.

No significant associations were found between other factors (education level, length of ITO decision-making experience, ITO training and reading ITO books) and use of academic research.

Factors	Chi-square value*	Sig. **	Effect size		Odds ratio
			Phi	Approx. Sig. ***	
i. Frequency of reading academic papers (+)	9.813	0.002	0.453	0.000	21.5:1
ii. Perception about being an audience for academic research (+)	12.168	0.000	0.482	0.000	14.1:1
iii. Perception that 'academic research-based frameworks/models are far from real world' (-)	6.431	0.011	-0.447	0.004	1:8.0
iv. Perception about 'lack of timeliness of academic research' (-)	7.892	0.005	-0.520	0.002	1:12.9
v. Perception that 'reading academic research publications demands too much time' (-)	7.538	0.006	-0.453	0.002	1:11.7
vi. Perception that 'academic research is not a commonly used source for practitioners to acquire decision-making knowledge' (-)	6.939	0.008	-0.438	0.002	1:16.9

* Chi-square with Yates Continuity Correction ** Asymptotic significance (2-sided) *** Approximate significance
(+) positive association (-) negative association

Table 3. Positive and negative factors associated with practitioner use of academic research

5 Conclusions and Implications

This study investigated the use of ITO research-generated knowledge by IT decision-makers (practitioners). The ITO decision makers who participated in this study were mostly senior IT managers, from a diverse range of industries/sectors and countries. Our findings (Figure 1) suggest the lack of structured formal decision-making processes for ITO in the majority of organisations. In response to RQ1, the findings revealed various external sources of practitioners' knowledge of IT outsourcing decision making. The most influential source was peer practitioners, followed by IT vendors/service providers and consultants. Participants were most inclined toward using a decision support

model/framework from well-known IT consultancy firms and least from academic research. Academic articles were occasionally read by the participant ITO practitioners but more than half of the participants did not consider themselves as an audience for academic research papers. Overall, academic research was the least used source by practitioners for acquiring ITO decision-making knowledge.

In response to RQ2, analysis of the responses revealed an association between some of the perceptions of the participants about academic research and their adoption of academic ITO research as reported in section 4. Perceptions about relevance of academic research (applicability of academic research-based frameworks/models in real world) and ease of use of academic research (not too much time to acquire and read) is associated with its adoption by practitioners. We found that practitioners who were adopters of academic research perceived it more useful than non-adopters. Thus, it may be the negative perceptions about academic generated-knowledge, not the research rigour or relevance *per se* that prevents practitioners from using academic research-generated knowledge. Consequently, in light of such negative perceptions, even highly relevant and rigorous research-generated knowledge would have little chance of adoption in the practice world.

Our study rejects some notions of the two communities theory (Caplan 1979) that considers cultural and language as the key hindrance factors. However, findings about access to, and awareness of available academic research, and time required to search and find relevant research publications confirm that a communication problem exists between academia and industry (the practice world), as suggested by two communities theory as well as diffusion of innovation theory. The positive association of frequency of reading academic papers with use of academic research, together with the high level of agreement on the lack of awareness about available academic research, highlights the importance of facilitation of communication of research results to practice. In addition, our findings are in line with the view of Newman et al.'s (2016) research that two communities of *user* and *non-user* of academic-generated knowledge exist within IT decision-makers.

The findings also suggest the possibility of an institutional effect that hinders adoption of knowledge from academic sources. The belief that academic research is not a commonly used source for practitioners to acquire decision-making knowledge was significantly more frequent among non-adopters than adopters. In other words, perceptions on the credibility and usefulness of non-academic sources may have been institutionalised in the practice world by normative forces and consequently promote further adoption from those sources. This seems particularly possible with regard to consultants and vendors, because they actively promote themselves as legitimate sources of knowledge e.g. as part of their marketing campaigns.

To our knowledge this study is the first to investigate adoption of academic research by ITO practitioners, thereby making an original contribution by providing an in-depth analysis of views of ITO practitioners regarding academic research. The findings of our study provide empirical evidence of a research-practice gap, responding to the call to investigate this issue (Bartunek and Rynes 2014). In addition, we used a novel, multi-theory approach that resulted in a deeper understanding of the knowledge adoption behaviour of ITO practitioners. We also identified the capacity and limitations of each of those theories in explaining our research problem.

5.1 Implications for researchers, policy makers and practitioners

The findings of this study have several implications for researchers, research policy-makers and IT practitioners (IT decision makers). Our empirical findings support the claim that a research-practice gap exists in the IT outsourcing field. Feedback is essential for the effectiveness of any communication process, thus reducing the gap requires establishing a feedback loop to enable evaluation of ITO research in a real world setting. Research-policy makers and researchers who are concerned about the impact of IS research on practice should turn their attention to improving practitioners' perceptions of IS research, and increase practitioners' awareness about, and access to, available IS research. We argue that communication of research to the practice world should be perceived as a proactive 'knowledge transfer' process rather than a passive 'diffusion' process, since the thick boundary between the two worlds limits the natural flow of research-generated knowledge to practice. Publishing summaries of research findings in practitioners' popular media seems a promising approach, and may help overcome the extensive publication time-lag often characterised by academic journals. In addition, academic researchers should engage with practitioners, particularly to identify real world problems worthy of research and seek feedback on their research. Academic institutions and policy makers need to ensure that such academic engagement activities are adequately valued in academic reward systems.

IT practitioners should be informed that solely relying on consultants, vendors and peers as knowledge sources could result in poor decisions based on biased information/knowledge. Alternatively, the

independent knowledge from academic sources may provide valuable, evidence-based knowledge to aid practitioners in their decision making. IT practitioners should consider engagement with academic researchers, for example through collaborative research, as a knowledge exchange opportunity with mutual benefits to both parties. IT practitioners should also recognise their critical role as customers of academic research, and the fact that they may deprive themselves of the benefits of academic research if they fail to engage with academics and provide feedback on academic research.

5.2 Limitations and future research

The relatively small sample size of the survey (61) and the fact that participation in this survey was voluntarily, limit the generalisability of the findings. The distribution of the country of residence of the survey participants towards USA should also be noted when interpreting the results of the survey. It should be noted that the term 'academic research papers' refers to a broad range of academic articles from scholarly peer-reviewed journal articles and conference papers to practitioner-oriented academic journals such as Harvard Business Review (HBR) which were mentioned in the participants' comments. Our data does not provide detailed information about the exact type of academic papers that participants read.

Despite these research limitations, this study provides new insights into the adoption of academic research-based knowledge by IT practitioners and the research-practice gap problem. Future research can examine the validity and generalisability of our findings on a larger scale. The influence of IT consultancy firms and IT vendors on sourcing decisions of IT decision-makers is a less explored area that demands further research. Investigation of knowledge-adoption from an institutional theory perspective is also a promising and less explored research domain. Also, future research can investigate whether the academic-research based recommendations were in disparity with the other sources or not. While our findings indicated several factors related to knowledge users (e.g. negative perceptions about academic research) and knowledge transfer (e.g. awareness), in future the practical relevance and rigour in the knowledge production side also should be investigated.

In conclusion, the low use of academic research by practitioners is an alarming symptom for ITO researchers in particular and the IS research community in general. Information Systems is an applied discipline, thus IS research should produce useful knowledge to support practitioners. Knowledge is useful for practitioners if it can enable them to make better decisions. However, after three decades of ITO research, the practical relevance of ITO research seems to be limited. In other words, ITO researchers have been (and still are) conducting research but rarely attempt to evaluate the practical relevance and impact of their research with practitioners, and have not established feedback loops for continuous improvement of ITO research. Research that has not been grounded in addressing real world problems in practice raises serious concerns about the rationale for conducting research and queries the possible waste of academic resources (e.g. research funds and researchers' time). We challenge the IS research community to redefine its conception of 'highly regarded research' with attention to research impact.

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