

Application of RBV Theory in Business Management – A Bibliometric Analysis

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Abstract

A firm's primary objective is how to gain competitive advantage over other firms in their segment. Resource based view has been a theory which is being used by many firms to gain competitive advantage. Through this paper we tried to make a holistic attempt to comprehend application of Resource based view theory in area of business management and accounting. 1741 articles were abstracted from Scopus database. The paper is, divided into two half. Bibliometric analysis is, performed in the first half to show the most productive states/regions and co-citation by different authors. Content analysis is, conducted to pinpoint the articles that have exclusively used RBV theory along with other applicable theories in the field of business management.

Keywords: Resource Based View theory; Bibliometric analysis; Content analysis; Competitive Advantage; Strategic Management

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Introduction

For last few decades there has been lots of studies had taken up by various researchers focusing on competitive advantage (CA). CA is how an organization or firm frames or acquire specific qualities and characteristics that allow it to outperform its rivals (Wang, 2014). CA has been a part of strategic management research through which researchers tried to elaborate and describe superior performance of some firms or organizations (Powell, 2001). Dominant CA theories are primarily market based view or resource based view.

Firms in the identical domain achieve competitive advantage over their rivals due to resources that are VRIN (valuable, rare, Inimitable and non-substitutable). This variance in performance among firms has been the subject of inquiry and debate among scholars and establishments. The RBV Theory takes an inside-out view to analyze how a firm gain competitive advantage by exploiting existing resources. RBV theory primarily revolves around the internal environment of a firm. RBV emphasizes the resources that firms have developed to compete in the environment. RBV theory enables efficiency based justification of performance difference and conceptualize firms as a package of resources and capabilities (Peteraf & Barney, 2003).

The firms could develop competitive advantage by utilizing resources that are valuable, rare, inimitable and non-substitutable. Firm's controllable resources classified as physical capital, human capital and organizational capital create value and hence enable firm to implement strategies that enhance efficiency and effectiveness (Figure 1) (Barney, 1991).

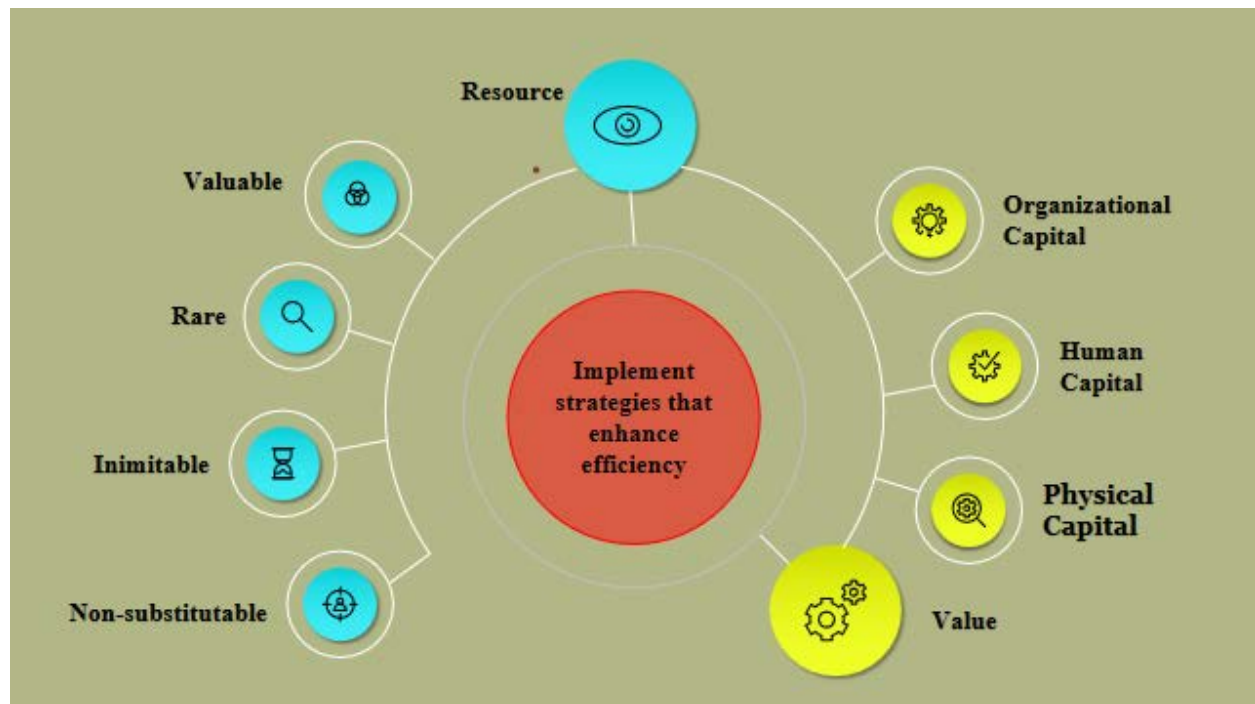


Fig. 1. Resource Based View Theory

Former academics have examined the utility of RBV theory from different perspective. The article has the highest number of citations (7613) where the author had revealed that traditional RBV

theory misconstrues strategic leverage created through long term competitive advantage in dynamic market conditions (Eisenhardt & Martin, 2000). The first detailed review by (Bharadwaj, 2000) examined the relationship between IT backed resources and firms performance. The results indicate that IT provides competitive advantage to firms resulting in increased profits and cost effectiveness. Resources can comprise of assets, managerial procedures, firm characteristics, information, or knowledge controlled by the firm used to conceive of and implement their strategies. The results show that sustainability within a firm can be achieved only through managerial IT skills (Mata et al., 1995). Furthermore, different streams emerging out of RBV theory have been developed like NRBV, Knowledge based view, and dynamic capability theory (S. L. Hart, 1995; Stuart L. Hart & Dowell, 2011; Robert, 1996; Teece, 2016).

RBV theory must include capability lifecycle component to effectively interpret the sources of heterogeneity capabilities within a firm leading to market domination (Helfat & Peteraf, 2003). RBV theory provides holistic view by integrating theories from strategy research, organizational economics and different school of industrial association research (Mahoney & Pandian, 1992). The author uses RBV theory to examine available resources divided into component and architectural competence to measure firms performance in area of pharmaceutical research (Henderson & Cockburn, 1994).

Through this study we tried systematically to comprehend the RBV theory application in the area of business management over the past few decades. To enhance understanding of the theme and research process we too help of Bibliometric analysis. The objectives of this paper are the following

- To review and measure the research in the field of business management based on RBV theory
- To use bibliometric analysis as basis to evaluate articles published in the area of business management
- Content analysis is carried out to provide guidelines for future research by pinpointing existing gaps in current literature

Research Methodology

2.1. Bibliometric Analysis

Analysis of published data in a particular field by means of statistical and mathematical techniques is possible through bibliometric method (McCain, 1990; Paisley, 1990). Over the years, bibliometric analysis has caught the attention of researchers to analyze the data due to development and accessibility of multiple software (Donthu et al., 2021; Khan et al., 2021). Bibliometric analysis helps to identify the latest research trend and gaps in areas where future investigation is desirable (Gall et. al., 2015; B. Wang et. al., 2014). Research funding projects can also be identified by policy makers and agencies by scrutinizing bibliometric outcome (Ugolini et al., 2015).

CiteSpace and VOSviewer are software that facilitate the user to gauge upon progression made in a particular research field, providing a bird's eye view (Chen, 2006; Shafique, 2012; V. Singh, et. al, 2019; Zhang et. al, 2021). (Zhu et. al., 2019) have observed that keyword co-occurrence analysis facilitates identification of frequently used terms trending in more recently published articles.

Software program VOSviewer was used to show bibliometric maps to infer correlation between authors, countries and for conducting citation analysis of articles (Jan & Ludo, 2010). Network

analysis is done by combining mapping and clustering methods in order to comprehensibly understand advancement in specific research field within particular domain. Clustering is done using VOS method to separate groups represented by different color (Waltman et. al., 2010).

Article Shortlisting through Scopus

The articles used in this paper have been selected through use of Scopus database as it provides substantial number of scientific published articles as compared with Web of Science (Vieira & Gomes, 2009). (Si et al., 2019) study show that Scopus has twenty percent more publication than Web of Science. Keyword used for the search the articles was Resource-Based-View-theory. Document search was, narrowed to include only journal articles. Similarly, Subject area, which covers 20 areas, was limited to business management and accounting field. Furthermore, content analysis was, carried out, to pinpoint relevant articles applying RBV theory in the business management area.

Content Analysis

Content analysis is a qualitative and flexible research analysis tool. It is used to interpret text data systematically, by classifying themes with the aim of preserving originality (Hsieh et. al., 2005). A technique used to make inferences of text data by replicating the authentic information (White et. al, 2006). Concepts are created during the abstraction stage when qualitative content analysis is performed, and must be supported by precise reporting (Elo et al., 2014).

Bibliometric and content analysis technique was, used to establish the results in this paper Fig.2.

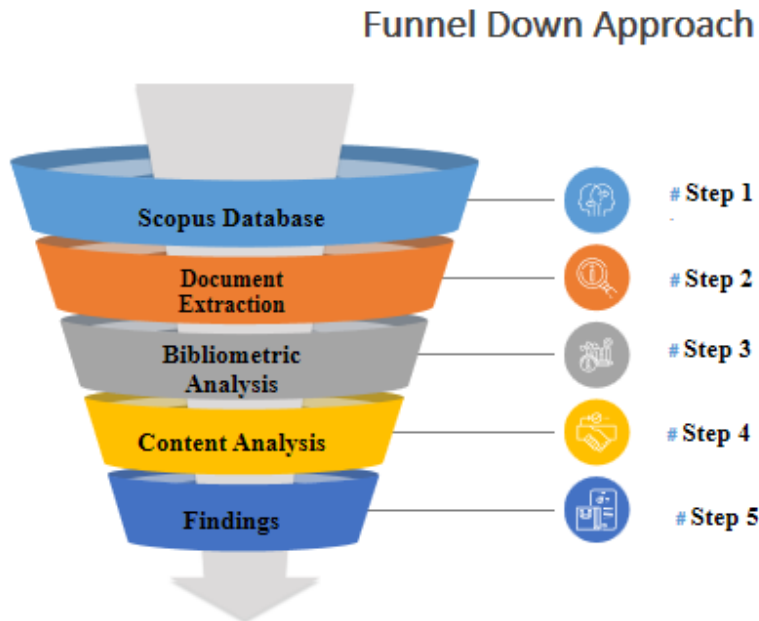


Fig. 2. Research Framework

Preliminary Literature Statistics

Figure 3 & 4 displays number of articles published from 1983 to 2021 for RBV Theory as applied to area of business management. The first article in the area of business management using RBV theory was, published in 1983. The number has significantly increased over the last decade and has reached 339 articles in 2021 (As of 12 December 2021). The average annual growth rate of publication from 2012 to 2021 was 225.96%. The application of RBV theory in business management research will continue to gather momentum and has requires comprehensive review.

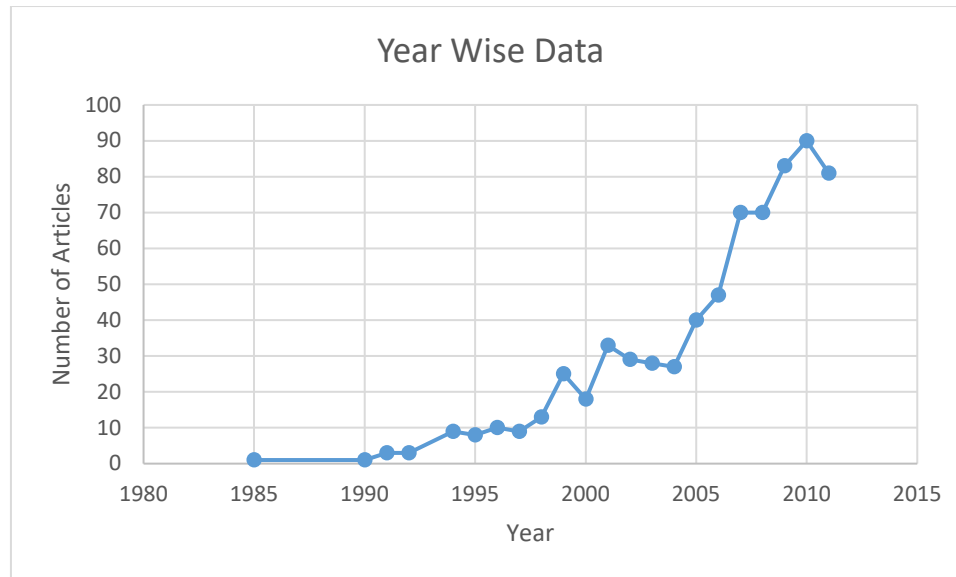


Fig. 3. Literature review from 1983 to 2011

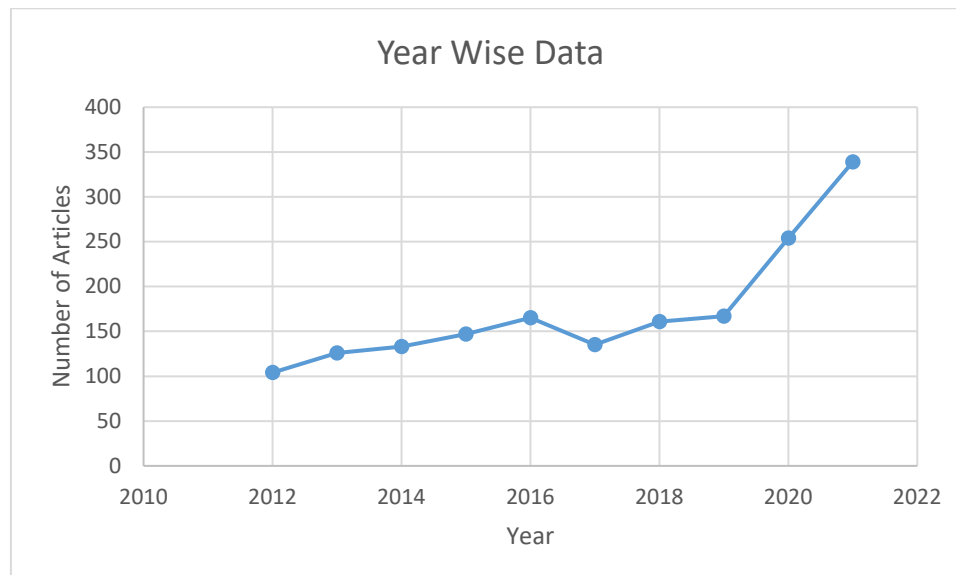


Fig. 4. Literature review from 2012 to 2021

The 1741 articles were searched for our research purpose and available across 516 different journals. Through Table 1 we tried to represent the top 15 journals with respect to number of publications, which accounted for approximately. This accounts 21.82% of the 516 journals. Three important journals under the domain of business management where maximum number of articles were published. The journals are Journal of Cleaner Production, Journal of Business Research and Industrial Marketing Management.

Results and discussion

52 articles (10.09%) were published in Journal of Cleaner Production and was ranked first. Ranking has been done on the basis of publication numbers in a particular journal. Journal of Business Research was ranked second. Compared to above mentioned journals Industrial Marketing Management published a smaller number of articles per year and thus being ranked third in applying the RBV Theory to business management.

In addition, the publication numbers in the journals of Business Strategy and the Environment, Journal of Management and International Business Review are comparable and has been ranked fourth, fifth, and sixth, respectively. The above six journals accounts for 34% of the total number of publications. This suggests that they are the significant journals in publishing articles applying the RBV Theory in the field business management over the past decades.

Table 1: Top 15 Journals and articles published

Source	Documents	Citations	Percentage
Journal of Cleaner Production	52	1873	10.09
Journal of Business Research	47	1269	9.12
Industrial Marketing Management	27	549	5.24
Business Strategy and The Environment	26	335	5.04
Journal of Management	24	1056	4.66
International Business Review	23	716	4.46
Management Decision	23	350	4.46
Strategic Management Journal	22	1214	4.27
Industrial Management and Data Systems	21	275	4.07
Journal of Business and Industrial Marketing	21	221	4.07
International Journal of Production Economics	20	1274	3.88
Technological Forecasting and Social Change	20	661	3.88
Journal of Business Ethics	19	1007	3.68
International Journal of Operations and Production Management	18	643	3.49
Supply Chain Management	17	736	3.3

With help of statistics from identified 1741 articles, as displayed in Figure 5 we analyzed the publication history of the top six journals in application of RBV theory for studying business management. The first article on the application of the RBV Theory to business management was published in Statistical Journal of the United Nations Economic Commission for Europe in 1983. This journal did not published any other article or paper on application of RBV theory in field of business management later on. In contrast there have been an increasing number of relevant articles has been found published in Journal of Cleaner Production for past four years (30 articles). Similarly, the number of related studies published in the Journal of business research and Industrial marketing management has gradually increased since 2018 to 2021, to reach a cumulative figure of 40 articles.

The remaining three top journals, Business Strategy and Environment, Journal of Management and International Business Review accounted for total 49 articles from 2018 to 2021 with a cumulative 2.81% of total articles published since 2012 onwards in 516 journals.

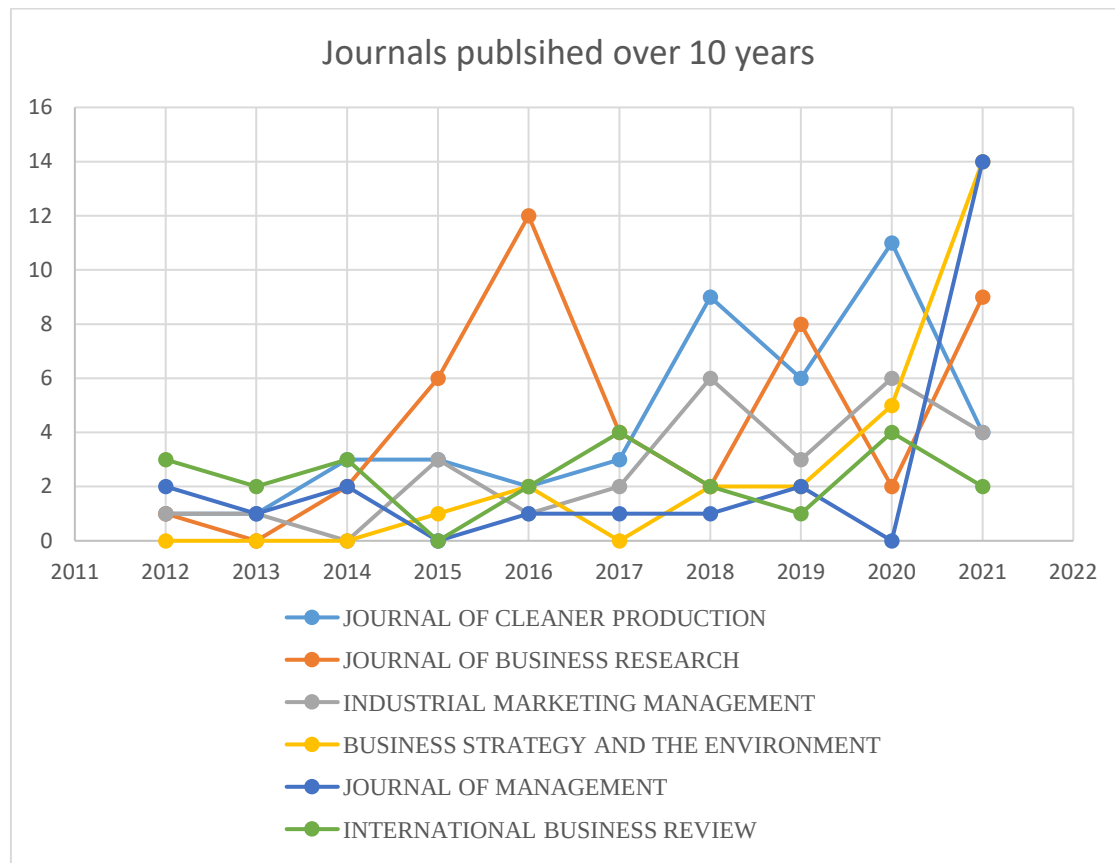


Fig. 5. Publication statistics on the application of the RBV Theory to business management

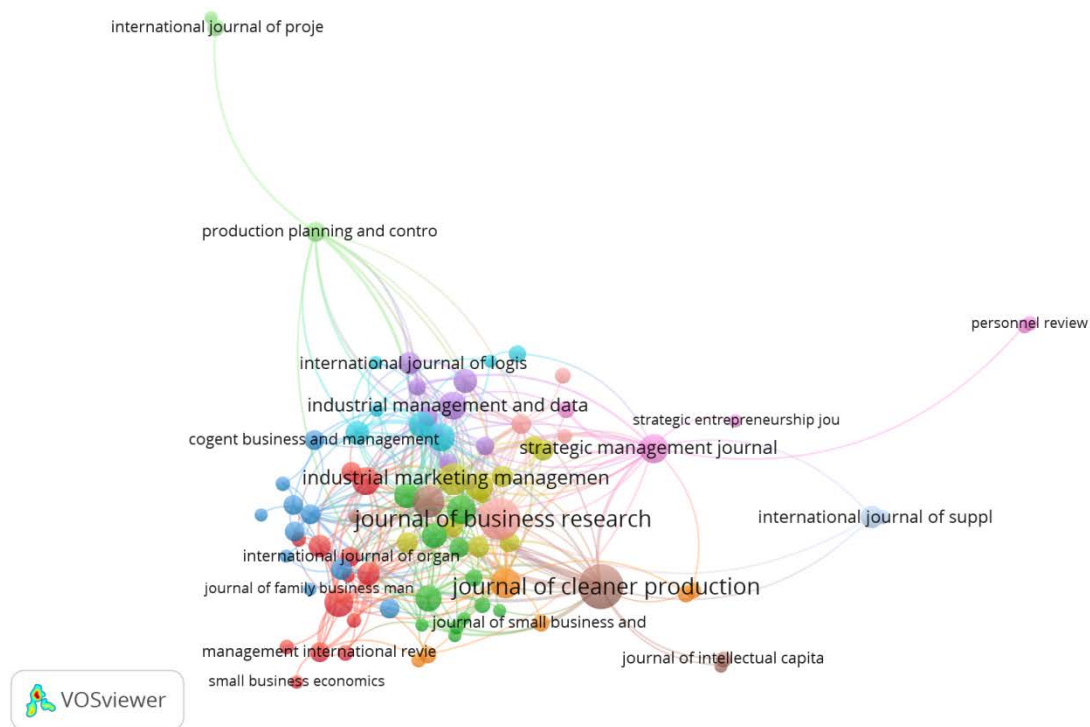


Fig. 6. Prominent articles published during last decade

Co-Authorship Analysis: Productive Countries and Regions

RBV Theory articles originate from 103 diverse states or regions. Among those 103, 35 are located in Europe, 20 in Asia, 12 in North & South America, 19 in Africa, and 2 in Oceania. Fig. 7 displays the universal distribution of the contributing states and territories. 63 states or territories (61.1%) produced 10 or less publications, 28 countries or territories (27.1%) have produced between 11 and 50 publications, and 7 states or territories (6.7%) have produced between 50 and 100 articles and 5 states (4.8%) have published more than 100 articles on the topic of RBV Theory. The USA produced the most publications ($n = 376$), followed by United Kingdom ($n = 282$) and China ($n = 192$).

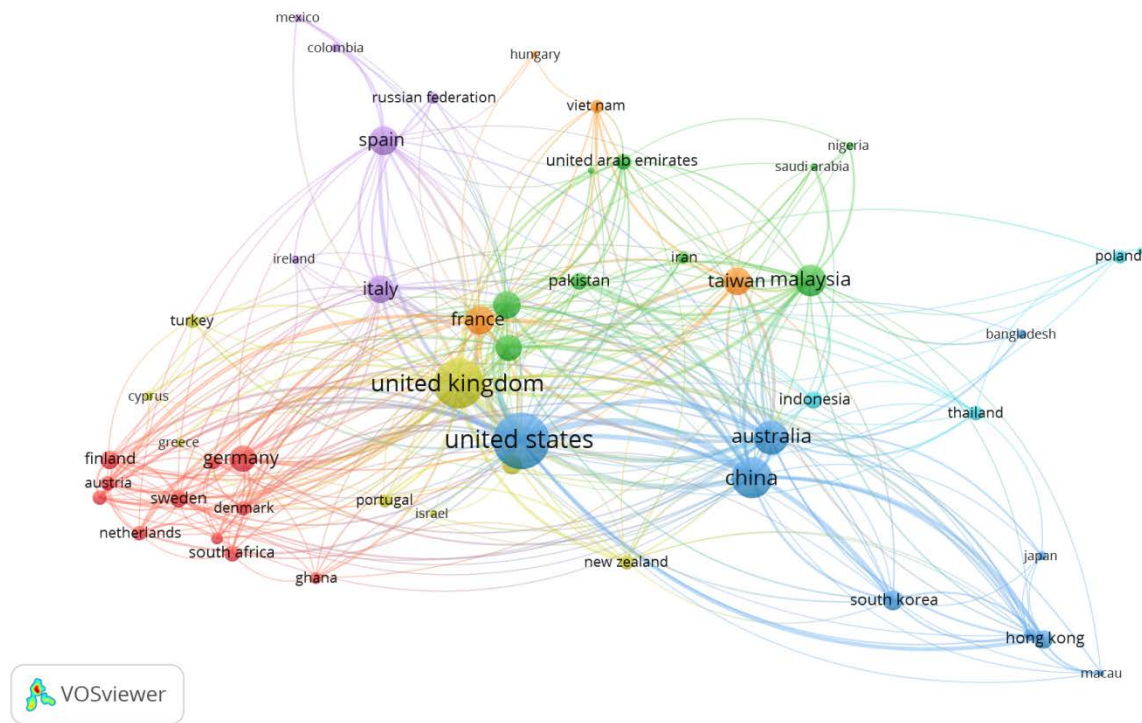


Fig. 7. Density of the main source countries and regions.

Table 2 details the 15 countries and regions that have published more than 10 articles and their publishing characteristics. The United States (376 articles, 21.72%), United Kingdom (280, 16.17%), Mainland China (191, 11.03%), and Australia (132, 7.62%) are the four most productive countries/regions with significant contribution to application of RBV Theory to business management.

Table 2: Publication characteristics of Top 15 productive countries and regions.

Country	Documents	Citations	Total Link Strength	Percentage
United States	376	13112	279	21.72
United Kingdom	280	9272	306	16.17
China	191	3824	175	11.03
Australia	132	3816	132	7.62
Malaysia	121	978	94	6.99
France	100	3033	130	5.77
Spain	98	2279	65	5.66
India	90	1393	66	5.19
Taiwan	88	2271	52	5.08
Italy	85	2540	69	4.91
Canada	84	2536	83	4.85
Germany	84	2159	72	4.85
South Korea	46	983	44	2.65
Brazil	45	589	34	2.59
Finland	42	978	34	2.42

United States stands out with 13112 in terms of number of citations (including self-citations and other citations). Followed by United Kingdom 9272, China 3824 and Australia 3816. These countries together affect the research output in the field of business management. United Kingdom (307 links), United States (279 links), and China (175 links) have the most links. This indicates that the cooperation network among the authors of these three countries this has been shown in Figure 6.

Institutions

Table 3 highlights top-10 of most productive institutions involved in the publication in the applications of RBV Theory in the field of business management. The five most productive institutions was located in United Kingdom. The institution with most relevant publications is the School of Business, Loughborough.

Table 3: Top-10 of most productive institutions publishing on RBV Theory

Organization	Country	documents
School of Business and Economics, Loughborough University	United Kingdom	8
Degroote School of Business, McMaster University	Canada	5
School of Management, Zhejiang university	China	5
Arizona State University	United States	4
Coggin College of Business, University of North Florida	United States	4
College of Management and Economics, Tianjin University	China	4
Department of International Logistics, Chung-ang University	South Korea	4
Leeds University Business School, University of Leeds	United Kingdom	4
Montpellier Business School, Montpellier Research in Management	France	4
Montpellier Business School	France	4

Citation Analysis: Key Articles

The outcome of the co-citation analysis is, shown in Fig. 8. The relative magnitude of the circles signifies the amount of citations in the journals, which means that bigger the size, the more the citation. Less space or overlap between two articles represents high correlation and similarity. Cluster represented by same color circles show a common topic among different articles. Four separate clusters demonstrate separate field within business management domain. All four clusters are intermingled with each other.

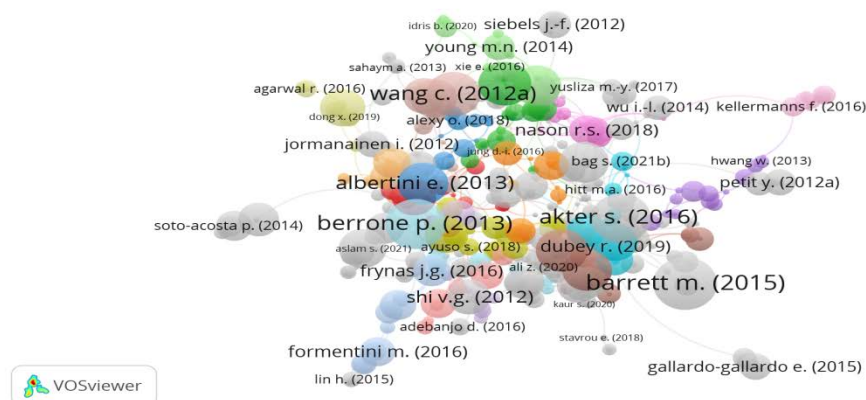


Fig. 8. Co-citation analysis of highly cited references

Table 4 shows the 15 most productive institution along with the number of citations. “Service Innovation In The Digital Age: Key Contributions and Future Directions” written by Barraet et al (2015) has been cited 477 times. Average citation of this paper is 68.1 times per year, since it publication.

Table 4: Top-15 of most productive institutions publishing on RBV Theory

Document	Citations	Source Publication
Barrett M. (2015)	477	MIS Quarterly: Management Information Systems
Berrone P. (2013)	440	Strategic Management Journal
Akter S. (2016)	415	International Journal of Production Economics
Wang C. (2012a)	347	Journal of International Business Studies
Meyer K.E. (2016)	335	Journal of International Business Studies
Schoenherr T. (2012b)	322	Journal of Operations Management
Albertini E. (2013)	297	Organization and Environment
Wu S.P.-J. (2015)	293	MIS Quarterly: Management Information Systems
Leuschner R. (2013)	287	Journal of Supply Chain Management
Gaur A.S. (2014)	280	Journal of World Business
Qiu Y. (2016)	269	British Accounting Review
Terjesen S. (2016)	258	Journal of Management
Blome C. (2013)	239	International Journal of Production Research
De Massis A. (2015)	237	Journal of Small Business Management
Cheng C.C.J. (2014)	231	Journal of Cleaner Production

Author Keyword Co-Occurrence Analysis

Keywords enable to gauge the content and theme of the article at large. The 1741 articles included comprise of 4792 keywords. These keywords were further divide into 11 clusters as shown in Figure 9. To conduct analysis, 228 keywords appearing more than 5 times, with a co-occurrence network of 228 nodes and 2117 links were short-listed.

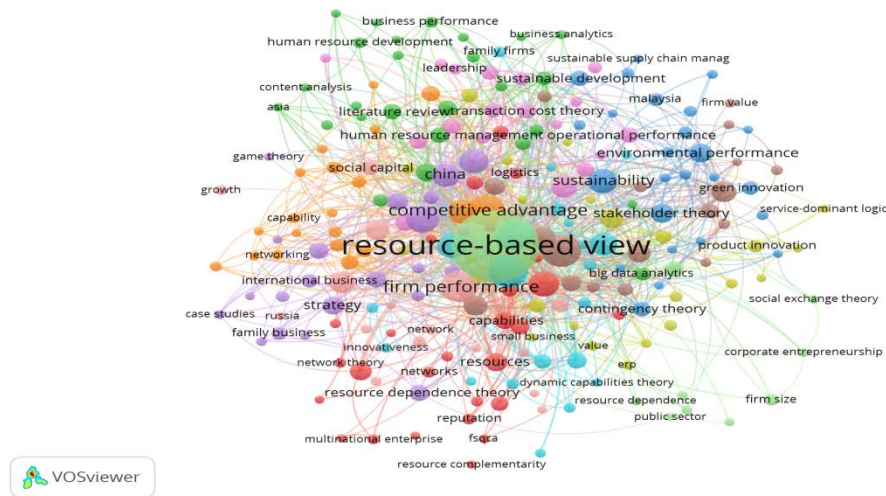


Fig. 9. Author keyword - co-occurrence network

Main Research Findings

This paper segregates the research article into five different categories derived from 228 keywords namely innovation, big data, emerging economies, competition and strategic management.

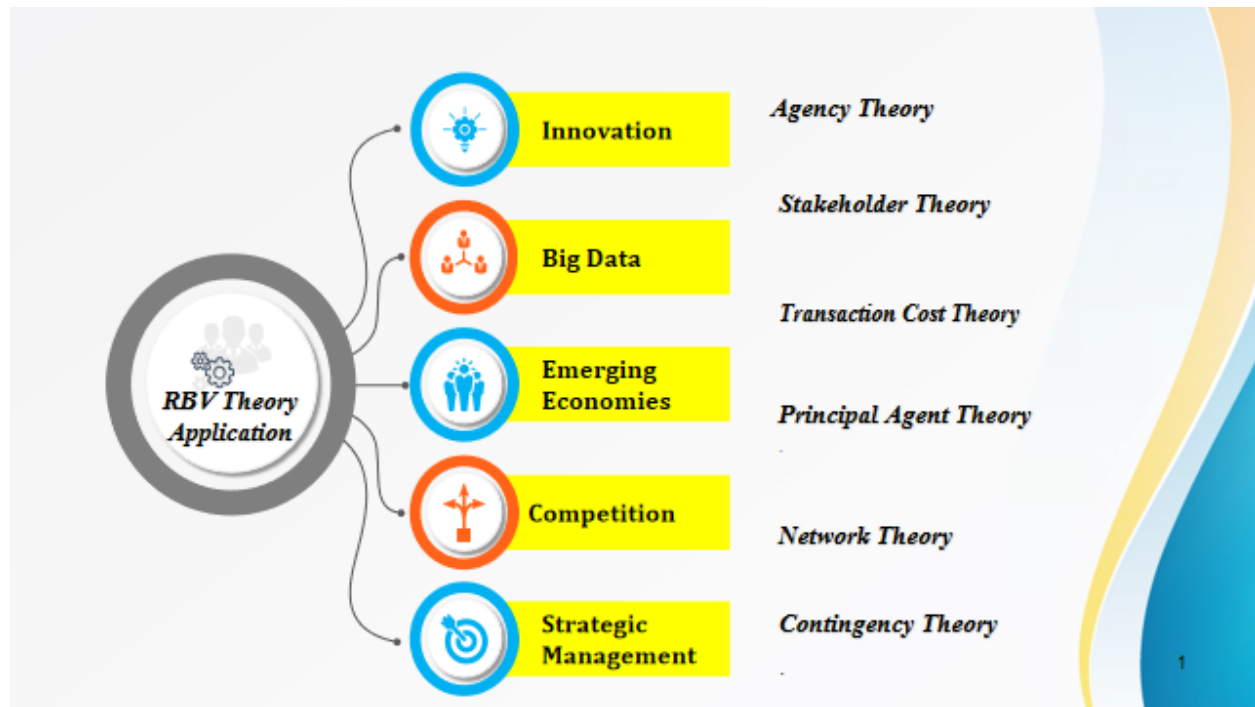


Fig. 10. Application Framework of RBV Theory

Innovation

(Hazen & Byrd, 2012) observed the need to combine complimentary resources within a firm along with technological innovations to achieve competitive advantage. The author had used RBV theory and resource-advantage theory to investigate the performance of firms after implementing IT in logistics supply chain processes. RBV theory is, employed to investigate manufacturing small and medium enterprises. The result show positive correlation between innovation, promotion and learning competences (Sok, O'Cass, & Sok, 2013). (Soto-Acosta, Colomo-Palacios, & Popa, 2014) examines how developing IT skills using innovation and web based knowledge can enhance cooperation and information sharing among employees within a firm. An integrated model comprising of technology-organization-environment theory and the resource-based view was, adopted for the study. (Wiengarten, Humphreys, Cao, & Mchugh, 2013) used RBV framework to examine how integrating IT resources with other organizational resources that are rare and inimitable leads to performance enhancement. (Naqshbandi & Tabche, 2018) building upon RBV, a model is, constructed to explain how top management can use organization culture to augment open innovation and apply it at different levels. (Liao, 2018) employs RBV and stakeholder theory to examine how novelty and creativeness affects eco innovation tactic. (Shahzad, Qu, Zafar, Rehman, & Islam, 2020) examines the interrelationship of green innovation, data management process and sustainable performance of a firm, through RBV theory. (Pérez-Luño, Alegre, & Valle-Cabrera, 2019) study the interrelationship between innovation and knowledge. The results indicate that leadership must emphasize on moderate exchange of knowledge and combination within a firm, to minimize wastage of resources. (Adebanjo, Teh, & Ahmed, 2018) investigate the

relationship of product/process innovation capabilities with supply chain integration and performance of a firm, by adopting RBV and institutional theory concepts.

Big Data

(Shiris & Rameshwar, 2018) developed a theoretical model based on RBV theory and contingency theory to study impact of big data and prognostic analytics on firm's sustainable goals. (Raguseo & Vitari, 2018) applies RBV concept to demonstrate that investment in big data analytics leads to performance enhancement and client satisfaction. (Cosic, Shanks, & Maynard, 2016) introduce a conceptual framework based on RBV principle to outline and rank resources that establish a firms business analytic initiatives. (Mikalef & Krogstie, 2020). Grounded in RBV concept and configuration theory, the author examines how big data analytics when integrated with other internal resources of a firm leads to efficiency in health care business (Y. Wang, Kung, Gupta, & Ozdemir, 2019). Big data analytics and state-of-the-art data security mechanism has a positive impact on services supply chain innovation competences and performance (Fernando, Chidambaram, & Wahyuni-TD, 2018). (Martinez et al., 2019) explore the resources required to build, operate and maintain block chain technology within a firm. (Fosso Wamba & Akter, 2019) RBV and dynamic capability view concept is, applied to show that big data enabled analytics impacts firms' performance.

Emerging Economies

(Gruber, MacMillan, & Thompson, 2012) observe that managerial and technology endowments restraints market opportunities while management vision and entrepreneurship helps to create value for customers, based on underlying principles of resource based view. (Ohad Ref, 2017) combines principle of behavioral theory and resource based view to observe how a firms decision to enter new market is impacted by performance feedback and existing gap between performance and institutional objective. (Tatoglu, Glaister, & Demirbag, 2016) explain the differences between local firms and MNE's talent management motivations by using concept of RBV and institutional theory. (Ehrgott, Reimann, Kaufmann, & Carter, 2013) augments the resource based thinking in supply chain management to support the notion that firm gain competitive advantage by integrating supply chain partners in emerging economies. (Kamasak, 2017) examines the role of tangible and intangible resources and capabilities on a firm performance. The result indicate that intangible resources have a major and decisive impact as compared to tangible resources.

Competition

Integrating internal resources of a firm has a positive impact on customer and supplier relationship leading to value creation. A conceptual model was developed by using elements from RBV theory and contingency theory (Lai, Zhang, Lee, & Zhao, 2012). (Crick & Crick, 2020) have used resource based and relational view to examine how firms transform their business model by embracing coopetition to survive during crisis. (Huo, Ye, Zhao, & Shou, 2016) observes that competitive performance is directly proportional with customer and supplier integration achieved through the principle of human resource integration based on RBV concept. Resources and capabilities sharing among firms leads to improvement in performance, which cannot be achieved in isolation (Crick, 2018). Critical resources affecting competitiveness of open source software ventures, is investigated through a theoretical model based on RBV (Ghapanchi, Wohlin, & Aurum, 2014). (M. Crick, 2020) explores how coopetition can be harmful for a firm as there is a possibility of intellectual resource loss and hence it is important to balance the amount of capability sharing.

Strategic Management

RBV theory provides the foundation to develop theoretical model to explain a firms variance in performance and subsequent success or failure in supply chain through collaboration (Fawcett, Fawcett, Watson, & Magnan, 2012). RBV theory and positional advantage theory is employed to study elements that affect complex relationship of supply chain integration and performance. The results indicate that SCI has a positive impact on a firms financial performance (Chang, Ellinger, Kim, & Franke, 2016). (Schmidt & Keil, 2013) fill the prevailing gap in RBV theory by emphasizing on the significance of demand side factors and expanding managerial role to utilize available resources to create value and gain competitive advantage. RBV concept was, employed to construct theoretical insights about how triple bottom line firms achieve competitive advantage by utilizing resources based on laid down principles. The results show that these firms focus on VRIN resources (Glavas & Mish, 2015). RBV perspective helps to analyze the relation between human resources and its subsequent green supply chain management strategies adoption within a firm (Chiappetta Jabbour, Mauricio, & de Sousa Jabbour, 2017). (Fayard, Lee, Leitch, & Kettinger, 2012) develop a conceptual model based on RBV, to forecast which in-house resource can be used to reduce inter-operational cost. (Hsu, 2013) demonstrate using microeconomic theory and RBV, how IT and enterprise resource planning integration can provide advantage to a firm. (Agarwal, Grassl, & Pahl, 2012) introduces META-SWOT tool based on inside-out view of RBV, to gain competitive superiority by prioritizing available resources within a firm.

RBV and Other Theories

Figure 10. Shows that various studies have integrated RBV theory with other contemporary theories. RBV Theory has been integrated with contingency theory and leadership theory to discover organizational scope and its effects (Josefy, Kuban, Ireland, & Hitt, 2015). The authors combines RBV theory and institutional theory to determine by what method a firm can enhance export performance by aligning market orientation capabilities with export channels (He, Brouthers, & Filatotchev, 2013). (Germann, Lilien, & Rangaswamy, 2013) employed upper echelon theory and RBV theory to observe the factors that makes a firm deploy marketing analytics and its inclusive impact on performance. (Wagner, 2015) observed that that a firms alignment with resource based principles could have a restraining effect on commercial and environmental performance. (Hazarika & Zhang, 2019) propose a conceptual framework integrating principle of RBV, strategic choice and institutional theory, to highlight the factors that makes a firm adopt eco-innovative practices. The results show that eco-innovation has a positive impact on financial performance of firm involved in construction business.

Conclusion and future research direction

Going by the number of citations and relevance (Akter, Wamba, Gunasekaran, Dubey, & Childe, 2016), (Gaur, Kumar, & Singh, 2014), (Qiu, Shaukat, & Tharyan, 2016), (De Massis, Frattini, Pizzurno, & Cassia, 2015), (Blome, Schoenherr, & Rexhausen, 2013), (Cheng, Yang, & Sheu, 2014), (C. Wang, Hong, Kafouros, & Boateng, 2012), (Torugsa, O'Donohue, & Hecker, 2012), (Nyberg, Moliterno, Hale, & Lepak, 2014), (S. K. Singh, Giudice, Chierici, & Graziano, 2020), (Treiblmaier, 2018), (El Ghoul, Guedhami, & Kim, 2017), (Y. Wang & Hajli, 2017), (Lin, Zeng, Ma, Qi, & Tam, 2014) and (Dubey, Gunasekaran, Childe, Blome, & Papadopoulos, 2019) are the top 15 articles. Together, they play critical roles in guiding the application and expansion of the RBV Theory in the field of business management.

This paper identifies future research topics through co-citation and content analysis method. Application of RBV theory to study airport efficiency and performance is one such area where there is scope for future research specially among developing nations. (Barros, Wanke, Nwaogbe, & Azad, 2017) and (Njoya & Niemeier, 2011) feature among very few articles where airport efficiency has been the subject of analysis through RBV lens. There is need to analyze the impact of tangible and intangible resources on airport efficiency and performance.

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