


# Intellectual Structure and Publication Pattern in *Journal of Global Information Management*: A Bibliometric Analysis During 2002-2020

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## ABSTRACT

The *Journal of Global Information Management* has been publishing high-quality research related to information systems since 1993. The current study provides a retrospective of its magnificent journey. The study recognizes prominent authors, institutions, countries, and publications of JGIM using bibliometric analysis. D.C. Yen and M. Srite are the most productive and influential authors of the journal, while the National University of Singapore is the most contributing institution. The USA emerges as the leading contributor to the journal; however, China exhibits a large number of collaboration links. Along with the description of these trends, the study employs graphical analysis to investigate collaboration links among authors, affiliated institutions, and countries. Furthermore, the study examines the intellectual similarity structures among the authors and countries through the bibliographic coupling. The selected publications have been clustered into six groups based on the similarity of the reference list. The evolution of these themes over time has also been discussed.

## KEYWORDS

Bibliographic Coupling, Bibliometric Analysis, Co-Authorship Analysis, Keyword Co-Occurrence Analysis

## INTRODUCTION

The *Journal of Global Information Management (JGIM)* is renowned in the area of management information systems (MIS) publishing original and high-quality research related to global information resource management. The journal disseminates theoretical and practical knowledge about MIS resources, and focuses on its managerial implications. As per SCIMAGO research areas, it publishes well-conducted research related to various aspects of information technology (IT) and systems, Business and International Management, Computer Science applications, e-learning, and Management Science originating from different countries. The journal began its publications in 1993 from the US, and has consistently published 4 issues each year, publishing its 28<sup>th</sup> successful volume in 2020. Dr. Zuopeng (Justin) Zhang from the University of North Florida, USA, is its editor-in-chief. The journal is indexed in various prestigious databases such as Scopus, Web of Science, Compendex,

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INSPEC, ABI/INFORM, EBSCO host, among others. The journal has gained a prestigious position in different journal ranking lists; for instance, it ranks in ‘A’ category journal as per ABDC rankings, while it ranks ‘2’ under ABS’s AJG list. It attained an h-index value of 39 over the years, which in turn represents that at least 39 articles published in the journal have received a minimum of 39 citations. Its Scimago journal rank for is 0.34 and it lies in Q2 of Business and International Management area.

In order to provide an overview of the glorious journey of the journal, the current study performs a bibliometric analysis of the publications. Recently, a number of studies have employed this method to analyze the publications of various reputed journals, including the *Journal of Business Research*, *Journal of Knowledge Management*, *European Journal of Marketing*, among several others, which are listed in Table 1. Most of these studies focus on analyzing the publication trends of a journal to mark a specific anniversary, while others examine the trends over a specific time.

**Table 1. Recent bibliometric studies of reputed journals**

Journal	Authors	Year
Journal of Business Research	Donthu, Kumar, & Pattnaik	2020
Industrial Marketing Management	Martínez-López, Merigó, Gázquez-Abad, & Ruiz-Real	2020
International Journal of Advertising	Donthu, Kumar & Pattnaik	2020
Review of Financial Economics	Baker, Kumar & Pattnaik	
European Journal of Marketing	Martínez-López, Merigó, Valenzuela-Fernández, & Nicolás	2018
Journal of Knowledge Management	Gaviria-Marin, Merigo, & Popa	2018
European Journal of Operational Research	Laengle, Merigó, Miranda, Słowiński, Bomze, Borgonovo, & Teunter	2017
Quality & Quantity	Mas-Tur, Modak, Merigó, Roig-Tierno, Geraci & Capecci	2019

This study aims at providing a retrospective overview of the glorious journey of JGIM between 2002 and 2020. Further, the study analyzes citation and publication structures followed by the identification of most prolific authors, articles, institutions, and countries. Additionally, it provides a thematic analysis of the publications by deploying bibliographic coupling of articles into 6 clusters. Notably, various links among the authors related to collaboration and intellectual similarities have been analyzed by using co-authorship analysis and bibliographic coupling. Significant topics of discussion have also been explored by using keyword co-occurrence analysis, and the evolution of these topics over time provides interesting insights. The results obtained from the analysis may help the general audience in understanding various factors related to the journal.

The rest of the study is structures as follows; section 2 describes the methodology and data used for research, and section 3 presents descriptive results. Section 4 discusses the network analysis results of the study, followed by concluding remarks in section 5.

## METHODOLOGY

Bibliometric is a research field of applying mathematics and statistical methods to bibliographic details of books and other media of communication, which provides a historical overview (Pritchard, 1969). Broadly, bibliometric analysis focuses on monitoring the cognitive structure of a research field, and

its evolution over time (Noyons et al., 1999; Sengupta, 1992). It provides the summaries of literature published over the years, and classifies the bibliographic records. This method can be used to analyze books, journals (Donthu et al., 2020b; Martínez-López et al., 2020), universities/institutions (Merigó et al., 2019), topics (Danvila-del-Valle et al., 2019) key authors, institutions, and countries based on their respective contributions.

The bibliometric analysis is composed of important techniques such as bibliographic coupling, co-citation analysis, co-authorship networks, and keyword co-occurrence analysis. Bibliographic coupling refers to connecting publications based on the similarity of literature referred by these publications (Kessler, 1963), whereby the structure emerging out of these connections is static and permanent. Co-authorship connections among researchers act as a useful tool for mapping collaboration structures in the research field, while identifying research groups (Peters & Van Raan, 1991). The keyword co-occurrence analysis provides linkages between keywords, based upon their frequency of occurrence in the same publication (Callon et al., 1983), which helps in mapping the research interests of the field (Cobo et al., 2011).

### Data Analysis Process

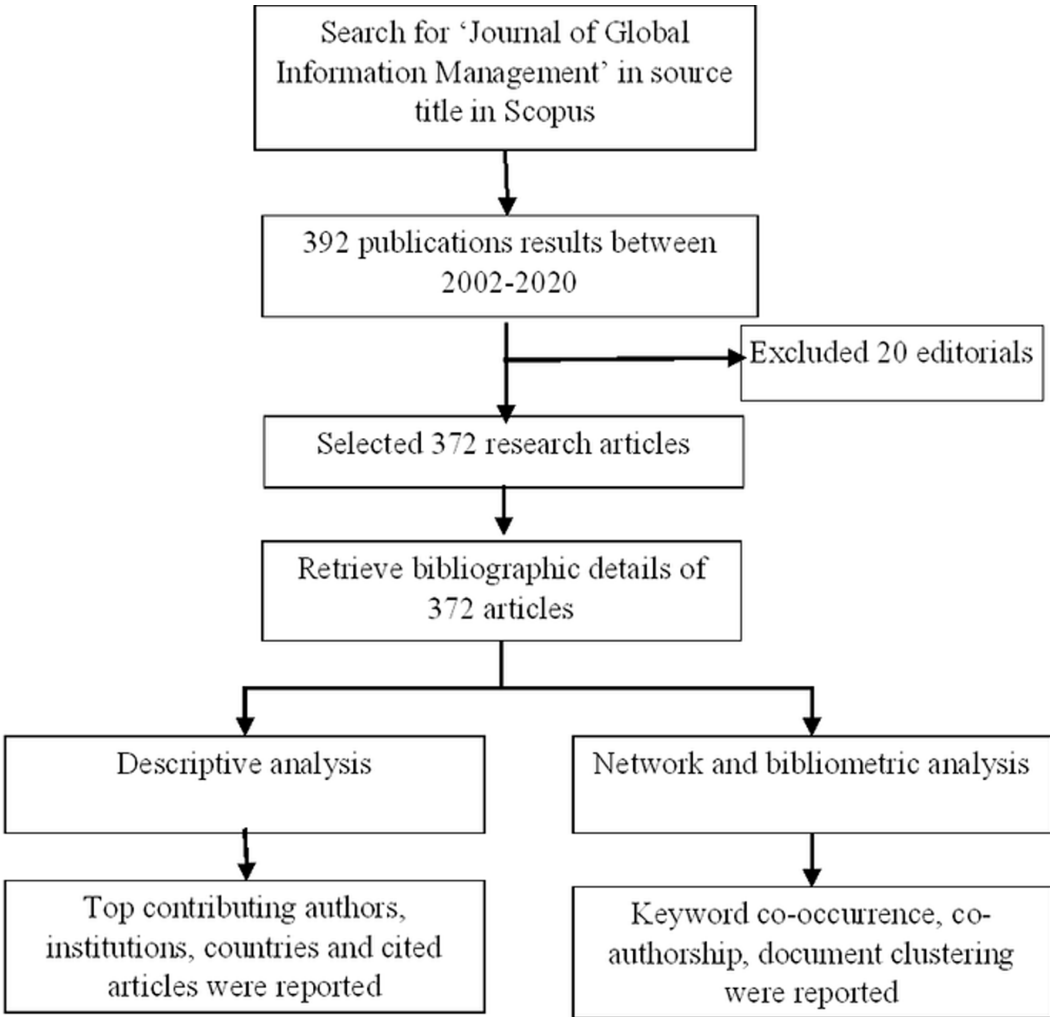
Based on the discussion related to various techniques involved in bibliometric analysis, this study analyzes JGIM's journey of 19 years. In this endeavor, the analysis has been divided into two parts, descriptive analysis and network analysis. The descriptive analysis summarizes important productivity measures about authors, papers, institutions, and countries while network analysis helps in identifying the relationships among these entities. The descriptive analysis of the records involves identifying top authors, affiliated institutions, countries, and publications. This analysis is based upon various impact measures, such as the total number of publications, number of citations received, and average citations per article. Other impact measures include h-index, g-index, and m-index (Baker et al., 2020; Donthu et al., 2020b). The h-index is defined as the h number of publications having at least h number of citations, while g index denotes g number of publications receiving at least  $g^2$  number of citations (Egghe, 2006; Hirsch, 2005). The m-index on the other hand, is calculated by dividing h-index value by number of years, since the author is active.

Network analysis includes bibliographic coupling, co-authorship network, and keyword co-occurrence network. In line with recent studies on bibliometric analysis, this study uses VOSviewer software (Donthu et al., 2020b; Martínez-López et al., 2020) and the Bibliometrix package (Valtakoski, 2019; Wang et al., 2020) for developing these bibliometric networks. These networks (developed by VOSviewer) were further visualized in Gephi software (Bastian et al., 2009) by taking reference from studies mentioned in Table 1. The VOSviewer software is a freely available software used for constructing bibliometric maps. It is capable of handling large graphs, which are displayed in an easy to interpret manner (Van Eck & Waltman, 2010). The Bibliometrix R-Tool is also an open source tool helps in developing scientific maps and conceptual structure using network characteristics (Aria & Cuccurullo, 2017).

### Data Collection and Key Insights

The journal started publication in the year 1993; however, due to limited availability of data, only the records ranging from 2002 to 2020 are considered. A search by using the source title in Scopus was performed on 18<sup>th</sup> May, 2020, which resulted in 392 records. The research output can be measured in terms of number of research articles, which may include normal articles (including proceedings papers) and reviews, but not editorials, meeting abstracts, and corrections (Van Raan, 2014). Therefore, final analysis has been performed on 372 articles, after excluding 20 editorials from the results (Figure 1). These search results include the research articles (321), conference papers (9), and review articles (42). Table 2 presents general information about the selected publications. Further, out of these 372 articles, 37 are single-authored, while remaining articles include more than one author. The average number of authors per article is 2.43.

Figure 1. Research design



## DESCRIPTIVE RESULTS

This section provides descriptive information about JGIM publications between 2002 and 2020. The 372 articles selected for further analysis received 6698 citations, making the average number of citations per article equal to 18.01.

### Year-Wise Publication and Citation Trend

In 2002, the journal published 20 articles followed by a fall in the number of publications in the next few years. The compound annual growth rate of the number of publications is 2.09 between 2002 and 2020. Table 3 depicts the citation and publication trend of the articles published in JGIM between 2002 and 2020. The table also represents the number of publications receiving citations more than 5, 10, 20, and 50. In terms of the number of publications, 2006 was the least productive year, while 2019 was the most productive year. However, in terms of the number of cited publications, 2018 obtains the first rank with 25 articles followed by 2017 with 22 cited articles. In order to understand

**Table 2. General description of bibliometric data**

Description	Results
Timespan	2002:2020
Documents	372
Average citations per documents	18.01
Average citations per year per doc	1.469
References	21943
Article	321
Conference paper	9
Review	42
Keywords Plus (ID)	2198
Author's Keywords (DE)	1544
Authors	904
Author Appearances	1114
Authors of single-authored documents	36
Authors of multi-authored documents	868
Single-authored documents	37
Authors per Document	2.43
Co-Authors per Documents	2.99
Collaboration Index	2.59

the overall impact of the journal, the number of citations and average citations per article has been analyzed. The highest number of citations flowed to the articles published in the year 2005 (1218), making it the most influential year. The year 2002 received the second position with 1016 citations. In terms of citations per article, 2005 remained the most influential year with 81.20 citations per article followed by 2006 with 57.21 citations per article. The highest number of articles having at least 50 citations were published in the year 2005 (9 articles) followed by 5 such articles in 2006.

### Top Cited Publications

JGIM has published many relevant articles in the field of information systems and information management research, which have garnered attention of the scientific community. Table 4 presents the list of 15 most influential articles published in JGIM between 2002 and 2020. Straub, Loch, Evaristo, Karahanna, & Srite (2002) rank first both in terms of the number of global citations (349) and local citations (20), making it the most influential article published in JGIM between 2002 and 2020. The study focuses on providing a theory-based view of culture by employing the social identity theory, and provides useful insights for future research focusing on the impact of culture. Other important articles include Myers & Tan's (2002) with 288 citations, and Chan & Lu's (2004) study has 276 citations. Myers & Tan (2002) argued in favor of adopting a dynamic view of culture in information systems studies, while Chan & Lu (2004) empirically investigated the adoption of internet banking services.

A significant proportion of the studies listed in Table 4 focus on various aspects of culture. Other important topics discussed in these influential works include various e-services such as e-government, e-commerce, and banking services. 19 out of 20 studies were published before 2007, which implies the lack of influential studies in the following years. Sixty percent of these top articles received more than 100 citations throughout 2002-2020.

Table 3. Publication and citation structure of JGIM between 2002 and 2020

Year	TP	TC	TCP	TC/TP	TC/TCP	TP with TC ≥			
						5	10	20	50
2002	20	1016	20	50.80	50.80	17	13	9	4
2003	17	555	17	32.65	32.65	17	15	10	3
2004	19	719	18	37.84	39.94	17	13	10	4
2005	15	1218	15	81.20	81.20	15	15	12	9
2006	14	801	14	57.21	57.21	14	11	10	5
2007	17	390	17	22.94	22.94	16	9	6	3
2008	17	403	17	23.71	23.71	17	15	10	1
2009	15	268	15	17.87	17.87	15	11	4	1
2010	16	265	16	16.56	16.56	14	10	6	0
2011	15	144	15	9.60	9.60	12	6	1	0
2012	14	215	14	15.36	15.36	13	5	1	1
2013	19	198	18	10.42	11.00	14	9	4	0
2014	14	68	13	4.86	5.23	6	1	0	0
2015	15	98	14	6.53	7.00	9	5	0	0
2016	16	84	16	5.25	5.25	6	3	0	0
2017	25	153	22	6.12	6.95	8	6	2	0
2018	36	72	25	2.00	2.88	6	0	0	0
2019	39	28	14	0.72	2.00	1	0	0	0
2020	29	3	3	0.10	1.00	0	0	0	0
Total	372	6698	303			217	147	89	31
Notes: TP= Total publications, TC= Total citations, TCP=Total cited publications, TC/TP= Number of citations per publication, TC/TCP=Number of citations per cited publication									

## Most Productive and Influential Authors

In total, 904 unique authors have published articles in JGIM between 2002 and 2020; out of these authors, 36 have published single-authored articles, while the rest were part of collaborated research works. Table 5 depicts the list of most productive authors of JGIM who have published at least 4 articles during this period of 19 years. Along with the number of articles, other measures used for assessing their impact include the number of citations, h-index, g-index, and m-index. Additionally, a fractionalized measure of contribution has also been computed. The contribution of each author has been normalized based on the total number of co-authors in each publication as follows,

$$TP_{frac}(AU) = \sum_{a \in AU} \frac{1}{no.of co - authors}$$

Here,  $AU$  is the set of documents co-authored by an author, and  $a$  is a document included in  $AU$ . The publications of these authors have been divided into 4 different categories based on the number of citations.

**Table 4. 15 Most influential articles published in JGIM between 2002 and 2020**

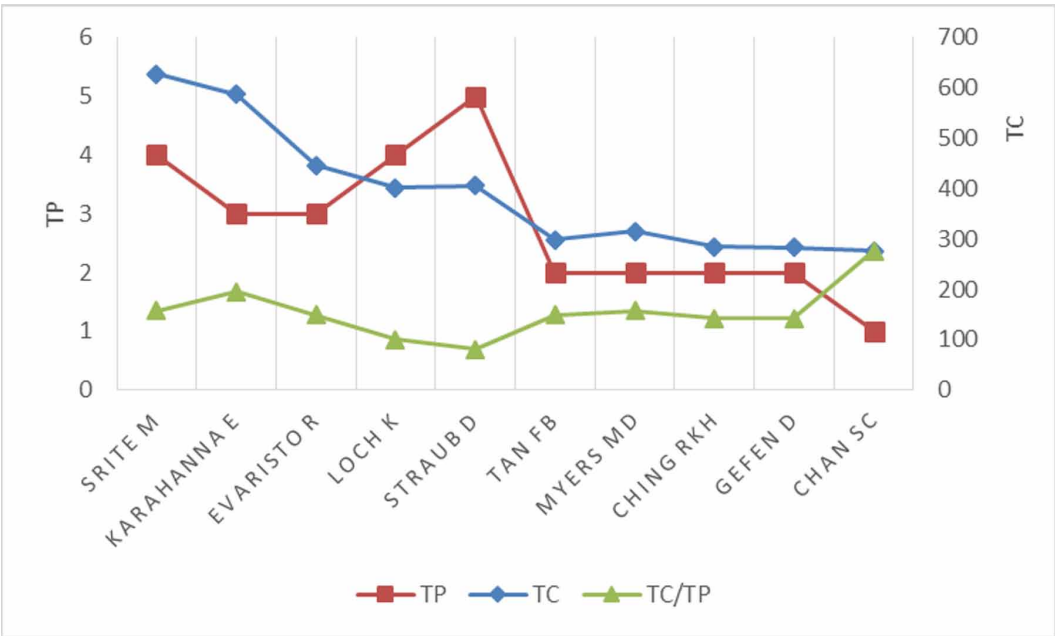
Author	Title	Year	LC	TGC	CPY
Straub, Loch, Evaristo, Karahanna & Srite	Toward a Theory-Based Measurement of Culture	2002	20	349	19.39
Myers, Tan	Beyond Models of National Culture in Information Systems Research	2002	10	288	16
Chan & Lu	Understanding Internet Banking Adoption and Use Behavior: A Hong Kong Perspective	2004	4	276	17.25
Chen, Chen, Huang	E-Government Strategies in Developed and Developing Countries: An Implementation Framework and Case Study	2006	7	200	14.28
Karahanna, Evaristo, & Srite	Levels of Culture and Individual Behavior: An Investigative Perspective	2005	9	197	13.13
Cyr, Bonanni, Bowes, & Ilsever	Beyond Trust: Web Site Design Preferences Across Cultures	2005	4	169	11.26
Grant & Chau	Developing a Generic Framework for E-Government	2005	5	160	10.67
Gefen & Heart	On the need to include national culture as a central issue in e-commerce trust beliefs	2006	5	149	10.64
Singh N.	Cultural Adaptation on the Web: A Study of American Companies' Domestic and Chinese Websites	2003	5	140	8.23
Gefen, Rose, Warkentin & Pavlou	Cultural diversity and trust in IT adoption: A comparison of potential e-voters in the USA and South Africa.	2005	3	134	8.93
Doolin, Dillon, Thompson & Corner	Perceived Risk, the Internet Shopping Experience and Online Purchasing Behavior: A New Zealand Perspective	2005	2	133	8.86
Rowe, Truex & Huynh	An Empirical Study of Determinants of E-Commerce Adoption in SMEs in Vietnam: An Economy in Transition	2012	4	104	13
Siau K.	Using Social Development Lenses to Understand E-Government Development	2006	6	95	6.78
Carmel & Nicholson	Small firms and offshore software outsourcing: high transaction costs and their mitigation	2005	4	85	5.67
Chen & Ching	An Empirical Study of the Relationship of IT Intensity and Organizational Absorptive Capacity on CRM Performance	2004	4	85	5.31
Notes: LC= Number of local citations, TGC= Total global citations, CPY=Citations per year					

D.C. Yen from SUNY at Oneonta, USA, leads the list of most productive authors with 9 publications followed by Y. Chen with 7 articles and S.Y. Hung with 6 articles. However, in terms of the number of cited publications, D.C. Yen again leads the list followed by S.Y. Hung and C. Zhang. In terms of fractionalized contribution measures, K. Rouibah obtains the first rank, followed by C. Wang and D.C. Yen. In addition to these productivity measures, Figure 2 compares the overall impact of authors in terms of the number of citations received between 2002 and 2020. In terms of the number of citations, M. Srite gains the first rank with 628 citations, followed by E. Karahanna with 587 citations. However, in terms of the number of citations per article, Chang S.C. obtains the first rank with 288 citations per article, but the author has published only one article. Among the

highly productive authors mentioned in Table 5, M. Strite received the highest number of citations per article (157), followed by K. Loch with 100.3 citations per article and D. Straub with 81.2 citations per article. In the case of h-index and g-index values, D.C. Yen and S.Y. Hung lead the lists. In terms of m-index values, S.Y. Hung obtains the first rank, followed by X. Xu.

In the category of the number of publications with at least 5 citations, D.C. Yen ranks higher with 6 such publications followed by S.Y. Hung. However, in all other categories of publications with at least 10, 20, and 50 citations, M. Strite obtains a higher rank. Among these highly contributing authors, only M. Strite and D. Straub have received more than 100 citations on their 2 articles.

Figure 2.



### Most Productive Institutions

The authors who have been publishing in JGIM through these 19 years (i.e. 2002 through 2020) are affiliated with 502 different institutions. Table 6 depicts the list of author-affiliated institutions that have contributed at least 5 articles during this period. The number of publications of each institution has been calculated irrespective of whether the affiliated author is a corresponding author or not. As a result, the number of publications reflected in Table 6 are greater than country-wise publications presented in Table 7. The National University of Singapore (NUS) is the most contributing author-affiliated institution with 21 articles in JGIM between 2002 and 2020. Out of these 21 articles, 19 received at least one citation. Another highly contributing institution is the City University of Hong Kong, along with Georgia State University, USA, with 17 and 13 publications, respectively. However, in terms of number of citations received on the publications, the University of Wisconsin ranks first with 926 citations, followed by California State University (CSU), USA, with 705 citations. These universities also rank higher in terms of the average number of citations per article, with 132.29 and 117.5 citations per article respectively. Other influential institutions include Carleton University, Canada with 69.8 citations per article, followed by Shanghai Jiaotong University, China with 82



**Table 5. Most contributing authors of JGIM from 2002 to 2020**

Author	University	Country	TP	TC	TCP	TP <sub>frac</sub>	TC/TP	TC/TCP	PY	h	g	m	TP with TC ≥			
													5	10	20	50
Yen D.C.	SUNY at Oneonta	USA	9	106	9	2.18	11.78	11.78	2004	5	9	0.29	6	2	2	0
Chen Y.	Ohio University	USA	7	10	1	1.76	1.43	10.00	2003	1	3	0.06	1	1	0	0
Hung S.Y.	National Chung Cheng University	Taiwan	6	70	6	1.38	11.67	11.67	2010	5	6	0.46	5	2	1	0
Li Y.	Tsinghua University	China	5	20	4	1.78	4.00	5.00	2006	3	4	0.2	2	1	0	0
Chang S.I.	National Chung Cheng University	Taiwan	5	91	5	1.40	18.20	18.20	2002	4	5	0.21	4	3	2	0
Rouibah K.	Kuwait University	Kuwait	5	43	3	2.67	8.60	14.33	2009	2	5	0.17	2	2	1	0
Zhang J.	University of Wisconsin	USA	5	22	3	1.20	4.40	7.33	2008	2	4	0.15	2	1	0	0
Zhang C.	Fudan University	China	4	21	4	1.42	5.25	5.25	2008	2	4	0.15	2	1	0	0
Huang W.W.	Ohio University	USA	4	31	3	1.42	7.75	10.33	2003	3	4	0.17	3	2	0	0
Liu Y.	Xidian University	China	4	14	2	2.33	3.50	7.00	2016	2	3	0.4	1	1	0	0
Srite M.	University of Wisconsin	USA	4	628	4	1.20	157	157	2002	4	4	0.21	4	4	4	2
Straub D.W.	Georgia State University	USA	5	406	5	1.53	81.20	81.20	2002	5	5	0.27	5	2	2	2
Wang C.	Dongbei University of Finance and Economics	China	4	9	1	2.25	2.25	9.00	2003	1	3	0.06	1	0	0	0
Wei K.K.	City University of Hong Kong	China	4	62	4	1.33	15.50	15.50	2003	4	4	0.22	4	2	1	0
Xu X.	American University of Sharjah	UAE	4	3	1	0.80	0.75	3.00	2018	1	1	0.33	0	0	0	0
Loch K.	Georgia State University	USA	4	401	4	1.20	100.25	100.25	2002	4	4	0.21				
Zheng X.	Old Dominion University	USA	4	0	0	0.74	0.00	0.00	2019	0	0	0	0	0	0	0

Notes: TP<sub>frac</sub> = Fractionalized frequency of publications, h=h-index, g=g-index, m=m-index, PY=Starting publication year

citations per article. Interestingly, these are also the top four universities as per the number of citations per article cited. Moreover, almost half of these institutions have published at least one article with at least 50 citations; the highest number of such articles belong to NUS (5) and CSU (5). In fact, CSU has remained the most impactful in this category, as for 5 out of a total of 6 articles, it received a minimum of 50 citations. Most of the institutions listed in Table 6 attained reputed positions in different university rankings such as QS ranking and Academic Ranking of World Universities, which highlights the importance of JGIM as an academic outlet for authors belonging to top-ranking universities.

### Most Productive Countries

The publication trend in author-affiliated countries is analyzed in this section. Table 7 depicts the list of most contributing countries in terms of the number of publications from 2002 to 2020. The number

of publications of each country has been calculated by using the affiliation of the corresponding author of each article. Furthermore, the number of publications has been divided into single country publications (SCP) and multiple country publications (MCP) to examine the extent of collaboration among authors of different countries. Table 7 also presents details related to total citations, citations per article, and the number of authors affiliated with these countries. Herein, the US ranks first by contributing 59 articles, followed by China with 48 articles. India and South Korea occupy the third position with 22 articles each.

The US contributed the highest number of SCP; however, China published the highest number of articles with authors belonging to multiple countries. This indicates that there's possibly a lower level of international collaboration among US-based authors, while China possibly exhibits a greater extent of international collaboration. Interestingly, although Denmark does have the highest value of collaboration ratio (0.75), but it has only contributed 4 articles. However, if we were to compare the collaboration value of countries with at least 10 publications, China ranks first in terms of collaboration ratio (0.65), followed by the United Kingdom (0.55). The detailed collaboration connections between countries are examined in the network analysis section by employing co-authorship networks.

The US also leads with the maximum number of authors (256) followed by China with 130 contributing authors. In terms of the number of citations, the US again occupies the first rank with 2085 citations and leads China (661) by a large margin. This trend indicates the overall impact of the US towards enhancing overall journal citations. Notably, Canada (480) and New Zealand (528) also exhibit high values of citations. In fact, in terms of the number of citations per article, New Zealand is the first, with 66 citations per article followed by Canada with 53.33 citations per article.

## Top Cited References

In order to recognize the sources of intellectual influence on JGIM authors, the most frequently cited articles and books have been explored. Table 8 shows the list of such articles and books. Fornell & Larcker's (1981) is the most frequently cited article, with 22 citations from JGIM articles alone, which in turn indicates the popularity of Structural Equation Modeling (SEM) approach among researchers. Hofstede's (1984) book received 21 citations making it the second most cited reference. This shows the importance of culture-related discussions by JGIM authors. Another important reference is Venkatesh, Morris, Davis, & Davis' (2003) article focusing on the Technology Adoption Model (TAM), which shows a higher level of discussion around technology adoption. The intellectual roots of discussion in JGIM indicated in Table 8 reveal that frequently referred sources are related to areas of cultural impacts, information technology adoption, information systems success, e-commerce, and structural equation modeling approach.

## Top Cited Sources

In addition to top-cited references, the sources of these references have also been examined. Table 9 indicates the list of journals referred for at least 100 times by JGIM authors from 2002 to 2020. *MIS Quarterly* obtains the first position with 992 citations, followed by JGIM itself with 792 citations. Other important sources referred by the authors include *Information Systems Research* and *Information & Management* journal with 469 and 465 citations, respectively. Most of the cited sources are reputed journals in the area of Management Information Systems and Business research. Table 9 also shows the ABDC and ABS's AJG ranking and impact factor of each of these sources. All of these sources belong to A\* and A category of the ABDC ranking list, and 50 percent belong to 4 and 4\* ranking as per ABS's AJG list. This indicates that JGIM authors referred to the sources exhibiting academic excellence in their respective areas.

Along with providing an overview of various descriptive factors, the current study also examines various kinds of connections among the authors, their affiliated institutions, and countries. These connections involve collaboration networks and intellectual similarity connections. The following section discusses these network connections.

**Table 6. Most contributing institutions affiliated with JGIM authors**

Affiliations	Country	QS	ARWU	TP	TCP	TC	TC/TP	TC/TCP	TP with TC ≥			
									5	10	20	50
National University of Singapore	Singapore	11	67	21	19	586	27.90	30.84	17	11	7	5
City University of Hong Kong	China	55	201-300	17	16	321	18.88	20.06	14	10	6	2
Georgia State University	USA	701-750	501-600	13	13	607	46.69	46.69	13	6	6	2
National Chung Cheng University	China	801-1000	-	12	11	134	11.17	12.18	9	5	2	0
University of Science and Technology of China	China	98	101-150	11	10	183	16.64	18.30	7	5	5	1
Old Dominion University	USA	-	601-700	9	3	18	2.00	6.00	1	1	0	0
Saint Louis University	USA	-	401-500	9	9	366	40.67	40.67	9	6	5	3
Ohio University	USA	801-1000	701-800	8	7	448	56.00	64.00	7	5	2	2
University of Wisconsin-Milwaukee	USA	-	401-500	7	5	926	132.29	185.20	5	3	2	
Fudan University	China	44	101-150	7	7	39	5.57	5.57	3	2	0	0
Yonsei University	South Korea	107	201-300	7	5	75	10.71	15.00	5	4	2	0
California State University	USA	-	-	6	6	705	117.50	117.50	6	6	6	5
Kuwait University	Kuwait	801-1000	-	6	4	46	7.67	11.50	2	2	1	0
Management Development Institute	India	-	-	8	7	168	21.00	24.00	6	6	3	2
Miami University	USA	801-1000	-	6	6	100	16.67	16.67	6	2	2	0
Sungkyunkwan University	South Korea	100	151-200	6	5	39	6.50	7.80	2	2	0	0
University of Lethbridge	Canada	-	-	6	6	121	20.17	20.17	6	3	2	0
University of Wollongong	Australia	218	201-300	6	5	49	8.17	9.80	5	3	0	0
American University of Sharjah	UAE	376	-	5	2	13	2.60	6.50	1	1	0	0
Carleton University	Canada	651-700	701-800	5	5	349	69.80	69.80	4	4	2	2
Shanghai Jiaotong University	China	59	82	6	5	410	68.33	82.00	3	2	2	2
Tsinghua University	China	17	43	5	5	78	15.60	15.60	5	2	1	0
University of Auckland	New Zealand	85	201-300	6	6	335	55.83	55.83	4	3	2	1
University of Manchester	United Kingdom	29	33	5	2	64	12.80	32.00	2	2	2	0
Washington State University	USA	391	301-400	5	5	195	39.00	39.00	4	3	3	1

Notes: QS= QS World University ranking, ARWU= Academic Ranking of World Universities

## NETWORK ANALYSIS

### Co-Authorship Networks

In order to examine the collaboration connections among the JGIM authors, a co-authorship network has been plotted for authors who have published at least 3 articles and received at least 20 citations. There are 32 such authors, but only 22 of them are connected through co-authorship connections.

**Table 7. Most productive countries affiliated to JGIM authors during 2002-2020**

Country	NP	SCP	MCP	CR	TCA	TC	TC/NP	NCP	TC/NCP	5	10	20	50
USA	59	43	16	0.27	256	2084	35.32	54	38.59	49	36	27	12
China	48	17	31	0.65	130	661	13.77	33	20.03	20	13	7	3
India	22	21	1	0.04	62	108	4.91	15	7.20	5	4	2	0
Korea	22	13	9	0.41	39	158	7.18	18	8.78	12	7	2	0
Taiwan	17	10	7	0.41	54	178	10.47	13	13.69	7	4	2	1
Australia	14	7	7	0.5	42	110	7.86	11	10.00	8	4	1	0
United Kingdom	11	5	6	0.55	39	158	14.36	10	15.80	8	4	3	1
Canada	9	6	3	0.33	32	480	53.33	7	68.57	7	6	5	3
Brazil	8	5	3	0.38	21	23	2.88	5	4.60	2	0	0	0
New Zealand	8	6	2	0.25	20	528	66.00	8	66.00	7	6	4	2
Singapore	7	4	3	0.43	26	126	18.00	6	21.00	6	2	1	1
France	6	3	3	0.5	13	18	3.00	3	6.00	1	1	0	0
Kuwait	6	4	2	0.33	8	46	7.67	4	11.50	2	2	1	0
Denmark	4	1	3	0.75	7	19	4.75	2	9.50	2	1	0	0
Iran	4	4	0	0	5	20	5.00	4	5.00	1	1	0	0
Notes: TCA=Total Contributing Authors, SCP=Single Country Publications, MCP=Multiple country publications, CR (Collaboration Ratio) =MCP/TP													

Further, these authors have been clustered into 8 groups based upon their links (Figure 3). The size of the node indicates the number of publications, and the thickness of links indicates the frequency of the co-authorship connection. D.C. Yen has the strongest co-authorship links with both S.I. Chang and S.Y. Hung having co-authored 4 articles with each of these authors. Another strong collaboration link exists between S.I. Chang and S.Y. Hung, M. Srite and E. Karahanna, W. Ke and K.K. Wei, and D.W. Straub and K.D. Loch each contributing three co-authored articles to JGIM.

Interestingly, these co-authorship links have been observed only among three universities, namely, Washington University, USA, Drexel University USA, and Georgia State University USA. The strongest collaboration link exists between the City University of Hong Kong and the University of Science and Technology, China, with 2 co-authored publications. The study further explores collaboration links among author-affiliated countries. As indicated in Table 7, China published the highest number of multiple country publications, followed by the USA. This section explores these collaboration links in among the countries with 10 contributing authors, and at least 100 citations. 10 such countries present three collaboration clusters indicated by different colors in Figure 4. USA and China are topmost contributing countries; they also exhibit the strongest collaboration links of authors. Further, the authors from these countries have co-authored 38 articles followed by 10 articles co-authored by USA and Taiwan. South Korea and Canada also have strong collaboration links with authors from the USA with 6 co-authored publications each.

### Clustering of JGIM Articles Based on Bibliographic Coupling

Kessler (1963) argued that when two or more articles refer to the same source, it indicates the intellectual similarity among these articles; exploration of these connections is called bibliographic coupling. The bibliographic coupling of 372 articles done in this study, resulted in 10 clusters of

**Table 8. Most frequently cited references by JGIM authors**

Citations	Title	Author	Year	Publisher
22	Evaluating Structural Equation Models with Unobservable Variables and Measurement Error	Fornell & Larcker	1981	Journal of Marketing Research
21	Culture's Consequences: International Differences in Work-Related Values	Hofstede G.	1980	Sage
18	User Acceptance of Information Technology: Toward A Unified View	Venkatesh, Morris, Davis & Davis	2003	MIS Quarterly
12	User Acceptance of Computer Technology: A Comparison of Two Theoretical Models	Davis, Bagozzi & Warshaw	1989	Management Science
11	Perceived Usefulness, Perceived Ease of Use, And User Acceptance of Information Technology	Davis F.D.	1989	MIS Quarterly
11	The Impact of Culture on The Adoption of It: An Interpretive Study	Hasan & Ditsa	1999	Journal of Global Information Management
10	The Delone And Mclean Model of Information Systems Success: A Ten-Year Update	Delone & Mclean	2003	Journal of Management Information Systems
10	Building Theories from Case Study Research	Eisenhardt	1989	Academy of Management Review
10	A Research Manifesto for Global Information Management	Gallupe & Tan	1999	Journal of Global Information Management
8	Information Systems Success: The Quest for The Dependent Variable	Delone & Mclean	1992	Information Systems Research
8	An Integrative Model of Organizational Trust	Mayer, Davis & Schoorman	1995	Academy of Management Review
8	Development of An Instrument to Measure the Perceptions Of Adopting An Information Technology Innovation	Moore & Benbasat	1991	Information Systems Research
7	The Theory of Planned Behavior	Ajzen	1991	Organizational Behavior And Human Decision Processes
7	Structural Equation Modeling In Practice: A Review and Recommended Two-Step Approach	Anderson & Gerbing	1988	Psychological Bulletin
7	Cultures and Organizations: Software of The Mind	Hofstede G.	1991	Mcgraw Hill
7	Developing and Validating Trust Measures for E-Commerce: An Integrative Typology	Mcknight, Choudhury & Kacmar	2002	Information Systems Research
7	Understanding Information Technology Usage: A Test of Competing Models	Taylor & Todd	1995	Information Systems Research
7	A Theoretical Extension of The Technology Acceptance Model: Four Longitudinal Field Studies	Venkatesh & Davis	2000	Management Science

351 articles by using clustering technique proposed by Waltman et al. (2010). Only the clusters containing at least 8 articles have been considered for further analysis, which in turn resulted in 6 clusters of articles. These clusters cover almost 94.35 percent of total number of articles. Table 10 depicts an overview of these six clusters, and lists the most influential articles of these clusters in

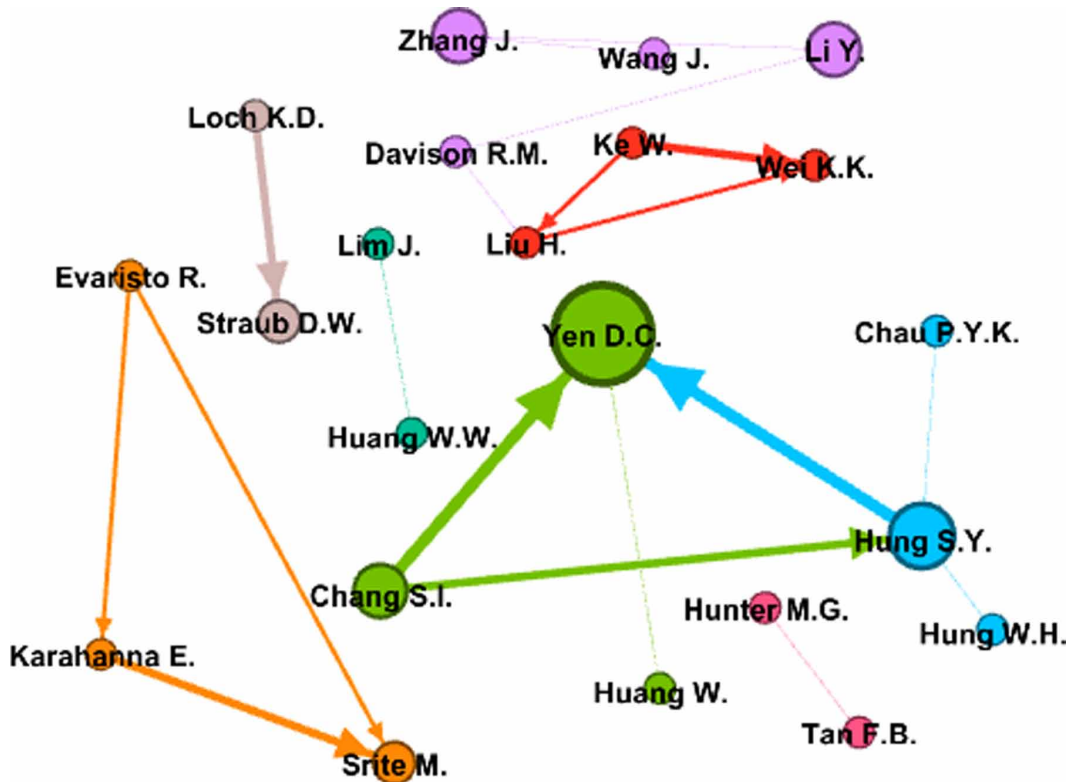
**Table 9. Most frequently cited sources**

Sources	Citations	ABDC	ABS	Impact factor
Management Information Systems Quarterly	992	A*	4*	5.37
Journal of Global Information Management	792	A	2	1.098
Information Systems Research	469	A*	4*	2.457
Information & Management	465	A*	3	5.155
Journal of Management Information Systems	412	A	4	3.949
Management Science	307	A*	4*	4.219
Communications of the ACM	273	A	2	4.550
Journal of Marketing	215	A*	4*	5.266
Academy of Management Review	212	A*	4*	10.632
Decision Support Systems	199	A*	3	4.721
European Journal of Information Systems	191	A*	3	2.600
Journal of International Business Studies	170	A*	4*	9.158
Strategic Management Journal	166	A*	4*	5.471
Academy of Management Journal	165	A*	4*	7.191
Organization Science	162	A*	4*	3.257
International Journal of Information Management	144	A*	2	8.210
Harvard Business Review	132	A	3	13.210
Journal of Business Research	131	A	3	4.874
Computers in Human Behavior	128	A	3	5.003
Decision Sciences	108	A*	3	2.014

terms of their number of citations. The names of these clusters have been decided based on major topics being discussed in these clusters, which are derived from highly cited and high link strength papers of each cluster.

Cluster 1- IT (Information Technology) Outsourcing – this is the largest cluster in terms of the number of articles (93), which have received 1121 citations. This cluster involves discussion around the outsourcing of IT along with different aspects related to e-government services. Carmel & Nicholson (2005) obtain the first rank in this cluster with 85 citations; they discuss the engagement of smaller firms in offshore IT outsourcing. The study employs transaction costs, and discusses various mitigation approaches for reducing the cost for smaller firms. The second most frequently cited study within this cluster is Tan, Pan, & Lim (2005), with 84 citations. This is a case study, which provides insights about stakeholder management in e-government by recognizing differing interests of these stakeholders. Another important study that has been included in this cluster is Dhar & Balakrishnan's (2006) work related to IT outsourcing with 77 citations. This study examines the risk and benefits related to IT outsourcing by using two case studies, which provide crucial insights for managing outsourcing functions. The study ranked fourth in terms of the number of citations

**Figure 3.**

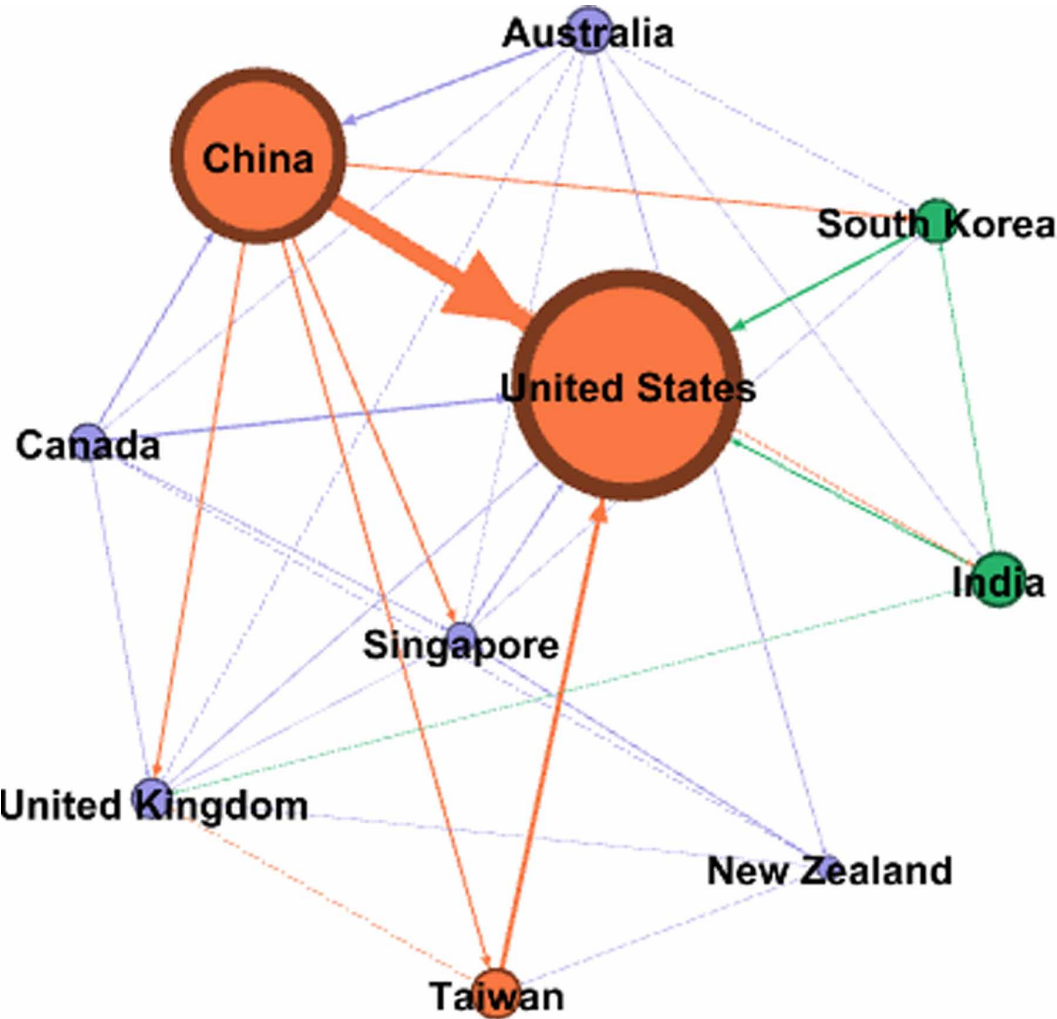


(55), and it discusses issues related to virtual teams for software development, reveals that trust and task structure does impact the effectiveness of these teams in the process (Edwards & Sridhar, 2005). Taylor (2007) obtained the fifth position with 54 citations; his work revolves around risks related to outsourcing projects such as unsatisfied customers and threats from competitors.

Cluster 2- E-business and IS success- is the second largest cluster with 63 articles with 630 citations. The topics discussed in this cluster include the success and effectiveness of information systems, adoption of various information systems and e-businesses. The most influential study within this cluster is J.-S. Chen & Ching (2004) with 85 citations. The study examines the role of IT intensity and absorptive capacity of an organization in improving its customer relationship management performance. Yoo, Suh, & Lee (2002) occupies the second position with 75 citations; it focuses on factors affecting user participation in virtual communities. The sense of community and membership impact participation in these communities. de Guinea, Kelley, & Hunter (2005) received 44 citations; their study examined the effectiveness of information systems for small businesses. They stated managerial and vendor support to be important factors for effective IS. Other important studies of this cluster include Li, Lai, & Wang (2010) and Shih, Chiu, Chang, & Yen (2008) with 42 and 37 citations, respectively. Li et al. (2010) examined e-business assimilation in Chinese firms, while Shih, Chiu, Chang, & Yen (2008) studied the adoption of RFID in Taiwan.

Cluster 3- Culture- consists of 58 studies making it the third-largest cluster, but it ranks first in terms of the number of citations (2308). The central topic of discussion within this cluster is culture vis a vis its impact under different contexts. The most influential study in this cluster is that of Straub et al. (2002), with 349 citations. The study recognizes the need for better measurement of culture in cross-cultural studies; the authors argue in favor of identifying multiple cultures that go on to impact

Figure 4.



an individual. Similarly, the second most cited work within this cluster, Myers & Tan (2002), also argue that the measures of culture are too simplistic; they encourage future researchers to adopt a more dynamic view of culture. Y. N. Chen, Chen, Huang, & Ching (2006) occupy the third position in terms of the number of citations (200). Their study adopts a case study research methodology, and performs a comparative analysis of e-government implementation in developing and developed countries. Other important studies of this cluster include Cyr, Bonanni, Bowes, & Ilsever (2005), with 169 citations and Gefen & Heart (2006) with 149 citations. Cyr et al. (2005) empirically investigated the impact of culture on website design preferences, which further influences consumers' trust and satisfaction. Finally, Gefen & Heart (2006) demonstrated that the impact of trust beliefs towards e-commerce is unvarying across cultures.

Cluster 4-E-government and ICT- is composed of 52 articles with 1078 citations. This cluster ranks third in terms of the number of citations received. Studies included in this cluster revolve around topics of e-government implementation, information communication technologies' adoption and implementation, and knowledge management. Grant & Chau (2005) rank first, with 160 citations received between 2002 and 2020. Their study provides a generic e-government framework



for identifying strategic agendas and application initiatives. Huy, Rowe, Truex, & Huynh (2012) come second in this cluster with 104 citations. Primarily, it is an empirical study, which examines e-commerce adoption by small and medium enterprises (SMEs). Further, the study provides useful implications for promoting e-commerce adoption in transition economies like Vietnam. The third rank within this cluster belongs to Siau & Long (2006), with 95 citations. Their study focuses on e-government development, and reveals the significant role of income level, development status, and region in e-government development. Next in line is Srivastava & Teo (2007) work with 79 citations, focusing on e-government implementation. This study focuses on the relationship between e-government development vis a vis the efficiency of government processes, which in turn is related to national performance. Zhao, Kim, Suh, & Du (2007) received 59 citations; their study examined factors affecting internet diffusion across different countries.

Cluster 5—consists of 36 studies having 249 citations. It is the least influential cluster in terms of the number of citations, and includes only one highly cited study. The cluster includes studies focusing on a variety of topics such as IoT (Internet of Things), Cloud computing, and security measures; however, the common link among these topics is ‘decision making’. Doolin, Dillon, Thompson, & Corner (2005) is the most influential work included in this cluster with 133 citations. This study focuses on the role of perceived risk and benefits in an online purchase decision. Joseph, Kar, Ilavarasan, & Ganesh (2017) provide insights about IoT discussion through twitter analytics. Another work included in this cluster is Wu, Ding, Xu, Mo, & Jin (2016), which focuses on decision-making related to the adoption of cloud computing in e-government services.

Cluster 6- E-services and consumer behavior- ranks fourth in terms of the number of citations (936), while it ranks last in terms of the number of publications included (32). Studies included within this cluster primarily discuss various e-businesses or services vis a vis consumer behavior pertaining to these services. Chan & Lu (2004) are the first in rank with 276 citations; their study focuses on internet banking services. They examine the impact of subjective norms, ease of use, and computer self-efficacy on the use of these services. The second most influential study by Karahanna, Evaristo, & Srite (2005) received 197 citations. It is a conceptual study, which focuses on the impact of different culture levels on individual behavior in the workplace, and specifies conditions of the dominance of one culture over others. Elbeltagi, McBride, & Hardaker (2005) rank third with 58 citations. Their study employs Technology Adoption Model (TAM) to understand the adoption of decision support systems in local authorities of a developing country. Other important studies of this cluster include Brown, Hoppe, Mugera, Newman, & Stander (2004) with 51 citations and Zhang, Guo, Chen, & Chau (2009) with 44 citations. Brown et al. (2004) confirmed the impact of attitudinal and behavioral control factors on the adoption of internet banking services. Zhang et al. (2009) proposed a user-centric model of e-government service adoption, and revealed the impact of cultural factors on this behavior.

Figure 5 provides an evolution of these bibliographic clusters over four time-periods. Cluster 1 is the largest cluster, and is evenly distributed over 4 time periods; however, the number of publications in recent times has reduced. Additionally, the focus towards cluster 3 has also declined sharply during recent times, indicating thereby the reducing focus on cultural impacts and related discussions. On the other hand, clusters 2, 5, and 6 have shown a rising trend during recent times; this indicates the increasing attention that has been garnered towards topics related to IS success and effectiveness, coupled with various e-businesses and services, along with different emerging technology phenomena and trends.

## Bibliographic Coupling of Authors

In order to understand the intellectual associations among the authors of JGIM between 2002 and 2020, bibliographic coupling connections among the authors have been explored. Figure 6 represents the bibliographic coupling links among 11 authors who have published at least 4 articles, and have been cited for at least 10 times. This resulted in two clusters of authors; the strongest link is between

S.Y. Hung and D.C. Yen, followed by S.I. Chang and D.C. Yen. While S.Y. Hung and S.I. Chang also form a strong bibliographic coupling link followed by Y. Li and Y. Chen.

### **Bibliographic Coupling of Countries**

The bibliographic coupling links among the 10 countries with at least 10 contributing authors and 100 citations have been explored. These countries have been clustered into 2 groups, whereby top publishing countries like the US, China, and India are clustered into one group (Figure 7). In fact, the US is central to the graph, which is in line with its highest number of publications. USA and China constitute the strongest bibliographic couple followed by USA and Taiwan. These links go on to indicate the level of similarity in the research areas of authors belonging to these countries. Other strong links of intellectual similarity exist between USA and South Korea, Taiwan and China, Canada and USA, and China South Korea. Due to a large number of publications coming from USA and China, most of the similarity links exist around these countries. Apart from these countries, there are strong similarities between Taiwan and South Korea and Australia and South Korea.

### **Keyword Co-Occurrence and Frequency Analysis**

In order to analyze the topics of discussion the keywords submitted by the author have been selected. Figure 8 represents the keyword co-occurrence network of 26 author keywords co-occurring at least 5 times. These 26 keywords are grouped into 6 clusters indicated by different colors. The size of each node depicts the frequency of occurrence of a keyword, while the thickness of links depicts the frequency of co-occurrence of two keywords. The strongest co-occurrence link exists between ‘national culture and e-commerce’ followed by ‘offshoring and outsourcing’. Other important co-occurrence links include ‘developing countries and e-commerce’, ‘trust and e-commerce’, ‘national culture and power distance’. Overall, the clusters of keywords are formed around the following keywords: ‘culture’, ‘e-commerce’, and ‘developing countries’.

### **Thematic Evolution**

A thematic analysis has been performed by using a longitudinal mapping of co-word analysis suggested by Cobo et al. (2011). First of all, the keyword co-occurrence network is constructed based upon their association, following which sub-fields are detected using Louvain clustering algorithms. Further, the name of each sub-group is allocated by using centers algorithm. Then these detected networks are mapped in a four-quadrant graph by using two network measures, Callon’s centrality and Callon’s density (Figure 9). Centrality measures the extent of interaction of one network of words with others, and/or the strength of ties to other themes. This signifies the importance of a theme in developing an entire research field. On the other hand, density signifies the internal strength of ties among the keywords within a cluster or a group. This indicates the level of theme development. Furthermore, the themes in the right-hand quadrant are well developed and important for the structuring of the field of research, which in other words, are called motor themes. The themes in the lower right quadrant are important themes, but they aren’t much developed; these are called transversal and basic themes. Third, are themes that are present in the upper left quadrant; they are well developed, but are marginally important to the field because of unimportant external ties; in other words, these are called isolated themes. Fourth quadrant themes are less developed and marginal, which represent either emerging or declining themes.

Figure 9 represents the strategic map of the themes based on the density and centrality of the author keywords co-occurrence clusters. Herein, the graph shows that ‘national culture and social media’ and ‘technology adoption using UTAUT’ are motor themes. This implies that these two themes have garnered attention from researchers, and have remained central to the overall research in the field. Another important cluster is related to ‘culture and e-commerce’, ‘trust and internet’ and ‘developing countries and IT skills’. Some of the other themes, which have developed over time, but are not important to the overall discussion, include ‘ICT and digital divide’, ‘comparative studies of

**Table 10. Bibliographic coupling clusters of the publications**

No.	TP	TC	Theme	TC	Title	Author	Year
1	93	1121	IT outsourcing	85	Small firms and offshore software outsourcing: high transaction costs and their mitigation	Carmel & Nicholson	2005
				84	Managing Stakeholder Interests in e-Government Implementation: Lessons Learned from a Singapore e-Government Project	Tan, Pan, & Lim	2005
				77	Risks, Benefits, and Challenges in Global IT Outsourcing: Perspectives and Practices	Dhar & Balakrishnan	2006
				55	Analysis of Software Requirements Engineering Exercises in a Global Virtual Team Setup	Edwards & Sridhar	2005
				54	Outsourced IT Projects from the Vendor Perspective: Different Goals, Different Risks	Taylor H.	2007
2	63	630	IS effectiveness and success	85	An Empirical Study of the Relationship of IT Intensity and Organizational Absorptive Capacity on CRM Performance	Chen, & Ching	2004
				75	Exploring the Factors Enhancing Member Participation in Virtual Communities	Yoo, Suh & Lee	2002
				44	Information Systems Effectiveness in Small Businesses: Extending a Singaporean Model in Canada	de Guinea, Kelley & Hunter	2005
				42	E-Business Assimilation in China's International Trade Firms: The Technology-Organization-Environment Framework	Li, Lai & Wang	2010
				37	An Empirical Study of Factors Affecting RFID's Adoption in Taiwan	Shih, Chiu, Chang & Yen	2008

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**Table 10. Continued**

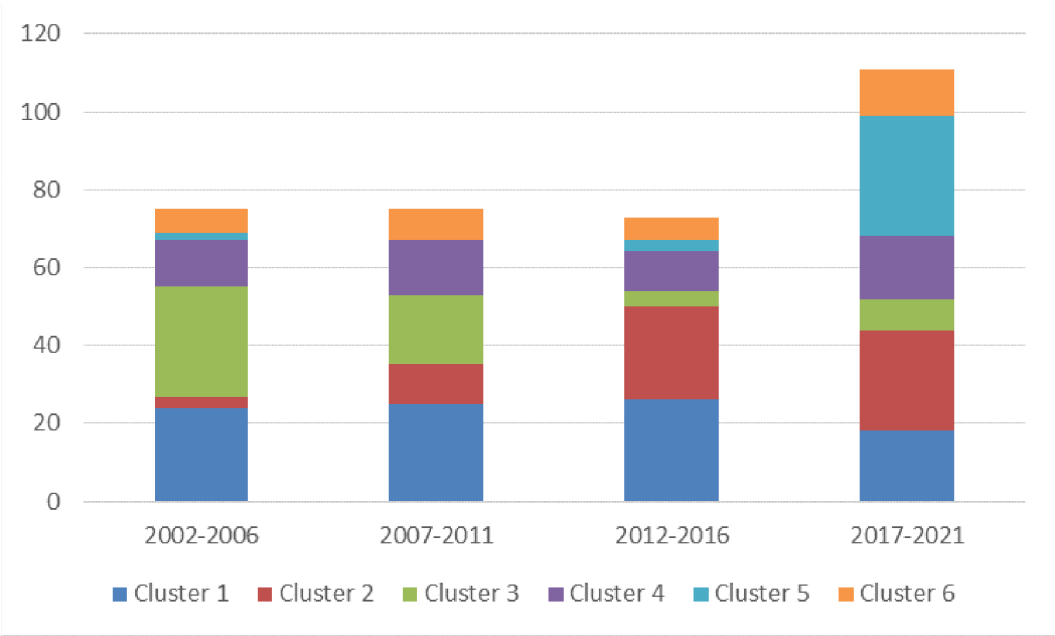
No.	TP	TC	Theme	TC	Title	Author	Year
3	58	2308	Culture measurement And impact	349	Toward a Theory-Based Measurement of Culture	Straub, Loch, Evaristo, Karahanna & Srite	2002
				288	Beyond Models of National Culture in Information Systems Research	Myers & Tan	2002
				200	E-Government Strategies in Developed and Developing Countries: An Implementation Framework and Case Study	Chen, Chen, Huang & Ching	2006
				169	Beyond Trust: Web Site Design Preferences Across Cultures	Cyr, Bonanni, Bowes, & Ilsever	2005
				149	On the Need to Include National Culture as a Central Issue in E-Commerce Trust Beliefs	Gefen & Heart	2006
4	52	1078	E-government and ICT	160	Developing a Generic Framework for E-Government	Grant & Chau	2005
				104	An Empirical Study of Determinants of E-Commerce Adoption in SMEs in Vietnam: An Economy in Transition	Van Huy, Rowe Truex & Huynh	2012
				95	Using Social Development Lenses to Understand E-Government Development	Siau & Long	2006
				79	E-Government Payoffs: Evidence from Cross-Country Data	Srivastava & Teo	2007
				59	Social Institutional Explanations of Global Internet Diffusion: A Cross-Country Analysis	Zhao, Kim, Suh & Du	2007

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Table 10. Continued

No.	TP	TC	Theme	TC	Title	Author	Year
5	36	249	Decision making	133	Perceived Risk, the Internet Shopping Experience and Online Purchasing Behavior: A New Zealand Perspective	Doolin, Dillon, Thompson & Corner	2005
				26	Review of Discussions on Internet of Things (IoT): Insights from Twitter Analytics	Joseph, Kar, Ilavarasan & Ganesh	2017
				19	Investigating the Determinants of Decision-Making on Adoption of Public Cloud Computing in E-government	Wu, Ding, Xu, Mo & Jin	2016
6	32	936	e-services and consumer behavior	276	Understanding Internet Banking Adoption and Use Behavior: A Hong Kong Perspective	Chan & Lu	2004
				197	Levels of Culture and Individual Behavior: An Investigative Perspective	Karahanna, Evaristo & Srite	2005
				58	Evaluating the Factors Affecting DSS Usage by Senior Managers in Local Authorities in Egypt	Elbeltagi, McBride, & Hardaker	2005
				51	The Impact of National Environment on the Adoption of Internet Banking: Comparing Singapore and South Africa	Brown, Hoppe, Muger, Newman & Stander	2004
				44	Impact of Perceived Fit on E-Government User Evaluation: A Study with a Chinese Cultural Context	Zhang, Guo, Chen & Chau	2009

Figure 5.



information management systems’, and ‘case studies and global information management’. However, discussions related to ‘ERP systems’ has declined, and this is represented through less density and centrality of the cluster.

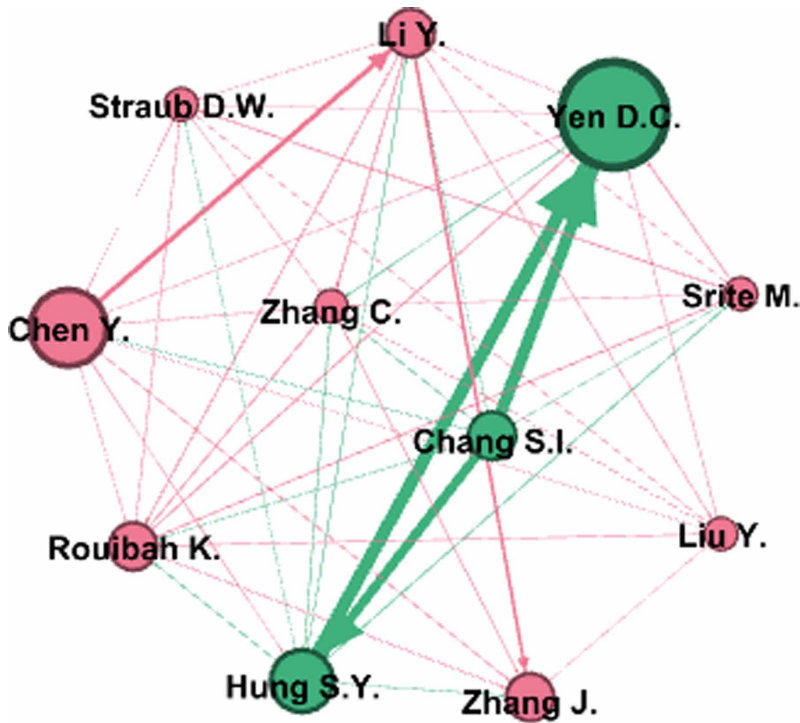
The thematic evolution has been studied by employing author keywords, and dividing the whole time duration of 2002-2020 into 4 periods with 2006, 2011, 2016 being the cut points. The first period of 2002-2006 indicates the presence of a large number of discussion themes (Figure 10). Discussions around ‘national culture’ ‘Trust’ and ‘developing countries’ have remained central during this period. Electronic commerce developed during this time was also an important theme, but it was not central to the discussion, while ‘virtual teams and cross cultural’ was an emerging theme. During the next period of 2007-2011 (Figure 11), the density of e-commerce related discussions increased; it remained one of the central topics for some time. Interestingly, some new themes related to ‘offshore outsourcing’ and ‘power distance’ became the central topics of discussion. However, ‘technology adoption’ related discussions remained marginal to the overall research field.

Figure 12 indicates that during the 2012-2016 period, discussions related to e-government remained central to the research field, while the centrality of developing countries related theme decreased as compared to the 2002-2006 period. Additionally, ERP related discussions remained marginal to the field overall. During 2017-2020 (Figure 13), e-government related discussions declined to low density and low centrality quadrant; however new areas of discussion emerged. One of the emerging topics during this period is related to ‘social media and big data’. Discussions related to ‘ICT security’, ‘trust and cloud computing’ and ‘user involvement’ were also important to the overall field.

## DISCUSSION AND CONCLUSION

JGIM is a prominent journal in the area of management information systems. The journal started publishing in 1993; however, due to lack of data, the current study provides a retrospective of its journey only from 2002 through 2020. The productivity of the journal has remained quite stable over

Figure 6.



a period of 19 years, from 20 articles in 2002 to 29 articles in 2020. These publications have garnered 6698 citations over this time-period. 81.45 percent of their total publications have received at least one citation, which indicates the level of influence of the journal. D.C. Yen is the most productive author of JGIM with 9 publications, while M. Srite is the most influential author in terms of the number of citations.

The City University of Hong Kong and Georgia State University, USA are the most contributing author-affiliated institutions to JGIM during 2002 to 2020. However, the University of Wisconsin, USA received the highest number of citations. In the country-based analysis, USA comes out to be the most productive and impactful country, both in terms of number of articles and citations. However, in case of collaboration, China is the first. Collaboration structures are further explored by using co-authorship networks among authors, their institutions, and countries.

In terms of intellectual roots, Fornell & Larcker's (1981) work related to SEM and Hofstede's (1984) book on 'Culture Consequences' obtained the highest number of citations from JGIM articles. This indicates the presence of discussion themes around culture and popularity of SEM approach among JGIM authors. The bibliographic coupling has been employed to draw similarities among the articles to derive the overall themes of discussion. This analysis resulted in 6 clusters of studies revolving around 'IT outsourcing', 'IS success and effectiveness', 'Culture', 'e-government', and 'e-commerce and consumer behavior'. Further, the evolution of these themes over different time-periods has been studied. The general audience of the journal may get a broad idea about the kind of research published in the journal and its progress over time. The reader may look into the publications of highly productive and influential authors of the journal and understand the quality of work expected by the journal. It may prove useful to emerging researchers who are looking forward to publish in the journal.

Figure 7.

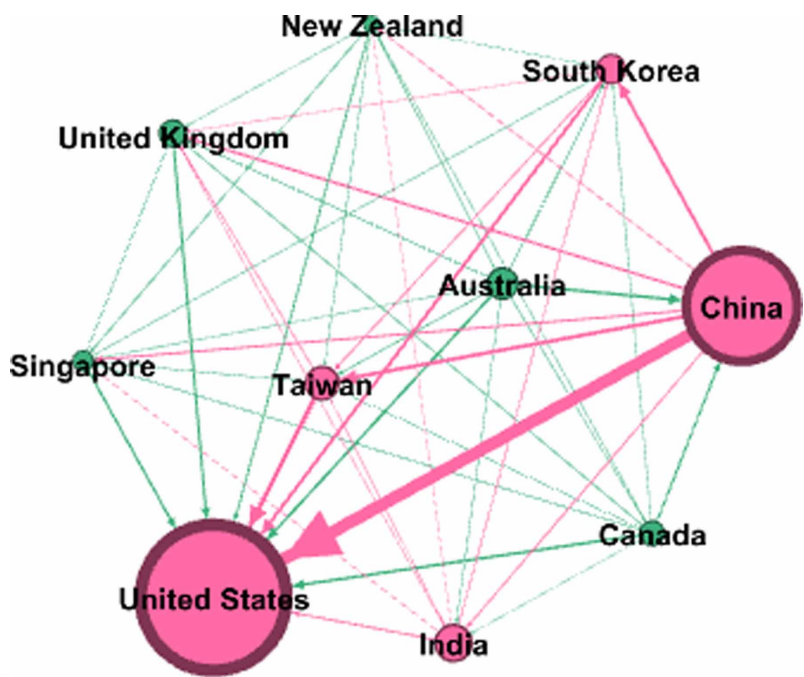


Figure 8.

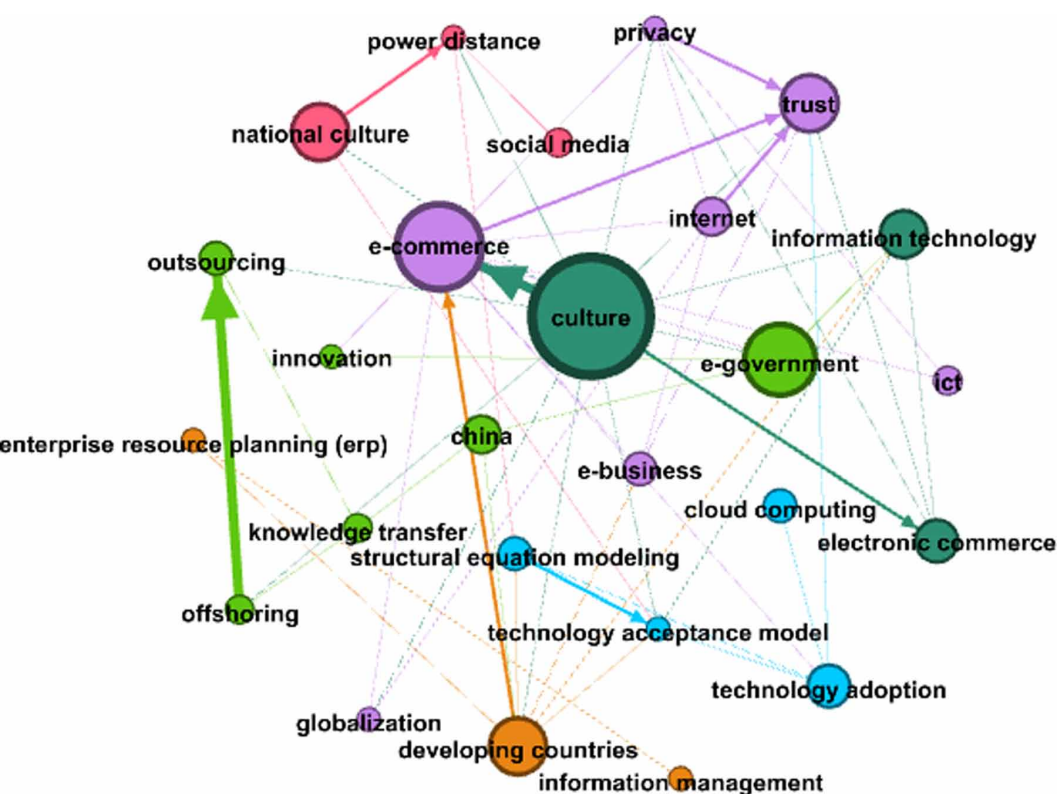
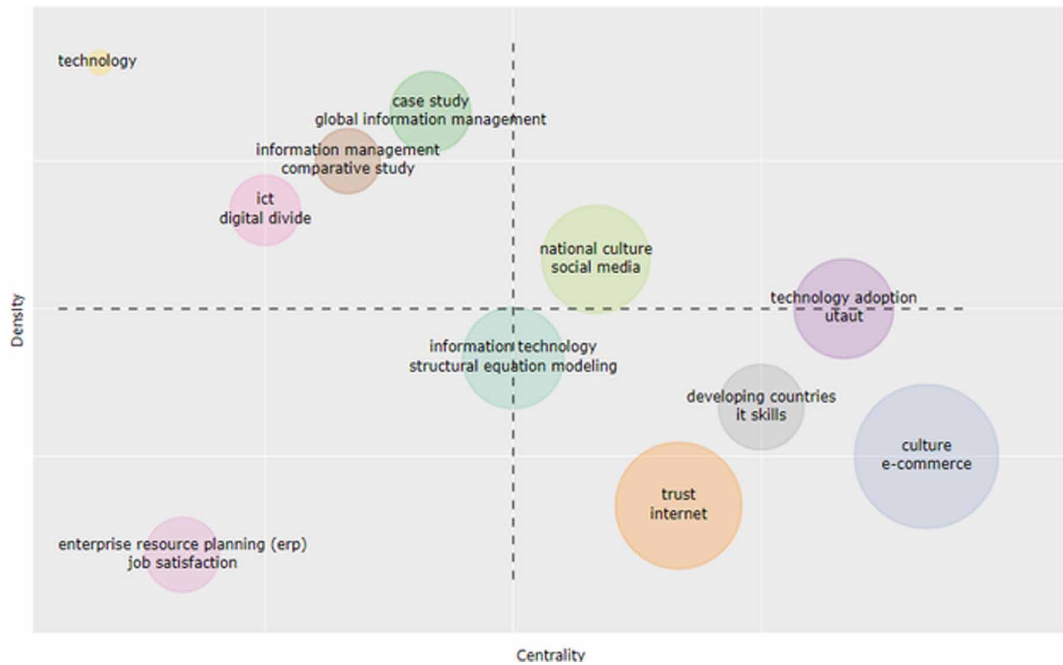




Figure 9.



The glorious journey of JGIM has placed it as a prominent research outlet in the area of Business and International management. As per the trends observed during recent period of 2017-2020, ‘social media’ and ‘big data’ related discussions have been emerging, but they have not become central to the overall discussion of the journal. Nevertheless, this emerging area of research can be encouraged by proposing special issues, which possibly focus on different aspects of social media and big data applications. The significance of these new age phenomena in different areas of application, such as the tourism industry, e-health services, and crisis management may be invigorated. In fact, this may further involve discussions around security issues related to these applications. Other areas of research demanding attention, include ‘user involvement’ and ‘information quality’ on social media applications.

Figure 10.

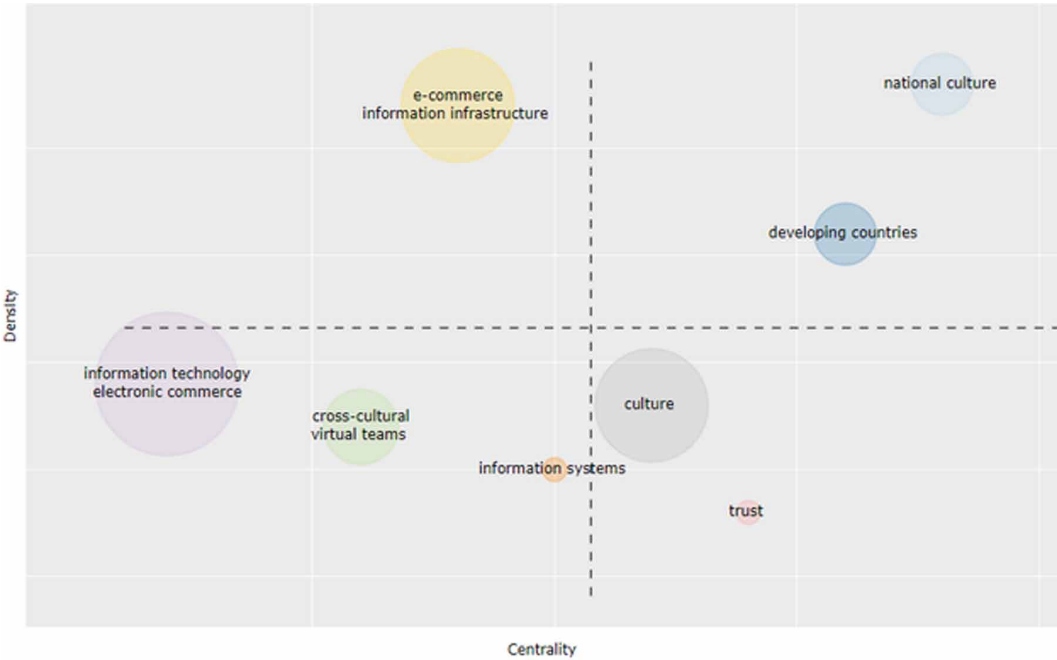


Figure 11.

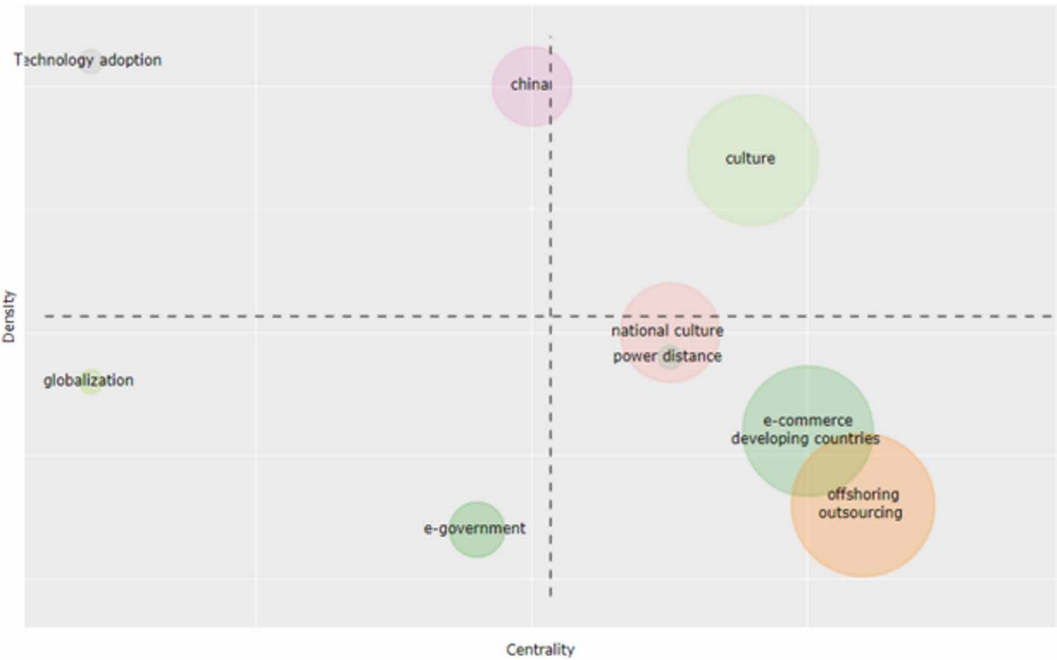


Figure 12.



Figure 13.



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