

# New trends in research designs and literature concerning innovation issues. A methodological approach

*Nuevas tendencias en diseños de investigación & literatura sobre temas de innovación. Un enfoque metodológico*

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## Abstract

This study provides a methodological tool for preparing a bibliographic portfolio in the field of business innovation. It does not constitute a literature review nor a report on the state of the art. In its development, innovation topics were investigated in 85 (eighty-five) academic papers published in 11 (eleven) open access journals classified in SCImago Journal Rank (SJR). The results show the prevalence of studies of an eminently quantitative nature research (40% of the total observed), although it is observed that studies of a qualitative and mixed nature (60%) have the greatest weight as a whole (34% and 26% respectively) which demonstrates the importance of the qualitative paradigmatic approach in recent published studies related to innovation. Likewise, the type of process innovation is the most common in these studies (21%) out of 15 defined types. In this sense, this work serves as an epistemic reference for undertaking new studies on innovation, especially designed for novice researchers, but equally useful for experienced researchers who want to delve deeper into the subject of innovation.

**Keywords:** Bibliographic portfolio; Innovation; Business Management.

## Resumen

El presente estudio brinda una herramienta metodológica para preparar un portafolio bibliográfico en el ámbito de la innovación empresarial, no constituye una revisión de la literatura ni un reporte del estado del arte pertinentes. En su realización se indagó sobre los temas de innovación en 85 (ochenta y cinco) trabajos académicos publicados en 11 (once) revistas de libre acceso clasificadas en SCImago Journal Rank (SJR). Los resultados muestran la prevalencia de los estudios de naturaleza eminentemente cuantitativa (40% del total observado), aunque se observa que los estudios de naturaleza cualitativa y mixta (60%) son los que tienen un mayor peso en su conjunto (34% y 26% respectivamente), lo que demuestra la importancia del enfoque paradigmático cualitativo en los estudios recientes estudios publicados relativos a la innovación. Asimismo, el tipo de innovación de procesos es el más común en estos estudios (21%) dentro de 15 tipos definidos. En este sentido, esta obra sirve de referencia epistémica para emprender nuevos estudios sobre innovación, especialmente pensada para investigadores noveles, pero igualmente útil para aquellos investigadores experimentados que quieran profundizar en el tema de la innovación.

**Palabras claves:** Portafolio bibliográfico; Innovación; Administración de empresas.

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## INTRODUCCIÓN

This paper focuses on providing a methodological tool to prepare a bibliographic portfolio of articles for Junior researchers or In-Training researchers, especially in the field of entrepreneurship or Business Innovation. However, this is not a literature review or a state-of-the-art report concerning the object of study. For this purpose, Elsevier's Scopus (hereafter Scopus) Database was used, the foremost abstract and citation databank of peer-reviewed literature, considering bibliometric indicators of papers published in journals ranked in SCImago Journal & Country Rank (SJR indicator), specifically over a four-year period i.e., from 2015 to 2018.

Regarding the creation of a bibliographic portfolio of articles, the recent development of well-known *Methodi Ordinatio* is worth reporting, due to its good results as a methodological proposal for selecting and classifying relevant scientific articles covering impact factor, number of citations and year of publication (Negri et al., 2015). Thus, in order to carry out a future study on the "innovation" variable, including a broad analysis of the state of the art, the use of this method is suggested. *Debe cortar cada oración, hay aproximadamente 4 ideas mezcladas en 1, demasiado densas las oraciones. Deben ser más simples. (Véase la nota del autor principal (Anónimo))*

Observing business organizations, they are not linear. They are not juxtapositions of areas, sections, departments, subsidiaries and/or other aggregates. Rather, organization's parts are a whole structure with strong interactions among them, i.e., they establish a system in which positive or negative synergies can occur. In fact, they occur visibly or invisibly. This indicates that a structural-systemic methodology for the study of business organizations is required, framed in what Martínez has called "Systemic Ontology" (2013, p. 33).

The breadth of topics that are relevant to organizations under constant turbulence, both in theory and praxis, uncovers the need to form multi and interdisciplinary research groups with a systemic view and qualitative methods. This is necessary to generate transdiscipli-

nary knowledge to propose solutions to their problems or continuous improvements.

Therefore, with the adoption of a systemic paradigm for the expansion of science and technology, research designs in social sciences today should be primarily based on qualitative methodologies, which are grounded on hermeneutical, phenomenological, and ethnographic approaches.

Based on the previous considerations, this study focuses on research designs included in 85 (eighty-five) scholarly articles related to Innovation published in 11 (eleven) journals indexed in Scopus. The particular topic(s) were reviewed, which allowed revealing trends or new perspectives in this study.

However, within the qualitative studies preliminary checked, the lack of a systemic approach in the methodological designs of most of the articles persists, which could be a generalized trend in this type of studies given the increasing complexity of the reality and environment of business organizations.

Based on the above-mentioned issues, the following research question arised: What topics of innovation have been investigated over the past 4 years? Therefore, the purpose of the present study was to describe trends in research designs concerning innovation in scientific articles published in journals indexed in Scopus. For this, research designs were characterized according to their paradigmatic orientation, whether quantitative, qualitative or mixed, and the relevant study topics or keywords were reported.

In order to reach the proposed, this study was divided into four stages. The first one focuses on the objectives pursued and the approach to the research topic. In the second stage, some theoretic-conceptual references on business innovations are described. The third stage includes online data collection from Scopus. It also illustrates the characterization and interpretation of the data.

The last stage focuses on the result of reflections arising from the outcome of the process indicated above. It highlights the need to establish academic



research programs based on systemic paradigm with qualitative approaches.

The relevance of this study is explained by the current challenge faced by research in the field of Social Sciences (so-called soft sciences), in the sense of moving away from determinism, verification and predictability of the scientific method, typical of the so-called "hard sciences" (Basic Sciences) but of little or no applicability in the social field. In this sense, research in the field of organizations should be inscribed in a systemic vision of reality, given the inherent complexity of the social and societies.

### Contextualization of the Study

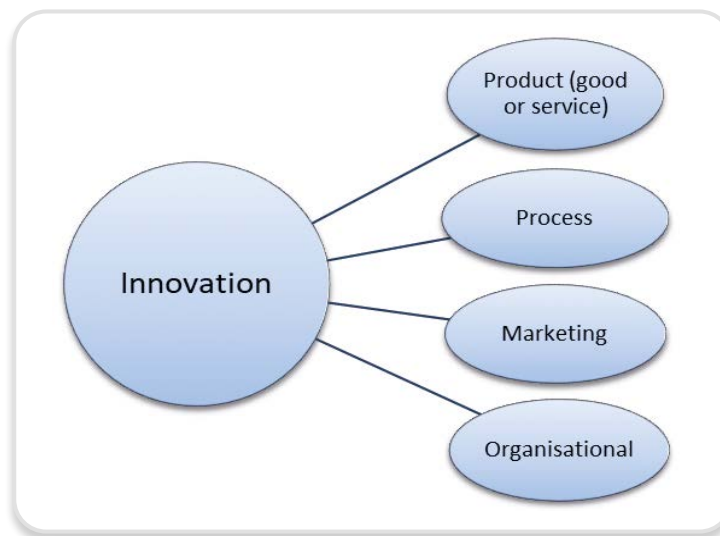
According to the Organization for Economic Cooperation and Development (OECD), innovation is a very broad phenomenon with many different features.

While technological change is a key driver of change, innovation is much comprehensive. In fact, company data reveals innovation strategies combining different modes of innovation, as they are new organizational or marketing methods alongside process or product innovations. Both are usually complementary.

Effectively, new organizational methods could enable the introduction of a new production process, or a new process might even require them. This holds true for both large companies and Small and Medium-sized Enterprises (SMEs) in manufacturing, marketing, and services.

In this sense, OECD (in the 4th. edition of the Oslo Manual, 2014, p.74-76) identifies four basic types of innovation related to: products (good or service), process, organizational, and marketing innovation. (See Figure 1 below).

**Figure 1.** Innovation-taxonomy-in-the-Oslo-Manual.



Source: Own elaboration, adapted from the Oslo Manual 2018. Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition.

### Taxonomy of Innovation according to the Oslo Manual 2018

**Product innovation:** The introduction of a good or service that is original or considerably better with respect to its features or projected uses. This comprises

substantial enhancements in technical stipulations, constituents and materials, integrated software, user kindness, or other purposeful characteristics.

**Process innovation:** The application of a unique or considerably upgraded production or



distribution method. This includes important changes in techniques, equipment and/or software.

**Marketing innovation:** The enactment of a new marketing scheme involving significant changes in product design or packaging, product location, product advertising, or pricing.

**Organizational innovation:** The implementation of a new administrative method or scheme in the firm's business practices, workroom organization, or external relationships.

The available scientific literature concerning innovation capacity is extensive. The available scientific literature on innovation capacity is extensive. For organizations to be competitive, remain in the market and grow in a sustainable manner, they must get and develop innovative capacity based on the application of quality research results.

This study aims to provide a review of available scholarly articles concerning Innovation in the last 4 years (2015 to 2018) published in journals indexed in Scopus.

## Justification

This research is relevant for its contribution to knowledge of research designs and issues concerning innovation in response to the needs and growing uncertainties of organizations, which must be addressed in research with a systemic approach.

By categorizing structures and interpreting data, this study represents a contribution to the analysis of epistemic positions on a vital issue for organizations such as innovation, enabling the construction of future contextual and comprehensive proposals.

In this regard, this work serves as an epistemic reference from the theoretical and practical perspectives to undertake new studies on innovation and related topics, particularly designed for novice researchers, but equally useful for experienced researchers who want to delve deeper into the subject of innovation.

## METHODOLOGY

### Approach strategy

This study is framed in the criticality of post-positivism, because in the process of inquiry, it uses qualitative methods and techniques provided by the hermeneutical approach. This method studies the integrated whole made up of units of analysis, which emerge from context data. As expressed by Martínez (2009) "qualitative research tries to recognize the deep nature of reality, its active conformation. Hence, the qualitative (which is all integrated) is not opposite to the quantitative (which is only one characteristic), but implies and assimilates it, especially where it is significant." (Free translation by the authors of this study).

Likewise, the use of hermeneutics in research allows the interpretation of the language used in the arguments by the authors of consulted works, because it makes possible to explain, translate, and also understand the words that express the sense of something. This research is regarded as descriptive; it tries to describe the scholarly articles of the best positioned open-access journals in Scopus concerning innovation; in this sense, it is also documentary research of literature finding.

### The Instruments

The main instrument used in qualitative research is represented by the researcher, who is assisted by other instruments to gather the information needed to answer the research questions. The instruments used in research are consistent with the selected method and technique. Categorical arrays or tables, which allow to synthesize information obtained from the literature review, are very useful to this study.

### Tables

A categorial table was designed to address the review of selected scholarly articles as units of analysis. The use of a qualitative methodology means that information emerges during the progress of the



research work through the examination of the study units. In this sense, tables were constructed to display the following data concerning the revised papers published in each journal: journal name and country; year of publication; and number of citations (if any) in every paper in the period between 2015 and 2018 (four years).

Furthermore, to be consistent with the purpose of this study, the quantitative, qualitative or mixed characteristics were reported for each reviewed article and categorized as N, L, or M, respectively. The subject areas of knowledge (informed or not) or keywords were also reported.

To fill each table, the SCImago Journal & Country Rank (<http://www.scimagojr.com>) was first consulted. This is an entrance way to the journals and scientific indicators from the information enclosed in Scopus that allows to explore and identify the top-ranked journals according to the following parameters:

**Subject area:** Business, Management and Accounting; Subject category: Management of Technology and Innovation; Region: All regions; Type: Journals; Display only Open Access Journals. Scholarly articles from the top-ranked-open-access journals were searched in Scopus for each region using the following parameters:

**Search:** ISSN; and Innovation (Article title, Abstract, Keywords); Limit data range (inclusive), Published: 2015 to 2018; Document type: Article; Access type: Open Access.

After that, the search was limited by the following criteria:

**Sort on:** Cited by; Select: The first ten (cited or not). As can be seen, this was the pursued procedure to request the required data in this research.

## Referential theoretical context

According to Baregheh et al. (2009), there is a great diversity of definitions concerning innovation. Nevertheless, the classification of innovation by the OECD (see Figure 1) is widely accepted. In this way

Quandt et al. (2015), define innovativeness as the enabling organizational conditions for innovation: In spite of the criticism of the Oslo Manual as the mechanisms used to measure innovation (Freeman & Soete, 2009, p. 585; Speirs et al., 2000, p. 9-10; Beyhan et al., 2009, p. 6-8), the proposed indicators are recurrently used in the field of research:

- As inputs of Innovation process: investments in activities/assets that lead to innovation (Salum, 2012, p. 7-8; IBGE, 2010, p. 20-21.).
- As outputs of Innovation process: the number of innovative products (or services) launched in a given period of time (Oke et al., 2012, p. 284; Bornay-Barrachina et al., 2012, p. 230; Dabla-Norris et al., 2012, p. 430).
- While the term "innovation" is most often associated with results (Sawang & Unsworth, 2011, p. 989-999; Autant-Bernard et al., 2010, p. 202; Weeks & Thomason, 2011, p. 304; Saá-Pérez & Díaz-Díaz, 2010, p. 1654), the term "innovativeness" has been used in a context related to enablers of organizational conditions for innovation (Bornay-Barrachina et al., 2012, p. 223; Cepeda-Carrion et al., 2012, p. 110; Ferraresi et al., 2010, p. 5). Some settings corroborate this observation:
- Organizational capacity or propensity to introduce innovations (Dotzel et al., 2013, p. 259.).

Responsiveness and inclination of companies to adopt new ideas that lead to the development and launch of new products (Rubera & Kirca, 2012, p. 130). Company openness to breaking established procedures, which leads to generation, experimentation, and creativity. All this leads to the development of new products and technologies (Brockman et al., 2012, p. 434).

Company willingness to emphasize technological developments, new products, services, and/or processes (Dibrell et al., 2011, p. 469). Despite this, it is not uncommon in research that the terms are used



interchangeably, using measures to assess innovation or innovativeness. (Dotzel et al., 2013, p. 261-262; Rubera & Kirca, 2012, p. 137; Akgün et al., 2012, p. 451; Uz Kurt et al., 2012, p. 12; Brockman et al., 2012, p. 445). (Quand et al., p. 875). (Free translation by the authors of this study).

Given these points, we argue that the conception of innovation is widely applied in the field of business organizations, both in theory and in practice. In this sense, the difference between the terms "innovation" and "innovativeness" should be clear. Also, both terms are closely related to those such as creativity, flexibility, self-learning, and quickness mentioned by Mochón et al. (2014) and by Quandt et al. (2015) while involving risk taking and the incurrance of occasional errors; errors may occur with some frequency in flexible working environments. They allow or facilitate self-learning within an organization, thus enhancing its competitiveness.

Accordingly, the research activity should make the difference between the terms "innovation" and "innovativeness" explicit, referring categorically to each of them and their related terms as appropriate to each case or object of study.

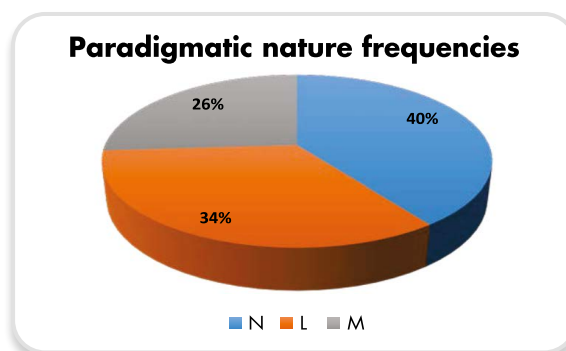
## ANALYSIS OF RESULTS

First, the data analysis and results of 85 (eighty-five) articles examined belonging to 11 (eleven) reviewed journals are illustrated in graph 1 and graph 2. Tables 1 and 2 contain the items of 2 (two) of those periodical journals: Table 1 referred to Journal of Technology Management and Innovation (country: Chile), Q3 (Q1 to Q4 refer to journal ranking quartiles within a sub-discipline using the SJR citation index) and Table 2 referred to Quality Innovation Prosperity journal (country: Slovakia), Q3.

The other 9 reviewed journals were: 2. Interfaces (country: United States); 3. Q2; Management and

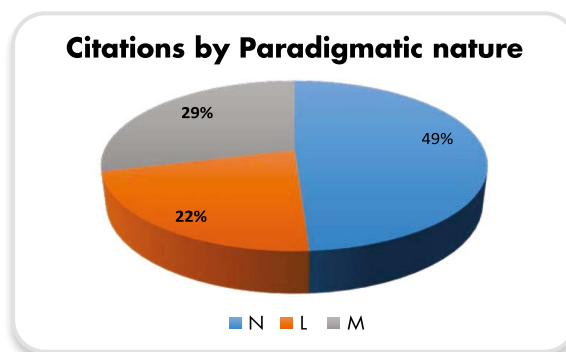
Production Engineering Review (country: Poland); 4. Q2; Asian Journal of Shipping and Logistics (country: Netherlands); 5. Q2; International Journal of Technology (country: Indonesia); Q3; 6. Knowledge and E-Learning (country: China), Q3; 7. Eastern European Journal of Enterprise Technologies (country: United Arab Emirates), Q3; 8. Bank and Bank Systems (country: Ukraine), Q3; and 9. Intangible Capital (country: Spain), Q3.

**Graph 1.** Data Analysis and aggregate results



Source: Own elaboration. **Note:** Definitions of abbreviations: N: quantitative nature; L: Qualitative nature; M: Mixed nature (both N as L).

**Graph 2.** Data Analysis and results.



Source: Own elaboration. **Note:** Definitions of abbreviations: N: quantitative nature; L: Qualitative nature; M: Mixed nature (both N as L).



**Table 1.** Conventions & Data analysis of scholar papers published in all the reviewed journals.

<b>Conventions &amp; Data analysis :</b>																																																								
<p><b>YP</b> : Year of publication.</p> <p><b>TC</b> : Total citations.</p> <p><b>PN</b> : Paradigmatic nature or character of the study and/or of its research design;  <b>N</b> : Quantitative nature;  <b>L</b> : Qualitative nature;  <b>M</b> : Mixed nature (both <b>N</b> as <b>L</b>).</p> <p><b>IT</b> : Innovation type: <b>1</b>. Product (or service); <b>2</b>. Process; <b>3</b>. Marketing; <b>4</b>. Organizational;  <b>5</b>: 1, 2; <b>6</b>: 1, 3; <b>7</b>: 1, 4; <b>8</b>: 2, 3; <b>9</b>: 2, 4; <b>10</b>: 1, 2, 3; <b>11</b>: 1, 2, 4; <b>12</b>: 2, 3, 4; <b>13</b>: 1, 3, 4;  <b>14</b>: 1, 2, 3, 4; <b>15</b>: Not microeconomic but macroeconomic type.</p> <p><b>A</b> : Absolute frequency;  <b>R</b> : Relative frequency (rounded).</p>																																																								
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Source: Source: Own elaboration. Data from Scopus (2019) and adapted to the methodological guidelines of this study.

## DISCUSSION OF RESULTS

As shown in Graph 1, within the total data-analysis pertaining to all papers examined, those of Paradigmatic nature, PN: N-type show a trend in proportion of 40%, while L and N types show 60% (34% and 26% respectively). In frequency of citations (Graph 2), N-Type items (49%) prevail. Likewise, there is a great variety of items corresponding to IT: 2-type (21%), 4-type (14%), 15-type (14%), 5-type (13%) and 15-type (14%), which total 76%.

Finally, absence of IT: 7-type and 13-type is highlighted.

For illustrative purpose of the organization and data analysis that led to the results in Table 1, the analysis of the articles in the Journal and Technology Management and Innovation is presented in Table 2 below. As in Table 2, the results of the analysis of the articles in the journal Quality Innovation Prosperity are presented in Table 3.

**Table 2.** Analysis of articles published in Journal of Technology Management and Innovation

Scholar papers published in Journal of Technology Management and Innovation; Country: Chile.	YP	Year of citation				TC	PN	IT	Subject areas and/or author(s) keywords
		2015	2016	2017	2018				
1 Martovoy, A., Mention, A. -, & Torkkeli, M. (2015). Inbound open innovation in financial services. <i>Journal of Technology Management and Innovation</i> , 10(1), 117-131. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000100009">http://dx.doi.org/10.4067/S0718-27242015000100009</a>	2015					0	M	11	Banking services; Benefits and costs; Financial innovation; Inbound open innovation; New service development.
2 Pinto, H., De Noronha, M. T., & Faustino, C. (2015). Knowledge and cooperation determinants of innovation networks: A mixed-methods approach to the case of Portugal. <i>Journal of Technology Management and Innovation</i> , 10(1), 83-102. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000100007">http://dx.doi.org/10.4067/S0718-27242015000100007</a>	2015	1		1		2	M	9	Content analysis; Innovation; Innovation networks; Innovation system; Logistic regression.
3 Dedehayir, O., & Seppänen, M. (2015). Birth and expansion of innovation ecosystems: A case study of copper production. <i>Journal of Technology Management and Innovation</i> , 10(2), 145-153. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000200010">http://dx.doi.org/10.4067/S0718-27242015000200010</a>	2015		1	2	1	4	L	2	Complex product system; Copper production; Innovation ecosystem; Life cycle.
4 De Almeida, M. F. L., De Moraes, C. A. C., & De Melo, M. A. C. (2015). Technology foresight on emerging technologies: Implications for a national innovation initiative in Brazil. <i>Journal of Technology Management and Innovation</i> , 10(2), 183-197. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000200013">http://dx.doi.org/10.4067/S0718-27242015000200013</a>	2015			1		1	L	2	Biotechnology; Information and communication technologies; Nanotechnology; Technology foresight.
5 Juk, Y. V., & Fuck, M. P. (2015). Innovations and support institutions: The 1st geographical indication in Brazil. <i>Journal of Technology Management and Innovation</i> , 10(2), 117-126. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000200008">http://dx.doi.org/10.4067/S0718-27242015000200008</a>	2015					0	L	12	Co-evolution; Geographical indication; Innovation; Support institutions; Vale dos vinhedos.
6 Michelino, F., Cammarano, A., Lamberti, E., & Caputo, M. (2015). Knowledge domains, technological strategies and open innovation. <i>Journal of Technology Management and Innovation</i> , 10(2), 50-78. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000200005">http://dx.doi.org/10.4067/S0718-27242015000200005</a>	2015	1	3	5	2	11	M	9	Decentralized R&D activities; Exploitation vs. exploration; Innovation strategies; Open innovation; Patent data analysis.
7 Farhana, M., & Bimenyimana, E. (2015). Design driven innovation as a differentiation strategy - in the context of automotive industry. <i>Journal of Technology Management and Innovation</i> , 10(2), 24-38. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000200003">http://dx.doi.org/10.4067/S0718-27242015000200003</a>	2015			2	1	3	L	14	Automotive industry; Competitive advantage; Design; Dynamic capability; Innovation.
8 Gómez-Valenzuela, V. (2015). Analysis of preference of incentives to innovation of Dominican manufacturing and service firms. <i>Journal of Technology Management and Innovation</i> , 10(2), 93-116. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000200007">http://dx.doi.org/10.4067/S0718-27242015000200007</a>	2015				1	1	N	15	Conjoint analysis; Dominican republic; Incentives; Innovation.
9 Vega-Jurado, J. M., Juliao-Esparragoza, D., Paternina-Arboleda, C. D., & Velez, M. C. (2015). Integrating technology, management and marketing innovation through open innovation models. <i>Journal of Technology Management and Innovation</i> , 10(4), 85-90. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000400009">http://dx.doi.org/10.4067/S0718-27242015000400009</a>	2015				2	2	L	14	Innovation in marketing; Open innovation; Technology innovation; University-industry-government relationship.
10 Butryumova, N., Karpycheva, S., Grisheva, K., & Kasyanova, E. (2015). Obstacles to small innovative companies' development: Case study of Nizhny Novgorod Region. <i>Journal of Technology Management and Innovation</i> , 10(4), 74-84. Doi: <a href="http://dx.doi.org/10.4067/S0718-27242015000400008">http://dx.doi.org/10.4067/S0718-27242015000400008</a>	2015			1		1	L	14	Case study; Innovation infrastructure; Nizhny Novgorod region; Obstacles; Russia; Small innovative companies.
<b>Total citations</b>		<b>2</b>	<b>4</b>	<b>12</b>	<b>7</b>	<b>25</b>			

Source: Data from Scopus (2019) adapted to methodological guidelines of this study. TC: Total citations; PN: Paradigmatic nature or character of the study and/or of its research design; IT: Innovation type:

1. Product (or service); 2. Process; 3. Marketing; 4. Organizational; 5. 1, 2; 6. 1, 3; 7. 1, 4; 8. 2, 3; 9. 2, 4; 10. 1, 2, 3; 11. 1, 2, 4; 12. 2, 3, 4; 13. 1, 3, 4; 14. 1, 2, 3, 4; 15: Not microeconomic but macroeconomic type; N: Quantitative nature; L: Qualitative nature; M: Mixed nature (both N as L).





**Table 3.** Analysis of articles published on Quality Innovation Prosperity journal.

Scholar papers published in Quality Innovation Prosperity journal; Country: Slovakia.		YP	Year of citation				TC	PN	IT	Subject areas and/or author(s) keywords
			2015	2016	2017	2018				
1	Dorčák, P., Štrach, P., & Pollák, F. (2015). Analytical view of the perception of selected innovative approaches in marketing communications. <i>Quality Innovation Prosperity</i> , 19(1), 74-84. Doi: <a href="http://dx.doi.org/10.12776/QIP.V19I1.441">http://dx.doi.org/10.12776/QIP.V19I1.441</a>	2015		1	2	1	4	L	3	Innovations; Internet; Marketing communication; Social network.
2	Majerník, M., Bosák, M., Štofová, L., & Szaryszová, P. (2015). Innovative model of integrated energy management in companies. <i>Quality Innovation Prosperity</i> , 19(1), 22-32. Doi: <a href="http://dx.doi.org/10.12776/QIP.V19I1.384">http://dx.doi.org/10.12776/QIP.V19I1.384</a>	2015		4			4	N	4	Certification system; Criteria of energy intensity; Energy management system; Energy quality; Innovative model.
3	Hudec, O., & Prochádzková, M. (2015). Visegrad countries and regions: Innovation performance and efficiency. <i>Quality Innovation Prosperity</i> , 19(2), 55-72. Doi: <a href="http://dx.doi.org/10.12776/QIP.V19I2.593">http://dx.doi.org/10.12776/QIP.V19I2.593</a>	2015		1	2	1	4	N	15	Efficiency; Innovation performance; Innovation system; Knowledge production function.
4	Džupka, P., Klasová, S., & Kováč, V. (2016). Analysis of innovative start-up companies – case of Košice region. <i>Quality Innovation Prosperity</i> , 20(1), 40-56. Doi: <a href="http://dx.doi.org/10.12776/QIP.V20I1.641">http://dx.doi.org/10.12776/QIP.V20I1.641</a>	2016			3	2	5	N	15	Innovation; Prosperity; Start-up; Support policy.
5	Spáček, M., & Vacík, E. (2016). Design of an innovative business model for mobile virtual network operators. <i>Quality Innovation Prosperity</i> , 20(2), 69-88. Doi: <a href="http://dx.doi.org/10.12776/QIP.V20I2.772">http://dx.doi.org/10.12776/QIP.V20I2.772</a>	2016					0	L	4	Business model innovation; Structural modelling; Sustainable innovation; Telecommunications; Virtual operator.
6	Šoltés, M., & Štofa, T. (2016). Crowdfunding – the case of Slovakia and the Czech Republic. <i>Quality Innovation Prosperity</i> , 20(2), 89-104. Doi: <a href="http://dx.doi.org/10.12776/QIP.V20I2.807">http://dx.doi.org/10.12776/QIP.V20I2.807</a>	2016					0	N	15	Crowdfunding; Entrepreneurship; Innovation; Reward-based; Start-up.
7	Camagni, R. (2017). The city of business: The functional, the relational-cognitive and the hierarchical distributive approach. <i>Quality Innovation Prosperity</i> , 21(1), 31-48. Doi: <a href="http://dx.doi.org/10.12776/QIP.V21I1.818">http://dx.doi.org/10.12776/QIP.V21I1.818</a>	2017					0	L	15	Agglomeration economies; Income distribution in space; Interpretation of cities; Large vs. medium cities; Urban competitiveness.
8	Fadhil, R., Syamsul Maarif, M., Bantacut, T., & Hermawan, A. (2017). Assessment of innovation potential of gayo coffee agroindustry. <i>Quality Innovation Prosperity</i> , 21(3), 114-126. Doi: <a href="http://dx.doi.org/10.12776/QIP.V21I3.888">http://dx.doi.org/10.12776/QIP.V21I3.888</a>	2017				2	2	N	15	Agroindustry; Assessment; Gayo coffee; Innovation potential.
9	Bedoya-Villa, M. A., & Escobar-Sierra, M. (2018). Impact of employees' attitudes and leader's role on the innovation management linked to social responsibility. <i>Quality Innovation Prosperity</i> , 22(2), 65-81. Doi: <a href="http://dx.doi.org/10.12776/qip.v22i2.1121">http://dx.doi.org/10.12776/qip.v22i2.1121</a>	2018					0	N	4	Decision trees; Employees' attitudes; Innovation; Leader's role; Multiple linear regression; Social responsibility.
10	Pařová, D., Czaja, A., & Vejačka, M. (2018). Innovative approach to education improvement via enterprise-education collaboration. <i>Quality Innovation Prosperity</i> , 22(3), 68-82. Doi: <a href="http://dx.doi.org/10.12776/QIP.V22I3.1171">http://dx.doi.org/10.12776/QIP.V22I3.1171</a>	2018					0	L	2	Collaborative learning; Education innovation; HR development; Labour market.
<b>Total citations</b>			<b>0</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>19</b>			

Source: Source: Data from Scopus (2019) and adapted to the methodological guidelines of this study. TC: Total citations; PN: Paradigmatic nature or character of the study and/or of its research design; IT: Innovation type:

1. Product (or service); 2. Process; 3. Marketing; 4. Organizational; 5: 1, 2; 6: 1, 3; 7: 1, 4; 8: 2, 3; 9: 2, 4; 10: 1, 2, 3; 11: 1, 2, 4; 12: 2, 3, 4; 13: 1, 3, 4; 14: 1, 2, 3, 4; 15: Not microeconomic but macroeconomic type; N: Quantitative nature; L: Qualitative nature; M: Mixed nature (both N as L).



## DISCUSSION

The route of this work has made it possible to reveal that the quantitative paradigm of research in the field of innovation is not prevalent, as it has been previously appreciated through non-systematic reviews by the authors of this study. The global results prove this assertion, as it can be seen in Graph 1, in which articles framed in the quantitative paradigm have a frequency of 40% compared to those of the qualitative and mixed paradigms (60%, 34% and 26%, respectively).

On the contrary, it can be seen that items framed in the quantitative paradigm stand out with a frequency of 49% in citations, and items of process innovation, alongside other 14 (fourteen) innovation types (IT) are the most common (21%) Table 1.

It is necessary to mention that the implicit limitation on data collection deriving from the study's methodological framework is that there are journals that do not offer open access. This is a situation that obviously forced leaving numerous scholarly articles belonging to those publications out of the analysis.

Consequently, if this circumstance could have been avoided, the observed trends might have changed, perhaps even markedly. Despite this limitation, the authors consider it is a relatively irrelevant aspect when framing and presenting studies. The authors' desire was to provide a practical and exemplary methodological guide for education and training of junior researchers in academic undergraduate programs, especially for those interested in qualitative research in the field of social sciences, focusing primarily on business administration and related disciplines and careers.

## CONCLUSIONS

Considering the general purpose of this study, that of proposing a structure for the preparation of a bibliographic portfolio of articles from publication focused on the field of innovation, it is concluded that an appropriate methodology has been obtained that allows structuring the required portfolio of articles

from publication in a way that clearly reflects the paradigmatic trends used in recent research, namely quantitative, qualitative and mixed approaches.

In this sense, this work serves as an epistemic reference for undertaking new studies on innovation, especially designed for novice researchers, but equally useful for experienced researchers who want to delve deeper into the subject of innovation.

As for the results, it is relevant to indicate that, although studies of an eminently quantitative nature prevail (40% of the total observed), it is worth noting that studies of a qualitative nature and those of a mixed nature (60%) have the greater weight as a whole (34% and 26% respectively), which shows the importance of the qualitative paradigmatic approach regarding recent studies carried out in the field of innovation. In this way, through the development of future relevant research, using the proposed methodology, comparative results of interest may be derived to monitor research trends in the scope of the object of this study. Likewise, future studies aligned with the proposal of this study may be of interest to small and medium-sized enterprises (SMEs).

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