Research on Online Public Service in China: A Critical Assessment

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ABSTRACT

With the development of China's e-government, online public services (OPS) have become one of the focal areas of the service-oriented government building. In this paper, we conducted a quantitative and qualitative analyses of papers on this topic published in Chinese core Journals and the China "E-government Journal". For each paper we paid close attention to author's institutional association and department, publish journal names and issues, paper length, research themes, research methods, levels of analysis, and geographical focus in order to take a multi-faceted view. Findings from the study suggested that in terms of research methods, most papers take a descriptive approach such as experiences illustration, practice introduction and viewpoints, and only a few papers meet the typical rigorous standard for academic papers. Also, we found that most OPS studies in China focus on service construction while only a few touch service quality assessment. This study indicates that China's OPS practice was still at its early developmental stage. Although practitioners and researchers both agreed on the significance of OPS for China's administrative reform, it is clear that practices are still lagging behind.

Categories and Subject Descriptors

H.3.5 [Online Information Services]: *Web-based services*

General Terms

Management, Measurement, Performance, Design

Keywords

Online Public Service (OPS), Critical Assessment, China

1. INTRODUCTION

With the advancement of service-oriented government building,

all levels of government in China from the central to the local are actively promoting the e-government development to achieve the government reform and deliver public services. Many local governments have already begun to build service-oriented e-government within which providing online public services is a particular focus. In 1999, more than 40 ministries, bureaus and offices launched a joint initiative called "Government Online Project". By the end of 2006, the total number of the domain names under the gov.cn rose to 28575. About 70% of the municipal governments had set up service functions on the internet [28]. However, according to the assessment report of CCID (China Center for Information Industry Development) Consulting, Inc., only 8.7% of the municipal government portals can be classified as user-oriented services, and up to 48.1% portals organize their services with a agency-oriented perspective.

In the context of the practice mentioned above, this paper carried a systematic analysis on the current Chinese research papers in the OPS domain in order to explore the focus and status of the field and potential problems. A critical analysis of these research papers could give insights to the future research, and practically could improve the current OPS environment and promote the construction of service-oriented government.

This paper is organized as follows. First, it introduces the research context and the significance of this research followed by the research methods adopted in this study. Based on this methodology, the paper continues with further data analysis, and presents findings and results in the third part of the paper. Fourthly, it further discussed the findings and their implications for future studies followed by a conclusion.

2. METHODOLOGY

2.1 Selection of Journals

This paper tends to focus on high-quality Chinese papers in OPS area, so we chose the largest database of China, the China National Knowledge Infrastructure (CNKI, www.cnki.net), which contains 6642 kinds of domestic academic journals, including 2460 kinds of core journals and important database. This database contains no less than 99% of all the journals and 99.9% of the papers written in Chinese language. Given to the completeness of this database, we chose the core journals in this database to collect papers for study. Core journals in China are generally referred to journals that have accumulatively published a great number of papers in China, have high paper citations and

high academic influence [28]. In this research, core journals particularly refer to journals listed in the "Main list of the Chinese core journals" developed and published by Peking University Library every four years. In addition, since e-government is still a quite new research field in China, no Chinese journals in this domain has been recognized as core journals in China. However, among non-core journals, the China "E-government Journal" has enjoyed a high reputation and influence in the field and many researchers have chosen to publish high quality papers in this journal. Therefore, we decided to include the China "E-government Journal" into the database. In sum, core journals and the China "E-government Journal" are the source of searching papers in this study.

2.2 Selection of Articles

Online Public Services in this study referred to online transaction services delivered by the government agency to citizens, enterprises and social organizations, so we excluded papers simply focused on studying online information delivery. We searched papers in the abovementioned database by using several combinations of key words, such as " 'online or website or government' and public service"*('Zaixian or Wangzhan or Zhengfu' and Gonggongfuwu)*, " 'government or website or online or web' and service" *('Zhengfu or Wangzhan or Zaixian or Shangwang or Wangshang' and Fuwu)*, "government and online office "*(Zhengfu and Wangshangbangong)*, "government and 'online or on the net' and approval " *(Zhengfu and 'Wangshang or Shangwang or Zaixian' and Shenpi)*, " 'department or bureau' and online service " *('Bumen or Ju' and Zaixianfuwu)*, etc. As a result of the searching and manual screening, a total of 37 articles meet the criteria of focusing on studying OPS and were thus selected for study. We then coded each paper in the Online public service pool according to the classification schemes to be explained later. During the coding process, we re-evaluated each paper for its relevance to the online public service.

2.3 Multifaceted Coding Methods

Owing to its interdisciplinary nature, OPS encompassed an array of rich research ingredients. Therefore, we conducted a multifaceted view to code the collected papers. After referring to previous similar studies [23] and brain-storming among the research team members, we identified various aspects and ingredients of OPS studies. We decided to pay special attention to the author, author's institutional association and department, publish journal and issue, page length of papers, research themes, research methods, level of analysis, and geographical focus (see Table 1). The reasons and purpose of setting these facets are as follows:

- Author institutional affiliation: to know which institutions are the major players in this research area, and are from which sectors of the society;
- Author's disciplinary department in universities or research institutions: Given the interdisciplinary nature of e-government research, this fact intends to explore to which disciplinary department the scholars belong. After referred to the "China National Standard Subject Classification and Code" published by Chinese Ministry of Education and the

international subject classification practice, the research team carry out a classification of subjects;
- Publish journal: classification of journals leads to deep analysis of publish venues of papers and determine which journals publish more studies in this area;
- Journal issue: to examine annual publications numbers in this field, and to explore possible research trend in terms of annual quantity of published papers;
- Paper length in terms of page numbers: to take paper length as one of indicators of paper quality;
- Research themes: to classify the research themes by its subjects in order to explore the major focus of current studies in this area;
- Research methods: with reference to previous methods home and abroad [4] [23], we classify the research methods into theoretical, empirical, and descriptive in order to summarize the major methods used in existing researches;
- Level of analysis: to classify the governmental levels of analysis of current studies;
- Geographical focus: to identify domestic, foreign and comparative studies in order to explore the geographic focus of current studies.

After categorizing and coding data, we carried on a quantitative analysis with the aid of the SPSS software, and then further conducted a qualitative literature review to examine the research questions, findings and trends of the OPS research in China.

3. FINDINGS AND RESULTS

3.1 Quantitative Analysis

3.1.1 The Sector and Discipline Department

OPS study is a new research area in China. From the statistics analysis, we find that no author ever published more than one article in core journals or the China E-government Journal. The author's sector could be categorized into universities or research institutions, government agencies, and enterprises or social organizations. From the classification of the authors' sector, we find that about 54.1% of the papers come from authors in universities or research institutions, 27% from authors in government agencies, and 18.9% from authors in enterprises or social organizations. Furthermore, based on the statistical analysis of the institutions from which authors come, researchers from China Software Testing Center published three papers, scholars from Beijing Polytechnic University, Shanghai Jiaotong University, and Zhejiang University published two papers each, while all the other 28 institutions published one paper respectively. Given that China has a large number of research institutions or social organizations, these 32 institutions represent only a very small proportion.

We also categorize papers from the universities or research institutions by the authors' disciplinary departments. Since the departments' name are various among universities in China, we classify the departments from their major research areas. In this study, authors' departments are classified into computer science and engineering, information management, public administration, business administration, economics, library science, and others.

Table 1. Multifaceted Coding Schema

Facets	Codes/categories		Definitions and Descriptions
Author's sector	Universities or research institutions		Universities; Research centers; Research institutions
	Government		Government agencies
	Enterprises and social organizations		Enterprises; NGOs; NPOs
Author's disciplinary department	Computer science and engineering		Computer Science or Engineering Department
	Information management		Information Resources Management School or Department
	Public administration		Public Administration Department; Public Policy or Public Affair Department
	Business administration		Management School , Business administration School or Department
	Economics		Economics Department or Research Center
	Library science		Library Science Department; Library
	Others		Department or Center that does not fall into either of the above categories
Paper length			The total page number of the paper. If the content is less than one page, it is counted as one page.
Research themes	Classification of research perspectives	Multi-theme	Covering more than one of the following topics, but not focus on one specific aspect.
		Service construction and modeling	System building and modeling; Function design; Technology introduction; Platform development
		Service evaluation	Service capacity assessment; Service quality evaluation; Willingness to use evaluation
		Promotion of OPS	Necessity and significance of online public service and its influence to government development
	Classification of service type	Regulation	Administrative regulation business
		Service	Public services
		Both	Both regulation and services
Research methods	Theoretical	Theoretical framework building	Theory construction based on existing literatures and theories
		Critical literature review	Review existing literature in terms of the research themes, research methods and key findings, make comments and summary, identify their achievements and gaps, and then put forward directions for future studies.
	Empirical	Interview	In-depth interviews conducted on an individual or group basis with a qualitative approach
		Survey	collect data through questionnaires with a quantitative approach
		Observation	Involves large number of participatory or non-participatory observations with quantitative or/and qualitative approach
		Secondary-data	Analyze data collected from secondary sources
		Comparative studies	Comparative analysis of two or multiple cases in different context
		Case studies	In-depth analysis of one or multiple cases
	Descriptive	Theoretical and practice integration	Apply theory in practice, and build practical framework, methods or tools
		Practice illustrations and introduction	Introduce or describe practices or applications, but does not conduct systematic analysis with academic approach
		View points	Express personal viewpoints, give advice or guidance for practice
Levels of Analysis	General		Does not indicate any specific level of analysis
	Central Government		Central government ministries
	Regional		Cross-regional studies
	Provincial		provincial level, including municipalities directly under the jurisdiction of central government (Beijing, Shanghai, Tianjin, Chongqing)

	Municipal	Cities and districts/counties of municipalities
	County	Districts and counties
	Grassroots	Grassroots government and self-autonomy organizations
Geographical Focus	Foreign	Foreign countries and Hong Kong, Macau and Taiwan
	Domestic	Mainland China
	Comparative	Comparative studies between two or more countries or regions

The finding is that business administration occupies the largest portion, accounting for 40%.

3.1.2 Evaluation of Paper Lengths, Year of Publications and Journal Names

Among all 37 articles collected, the mean of page length is 4.7 with the minimum at one and the maximum at 12. Up to 21 papers (57.8%) contain less than four pages, 14 papers (37.8%) contain 5 to 8 pages, and only two papers (5.4%) contain over 8 pages. As mentioned above, China started the "Government Online Project" practice in 1999, since then Chinese scholars began to focus on OPS area. Overall, the study indicates that beginning in 2000, studies of OPS showed an upward trend, peaked in both 2003 and 2008, but slid downward in 2009.

In addition, papers in OPS area scatter in all core journals and there isn't a specific core journal focusing on e-government. Among the core journals which published OPS papers, only "Computer Engineering and Design" has published four papers, "Library and Information Service" published two, while other journals published only one paper. However, "E-government Journal", a non-core journal, has published about 43.2% papers on OPS.

3.1.3 Research Themes and Business Nature

Most papers are multi-themes followed by the themes of service construction and modeling, while only very few studies pay attention to service quality and its evaluation. In terms of business nature, most papers studied regulations. About 32.4% of papers focus on regulations, 2.7% on public services, and 64.9% on both.

3.1.4 Research Methods

Among all papers studied, only one paper (2.7%) is based on the theoretical methods, specifically speaking, theoretical framework building. No article conducts critical literature review. Six papers adopt empirical methods with two papers using survey method, one using observation method, one using comparative study and two taking case studies respectively, while no paper adopts in-depth interview or secondary data method. Nevertheless, up to 30 papers (81.1%) adopt descriptive methods with nine papers in the category of theoretical and practice integration (24.32%), ten in practice illustrations and introductions (27.03%) and eleven in viewpoints (29.73%).

3.1.5 Levels of Analysis and Geographic Focus

In this study, we categorize the levels of analysis into general, central government agency, regional, provincial, municipal, county and grassroots. We could see that about 67.6% papers fall into general level, 8.1% into the provincial level, 22.6% into the municipal level and 2.7% into the county level. No article falls into either central governmental, regional or grassroots level.

Up to 91.9% of papers focus on discussing domestic issues; 5.4% focus on introducing foreign experiences; and only one article conducts a systematic comparative study among China, America, UK, Singapore and Canada.

3.1.6 Cross-tab Analysis of the Author's Sector and Research Methods

The cross-tab analysis between the author's sector and research methods shows that theoretical and empirical studies of OPS are conducted majorly by academia, while descriptive papers come from the academia, governments, enterprises and social organizations.

3.2 Qualitative Analysis

In-depth analysis on the research content and progress of OPS in China shows that current research topics concentrate on general introduction, service construction and modeling, service evaluation, and promotion of OPS. Most current studies of OPS focus on multi-themes that covering more than one topic or case but did not focus on either one of them. (1) Illustrate experiences and introduce practices in cities of mainland China, such as Yulin, Yuncheng of Shanxi Province, Hengyang, Tianjin, and District of Xi'an [5] [8] [11] [27]. Moreover, existing studies provide experience introductions of other countries and regions in terms of the customer-oriented design of OPS, humanization of services, and "package" services [3] [18]. (2) Discuss OPS issues in general, such as how to develop OPS and existing difficulties. Current research indicate that Chinese government websites are still inadequate in online public services delivery and keeps significant distance from public demands [14]; nevertheless, some believe that the "custom-centric" ideology has been formed in public services delivery [25].

Many existing studies are centering on service construction and modeling, including system building and modeling, function design, technology introduction, and platform development. Some papers introduce the development of online administrative systems by utilization of Web and Workflow technologies [2] [9] [12] [20], while others focus on improvement of government management and decision-making capacity through adopting new technologies such as SOA, Multi-Agent [6] [13].

Five papers address the service provision capacity, willingness of usage and service quality assessment. Papers on evaluation of service provision capacity develop evaluation index system to ensure that they comply with citizens' demand [16] [24]; Studies on willingness to use indicates that OPS should pay attention to the needs of different users and promote the benefits of online public services [10]. The paper also argues that enterprises'

willingness of using online public services relies on the perceived value, social impact, trust level in government and other factors [1]; by conducting surveys of personalized service provision of provincial government, a research on service satisfaction finds that China's governmental websites increasingly tend to concentrate on the quality and impact of public services [21].

Finally, some papers focus on promoting OPS, advocating the significance of online services and its impact on the government building. Researches argue that OPS play an active role in governmental reform from regulation to services and in the improvement of public services delivery [15] [19]. The existing researches emphasizes on improving administrative efficiency and open operation of power [7] [22], in order to promote the construction of a harmonious society [17].

4. DISCUSSIONS AND IMPLICATIONS

4.1 Low Attention on OPS Research

The China "Government Online Project" has been in existence for more than 10 years, but high quality papers on OPS area is still at its early stage with a total number of 37. This indicates that the OPS studies haven't yet received enough attention. However, almost half of the authors' are from government agencies, enterprises and social organizations. This demonstrates that OPS do have received attentions from practitioners, although most of these papers are descriptive articles without taking a theoretical or empirical approach for study. Moreover, given the finding that authors' from business administration department accounts for 40% percent of researchers on OPS, while authors' from public administration only occupies 10%, it seems that public administration researchers should pay more attention to this research area, as OPS are parts of public services.

The findings also show that although the number of papers on OPS is relatively limited, but the figure has been increasingly rising since 2000. The possible reason for the peaks in 2003 and 2008 could be attributed to the influence of the sixteenth and the seventeenth National People's Congress of CCP, during which the President of China addressed that deepening administrative reform in China, should "further reform government functions, improve management style, and promote e-government". The decline of 2009 may be due to the financial crises, which diverted the attention of academia and journals to the economy recovery away from the conventional delivery of public services.

4.2 Inadequate Research Methods

The study finds that the quality of the current studies of OPS is not yet satisfying. First, the paper length seems to be too short to be rigorous and in-depth research. Although paper length is not the only criterion to judge the quality of papers, the fact that 57.8% of the papers studied cover less than one sheet does not seem to be a positive indicator. Furthermore, the fact that 81.1% of papers are simply descriptive article suggests that future studies in China on OPS should pay more attention to improving their research methods and carry out more rigorous empirical and theoretical studies. At last, the finding also shows that Chinese scholars may need to consider conducting more international research such as systematic comparative studies to expand the

vision and dimension of current research on OPS, as many foreign countries have accumulated quite many knowledge and practice experiences in this field.

4.3 Research Quality Reflects Practical Realities

Theory is inseparable from practice progress. The analyses above shows that China's research on OPS is still at its preliminary stage, which can be partially explained by the insufficient OPS practice in China. Reasons for insufficient practice of OPS varied, such as lack of motivation for innovation, institutional constraint, and ineffective evaluation. With the development of service-oriented government building and the emerging new information technology, OPS practice may advance further, and consequently future studies might also concentrated more on service quality rather than on quantity only.

Moreover, in terms of the business nature of current online public service, current practices focus heavily on regulations rather than on services, because: (1) practice in public services delivery experienced relatively short period. Zhang pointed out that from the perspective of Chinese website construction, public services delivery function is weaker than other services, and the imbalance among different areas is obvious [26]. Some leading government websites have acquired information provision and processing capacities such as the portals in Beijing and Shanghai, while the rest are still inadequate in providing online public services (See Figure 1). (2) Government function in China is still biased towards regulation rather than providing public service.
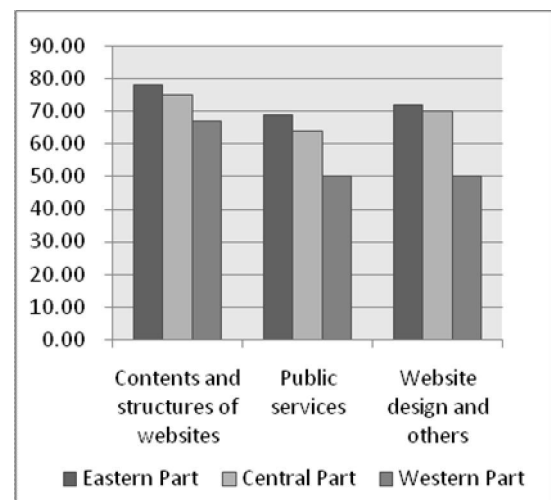
Figure 1. Regional Comparison of Government Portals Performance in 2008

The analyses of research level indicate that most papers on OPS in China do not indicate specific level of analysis but maintain a generic coverage. This might be caused by: 1) the function of central government generally focus on making policies rather than directly providing public service; 2) current OPS practice at low level grassroots government may still in need of infrastructure and financial aid.

5. CONCLUSION AND FUTURE STUDY

OPS have become one of the focal areas since China started its "Government Online Project" in 1999. In this paper, we conducted a quantitative and qualitative analyses of all papers published in the Chinese core Journals and the China E-government Journal by taking a multi-faceted coding schema. Findings from this study suggested that China's OPS practice and researches were still at its early development stage. Although practitioners and researchers both agreed on the significance of OPS for China's administrative reform, it is clear that practices are still lagging behind.

The limitation of this paper is obvious. We choose the China core Journals and the China E-government Journal as the sources of search paper, but it is likely that some high quality papers were published in other journals, while papers publish on core journals and the China E-government journals may not be truly good ones.

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