

# Inter-Organizational IT Co-Operation between Municipalities: a Literature Review

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**Abstract.** The purpose of this study is to understand the status of academic research for inter-organizational IT co-operation between municipalities. In order to understand the theoretical background for such an inter-organizational IT co-operation, a literature review is organized. In addition to inter-organizational co-operation and IT governance literature, resource based view and transaction cost theories in relevant context will be reviewed. The findings of this study show that existing research is mainly focusing on co-operation activities around companies and outsourcing leaving other reasons for inter-organizational activities with less attention. Research focusing on IT co-operation between municipalities is quite scarce. Also case studies for public IT co-operations are quite low in numbers.

**Keywords:** municipality, inter-organizational, IT co-operation, RBV, TCE

## 1 Introduction

Municipalities have a very independent position in Finland regarding their decision making and actions. This is based on the constitution. This status affects to all actions and activities municipalities are conducting including the municipality IT. The structures and organizations of municipality IT have been locally created making them very self-governing and isolated. However, due to economic downturn all across Finland followed by governmental pressure, co-operation between municipalities is now progressing and driving municipalities to find new ways to co-operate also in the field of IT.

The current literature review focuses on the inter-organizational IT co-operations between municipalities. To clarify the topic, a literature review is organized in order to get a better understanding about the theories and knowledge behind the formation of such co-operational arrangements. In addition to inter-organizational co-operation and IT governance literature, resource based view and transaction cost economics literature will be reviewed. One of the main outcomes of this study is that current research is more focusing on companies and outsourcing and antecedents of networking leaving public sector with case studies with less attention.

The article is organized as follows. First there is an introduction in the current section. In the section two, the background of the research is explained. In the section three, the description of the research process used in the research is presented. In the

section four, the findings are presented together with the discussion. The last section concludes the article with some research ideas for the future.

## **2 Background**

Inter-organizational co-operation is an operating model, which is quite common between companies in the business life. Companies co-operate in order to achieve results with optimum efforts. However, in the municipality sector, this is not too common. In Finland and especially in the IT field, this way of working is rather informal and it is at least not officially recognized. Municipalities have been, and they still are, very independent, which has made it possible to create their own IT solutions and IT practices. But the situation is now changing due to economic challenges around Finland.

In order to collect the understanding about academic research done in the inter-organizational IT co-operations between municipalities, a literature review is conducted in the current research. The content and the methodology of the review will be clarified in the following sections.

### **2.1 Research questions**

The target of the current research is to identify the academic research done related to the topic of inter-organizational IT co-operation between municipalities. The research questions for the review are:

1. How many peer-reviewed journal articles have been published?
2. When the articles have been published?
3. Who has published the articles?
4. Which are the primary focus areas?
5. Which approaches have been covered?

Based on the findings, the following questions will be discussed:

- A. How is the public sector IT covered?
- B. Are there case studies supporting theoretical research in the public sector?
- C. Are there any research focusing on differences between voluntary and non-voluntary IT co-operation within public sector?

The methodology used in the literature review is presented in the following section.

## **3 Research process**

The research process is conducted using a systematic, structured literature review [46] process which is commonly used in the field of IS. The research is done in three phases [15]. In the first phase, the publications are identified. In the second phase, the articles are analyzed and in the third phase, the articles are reviewed and synthesized. All phases are briefly discussed in the following.

### **3.1 Identification of Publications**

The literature review is at first focusing on the recent research which is done in the IT environment. Guidelines set by Association for Information Systems AIS [2] are used to identify relevant journals for the search. Based on the AIS Senior Scholars' Basket of Journals, 8 top IS Journals were selected. While the above mentioned journals are all considered to be the most respected journals in the field of IS, it was anticipated, that these journals cover the latest important issues about IS topics. To make the research process even more clear, it was also decided that conference papers were left out due to the uncertain availability and due to the fact that journals are often more up-to-date than books [16].

During the search process, it became clear that the number of relevant articles in the selected journals will be very limited. Based on this notice it was decided that relevant articles from other academic journals will also be taken into the review using selected databases and the same key words in the search. In this extended review process, the following databases were used: ABI/INFORM Global (ProQuest), Business Source Complete (EBSCO), Emerald Journals (Emerald), ScienceDirect (Elsevier), Web of Science/Web of Knowledge (ISI). Only peer reviewed, full text English language articles were accepted. In the search process, key words supporting the open research questions were used. The key words for the search are "inter-organizational", "IT co-operation", "IT governance", "municipality IT", "RBV" and "TCE" and their combinations. The search was targeted to find these expressions from the titles and from the abstracts of the articles. After the initial collection of articles, backward search technique was applied to the titles of the reference articles to identify other relevant articles. All identified articles were exported to the RefWorks database. Duplications were removed after initial screening. A main exclusion criterion at this point was mismatch with the research topic, mentioned on the title or on the abstract level. The final number of relevant articles is 43 including 8 articles from the backward search exercise to be included in the literature review.

### **3.2 Analyzes of Articles**

The articles are analyzed by collecting the following information:

- Number of articles published per year
- Name of the first (main) author
- Names of the journals publishing the articles
- Research approach used
- Primary research focus

In the following chapters, each piece of information is discussed in more detail.

### **3.2.1 Publishing time**

The year of publishing ranges from 1985 to 2013. Most of the articles are published during this millennium with 10 articles published before the year 2000 and 33 after and including the year 2000. The year which has most publications is 2009 with 5 publications followed by the year 2000 with 4 publications. In the years 2006, 2007, 2010, 2012 and 2013 there are 3 publications per each year.

### **3.2.2 Authors and Journals**

The number of authors is quite large compared to the total number of articles. There are 38 different persons, who are mentioned as the main author. M.C.Lacity is the main author in three articles and K.M.Eisenhardt and R.Gulati are the main authors in two articles. Other main authors have published one article each. On average, there are 2,1 writers per article, ranging from 1 author to 5 authors per article.

Overall 28 different journals have published articles identified by the search. Journals, which have published most articles, are European Journal of Information System and Journal of Management with 4 articles each. Journal of Information Technology, Journal of Strategic Information Systems and Strategic Management Journal have all published 3 articles each (see Table 2).

**Table 2.** Journals, number of articles and publishing years of articles

Name of the Journal	No. of articles	Publ. year of article
Academy of Management Journal	1	2004
Academy of Management Perspectives	1	2010
Academy of Management Review	2	1998, 2005
Administratie Si Management Public	1	2009
Administrative Science Quarterly	1	1995
American Journal of Sociology	1	1985
Association for Computing Machinery	1	1993
Communications of the AIS	1	2013
Critical Perspectives on International Business	1	2007
European Journal of Information Systems	4	1996, 2009 2013, 2013
European Journal of Purchasing & Supply Management	1	2000
Government Information Quarterly	1	2012
International Journal of Accounting Information System	1	2012
International Journal of Information Management	1	2012
International Journal of Management Reviews	1	2006
International Journal of Management	1	2006
Journal of Academy of Marketing Science	1	2001
Journal of Information Technology	3	2001,2010 2010
Journal of Management	4	1991, 2000 2003, 2007
Journal of Operations Management	1	2009
Journal of Policy Analysis & Management	1	1987
Journal of Strategic Information Systems	3	2009, 2011 2011
Journal of Supply Chain Management	1	2008
MIS Quarterly	2	2000, 2004
Organization Science	1	1996
Policy Studies Journal	1	2007
Public Administration Review	2	2006, 2009
Strategic Management Journal	3	1992, 1999 2000

### 3.2.3 Research approach and focus areas

There are two types of articles: articles which include purely theoretical view and articles which have also empirical research included. There are totally 29 articles which have taken a theoretical approach including 6 articles, which can be considered as a

literature review [3,31,33,34,35,39]. At the same time it is of course to say, that in most of the articles, a literature overview is provided. 15 articles are considered as empirical with two articles with a survey [41,45] and 9 articles with a case study [12,22,28,30,36,37,38,47,48]. Four articles are based on other empirical findings [1,8,26,32].

When reviewing research focus areas of the articles, one article can be considered as a fundamental theory creation article [5]. 8 articles are targeting on outsourcing including four articles focusing on IT outsourcing [3,33,34,35] and four articles on outsourcing generally [4,23,37,49]. Three articles [22,25,26] are studying alliance formation. Six articles [1,12,18,30,36,47] are concentrating on public networks. 17 articles have an IT or an ICT emphasis and five articles are focusing on network governance issues [32,38, 40,48,51]. The main focus areas are listed in Table 3.

**Table 3.** Main focus areas

Focus area	Number of articles
Theory creation	1
IT outsourcing	4
Outsourcing (general)	4
Alliance formation	3
Public networks	6
IT/ICT emphasis	15
Governance issues	5

## 4 Findings

The literature review presents the current status of academic research for IT related co-operation. The research focus is often companies and their actions. In the review, it becomes evident that theoretical background in networks and alliances is widely discussed. “A network is a set of actors connected by a set of ties. The actors (often called “nodes”) can be persons, teams, organizations, concepts, etc.” [9]. Alliance formation in turn is a complicated activity where both strategic and social aspects are needed. Companies start co-operation when there is a need and an opportunity. Strong or weak companies tend to co-operate through strategic alliances [22]. Main topics which support co-operation in inter-organizational networks are learning, common rules, equivalency with partners, common background and trust to others [10] and especially trust [28,40]. Trust between network partners is very important when sharing knowledge [29]. Companies can get better results from networking when sharing knowledge between alliance partners [20,50]. It is also stated that previous experiences from inter-organizational co-operation influence creation of new networks [25,26]. Companies with complementary resources get better success in the common project [41]. On the other hand, companies with similar cultural norms share a good quality relationship [41].

According to the review, (IT) outsourcing is the issue where a great deal of inter-organizational co-operation take place. There are few literature reviews [3,33,34,35] focusing on IT outsourcing, which not only provide a summary about available academic IT outsourcing knowledge but they also give directions for future research and guidelines for practitioners. Based on the changing needs, more learning will be needed from both suppliers and clients together with more leadership from companies who outsource [31,32,40]. Comprehensive use of outsourcing provides possibilities for continuous inter-organizational co-operation [24].

TCE is the most common theory in the IT outsourcing with special emphasis on transaction costs [33]. TCE focuses on isolated and stable transactions, while the wholeness should also be remembered [7]. However, some mixed results are also available [7], mostly due to some ignored TCE concepts [3,33]. TCE and core competences approach together provide guidance for outsourcing. Outsourcing should be used as the way, not as the target itself [4]. It is also stated that RBV and TCE are not enough to provide guidance for outsourcing [37]. Through RBV, outsourcing company's non-core processes may increase company's performance but on the other hand, if the company is outsourcing core processes, it may have a decreasing effect to company's performance [23]. Some articles provide also arguments which favor the in-house improvements for IT activities instead of outsourcing and decrease the importance of cost reduction effect in outsourcing [13,17].

Due to changes in political environment, economic challenges and other unexpected global or local activities, constant information sharing between organizations may face challenges [44]. When using IT as a mean to do business or to handle normal daily business activities, network partners must be well connected with great trust to each other and they both have to add value to the network [43]. Through co-operation companies can learn from each other. When starting an inter-organizational co-operation, IT settings should be well analyzed in advance to avoid surprises later on [13]. It is also argued that IT offers new organizational capabilities to inter-organizational alliances [7].

TCE uses governance to maintain control in order to reduce conflicts and to achieve common targets [49]. IT governance is important when creating more efficiency in networks. It is proposed that IT unity in networks may be better achieved through guiding the models of operations compared to the traditional IT governance [32]. In inter-organizational co-operations, IT governance has to be adapted according to the needs. All members in the network should use the same terminology [51]. However, IT governance does not directly influence business value. It rather affects the business value through making and maintaining the IT capabilities [38] or supporting business processes [31]. When a company invests in IT, the benefits may come later on [11]. It is even stated that the network governance is a specific way which unofficially secures social capital in inter-organizational relationships [27]. Good management can promote co-operation within IT governance processes, so decision making can foster the success of the project. It is also important that involving all stakeholders in problem solving will promote their engagement with IT governance [48].

The role of RBV is also important. RBV consists of "four empirical indicators of potential of firm resources to generate sustained competitive advantage-value, rareness, imitability, and substitutability" [5]. RBV helps IS researchers to fully understand the IS role in the company. RBV defines the difference between asset-based IT

and IS, where IS combines capabilities and assets [43]. RBV view of IT proposes that IT resources including IT infrastructure, IT skills and the ability to take advantage of IT will make the difference between companies. This difference is also difficult to copy or replace. Companies, who only pay the IT costs but don't develop their IT capabilities, will lose out [8].

Public networks have some special issues which are discussed. Due to economic climate and social pressures, governments have to use networks to fulfill their citizens' needs [30]. When communities are trying to improve their economy and well-being of their residents, inter-organizational co-operation is often used [39]. Co-operation between public agencies becomes much more important when more demands for better performance get coming [47]. Not surprisingly, co-operation in public administration makes the problem solving much easier and more effective compared to individual problem solving [18]. Co-operation between public agencies adds more value in difficult topics and it is not so important in simple topics [36]. It is also important to notice that in addition to improved trust between municipals, who participate in the network, co-operation also increases service offering and know-how of new services [12]. Even though public networks are often missing the formal status for decision making, they support information sharing between participants which will eventually bring practical benefits [1].

#### **4.1 Discussion of the findings**

The target of the current literature review is to collect the recent research about co-operation in IT environment between municipalities. Theoretical background is created on RBV and TCE theories. With the help of the literature review it became obvious that the focus area is very unique and the number of academic research articles focusing on municipality IT co-operations is quite limited. Most of the research is targeted to co-operation between companies and especially to the outsourcing activities. IT or ICT are well represented being part of companies' normal daily operation. Most research is quite recent done during this millennium. Number of authors is relatively big, which indicates that the area is interesting and invites researchers. Research is mostly theoretical without wide empirical support. According to the review, the number of case studies and surveys is limited concentrating mostly on co-operation or alliances between companies. Research which will target to co-operation of IT entities of public authorities is very rare. This may even be considered as a surprise because public sector is so wide and located everywhere.

One of the main issues to be answered with the review results is to clarify, how well the municipality IT is covered. The answer is quite clearly that it is not covered comprehensively. More research will be needed to clarify the IT co-operations in public sector. Especially now when economic climate is challenging in many countries, for example in Finland, possibilities for co-operation in municipal IT environment will be an important area to clarify. With the help of IT co-operation, municipalities are able to provide better services for their citizens and create more effective ways and processes to fulfill their challenges. With more effective operations, municipalities are also able to optimize their IT spending.

Another issue to be answered with the review is to clarify the status of empirical support in academic research of IT co-operation in public sector. Also this support



seems to be quite narrow. More case studies would be useful in order to clarify the actions, public agencies have already done. This should not be a problem considering the global economic challenges and the actions, governments have already taken in order to cope with the situations.

The third issue to be answered is the question about voluntary vs. non-voluntary IT co-operation in public sector. Based on the current literature review, this issue is barely covered. In the public sector, the way of working is often non-voluntary, to follow laws, directives or guidance set by government or other higher level agency. However, voluntary co-operation may be a more practical way to proceed, if not conflicting with laws etc. Research of these activities will provide great challenges and opportunities for the future.

## **5 Conclusion and implications**

The current research is conducted in order to identify the academic research which is done related the topic of inter-organizational IT co-operation between municipalities. A systematic literature review is conducted using different research databases and different key words in the IS environment. The research questions are set to identify the articles, authors and primary focus areas of the articles. Based on the findings, a set of relevant questions are discussed and answered.

Based on the findings of the review, the recent research covers outsourcing and the role of IT in co-operation arrangements of companies quite well. However, when discussing about networking or co-operation of public sector in the IT environment, many issues are still without better understanding. Especially different challenges in voluntary co-operation versus non-voluntary co-operation in IT activities in public sector seem to need more research in the future. This is a topic which will have a big impact to many countries. This is especially important for countries like Finland, where current economic challenges in public sector are big and actions to turn the direction of better need to be done urgently.

There are also some limitations for the current review. With the help of other key words, the number of articles and the content of articles could be different. The current research is done using RBV and TCE as leading theories but using different theories as a basis could also bring other articles and other results. Still the current review shows that the recent research misses the challenges of public sector's IT co-operations. This provides good research opportunities in the future. Also the fact that the number of case studies is scarce provides good research opportunities.

## **Acknowledgement**

I like to express my gratitude to my superior Tomi Dahlberg for his guiding support. I would also like to thank Janne Lahtiranta for his practical advices. The research has got financial support from Jenny and Antti Wihuri Foundation.

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