

Evidence-Based Management: The Use of Meta-analysis in Business Studies

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Abstract: *This study seeks to provide a big picture of meta-analytic activity in Business Studies. The analysis of the publications in Web of Knowledge (WOK) -Business Economics area (BE)- and of the articles published in the Top-10 journals in Business Management area, according to Journal Citation Report de Thomson Reuters (JCR, 2015), show an important and growing up meta-analytic activity in this domain, as well as an unequal interest in this kind of research among the Top-10 journals. It is also observed a lack of guides or standards about meta-analysis in this field of knowledge. The practical implication of this study is to identify the terminology used to facilitate future bibliographic searches, as well as to show new approaches and research gaps in this field.*

Keywords— Meta-analysis; Business Studies; Evidence-Based Management

1. META-ANALYTIC RESEARCH AND ITS APPLICATION

In scientist research, it is needed to synthesize the results of the different works performed about certain issues to advance in their study. Until the last quarter of the 20th Century, the synthesis activity was based on the researcher's experience and his/her intuition. That kind of synthesis had great subjectivity, given that there was not a systematic procedure for guiding the review (Fink, 2009; Rosenthal, 1991; Rosnow and Rosenthal, 1989). Nowadays, that subjectivity can be reduced using meta-analytic techniques.

Meta-analysis is a statistical tool used for supporting systematic reviews. It is considered the first critical step for using scientific evidence (Rousseau, 2006; Rousseau, Manning and Denyer, 2008, cited in Aguinis, et.al, 2011). It is a secondary research method because uses data of other previous studies. It serves for analyzing and synthesizing quantitative information, whenever possible, from different studies which deal with the same issue, to: (a) increase the review's rigor; (b) increase the validity of individual conclusions, and (c) identify possible research gaps.

Systematic review and meta-analysis are terms that sometimes have been indiscriminately used, but they are not the same thing. Meta-analysis is used in systematic review to summarize quantitative results from primary studies if these studies provide the adequate data for calculations. Through the meta-analysis, it is possible to calculate the effect size in an intervention, although there are other important objectives like analysis of heterogeneity (Hedges and Olkin, 1985; Viechtbauer, 2010). Meta-analysis is considered a data analysis technique, although, due to its characteristics, should be considered as a research design or, even, as a

measurement technique (Aguinis, Gottfredson and Wright, 2011).

Glass (1976) was the first author who used the term meta-analysis. He named it "the analysis of analysis". The domains that utilized this technique initially were Psychology and Organizational studies, although its use was notably increased in Medicine and Pharmacology in the last decade of the 20th Century. Given the intensive use in these fields, Medline accepted the term meta-analysis as medical subject heading (MeSH) in 1989 and as publication type (PT) in 1993. Within the Health field, meta-analysis has been one of the supports of the philosophical current called Evidence-Based Medicine (EBM).

1.1. Weaknesses of meta-analytic studies

Meta-analysis is a good tool for analyzing and synthesizing bibliography, but it is not exempt of risks. If it is applied badly it can generate undesirable or misleading results. In this sense, a meta-analytic study is not a synonym of reliable or quality study (Aguinis, Gottfredson and Wright, 2011). In fact, some meta-analysis with poorly defined criteria have been detected, even without indexes required for the correct interpretation of their results, so they cannot be considered reliable at all (Cohen, 1990; 1994).

Given these weaknesses, guides and standards have been proposed to elaborate and interpret meta-analytic results in specific fields of knowledge (Moher et al., 1999). In Psychology, the American Psychology Association (APA) incorporated guidelines in the fifth edition of her style manual and publication standards (APA, 2001). Equally, others independent authors have published guidelines and standards for meta-analysis elaboration and publication, and even to interpret their results (Durlak and Lipsey, 1991;

In'nami and Koizumi, 2010; Peters, et al., 2006; Stanley et al., 2013; Therrien, Zaman and Banda, 2011).

Despite these efforts, to date, there is not any common criteria for making meta-analytic studies applicable to any research field. Similarly, there is not a specific guide for Business Studies. This should be resolved, in the light of the results on the dubious reliability of the meta-analyses carried out in this area. Some authors have highlighted the lack of transparency in meta-analytic reports what, besides of affecting the replica capacity, could be considered a lack of scientific ethic (Aytug, Rothstein, Zhou and Kern, 2012).

1.2. Need for meta-analysis in Business Studies

Regarding the decision-making based in scientific evidence, perhaps a similar stream as adopted in Health can be necessary for the Business Studies field (Pfeffer and Sutton, 2006; Rousseau and McCarthy, 2007), that is: Evidence-Based Management (EBMa).

When one searches information for its application in organizations, for example in order to apply new methods or interventions for improving some aspect, finds great amount of literature, even contradictory, what does not facilitate the decision-making process, rather complicates it (Huedo-Medina and Johnson, 2010).

Meta-analysis is one of the ways that supports EBMa practice, allowing the scientific decision-making in Management, but it is not the only one. According to Rousseau, "EBMa means translating principles based on best evidence into organizational practices. Through EBMa, managers develop into experts who make organizational decisions informed by social science and organizational research— part of the zeitgeist moving professional decisions away from personal preference and unsystematic experience toward those based on the best available scientific evidence" (2006: 256).

On the other hand, it is known that managers and consultants frequently prefer to adapt what other firm have done instead to apply what has been tested by science (Bansal et al., 2012; McGrath, 2007). In fact, when one manager needs information, the first source that he/she consults is other manager (Brown and Duguid, 2002; Wenger, McDermott, and Snyder, 2002). In this sense, many organizations do not implement practices that research has shown to be positively associated with improvements in productivity and business performance (Hambrick, 1994; Johns, 1993; Pfeffer and Sutton, 2000).

This behavior could be consequence of the lack of professionalization in the managerial activity and, even, of the poor training in scientific research interpretation that has been observed in many formal programs of management worldwide (Burke and Rau, 2010; Charlier, Brown, and Rynes, 2011; Rousseau and McCarthy, 2007). As a result, few managers read academic publications (Rynes, Colbert and Brown, 2002) which raises the following question: Who

does the Academy in the field of Business Studies research for, and who uses the obtained results?

2. METHOD OF STUDY

Given the interest that can have meta-analysis in Business studies, this work analyzes the evolution of the meta-analysis in the Business area, through the following tasks:

1. Analysis of the evolution of the studies in the Business Area, which have applied meta-analysis, as well as those oriented to explain and improve the tool, indexed in Web of Knowledge (WOK) and published in the Top-10 journals, according to the Journal Citation Reports (JCR) of Thomsom Reuters.
2. Review of the content, in order to determine whether they are indexed correctly or, on the contrary, they address topics that do not belong to the Business studies.
3. Identification of eventual guides or standards for meta-analysis in Business studies.

2.1. Sample

1. Articles about meta-analysis indexed in WOK, Business economics area (BE), until 2015.
2. Articles about Organizational and Management Studies that use the term meta-analysis in the TOP-10 of JCR (2015) publications.

2.2. Procedure

Search criteria and the total of documents obtained are presented in **Table 1**.

The use of Booleans was rejected because using meta* or analysis* WOK chooses studies not suitable for this research. Instead of using Booleans, a series of representative terms for the searching were established. This study was made in two steps:

- 1) Search in WOK (BE), classification and analysis of the content of studies that use the term meta-analysis in their title.
- 2) Search in the TOP-10 of JCR, analysis of the content and classification.

The analysis of the content has followed this sequence:

- a. Review of the main area of interest of the journal (Organizational Psychology, Marketing, Medicine, etc.)
- b. Abstract review. When the study field was clear after the abstract review, the article was classified in some categories of the **Table 2**.
- c. Otherwise, a review of the discussion and conclusion was made.
- d. In case of doubts about the area, a content review of the entire article was made.

The analysis of articles published for the TOP-10 journals, with highest impact factor in BE area, was made by direct search in every journal, using the term meta-analysis in the title and in the topic.

3. RESULTS

3.1. Use of meta-analytic terminology and initial classification of indexed works

The search in WOK (Table 1) was started with the term meta-analysis. Applying the criteria *topic*, 175,808 documents were obtained. With the criteria *title* the documents were cut in half. The search with alternative terms, including possible Spanish denominations, indicated that the most second term used was metaanalysis.

Regarding the studies indexed in WOK for the criteria *BE*, the results found are:

(1) Meta-analysis was the most used term. For articles that used the criteria *topic* the term was in 63.50% of the works; (2) Applying the criteria *title*, meta-analysis was the most used term too (96.50%); (3) Alternative terms as metaanálisis, metanálisis, metaanalyses, meta-análisis and metaanalysis, represented 36.50% of the documents that addressed this topic; (4) Studies related with meta-analysis represented 0.81% of the research activity in BE, and more than a half of them were scientific articles.

Table 1: Search in WOK

TERMS	FILTER	DOCUMENTS
Meta-analysis (or) metanálisis (or) metaanálisis (or) metaanalysis (or) Metaanalyses (or) metaanalytic (or) Meta-análisis	Topic	276882
	Title	96627
	Title+ BE	1474
	Title+ BE +article	908
Meta-analysis	Topic	175808
	Topic + BE	3903
	Topic +BE +article	3069
	Title	93058
	Title +BE	1372

3.2. Contents review and determination of the meta-analytic activity in Business Studies

In the search with the term meta-analysis plus the criteria *title – BE - article*, 828 articles were obtained. To analyze the researching effort using the meta-analysis in Business Studies and determine possible topics belonged to other fields, without direct relation with Business arena, the content

review of these articles was made. Table 2 shows the categories used for classifying these works.

Table 2: Classification of published topics

Term of search: Meta-analysis Filter: title+ BE + article		
AREA	ARTICLES	%
Organization-Management	262	31,64
Medical industry - pharmacology	258	31,16
Macro-economy & development	142	17,15
Publicity & Marketing	75	9,06
Applied psychology	54	6,52
Various (legislation, security, etc.)	37	4,47
TOTAL	828	100

The analysis of the content of these 828 articles, whose title contained the term meta-analysis, shows the following data:

- 1) Only part of the total was a true meta-analytic study about primary studies. Approximately 10% was focused in explaining the tool, like how to use it, new approaches in meta-analytic studies, weaknesses, mistakes, and so forth.
- 2) About 9% was related with marketing and publicity, and due to these topics are directly related with Business area, these studies have been included in this research.
- 3) More than 31% was referred to medical or pharmacological treatments, but did not treat Business topics, so those studies have been excluded of this work.
- 4) 6.5% belonged to the Psychology field, but not related with Organizational psychology, so those studies have been excluded, as well.
- 5) About 17% treated macroeconomic and territory development topics, without direct relation with Business domain, so these studies have been excluded too.
- 6) There was a part (4.5%) without a clear classification and no direct relation with Business studies, so it has not been included, either.

As Figure 1 shows, from 828 articles published in the category BE of WOK, which supposedly treated about meta-analysis, only 41% belonged to Business studies (Management and Marketing accordingly the studies classification made in this research). The rest (59%) did not belong to this category. Therefore, after reviewing the content

of every article, the true percentage of publications about meta-analysis in WOK in Business studies is 1.2%.

3.3. Evolution of meta-analysis in Business Studies

This research has analyzed the works on meta-analysis indexed in WOK between 1981 and 2015. **Table 3** shows the results, per area of study and year, indexed in WOK during the named period.

In Business Studies (WOK) the first article about meta-analysis, published in 1981, belonged to the Applied Psychology field, but not to Organizational Psychology. **Figure 2** shows the publication evolution of meta-analytic articles in the period from 1981 to 2015.

During the first 5 years of this cycle, Management and Marketing areas published the greatest number of meta-analytic studies. Between 1990 and 1995, no interest is observed in this tool applied to those areas, while there was significant growth of use of meta-analytic research in Pharmacology and Medical areas. Since 1995 to date, the meta-analytic publications have been growing.

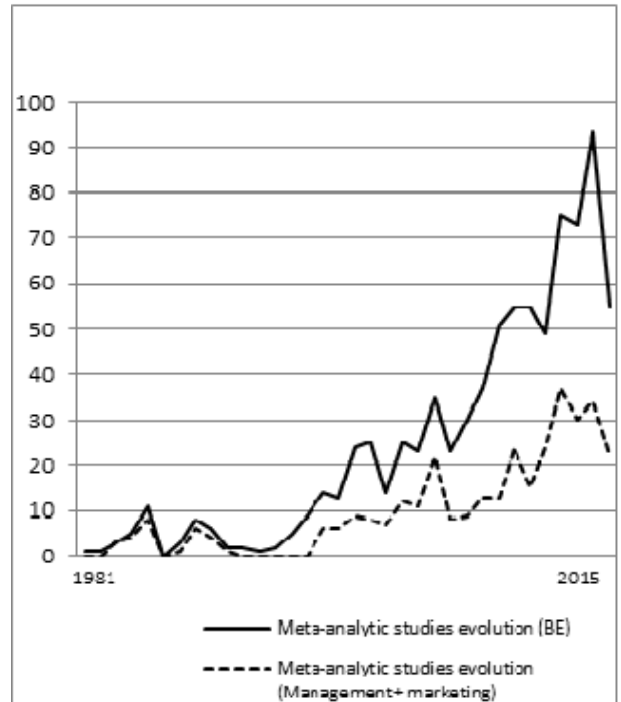


Fig. 2. Comparative of meta-analytic studies evolution between BE (WOK) and Management + Marketing areas

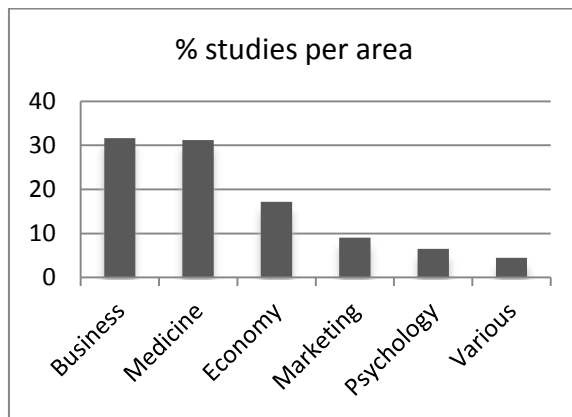


Fig. 1. Meta-analytic activity in BE of WOK per areas

Meta-analytic studies in the Business area, seems to have a quite similar evolution to the rest of BE domain, with a clear growing trend since the late 1990s. The presence of meta-analysis was increased notably in the first decade of 21st century, especially since 2005, with a significant growth in the Pharmacological and Medical studies. Parallel growth can be observed in Business Studies.

Table 3: Evolution of articles about meta-analysis in BE category (WOK)

	Managem ent	Marketin g	Medicine & pharmacolog y	Applied psycholog y	Economy & territorial developme nt	Various	TOTAL	Include d
1981	0	0	0	1	0	0	1	0
1982	0	0	0	1	0	0	1	0
1983	1	2	0	0	0	0	3	3
1984	2	2	0	1	0	0	5	4
1985	8	0	2	1	0	0	11	8
1986	0	0	0	0	0	0	0	0
1987	1	0	2	0	0	0	3	1
1988	4	2	0	1	1	0	8	6
1989	4	0	0	2	0	0	6	4
1990	0	1	1	0	0	0	2	1
1991	0	0	2	0	0	0	2	0
1992	0	0	1	0	0	0	1	0
1993	0	0	2	0	0	0	2	0
1994	0	0	5	0	0	0	5	0
1995	0	0	7	1	1	0	9	0
1996	2	4	4	1	3	0	14	6
1997	3	3	0	1	6	0	13	6
1998	7	2	8	1	4	2	24	9
1999	8	0	12	3	0	2	25	8
2000	7	0	4	2	1	0	14	7
2001	9	3	5	3	4	1	25	12
2002	9	2	4	2	4	2	23	11
2003	20	2	6	2	3	2	35	22
2004	6	2	9	3	3	0	23	8
2005	7	2	10	1	9	1	30	9
2006	8	5	13	2	8	1	37	13
2007	12	1	15	7	13	3	51	13
2008	17	7	20	4	4	3	55	24
2009	13	2	18	1	16	5	55	15
2010	17	7	13	1	9	2	49	24
2011	28	9	20	6	9	3	75	37
2012	25	5	22	3	12	6	73	30
2013	32	2	35	2	20	2	93	34
2014	12	10	18	1	12	2	55	22
TOT AL	262	75	258	54	142	37	828	337
%	31,64	9,06	31,16	6,52	17,15	4,47	100,00	40,7

Regarding the content published in the TOP-10 journals (Thomson Reuters- JCR index), due to the differences among journals in the number of yearly publications and in time of presence in the market, the comparative was made comparing the percentage of meta-analysis published in every journal throughout its existence. **Table 4** shows the results.

In data bases of every journal, we made a search using the word meta-analysis with the following criteria: term in the *topic* and term in the *title*. The two journals that have more references about meta-analysis in the title of the articles are: (1) Journal of Management, in which approximately 5% of the topics published has relation with meta-analysis and 2.3% contains the term meta-analysis in the title, and (2) Journal of Applied Psychology with more than 4% of studies related with meta-analysis, and 2.2% whose title contains the term. At the far end, we can find Organization Science and Academy of Management Annals. In these journals, none of their articles contains the term meta-analysis in the title, although 3.8% includes the term in its topic. Except the mentioned journals, the rest of the TOP-10 has published less than 1% of studies in whose title contains the term meta-analysis.

Table 4: Meta-analytic studies in TOP-10 journals (JCR) in Business area

JOURNAL	Years	Total articles	meta-analysis in TOPIC		meta-analysis in TITLE	
			Nº	%	Nº	%
Academy of Management Annals	2007-2015	106	4	3,8	0	0,0
Academy of Management Journal	1958-2015	3164	45	1,4	24	0,8
Academy of Management Review	1983-2015	2074	11	0,5	2	0,1
Journal of Applied Psychology	1956-2015	7032	290	4,1	156	2,2
Journal of Information Technology	1993-2015	629	1	0,2	1	0,2
Journal of Management	1983-2015	1515	71	4,7	35	2,3
Journal of Operations Management	1999-2015	649	7	1,1	3	0,5
Mis Quarterly	1979-2015	1171	12	1,0	3	0,3
Organization Science	1990-2015	1366	4	0,3	0	0,0

Personnel Psychology	1956-2015	7166	124	1,7	64	0,9
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4. DISCUSSION

Scientific knowledge in every domain is growing up very quickly and constantly, especially since the second part of the 20th century. This exponential growth could be a barrier when someone wants to determine the state of art in a specific subject; the researchers must review an important number of works, sometimes with different results and even contradictories. The same problem arises when we want to determine the effect of some intervention or treatment: many different results and few, or unclear, conclusions about the real effect.

One of the traditional methods applied for summarizing and synthesizing the scientific knowledge has been the literature review. This type of review is usually done in a non-systematic way, making it difficult to replicate, and it could present many weaknesses (Rosenthal, 1991; Rosnow and Rosenthal, 1989). To resolve most of the problems that literature review presents, and to assure objectivity, rigor and replicability, other research technologies are needed.

Meta-analysis can be an adequate technology for addressing some literature review problems. It is a systematic procedure, and its application also allows to determine the effect size in an intervention or treatment, as well as to analyze the heterogeneity that the different reviewed studies can present. In the same way, meta-analysis helps to minimize bias risk in primary studies, because it serves to expand the sample aggregating different studies. This allows the calculation of an effect size closer to the real effect of the studied population.

This study has addressed the use of meta-analysis in Business studies field, and the comparative with the situation in other domains, as education or health sciences, in which an intensive use of meta-analysis has been observed in the last years. In these other fields, meta-analysis is considered a powerful information tool, not only for scientific jobs, but also for practitioner ones, because it serves as support in making-decision processes related with daily practice in health sciences or education (Molinero, 2008).

4.1. Academic implications

This study presents an updated and evolutionary vision on meta-analytic activity in Business Studies. For this purpose, we have reviewed the contents about meta-analysis published in Web of Knowledge and in the TOP-10 journals in Business area, according to Journal Citation Reports of Thomson Reuters.

The most used terms for addressing meta-analysis in scientific publications are meta-analysis and metanalysis, although the correct term in English is the first one. On the other hand, the use of Spanish terminology is insignificant in the data bases reviewed. We consider that it is important to

identify and use the correct terms, for establishing a common criterion that facilitates the bibliographic searches.

In order to know the real volume of meta-analytic works, other later studies also should consider possible synonyms like quantitative review, and terms in others languages different to English or Spanish, which have been used in this research.

From the analysis in both data sources, it is remarkable that meta-analytic tech is used in Business Studies in quite similar way that is used in other domains. This means that there are not evidences of underutilization of this kind of research in the Business area. In fact, in WOK, 1.2% of the studies related with meta-analysis belongs to Business area.

It has also been observed a high trend for indexing, in BE category, meta-analytic studies from other domains. This practice can distort results obtained in any superficial review about meta-analytic bibliography, if the researcher takes as reference the BE category in WOK, without a deep review of the content of the individual works.

Approximately 10% of studies related with meta-analysis are not meta-analytic studies on primary works, but studies about the tool: how to use it, new approaches, bad praxis, and weaknesses. This percentage can be an index about the interest generated by the tool itself, and the need to define its correct utilization.

It is remarkable the dissimilar interest that meta-analysis provokes among the TOP-10 journals in Business Studies area. Journal of Applied Psychology and Journal of Management are the journals that have given the most space to the meta-analysis. On the other hand, the two journals that less space have given to the meta-analysis are Organization Science and Academy of Management Annals.

Despite the important presence of meta-analysis in Business Studies, it is missing the creation of specific guides for developing this kind of studies in our area, like the guides elaborated for making meta-analytic research in Health Science, or one guide which can be useful in research for any domain.

4.2. Practical implications

It is known that few managers read academic articles, so academic production does not achieve its purpose because, although knowledge is increased, a great part of it never will get a practical application in real contexts. Perhaps, the Academy language is not useful enough and adequate for managerial activity and, if this were the case, we would have a serious problem.

Obviously, meta-analytic studies do not solve this issue completely but, as a first step for promoting the Evidence-Based Management, we consider it is necessary to increase this kind of research in Business Studies, in order to bring the language of the academy closer to that of the organizations,

by facilitating summarized data and quantified effects about concrete aspects that concern managers.

Meta-analysis allows us to determine the effect size of any specific intervention, which different researchers have repeatedly tested in similar contexts, and increases the rigor of the synthesis studies. Besides, meta-analysis can support the decision making (Rousseau, 2006) as it occurs in the Health field. It is, therefore, a very useful tool for our area, which should be fostered and addressed with greater dedication in training programs, not only for researchers, but also for managers, because facilitates the decision-making supported in scientific evidence in real contexts of management (Rousseau and McCarthy, 2007).

Due to the implications of meta-analysis in both, academic and professional context, and for facilitating the meta-analytic studies realization, the research in Business area should walk to a greater rigor in its results, providing enough indexes, that allow researchers to calculate the effect size of any intervention. This would be a great advance in the knowledge about the specific issues that organizations need to solve, and it would allow us to know the state of science, in concrete questions in Business field, with greater accuracy.

5. REFERENCES

- [1] Aguinis, H., Gottfredson, R. K. and Wright, T. A. (2011). Best-practice recommendations for estimating interaction effects using meta-analysis. *Journal of Organizational Behavior*, 32, 1033–1043.
- [2] Aguinis, H., Pierce, A. C., Dalton, D. R. and Dalton, C. M. (2011). Debunking myths and urban legends about meta-Analysis. *Organizational Research Methods*, 14(2), 306–331.
- [3] Aytug, Z. G., Rothstein, H. R., Zhou, W. and Kern, M. C. (2012). Revealed or concealed? Transparency of procedures, decisions, and judgment calls in meta-analyses. *Organizational Research Methods*, 15(1), 103–133.
- [4] Bansal, P., Bertels, S., Ewert, T., MacConnachie, P., and O'Brien, J. (2012). Bridging the researchpractice gap. *Academy of Management Perspectives*, 26: 73-92.
- [5] Brown, J. S., and Duguid, P. (2002). *The social life of information*. Boston: Harvard Business School Press.
- [6] Burke, L. A., and Rau, B. (2010). The research–teaching gap in management. *Academy of Management Learning and Education*, 9: 132–143.
- [7] Charlier, S. D., Brown, K. G., and Rynes, S. L. (2011). Teaching evidence-based management in MBA Programs: What evidence is there? *Academy of Management Learning & Education*, 10: 222-236.
- [8] Cohen, J. (1990). Things I have learned (So Far). *American Psychologist*, 45(12), 1304–1312.

- [9] Cohen, J. (1994). The earth is round ($p < .05$): rejoinder. *American Psychologist*, 49, 997–1003.
- [10] Durlak, J. and Lipsey, M. (1991). A practitioners guide to metaanalysis. *American Journal of Community Psychology*, 19(3), 291–332.
- [11] Fink, A. (2009). *Conducting Research Literature Reviews: From the Internet to Paper*. USA: Sage Publications.
- [12] Ginsberg, A. and Venkatraman, N. (1985). Contingency perspectives of organizational strategy: A critical review of the empirical research. *Academy of management*, 10(3), 421–434.
- [13] Glass, G. (1976). Primary, secondary and meta-analysis of research. *American Educational Research Association*, 5, 3–8.
- [14] Hambrick, D. (1994). Presidential address: What if the academy actually mattered? *Academy of Management Review*, 19: 11–16
- [15] Hedges, L. and Olkin, I. (1985). *Statistical Methods for Meta-Analysis*. San Diego: CA Academic Press.
- [16] Huedo-Medina, T. and Johnson, B. T. (2010). *Modelos Estadísticos en Meta-Análisis (Vol. 1)*. La Coruña: NetBiblo, S.L.
- [17] In'nami, Y. and Koizumi, R. (2010). Database selection guidelines for meta-analysis in applied linguistics. *Tesol Quarterly*, 44(1), 169–184.
- [18] Johns, G. (1993). Constraints on the adoption of psychology-based personnel practices: Lessons from organizational innovation. *Personnel Psychology*, 46: 569–592
- [19] McGrath, R. G. (2007). No longer a stepchild: How the management field can come into its own. *Academy of Management Journal*, 50: 1379-1383.
- [20] Moher, D., Cook, D., Eastwood, S., Olkin, I., Rennie, D. and Stroup, D. (1999). Improving the quality of reports of meta-analyses of randomised controlled trials: The QUOROM statement. *The Lancet*, 354.
- [21] Molinero, L. (2008). Meta-análisis, una guía rápida para lectores y usuarios. *Hipertensión*, 25(3), 108–120.
- [22] Peters, J., Sutton, A., Jones, D., Rushton, L., and Abrams, K. (2006). A systematic review of systematic reviews and meta-analyses of animal experiments with guidelines for reporting. *Journal of Environmental Science and Health Part B- Pesticides Food Contaminants and Agricultural Wastes*, 41(7), 1245–1258.
- [23] Pfeffer, J., & Sutton, R. I. (2000). *The knowing-doing gap: How smart companies turn knowledge into action*. Boston: Harvard Business School Press.
- [24] Pfeffer, J., and Sutton, R. I. (2006). *Hard facts, dangerous half-truths, and total nonsense: Profiting from evidence-based management*. Boston: Harvard Business School Publishing.
- [25] *Publication Manual of the American Psychological Association (2001) (5th Ed.)*. Washington: American Psychological Association (APA).
- [26] Rosenthal, R. (1991). *Meta-analytic Procedures for Social Research*. Sage Publications, Inc.
- [27] Rosnow, R. L. and Rosenthal, R. (1989). Statistical procedures and the justification of knowledge in psychological science. *American Psychologist*, 44(10), 1276–1284.
- [28] Rousseau, D. M. (2006). Is there such a thing as “evidence-based management”? *Academy of Management Review*, 31: 256–269
- [29] Rousseau, D. M., and McCarthy, S. (2007). Educating managers from an evidence-based perspective. *Academy of Management Learning and Education*, 6: 84-101.
- [30] Rynes, S. L., Colbert, A. E., and Brown, K. G. (2002). HR professionals’ beliefs about effective human resource practices: Correspondence between research and practice. *Human Resource Management*, 41: 149–174.
- [31] Stanley, T., Doucouliagos, H., Giles, M., Heckemeyer, J., Johnston, R., Laroche, P. and Rost, K. (2013). Meta-analysis of economics reporting guidelines. *Journal of Economic Surveys*, 390–394.
- [32] Therrien, W. J., Zaman, M. and Banda, D. (2011). How can meta-analyses guide practice? A review of the learning disability research base. *Remedial and Special Education*, 32(3), 206–218.
- [33] Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software*, 36(3), 1–48.
- [34] Wenger, E., McDermott, R., and Snyder, W. M. (2002). *Cultivating communities of practice*. Boston: Harvard Business School Press.
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