

The relationship between service innovation and performance: a bibliometric analysis and research agenda proposal

Isabela Neves Ferraz*, Nathália de Melo Santos

Universidade de Brasília (UnB), Faculdade de Economia, Administração e Contabilidade (FACE), Brasília, DF, Brazil

Received 12 February 2016; accepted 18 July 2016

Available online 9 September 2016

Abstract

Interest in the theme of service innovation has a direct impact on the increase of studies on the subject in organizational research, especially in the sense of understanding the performance of innovations and how they contribute to better firm performance. In this context, the main purpose of this article is to present the scenario of studies that address the concepts of innovation in services and performance in conjunction with organizational research. For this, a bibliometric study was carried out with journals of administration with impact factors greater than or equal to 0.8. The analysis of 61 publications showed that the articles – in most part – were empirical, cross-sectional, and quantitative, with data collection source based on questionnaires and data analysis with inferential statistics. The *Service Industries Journal* and the *Journal of Business Research* published the most literature on the subject, and three universities in Taiwan had the highest number of articles published by authors linked to them. The studies mainly focus on clusters, the theme of strategy, and issues such as market orientation, performance, management, and product development. Having analyzed the references, the diversity found allows for the affirmation that there is no consolidated theoretical framework being used by the articles. Future research agendas are proposed, highlighting the need for investigations that consider the customer in the relationship between service innovation and performance, as well as longitudinal and mixed studies that triangulate data collection sources.

© 2016 Departamento de Administração, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo – FEA/USP.

Published by Elsevier Editora Ltda. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Keywords: Innovation in services; Performance; Bibliometrics

Introduction

For many years, studies on innovation were concentrated on the manufacturing industry and the process of technological appropriation by these industries (Drejer, 2004). However, this perspective has begun to change – especially in recent decades – with the development and expansion of services, which now have a strong economic and social impact, making it a sector with great potential to be exploited in organizational research (Kon, 2004).

Along with the great strategic importance assumed by the theme of innovation in services, there has been an increased

interest in research that seeks to understand the relationship between investments in innovation and performance of these innovations. Such interest converges with the fact that the economic order in which organizations operate entails a significant remodeling of competition, which leverages and influences the reciprocal discovery and exploitation of new opportunities, the ability to create innovative value propositions (and bring them to success), and the capability to mobilize and manage global resources (Hagen, Denicolai, & Zucchella, 2014), issues that all affect the performance of organizations.

In this context, we note that service innovation and performance are concepts that have the potential to be worked and exploited jointly, in order to better understand the advances that have occurred in services and the impacts of these processes in an increasingly competitive and dynamic economic context, which has numerous growth opportunities. Based on this assumption, this article examines academic research of administration in order to study the relationship between service innovation and performance. To accomplish this, we analyzed

Peer Review under the responsibility of Departamento de Administração, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo – FEA/USP.

* Corresponding author.

E-mails: isabelanf@gmail.com (I.N. Ferraz), nsantos.adm@gmail.com (N. de Melo Santos).

<http://dx.doi.org/10.1016/j.rai.2016.09.005>

1809-2039/© 2016 Departamento de Administração, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo – FEA/USP. Published by Elsevier Editora Ltda. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

61 articles published in administration journals with impact factors greater than or equal to 0.8. We opted for the use of bibliometrics, which is a reliable way to handle state-of-the-art literature, besides being a tool for scientific and technological assessment (Andrighi, Hoffmann, & Andrade, 2011).

In general, the main results indicate that the analyzed articles focus on the sub-themes of strategy, issues of market orientation, performance management, and product development. It was also noted that there is no consolidated theoretical body being referenced, given the great diversity of authors being cited in the works. In regards to future research agendas, there is a need for studies with a greater focus on the customer and longitudinal studies that use mixed methods and triangulate data collection sources. The intention of this article, therefore, is to provide a general view, bibliographic sources, and other possibilities that deepen the relationship between service innovation and performance for those researchers who have an interest in the subject, as well as to give an overview of how this relationship is being studied in administration research.

This paper is organized into five parts, including this introduction. The theoretical framework presents discussion on the literature, which analyzes service innovation in a synthesized manner. The third section presents the methodology used while the fourth section presents the results of this analysis, where the main findings are verified and future study proposals of the examined works are exposed. Finally, the fifth section presents final remarks.

Theoretical framework

Innovation in services has received great attention in organizational studies due to its impact on society, especially with regard to the direct influence on the creation of jobs and social and economic development (Gallouj, 2007). Services are activities that have very particular characteristics that distinguish them from goods produced in the manufacturing industry, since the products generated are not perfectly formatted and encoded, each transaction and result is unique, there is simultaneity between supply and consumption, they do not have a well-defined supply and demand, and have a variety of qualitative aspects involved in their production (Kon, 2004; Sundbo & Gallouj, 1998). Considering the nature of services and the importance of innovation processes that take place in this sector, it is possible to understand why production in the area has been dedicated to bringing theoretical and empirical perspectives to the theme.

The literature on innovative services is divided into three main theoretical approaches (Gallouj & Savona, 2009; Howells, 2010): (a) technologist – the main driving force of service innovation comes from environments external to the organization, with service innovation being seen as a consequence of technological diffusion in the service industry; (b) based on services – the purpose is to distinguish innovation in services, focusing on the peculiarities of a service and its innovation process (differentiating them from manufacturing), and checking how these peculiarities may lead to new conceptualizations of the innovation process in services; (c) the integrative approach – which

is based on the existence of similarities between manufacturing and services, a form that recognizes a set of interrelated activities, offering a unique analysis model that is able to propose a broader view of innovation, which includes its tangible/intangible and technological/non-technological aspects.

Barras (1986) was one of the first researchers who tried to explain the dynamics of service innovation through the reverse product cycle model. By conducting case studies in banking, insurance, and accounting sectors, the author found that, from the diffusion of new technologies – especially of information technology (IT) – services follow an innovation trajectory in an opposite manner to the product life cycle, characterized by successive phases of incremental innovation, radical innovation, and product innovation. Despite the importance of the study by Barras (1986) – considering that it was one of the theories that paved the way for explaining the process of innovation in services – the author's model received criticism since it emphasized the dissemination of technological innovations more than the process of service innovation, a technical view that did not consider the non-technological forms of service innovation (Gallouj, 1997).

In this sense, the plethora research developed that follows the trend of explaining innovations through a fundamentally technical perspective is not enough to understand service innovations. In search of circumventing this bias, the integrative approach highlights innovation and can go beyond technological aspects, with a single analysis model that considers goods and services within the same analytical perspective (Gallouj, 2007).

After understanding the context in which service innovation emerged – as well as the research that has been developed for it – it is possible to appreciate the potential that the subject has in the realization of research that involves numerous organizations, whether public or private. In this context, one of the concepts that has taken prominence in studies that address the theme of innovation in services is performance. According to Prajogo (2006), the need to find sources of competitive advantage in the service sector – especially when understanding innovation as a source of competitive advantage (and its implications for performance) – has increasingly attracted the attention of researchers.

The concept of performance in relation to the service innovation construct can be studied from various perspectives. With more micro aspects, some research has sought to understand service innovation performance implemented in organizations (Chong & Zhou, 2014; Hsueh, Lin, & Li, 2010; Kang & Kang, 2014; Kirner, Kinkel, & Jaeger, 2009). In a more macro view, other studies have focused on the impact of service innovation on firm performance as a whole (Lin, 2013; McDermott & Prajogo, 2012; Melton & Hartline, 2013; Ordanini & Rubera, 2010). In the latter perspective, innovation is seen as a powerful explanatory factor of the performance differences between firms (Fagerberg, 2005).

Several reasons may explain the increased interest in research seeking to address the interfaces between service innovation and performance. Economic growth in the service sector and its importance in societal development has allowed service innovation to be seen as a new factor for the advancement of the economy (Barcet, 2010; Gallouj, 2007). In this sense, the

attainment of innovation enables better organizational performance, which is reflected in growth and productivity (Cainelli, Evangelista, & Savona, 2006). Moreover, globalization of economies has promoted a new reality, enabling the creation of businesses that were before unimaginable. In light of this, organizations seek innovation and better performance, aiming to compete and differentiate themselves in their respective markets (Baregheh, Rowley, & Sambrook, 2009; Yokomizo, 2014).

Method

To meet the objectives of this work, a bibliometric survey was carried out on articles that deal with the relationship between the themes of service innovation and performance. The selected articles are from the area of administration and published in journals with impact factors greater than or equal to 0.8, as they are the most frequently cited and have greater academic importance.

After defining the criteria for the collection of information, a survey of items of interest to this study was done using the Web of Science database, which is a platform that catalogs the most important academic research worldwide. Using the search mechanism of this database, articles were found that contained in their title, abstract, or keywords the terms “service innovation” and “performance” in Portuguese and English. A time period was not set for the survey of the articles. A total of 279 publications were found and abstracts were read in order to ensure that they had real relevance to the theme under study. After this, 197 works were eliminated, leaving 82 articles. The impact factor criterion was then applied, reducing the number of eligible articles to 61, the final size of the analyzed sample.

Since this work seeks to address the relationship between service innovation and performance in academic literature, elements of bibliometric research were used to analyze them. Bibliometric analysis relies on quantitative measurement and allows the evaluation of the development of a particular research field, discipline, or phenomenon, as well as the identification of key theories and research topics (Araujo, 2006; Borgman & Furner, 2002).

After surveying the articles, the information drawn from them was stipulated. This information included: (a) general and methodological characteristics; (b) the characteristics of scientific literature on service innovation and performance; (c) the proposition of research agendas. The results are presented in the final section.

Presentation and analysis of results

General and methodological characteristics

With the results obtained by the analysis of the 61 items surveyed, Table 1 shows information about the articles by journal, year of publication, and impact factor. Despite not having a set timeframe for the search of items, papers published from 1995 to 2015 were found, with a certain dispersion existing among the journals: from the journals, 38 articles were found to be pertinent, and 11 journals (29%) published more than one article on the relationship between service innovation and performance.

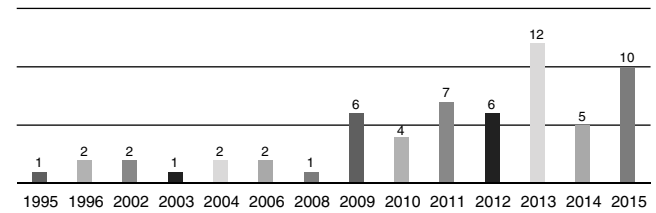


Fig. 1. Number of articles published per year.

Source: Prepared by the authors.

Journals that stood out were the *Journal of Business Research* and the *Service Industries Journal*, which were responsible for publishing 6 articles each on the theme.

Fig. 1 shows that the number of publications is well distributed over time, with consistency being maintained from 2002 to 2015. However, a big increase of publications on service innovation and performance occurred mainly from 2009, especially for the years 2013 and 2015, where 12 and 10 articles were found respectively. The growth of the service sector and competitiveness between firms – which leads to the need to innovate and obtain better performance – is a possible reason for the increase in publications on the theme of service innovation and performance in recent years.

Table 2 presents the frequency of the methodological evaluation criteria set out for analysis. In this table, we note that – except for a single work – all sample articles are theoretical and empirical works, a frequency of 98%. The other criteria for methodological evaluation, presented in Table 2, are analyzed only for 60 theoretical and empirical articles that make up the sample.

The sample of the studies has as its scope the analysis period considered in the survey. The majority of the articles (57% or 95%) of the sample are cross-sectional studies, while only 3 works (or 5% of the sample) conducted longitudinal studies. This finding is verified with the frequency in bibliometric studies of administration, perhaps for the difficulty that researchers encounter – together with the firms surveyed – in maintaining and/or performing analyzes that are not ephemeral.

In relation to research methods, the sample shows a predominance of quantitative methods, representing 65% of the analyzed articles (39 in total). Mixed method studies appeared in 16 articles (27%) and qualitative methods in articles 5 (8%). Note that compared to the use of quantitative methods, in service innovation and performance articles, there are still few studies applying qualitative methods. Hence, development of more qualitative studies are encouraged that mainly use mixed approaches, which are a good way to better explain the phenomena in question. In the articles of the sample, despite mixed methods having appeared in considerable quantity, in large part the qualitative phase consisted only of interviews in order to validate the research instrument, with in-depth qualitative research for thorough comprehension of certain contexts not being undertaken.

In Table 2, with respect to the ways of collecting data and analysis techniques, there is a similarity among the articles, since many have adopted more than one option among those listed. We found 20 studies (33%) that utilized interviews,

Table 1
Journal, impact factor, and year of article publication.

Journals	I.F.	1995	1996	2002	2003	2004	2006	2008	2009	2010	2011	2012	2013	2014	2015	Total
African Journal of Business Management	1.105								1							1
Asia Pacific Journal of Tourism Research	1.023														1	1
California Management Review	1.25												1			1
Computers in Human Behavior	2.694														1	1
Current Science	0.926														1	1
Electronic Markets	0.935											1				1
Health Economics	2.227									1						1
IEEE Transactions on Engineering Management	1.103					1							1		1	3
Industrial Marketing Management	1.82						1								1	2
Information & Management	1.865									1						1
International Journal of Hospitality Management	1.939										1			1		2
International Journal of Information Management	1.55														1	1
International Journal of Logistics Management	0.946										1					1
International Journal of Operations & Production Management	1.736											1				1
International Journal of Physical Distribution & Logistics Management	1.802								1							1
International Journal of Production Economics	2.752			1								1		1		3
Journal of Business Research	1.48		1			1					2		2			6
Journal of Engineering and Technology Management	2.06											1				1
Journal of Hospitality & Tourism Research	1.188												1			1
Journal of Operations Management	3.818												1			1
Journal of Product Innovation Management	1.696		1											1	1	3
Journal of Service Management	2.882									1						1
Journal of Service Research	2.484								2				1			3
Journal of Services Marketing	0.989											1			1	2
Journal of Small Business Management	1.353	1														1
Journal of the Operational Research Society	0.953				1											1
Management Decision	1.429													1		1
New Technology Work and Employment	1.909						1									1
Production Planning & Control	1.466												1			1
Public Administration	1.528			1												1
R&D Management	0.848													1		1
Regional Studies	2.068									1						1
Research Policy	3.117								1							1
Service Industries Journal	0.832									1	2		3			6
Sport Management Review	1.214												1			1
Technovation	2.526							1				1				2
Total Quality Management & Business Excellence	1.32														2	2
Tourism Management	2.554								1							1
Total	–	1	2	2	1	2	2	1	6	4	7	6	12	5	10	61

Source: Prepared by the authors.

Table 2
Frequency of evaluation criteria.

Evaluation criteria	F.	F. %
<i>Methodological approach</i>		
Theoretical	1	2%
Theoretical & empirical	60	98%
<i>Study type</i>		
Cross-sectional	57	95%
Longitudinal	3	5%
<i>Research method</i>		
Qualitative	5	8%
Quantitative	39	65%
Mixed	16	27%
<i>Source of data collection</i>		
Documents	14	23%
Interviews	20	33%
Questionnaires	50	83%
Observations	1	2%
<i>Data analysis techniques</i>		
Descriptive statistics	26	43%
Inferential statistics	54	90%
Discourse analysis	1	2%
Content analysis	17	28%
<i>Data source</i>		
Primary	47	78%
Secondary	8	13%
Primary and secondary	5	8%

Source: Prepared by the authors.

Note: F. = absolute frequency; F. % = percentage frequency.

14 (23%) that used documents, 50 (83%) that employed questionnaires, and 1 (2%) that made use of observation. These figures establish that questionnaires were the main means of collecting data in empirical research on service innovation and performance. As for data analysis techniques, since most studies used quantitative research methods, 54 articles (90%)

employed inferential statistical and 26 (43%) descriptive statistics. Content analysis appeared in 17 articles and discourse analysis in 1, with a frequency of 28% and 2% respectively.

Finally, regarding data sources, 47 studies (78%) made use of primary data, 8 (13%) employed secondary data, and 5 (8%) used primary and secondary data. These data show that, even though most studies make use of primary sources in their research, the number of works employing primary and secondary data concurrently was not as significant. This is an indication that a considerable part of the authors did not triangulate data in their studies, which would have brought greater validity to their research.

In short, most of the studies were quantitative, made use of primary data, adopted cross-sectional techniques, and employed questionnaires for data collection and inferential statistics to analyze data.

Characteristics of the scientific production on service innovation and performance

From the 61 articles being analyzed, it was possible to identify which ones were most cited by the current literature (until September 2015) from the Web of Science. Table 3 shows the 10 most cited articles. In first place is the work by [Atuahene-Gima \(1996b\)](#) with 206 citations, while the work of [Alam \(2006\)](#) is second with 101 citations. In tenth place is the work of [Gebauer, Gustafsson, and Witell \(2011\)](#) with 34 citations. Note that although the date of publication influences the number of citations – for example, the work [Atuahene-Gima \(1996b\)](#) that was published 20 years ago – more recent works, such as [Ordanini and Parasuraman \(2011\)](#), are among the four most cited, exposing the significance of studies for the area.

[Schneider and Borlund \(2004\)](#) claim that bibliometric methods are advisable to reveal different patterns of knowledge in scientific literature through the use of citations and references.

Table 3
Citation ranking of the analyzed articles.

Article title	Authors	Publication year	No. citations	Journal
Market orientation and innovation	Atuahene-Gima	1996b	206	Journal of Business Research
Removing the fuzziness from the fuzzy front-end of service innovations through customer interactions	Alam	2006	101	Industrial Marketing Management
Differential potency of factors affecting innovation performance in manufacturing and service firms in Australia	Atuahene-Gima	1996a	100	Journal of Product Innovation Management
Service innovation viewed through a service-dominant logic lens: The conceptual framework and empirical analysis	Ordanini and Parasuraman	2011	65	Journal of Service Research
Innovation, productivity, and growth in U.S. business services: Firm-level analysis	Love and Mansury	2008	58	Technovation
Learning during the new financial service innovation process: Antecedents and performance effects	Blazevic and Lievens	2004	48	Journal of Business Research
Hospitality teams: Knowledge sharing and service innovation performance	Hu, Horng, and Sun	2009	48	Tourism Management
Innovation paths and the innovation performance of low-technology firms: An empirical analysis of German industry	Kirner, Kinkel, and Jaeger	2009	48	Research Policy
Service delivery innovation antecedents and impacts on firm performance	Chen, Tsou, and Huang	2009	41	Journal of Service Research
Competitive advantage through service differentiation by manufacturing companies	Gebauer, Gustafsson, and Witell	2011	34	Journal of Business Research

Source: Prepared by the authors.

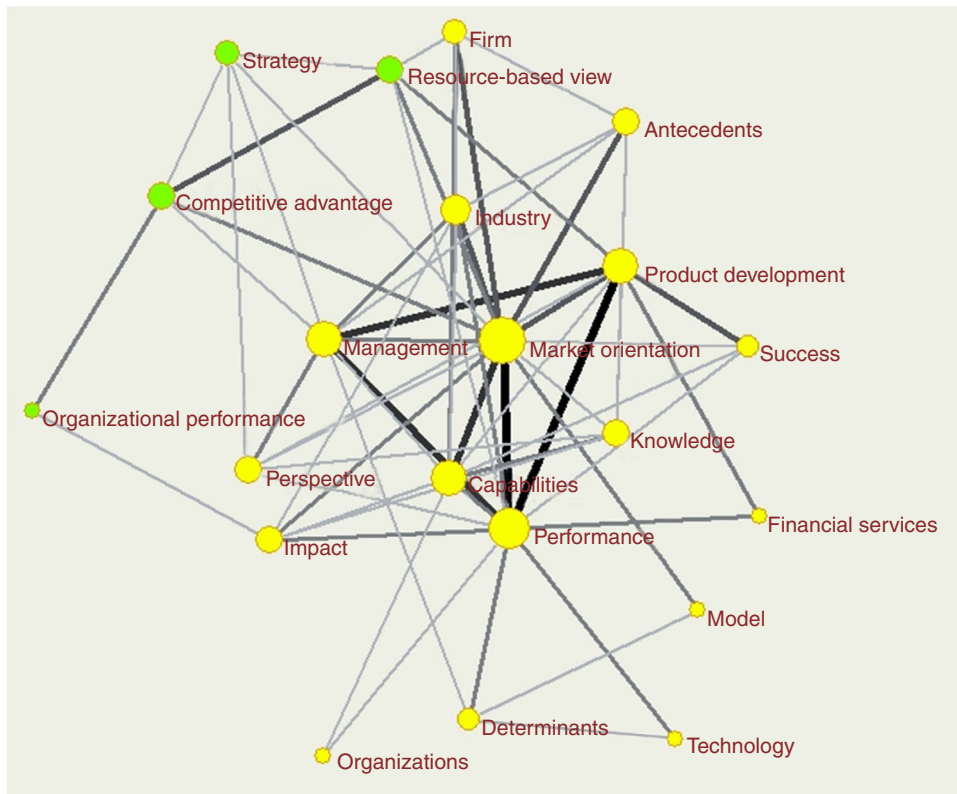


Fig. 2. Thematic areas of the analyzed articles.

Source: Prepared by the authors with the help of BibExcel software (Persson, Danell, & Schneider, 2009), and Pajek (Batagelj & Mrvar, 2003).

The authors also claim that the more an article is cited by a subsequent scientific body, the more the article has influenced related research. Therefore, in an attempt to portray the evolution of the issues addressed by these works which, in a way, are providing the basis for further research, a survey of the themes of the articles cited in the sample of 61 papers presented in Table 3 was undertaken.

It starts with the study of [Atuahene-Gima \(1996a\)](#) that sought to compare the development of new services and product activities, exploring the implications of innovation differences on performance and their consequences for managers and companies focused on services. [Hu, Horng, and Sun \(2009\)](#) explored issues related to knowledge sharing (KS), service innovation performance (SIP) and the role played by organizational teams in KS growth and SIP of the hospitality industry.

[Alam's \(2006\)](#) research aimed to understand the role of customer interaction in the early stages of development of new services, as well as explore how managers of services use contributions and customer information to improve and optimize the development of new services. In another perspective on the role of customers, [Gebauer et al. \(2011\)](#) evaluated the relationship between complexity of customer needs, customer centricity, innovativeness, service differentiation, and performance with firms that made a transition from being providers of pure goods to providers of services.

In another widely cited study, [Atuahene-Gima \(1996b\)](#) focused on the relationship between market orientation and characteristics of innovation, exploring their effects on market

success (sales and profits), and on firm performance (benefits to the organization). With similar objectives, [Blazevic and Lievens \(2004\)](#) analyzed the antecedents and consequences of project learning during the innovation process of financial services. These authors sought to assess the impact of project learning on the performance of the project and the financial institution, as well as determine the role of the nature of communication and organizational design in this learning project.

Following the same line of research, [Chen, Tsou, and Huang \(2009\)](#) explored the delivery of service innovation and its antecedents (innovation orientation, external partner collaboration, and information technology capability), as well as their consequences, identifying the impact of innovation in service delivery and firm performance. [Ordanini and Parasuraman \(2011\)](#) proposed and tested a framework that sought to explain the antecedents and consequences of service innovation based on the principles of service-dominant logic.

[Mansury and Love \(2008\)](#), in turn, examined the impact of innovation on the performance of North American service firms, seeking to distinguish different levels of innovation (new to market and new to the firm). [Kirner et al. \(2009\)](#) investigated the performance of product innovation (goods and services) and processes of low-, medium- and high-technology firms, identifying strengths and weaknesses of specific innovations from low-tech companies.

Fig. 2 shows the main thematic areas in the 61 articles of the sample. The green and yellow circles indicate two different clusters representing the concentration of the most discussed

Table 4
Most used references of the 61 works.

Articles cited	No. citations	% citation
Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. <i>Journal of Marketing Research</i> , 18, 39–50.	18	30%
Armstrong, J. S., & Overton, T. S. (1977). Estimating non-response bias in mail surveys. <i>Journal of marketing research</i> , 396–402.	15	25%
Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. <i>Journal of Management</i> , 17, 99–120.	13	21%
Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. <i>Journal of applied psychology</i> , 88(5), 879–903.	13	21%
Nunnally, J. C. (1978). <i>Psychometric theory</i> (2nd ed.). New York: McGraw-Hill.	10	16%
Hurley, R. F., & Hult, G. T. M. Innovation, market orientation, and organizational learning: An integration and empirical examination. <i>Journal of Marketing</i> , 62(3), 42–54.	10	16%
Avlonitis, G. J., Papastathopoulou, P. G., & Gounaris, S. P. (2001). An empirically-based typology of product innovativeness for new financial services: Success and failure scenarios. <i>Journal of Product Innovation Management</i> , 18(5), 324–342.	10	16%
Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. <i>Journal of Marketing</i> , 54(4), 20–35.	9	15%
Jaworski, B. J., & Kohli, A. K. (1993). Market Orientation: Antecedents and Consequences. <i>Journal of Marketing</i> , 57(3), 53–70.	9	15%
Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. <i>Journal of Marketing</i> , 68(1), 1–17.	9	15%
Hair, J. F., Anderson, R. E., Tatham, R. L., & William, C. & Black (1998). <i>Multivariate Data Analysis</i> . Prentice Hall.	9	15%
Berry, L. L., Shankar, V., Parish, J. T., Cadwallader, S., & Dotzel, T. (2006). Creating new markets through service innovation. <i>MIT Sloan Management Review</i> , 47(2), 56–63.	9	15%
Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. <i>Journal of management</i> , 12(4), 531–544.	9	15%
Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. <i>Academy of management journal</i> , 34(3), 555–590.	9	15%
Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. <i>Strategic management journal</i> , 18(7), 509–533.	8	13%
Drejer, I. (2004). Identifying innovation in surveys of services: A Schumpeterian perspective. <i>Research policy</i> , 33(3), 551–562.	8	13%
Gallouj, F., & Weinstein, O. (1997). Innovation in services. <i>Research policy</i> , 26(4), 537–556.	8	13%

Source: Prepared by the authors.

topics in the articles. The green cluster is clearly related to strategy, while the yellow cluster involves several sub-themes that fit into different areas of research. The figure's lines show the relationships between the subjects, with the darker lines indicating stronger relationships. Overall, this figure allows us to observe that the sampled articles focus primarily on issues related to market orientation, performance, management, and product development.

After analyzing the most cited articles and the most ubiquitous themes, we moved on to analyzing the references used by the 61 works. This task was carried out with the help of Sci.Mat software (Cobo, Lopez-Herrera, Herrera-Viedma, & Herrera, 2012) through which one can see a list of all the references used in the articles. There were, in all, 3283 different works referenced by the 61 articles. In the analysis conducted, it became clear that: 17 articles were referenced 8 or more times; 40 articles were referenced between 5 and 7 times; 49 articles were referenced 4 times; 95 articles were referenced 3 times; 294 articles were referenced 2 times; and 2787 articles – the majority – were referenced only once, indicating that a wide theoretical range is being employed in these works. In Table 4, we chose to present the 17 articles that were referenced 8 or more times.

The findings in Table 4 demonstrates that there is a wide dispersion of references used by the 61 articles. Perhaps this is because the theme belongs to an area of recent study or lacks theoretical consolidation. It is also noted that from the 17 most referenced works, 6 of them are related to methodological aspects (Table 4), confirming the perception that there

is a lack of a consolidated theoretical body for the development of research linking service innovation and performance. The absence of a theoretical mainstream means authors must seek information from different sources and include references from alternative research fields for service innovation. Sears and Baba (2011) support this view, saying that the innovation literature is fragmented and without a holistic perspective. They argue along the same line as Gallouj and Savona (2010), who showed that the area of innovation in services has always been fragmented, despite the increase in literary contributions in recent years.

In relation to the institutional origins of the authors, 93 different research centers were found. Fig. 3 shows the name and number of authors for those institutions with 3 or more linked

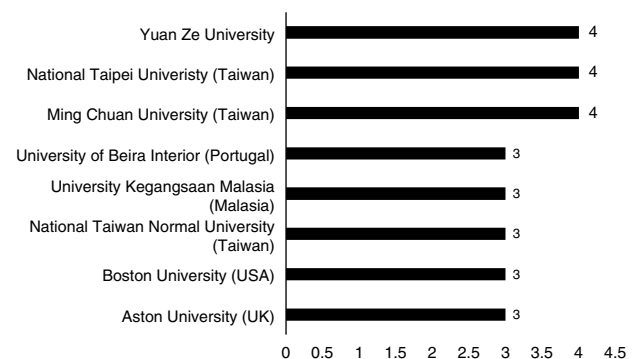


Fig. 3. Number of authors that publish by institution.

Source: Prepared by the authors.

Table 5
Suggested topics for future studies.

Suggested topics	Origin of article
The impact of customer and user performance, considering the role they can play in the development of new services.	Carbonell, Rodriguez-Escudero, and Pujari (2012)
The way services are provided in the context of the international performance of service companies, without forgetting how they are delivered.	Castro-Lucas, Diallo, Leo, and Philippe (2013)
The effects of service innovation culture on performance in the development of new services	Chen (2011)
International comparative studies to determine the existence of differences in the behavior of knowledge-intensive firms.	Ferreira, Raposo, and Fernandes (2013)
The relationship between service innovation and performance by integrating customer satisfaction and loyalty as variables of direct results.	Gebauer et al. (2011)
Forms of interaction between logistical resources and firm logistics performance.	Karia, Wong, and Asaari (2012)
Searching for precise measurements to measure business service innovation and performance.	McDermott and Prajogo (2012)
The simultaneous effects of engaging customers and other business partners (stakeholders) in the development process of new services.	Melton and Hartline (2013)
The influence of culture and organizational climate on creating a context for the development of new products and services.	Melton and Hartline (2013)
The influence of customer interaction and front-end activities on the overall performance of new services.	Alam (2006)
To consider the impact of external communication on project learning during the development of new services.	Blazevic and Lievens (2004)
The influence of aspects such as technology integration mechanisms and mechanisms for integration of knowledge on service provision and firm performance.	Chen et al. (2009)
The differences between the innovativeness of services and other innovative capabilities such as product innovation.	Grawe, Chen, and Daugherty (2009)
The influence of strategic firm orientation on innovation capabilities.	Grawe, Chen, and Daugherty (2009)
The relationship between the integration of the firm in networks and innovative service performance.	Hsueh et al. (2010)
The influence of changes in strategic processes and start-up implementation on performance.	Olson and Bokor (1995)
How firm performance can develop in relation to the application of innovations in IT services, using new ways to explain the return of innovations in IT, such as the central role of specific IT-skill processes and the role of dynamic capabilities (the firm's ability to reconfigure its resources to respond to environmental changes).	Ordanini and Rubera (2010)
Develop measures that evaluate the effects of service innovation strategy on the management of service innovation.	Tang (2015)
Evaluate the performance information provided by customers and include other stakeholders who can benefit from B2B performance.	Tang (2015)

Source: Prepared by the authors.

authors. Since most of the institutions have only 1 (70 institutions) or 2 (16 institutions) related authors, and that they are related to the sample of articles under analysis, we chose not to present them.

Analysis for the research centers showed that three institutions in Taiwan had the authors most linked to publications on service innovation and performance (Yuan Ze University, National Taipei University, and Ming Chuan University), with 4 works each.

Research agenda proposals

Table 5 lists the main themes and suggestions for future studies that were indicated by the articles analyzed. In the relationship between the constructs of service innovation and performance, the presented research agendas provide the interested reader new paths of investigation. In the agendas indicated by the works, the need for more research that considers customer participation in the relationship between service innovation and performance was highlighted.

From Table 5 and other results of this work, it is understood that it is still necessary to devote much effort to structure a consolidated theoretical framework on service innovation and performance. As seen, there is little research dedicated to the theme, which leaves a gap to be filled. It is suggested that further

studies are conducted in the area and that there is also work replication in order to consolidate achieved results and possible generalizations. In addition, replication will allow the definition of the most appropriate variables to measure the two phenomena. Longitudinal studies are also interesting, as the impacts of service innovation and performance cannot be perceived at a determined time, but their influence can be seen over a period.

Moreover, another relevant point that was analyzed is the limitations of the studies. The realization of these limitations by the researchers is an important step for the improvement of the work of a particular study field. Among the most important limitations cited in the articles, which can compromise their generalization or validity, were the following: the fact that the results found in the research are specific to the context analyzed, involving a particular organization, sector, country, or region; the sample size; conducting research with a cross-sectional design; the use of non-probability samples; and conducting research involving a single data source.

Such limitations brought directions for future research, such as: the need for studies that can encompass organizations from different sectors, countries, or regions, which include comparative studies, in order to corroborate or find alternatives to the results found; conducting longitudinal research; using larger data collection samples; and obtaining multiple sources of data and triangulating these data. These considerations highlight the

importance of identifying possible gaps and avenues of research by the authors of the work, thus seeking theoretical improvement.

Final considerations

The main objective of this article was to carry out a bibliometric analysis of works that address the relationship between the themes of service innovation and performance by analyzing articles published in the area of administration with impact factors greater than or equal to 0.8. Using this refinement in search of works, we obtained a sample of 61 article, of which 60 were theoretical and empirical, and only one was purely theoretical.

Among the most relevant results from the analyzes, it is emphasized that the surveyed articles focus on the sub-themes of strategy and various subjects such as market orientation, performance management, and product development. According to Schneider and Borlund (2004), mapping and carrying out an overview of citations can be seen as a way of organizing knowledge. The existence of a large dispersion of references used by the analyzed studies is an indication that there is still no specific mainstream for authors dedicated to this field of study to follow. This reinforces the need to consolidate knowledge and try to reduce fragmentation in the area, something that other authors have previously reported (Gallouj & Savona, 2010; Mohr, 1969; Sears & Baba, 2011). In the research agendas, the need for studies that consider the customer at the interfaces between service innovation and performance stands out, as well as longitudinal research that makes use of mixed approaches and triangulate data collection sources.

Conducting further research with similar issues in the future is suggested, in order to verify if the trends described here will continue to be present, as well as to find new research opportunities. Further work could also compare Brazilian and international articles, because as the criterion of the impact factor equal or above 0.8 and the database Web of Science was used in this research, the articles analyzed in their entirety are international. In this last point lies the main limitation of this study, since the analysis undertaken here is only a reflection of international productions from the database used and the selected search criteria.

Thus, from the identified gaps, it is perceived that there is a large space for more research addressing the relationship between service innovation and performance with the purpose of adding knowledge to the body of knowledge on this theme in organizational studies.

Conflicts of interest

The authors declare no conflict of interest.

References

- Alam, I. (2006). Removing the fuzziness from the fuzzy front-end of service innovations through customer interactions. *Industrial Marketing Management*, 35(4), 468–480.
- Andrighi, F. F., Hoffmann, V. E., & Andrade, M. A. R. (2011). *Análise Da Produção Científica No Campo De Estudo Das Redes Em Periódicos Nacionais E Internacionais. Review of Administration and Innovation – RAI*, 8(2), 28–53.
- Araújo, C. A. (2006). Bibliometria: Evolução histórica e questões atuais. *Em Questão*, 12(1), 11–32.
- Atuahene-Gima, K. (1996a). Differential potency of factors affecting innovation performance in manufacturing and services firms in Australia. *Journal of Product Innovation Management*, 13(1), 35–52.
- Atuahene-Gima, K. (1996b). Market orientation and innovation. *Journal of Business Research*, 35(2), 93–103.
- Barcet, A. (2010). Innovation in services: A new paradigm and innovation model. In *The handbook of innovation and services: A multi-disciplinary perspective*. pp. 49–67. Cheltenham: Edward Elgar Publishing.
- Baregheh, A., Rowley, J., & Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management Decision*, 47(8), 1323–1339.
- Barras, R. (1986). Towards a theory of innovation in services. *Research Policy*, 15(4), 161–173.
- Batagelj, V., & Mrvar, A. (2003). Pajek – analysis and visualization of large networks. In M. Juenger, & P. Mutzel (Eds.), *Graph Drawing Software* (pp. 77–103). Berlin: Springer.
- Blazevic, V., & Lievens, A. (2004). Learning during the new financial service innovation process: Antecedents and performance effects. *Journal of Business Research*, 57(4), 374–391.
- Borgman, C. L., & Furner, J. (2002). Scholarly communication and bibliometrics. *Annual Review of Information Science and Technology*, 36(1), 2–72.
- Cainelli, G., Evangelista, R., & Savona, M. (2006). Innovation and economic performance in services: A firm-level analysis. *Cambridge Journal of Economics*, 30(3), 435–458.
- Carbonell, P., Rodríguez-Escudero, A., & Pujari, D. (2012). Performance effects of involving lead users and close. *Journal of Service Research*, 26(7), 419–429.
- Castro-Lucas, C., Diallo, M. F., Leo, P. Y., & Philippe, J. (2013). Do innovators perform abroad? Findings from two producer's service sectors. *Service Industries Journal*, 33(4), 392–408.
- Chen, J.-S., Tsou, H. T., & Huang, A. Y.-H. (2009). Service delivery innovation. *Journal of Service Research*, 12(1), 36–55.
- Chen, W. J. (2011). Innovation in hotel services: Culture and personality. *International Journal of Hospitality Management*, 30(1), 64–72.
- Chong, A. Y. L., & Zhou, L. (2014). Demand chain management: Relationships between external antecedents, web-based integration and service innovation performance. *International Journal of Production Economics*, 154, 48–58.
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2012). Measuring use and creation of open educational resources in higher education. *Journal of the American Society for Information Science and Technology*, 63(8), 1609–1630.
- Drejer, I. (2004). Identifying innovation in surveys of services: A Schumpeterian perspective. *Research Policy*, 33(3), 551–562.
- Fagerberg, J. (2005). Innovation: A guide to the literature. In J. Fagerberg, D. C. Mowery, & R. R. Nelson (Eds.), *The Oxford handbook of innovation*. Oxford: Oxford University Press.
- Ferreira, J. J. M., Raposo, M. L., & Fernandes, C. I. (2013). Does innovativeness of knowledge-intensive business services differ from other industries? *Service Industries Journal*, 33(7–8), 734–748.
- Gallouj, F. (1997). Towards a neo-Schumpeterian theory of innovation in services? *Science and Public Policy*, 24(6), 405–420.
- Gallouj, F. (2007). Economia da inovação: Um balanço dos debates recentes. In R. Bernardes, & T. Andreassi (Eds.), *Inovação em serviços intensivos em conhecimento* (pp. 3–27). São Paulo: Saraiva.
- Gallouj, F., & Savona, M. (2009). Innovation in services: A review of the debate and a research agenda. *Journal of Evolutionary Economics*, 19(2), 149–172.
- Gallouj, F., & Savona, M. (2010). Towards a theory of innovation in services: A state of the art. In F. Gallouj, & F. Djellal (Eds.), *The handbook of innovation and services: A multi-disciplinary perspective* (pp. 27–48). Cheltenham: Edward Elgar Publishing.
- Gebauer, H., Gustafsson, A., & Witell, L. (2011). Competitive advantage through service differentiation by manufacturing companies. *Journal of Business Research*, 64(12), 1270–1280.

- Grawe, S. J., Chen, H., & Daugherty, P. J. (2009). The relationship between strategic orientation, service innovation, and performance. *International Journal of Physical Distribution & Logistics Management*, 39(4), 282–300.
- Hagen, B., Denicolai, S., & Zucchella, A. (2014). International entrepreneurship at the crossroads between innovation and internationalization. *Journal of International Entrepreneurship*, 12(2), 111–114.
- Howells, J. (2010). No title. In F. Gallouj, & F. Djellal (Eds.), *The handbook of innovation and services: A multi-disciplinary perspective*. Cheltenham: Edward Elgar Publishing.
- Hsueh, J.-T., Lin, N.-P., & Li, H.-C. (2010). The effects of network embeddedness on service innovation performance. *The Service Industries Journal*, 30(10), 1723–1736.
- Hu, M. L. M., Horng, J. S., & Sun, Y. H. C. (2009). Hospitality teams: Knowledge sharing and service innovation performance. *Tourism Management*, 30(1), 41–50.
- Kang, K. H., & Kang, J. (2014). Do external knowledge sourcing modes matter for service innovation? Empirical evidence from south korean service firms. *Journal of Product Innovation Management*, 31(1), 176–191.
- Karia, N., Wong, C. Y., & Asaari, M. H. A. H. (2012). Typology of resources and capabilities for firms' performance. *Procedia – Social and Behavioral Sciences*, 65(3), 711–716.
- Kirner, E., Kinkel, S., & Jaeger, A. (2009). Innovation paths and the innovation performance of low-technology firms – An empirical analysis of German industry. *Research Policy*, 38(3), 447–458.
- Kon, A. (2004). *Economia de serviços: Teoria e evolução no Brasil*. Rio de Janeiro: Campus.
- Lin, L. (2013). The impact of service innovation on firm performance. *The Service Industries Journal*, 33(15–16), 1599–1632.
- Mansury, M. A., & Love, J. H. (2008). Innovation, productivity and growth in US business services: A firm-level analysis. *Technovation*, 28(1–2), 52–62.
- McDermott, C. M., & Prajogo, D. I. (2012). Service innovation and performance in SMEs. *International Journal of Operations & Production Management*, 32(2), 216–237.
- Melton, H. L., & Hartline, M. D. (2013). Employee collaboration, learning orientation, and new service development performance. *Journal of Service Research*, 16(1), 67–81.
- Mohr, L. B. (1969). Determinants of innovation in organizations. *The American Political Science Review*, 63(1), 111–126.
- Olson, P. D., & Bokor, D. W. (1995). Strategy process-content interaction: Effects on growth performance in small, startup firms. *Journal of Small Business Management*, 27(1), 34–44.
- Ordanini, A., & Parasuraman, A. (2011). Service innovation viewed through a service-dominant logic lens: A conceptual framework and empirical analysis. *Journal of Service Research*, 14(1), 3–23.
- Ordanini, A., & Rubera, G. (2010). How does the application of an IT service innovation affect firm performance? A theoretical framework and empirical analysis on e-commerce. *Information & Management*, 47(1), 60–67.
- Persson, O., Danell, R., & Schneider, J. W. (2009). How to use Bibexcel for various types of bibliometric analysis. In F. Åström, R. Danell, B. Larsen, & J. Schneider (Eds.), *In Celebrating scholarly communication studies: A Festschrift for Olle Persson at his 60th Birthday* (pp. 9–24). Leuven, Belgium: International Society for Scientometrics and Informetrics.
- Prajogo, D. I. (2006). A process-based classification of knowledge maps and application examples. *Knowledge and Process Management*, 13(3), 218–225.
- Schneider, J. W., & Borlund, P. (2004). Introduction to bibliometrics for construction and maintenance of thesauri: Methodical considerations. *Journal of Documentation*, 60(5), 524–549.
- Sears, G. J., & Baba, V. V. (2011). Toward a multistage, multilevel theory of innovation. *Canadian Journal of Administrative Sciences*, 28(4), 357–372.
- Sundbo, J., & Gallouj, F. (1998). *Innovation in services. SI4S Synthesis paper*.
- Tang, T.-W. (2015). Competing through customer social capital: The proactive personality of bed and breakfast operators. *Asia Pacific Journal of Tourism Research*, 20(2), 133–151.
- Yokomizo, C. A. (2014). *The relations between innovation and internationalization, and between innovation and business performance: Evidence from companies operating in Brazil (Tese - Doutorado em Administração)*. Faculdade de Economia, Administração e Contabilidade – Universidade de São Paulo.