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**ESTUDIOS / RESEARCH STUDIES**

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**Characterisation of the classics of entrepreneurship (1968-2016).  
An analysis based on Web of Science**

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**Abstract:** The aim of this paper is to broaden the analysis of entrepreneurship as a field of study by employing a bibliographical search of works which constitute the “classics” of entrepreneurship and by examining their underlying “knowledge base” (cited works) as well as the reasons why they are characterised as such. H-Classics methodology was applied in the selection of these classic works and a thorough analysis of documents, citing and cited authors as well as journals was carried out. The results obtained in the process help isolate the sources that may determine which works could be seen as truly representative of the discipline of entrepreneurship and, more importantly, to find out which of them are more likely to embody the paradigms required in order to make a clear definition of what constitutes entrepreneurship as a discipline.

**Keywords:** Entrepreneurship; classic; H-Classic; H-Index.

**Caracterización de los clásicos del emprendimiento (1968-2016). Un análisis basado en la Web of Science**

**Resumen:** Este trabajo tiene como objetivo profundizar en el análisis del campo del emprendimiento mediante la búsqueda bibliográfica de los trabajos que se configuran como “clásicos del emprendimiento” y su caracterización, así como la del “conocimiento base” (trabajos citados) en que se apoyan los mismos. Se aplica la metodología H-Classics para seleccionar estos trabajos clásicos y se realiza un análisis en profundidad de documentos, autores citantes y citados y revistas. Los resultados alcanzados llevan a aislar las fuentes que permitirían determinar qué obras podrían constituir la disciplina del emprendimiento y lo que es más importante, cuáles cuentan con mayor “probabilidad” de mostrar aquellos paradigmas necesarios para conformarla.

**Palabras clave:** Emprendimiento; clásico; H-Classic; H-Index.

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## 1. INTRODUCTION

The controversy regarding the legitimacy of *entrepreneurship* as a field of research goes back to the time of its inception and has even led some to determine that it lacks a consolidated or at least a sufficiently specific theoretical framework (Genesca & Aponte, 2003). The issue, which is much discussed by its proponents (Low & MacMillan, 1988; Stevenson & Jarillo, 2007) is a result of its multidimensional, cross-curricular and complex nature (Boulard, 2011), which has awoken the interest of disciplines as diverse as Anthropology, Economics, Finance, History, Psychology, Politics and Sociology, from which it has borrowed and appropriated (Landström et al., 2012) theoretical frameworks.

Efforts to elucidate the issue on the part of a nucleus of influential researchers (Bruyat & Julien, 2001; Aldrich, 2012, Carlsson et al., 2013) have evolved from more theoretical approaches to increasingly systematic literature reviews, scientometry-based bibliometric studies or the combination of both, acting as useful tools in the attempt to objectively define the intellectual structure of entrepreneurship as a scientific field. One of the most complete attempts was carried out by Landström et al. (2012), who compiled the "knowledge base" of the subject for the period between 1980 and 2006. Others can be named, which show that this type of analysis affords strength to the argument of the legitimacy of entrepreneurship (Cornelius et al., 2006; Schildt et al., 2006; Cuervo et al., 2007). Some of them are more recent and more specific like those carried out by Teixeira and Ferreira (2013), Wang and Jessup (2014) and Liñán and Fayolle (2015).

Therefore, the paper presented here will try to take the analysis of the field of entrepreneurship to a deeper level, visualizing the characteristics of the classics of entrepreneurship as well as the knowledge base on which they are founded. A series of bibliometric analyses will be carried out with the intention of completing and updating efforts like those made by Meyer et al. (2014) or Luor et al. (2014). The underlying objective is to describe the situation of scientific research carried out to date in the field of entrepreneurship using the H-classics methodology. The following section serves to provide a description of the theoretical framework behind this paper and Section 3 the methodology applied in order to obtain the results presented in Section 4. Section 5 will bring the study to an end and present its main conclusions.

## 2. THEORETICAL FRAMEWORK

### 2.1. The rise of entrepreneurship and its phases

The figure of the entrepreneur and entrepreneurship as an area of knowledge have been the subject of an ever-increasing number of researchers since the days of the original authors like Richard Cantillon (1680-1734), Anne-Robert Jacques Turgot (1727-1781), Jean-Baptiste Say (1767-1832), John Stuart Mill (1806-1873), Carl Menger (1840-1921), Joseph Schumpeter (1883-1950), Ludwig von Mises (1881-1973), etc., until the present day (Minniti, 2013).

As the body of knowledge in entrepreneurship grows and possibilities and alternative choices in subject matter increase exponentially, it becomes evident just what a boom the subject has experienced since it came into existence. Landström et al. (2012), who based their work on previous studies like those of Hébert and Link (2009) or on their own previous material from Landström & Benner (2010), established three phases in the development of research in the area since 1980: take-off, growth and search for maturation. Vallmitjana (2014), who borrows from Diaz (2002), summarises the research history of entrepreneurship in four steps, with the fifth representing the current situation. One of the milestones that both authors highlight was the publication of an article by Birch (1979); not just because of its impact in academic circles but also because of its repercussions in the world of politics and political institutions, which led to a change in how entrepreneurship was perceived, portraying the figure as a catalysing force for employment. The article has been hailed as one of the "culprits" for the increasing popularity of the subject.

In this paper, the history of entrepreneurship is divided into three phases (conception, promise and legitimisation). Birch's article from 1979 marks the line that separates the first two, signalling a point where interest in entrepreneurship began to skyrocket, attracting an ever-increasing number of researchers.

**Conception:** from its early days until around 1980. This was a phase which was defined by the original research, focused mainly on the economy, and in which the underlying theories were formed that would become the hallmark of future research. It would be difficult to list every classic author who, directly or indirectly (Adam Smith (1723-1790), John Maynard Keynes (1883-1946)), has come to embody the intellectual foundation. To those already mentioned at the beginning of this review the names of illustrious personalities such as Alfred Marshall (1842-1924), Weber (1864-1920) or Frank Knight (1885-1972) could be added.

Some of the most significant achievements of this phase were: the creation of the *Research Center in Entrepreneurial History* at the University of Harvard (1948), the creation of programmes like *Small Business Administration* (1958) to promote research, conferences like the *National Council for Small Business Management Development* (1956), scientific congresses like the one on business creation at Purdue (1970), as well as the publication of the first specialised journals (*Journal of Small Business Management* (1963), *Bolton Reports* (1975), *American Journal of Small Business* (1975)).

**Promise:** This phase covers the period between 1980 and 2012, the year when Landström et al.'s work was published. The central axis of this phase is an article by Shane and Venkataraman (2000), from where it takes its name, and which encapsulates most of the great achievements in the field of entrepreneurship, marking the line of inquiry for future studies: How and why do opportunities arise, why are they detected by certain people and how are they used and taken advantage of by these individuals or entrepreneurs? This is the period in which the discipline was fully developed, building upon on a fragmented knowledge base. It brings together different classifications like those by Low & MacMillan (1988), Gartner (1985), Stevenson & Jarillo (1990), Cunningham & Lischeron (1991), Veciana (2007) or Díaz (2002). A multitude of theories were developed during that stage: economic (manager, risk-taker, innovator), psychological (personality traits, Kirznerian entrepreneurship), socio-cultural (marginalisation, role, networks, incubator, Weber's economic development, population ecology), managerial (entrepreneur's behaviour), all of which follow different approaches (Rodríguez Ramírez, 2009): behavioural, psychological or cognitive, economic, procedural, cultural or psychoanalytical.

**Legitimation:** this is the current phase, characterised by the need to authenticate the area. It could be defined around the three axes which Landström et al. (2012) anticipated: profound discussion of key concepts, demarcation of the field of research, characterisation of the phenomenon and the return from economics and the social sciences to research into business. One of the characteristic signs of this phase is the search for tools capable of unifying and organising such a diverse body of knowledge. The use of systematic literature reviews and bibliometric analyses applied to entrepreneurship is becoming more generalised. It can clearly be affirmed that the area is coming of age. The multidisciplinary nature favours the application of new methods which allow essential findings to be gathered in order to reach the goal of

the definitive official recognition and, simultaneously, to counteract some of the problems caused by the increase in research activity, such as the lack of coherent terminology, the existence of multiple lines of research which neither complement nor interact with each other, the use of empirical methods lacking strong theoretical foundations, and the need to build more solid theories on entrepreneurship. In conclusion, a greater connection between studies carried out at different analysis levels is required (Pittaway et al., 2014).

## 2.2. Bibliometrics as an analytical tool and an instrument of legitimisation

Kuhn's study from 1962 of the structure of scientific revolutions, affirms, among other things, that the existence of an accepted paradigm brings legitimacy to a field of research. Following this reasoning, entrepreneurship would find itself stuck in a pre-scientific phase, as there is no consensus on one or more of the theories which are dominating and are generally accepted in the community. In other words, the inability to find one or various paradigms is the reason why it cannot establish itself as an independent discipline and claim its place within the social sciences. The recent research carried out by Croci (2016) seems to corroborate this. Taking Merton (1977) as a starting point, factors described in Morrell (1990), Shane & Venkataraman (2000) and Aldrich (2012) are adapted and lead to the conclusion that research in entrepreneurship cannot be considered a discipline. For Croci (2016) this is a positive conclusion and he affirms that its configuration as an inter- or multidisciplinary field allows it to maintain its flexible and open character and thrive as a result of it.

In any case, entrepreneurship is on the way to being recognised scientifically and intellectually, and scientometrics and other associated disciplines will be powerful tools to determine whether or not this goal has been achieved or if further headway is required. According to De Solla Price (1963), Garfield (1972), Garfield and Merton (1979) as well as Dobrov (1989) science is contained within the documents that are published and the researchers who conceived them. The publication of results is an implicit part of the research process and the means by which they are validated and progress in a specific area is made known to the public. Consequently, publications are the means by which scientific knowledge is transmitted and validated. The analysis of publications is the adequate tool not only to evaluate research activity but also to legitimise emerging new disciplines.

Bibliometric analyses are based on Bibliometrics or the "science of the sciences" according to De Solla Price (1963), and they are centred on calculations and analyses of those values that can be quantified in the production (publications) and the consumption of scientific information (Ardanuy, 2012; López Piñero, 1972; Spinak, 2013). To that end, mathematical and statistical methods are applied to indexed documents in order to study a specific activity. For the purpose of this paper, the H-Classics concept was employed for a field analysis of entrepreneurship.

### 3. METHODOLOGY

A method suggested by Martínez et al. (2014) was used here to identify the classics of a scientific area using the H-Classic approach and the H-Index indicator, with the ultimate aim of defining the identity of the essential works on *entrepreneurship* as well as the knowledge users, and thus to establish the basis of the analysis presented here.

The H-Classics methodology takes the definition of the concept of classic literature or classic citation by Garfield (1977) as a starting point. The term refers to those documents that have left a mark on a specific discipline and have a higher visibility (number of times cited). In the application of this methodology to the area of Social Work, Martínez et al. (2014) used the H-Index indicator, going through the following stages:

- Select the publications and its citations from the chosen database.
- Configure the sample population that represents the research area to be analysed.
- Determine the H-Index of the research area<sup>1</sup>.
- Retrieve the H-core of the research area (those documents that have a value greater than the H-Index for the area).

Using this methodology here, the classics of entrepreneurship literature were identified for the date when the study was carried out (basis of the analysis). It has recently been used with positive results in different bibliometric studies: La Flor-Martínez et al. (2016), Moral-Muñoz et al. (2016), Herrera-Viedma et al. (2016), Heradio et al. (2016). This methodology has many advantages, it stands out because it surpasses arbitrary criteria in the selection of the sample of articles, and replaces them with a more precise, scientific, robust and transparent criterion based on the H index (Martínez et al., 2014).

Document samples used in this paper were taken from ISIWoS after examining different comparisons between available scientific databases (Meho and Yang, 2007; Norris and Oppenheim, 2007). ISIWoS was chosen because in terms of references and the time period covered by the indexed information, it is generally the most complete. The possibility of combining two databases (WoS/Scopus) was rejected as each database use a different citation pattern, which makes the results incompatible. Given the multidisciplinary nature of the research area, seven *subject areas* were added to the search sequence in addition to those detected by Landström et al. (2012). In order to establish the detailed search sequence in table I, the generic root "entrep\*" has been used. For this purpose, studies have been followed that highlight the discipline at global level (Cornelius et al., 2006; Schildt et al., 2006; Teixeira & Ferreira, 2013). These same studies recognize the possible bias that can be introduced by the choice of a single search term and are exposed in the limitations of the study.

**Table I.** Search file

WOS	
<b>Date</b>	30/01/2016
<b>Place</b>	Web of Science Core Collection
<b>Search Type</b>	Simple
<b>Syntax</b>	entrep*/topic
<b>Filtered by area</b>	(management or business or economics or planning development or history or social issues or education educational research or operations research management science or business finance or environmental studies or sociology or geography or political science or social sciences interdisciplinary or engineering industrial or history of social sciences or area studies or urban studies or public administration or computer science information systems or information science library science or psychology applied or international relations or multidisciplinary sciences or anthropology or psychology multidisciplinary or law )

The H-Index for the area calculated in accordance with the H-Classics methodology was 201, which generated an equivalent sample of classics of entrepreneurship (available upon request). The decision was made to include 4 more documents (each one with 200 citations, which is closer to the H-Classics value obtained) in order to make up for possible duplicates or documents that might have to be excluded in the end, which meant that the resulting sample group is made up of 205 documents<sup>2</sup>.

As a last step in this methodology the sample group had to be standardised prior to obtaining the results. That meant refining information, finding and fixing spelling mistakes, dealing with variants of the same word or name, etc. The final result of the analysis depended in large measure on an exhaustive normalisation. Special attention has been paid to the different forms that present both names of citation and cited authors (Scott Shane, S. SHANE, Shane, S.), variants that represent the same author, and therefore are unified, as well as their associations with other entities (journal / reference), using the module dedicated to the management of the knowledge base and its entities in SciMat (Cobo et al. 2012).

This bibliometric software, as well as analysis tools offered by WoS (*Analyze Results* and *Creation Citation Report*) were the instruments used to obtain the results which will be presented below. In every analysis a unique citation pattern from database *Social Sciences Citation Index* (SSCI) from *Web of Science*, was used.

## 4. RESULTS

The starting point of the study were the 205 classics of entrepreneurship literature selected through the application of the H-Classics methodology. The works and authors making up the collection are referred to as **classics** or **users of knowledge**, and the references they contain constitute the **knowledge base**, i.e. the researchers and original documents that have made the discipline visible through those classics (using terminology from Cornelius et al. 2006 and Landström et al. 2012).

### 4.1. Document samples: H-Classics

The results obtained after completing various stages and carrying out different analyses make up a total of 205 documents which, according to the methodology employed at the moment when the data were obtained (January 2016), were considered to be the citation classics of entrepreneurship literature.

In terms of chronology, the first publication is Baumol (1968), and the last articles selected correspond to Greenwood et al. (2011) and Zott et al. (2011). This selection accumulates a total number of 78,776 citations, with 16.7% of those concentrated in the 10 first articles, 25.6% in the first 20. Especially the first three documents stand out: Uzzi (1997), Shane & Venkataraman (2000), Lumpkin & Dess (1996) with 3.3%, 2.7% and 1.8% respectively. (Table II)

As far as the concentration of those classics per year and citations received is concerned, as Figure 1 shows, the interval between 1994 and 2006 represents the highest density of classics and citations received, namely 150 classics with 55,778 citations, representing 73% of the total number of classics and 71% of citations.

The distribution over time of the cited articles, i.e. the knowledge base (references used in the H-Classics), exposes the fact that according to the number of appearances of those references in the classics (see Figure 2), it took shape in the period between 1985 and 2005. Among the original documents, which were the sources of research into entrepreneurship, as expected, essential titles can be found such as Cantillon R. (1974), *Essays on the nature of commerce in general*, cited by the classic Lumpkin and Dess (1996), or the *Theory of Moral Sentiments* by Adam Smith, written in 1759 and first published in 1867.

The document typology is heterogeneous and, yet, is clearly dominated by articles with 153 documents, followed by 32 reviews and 16 proceedings papers, 2 notes and 2 editorial materials.

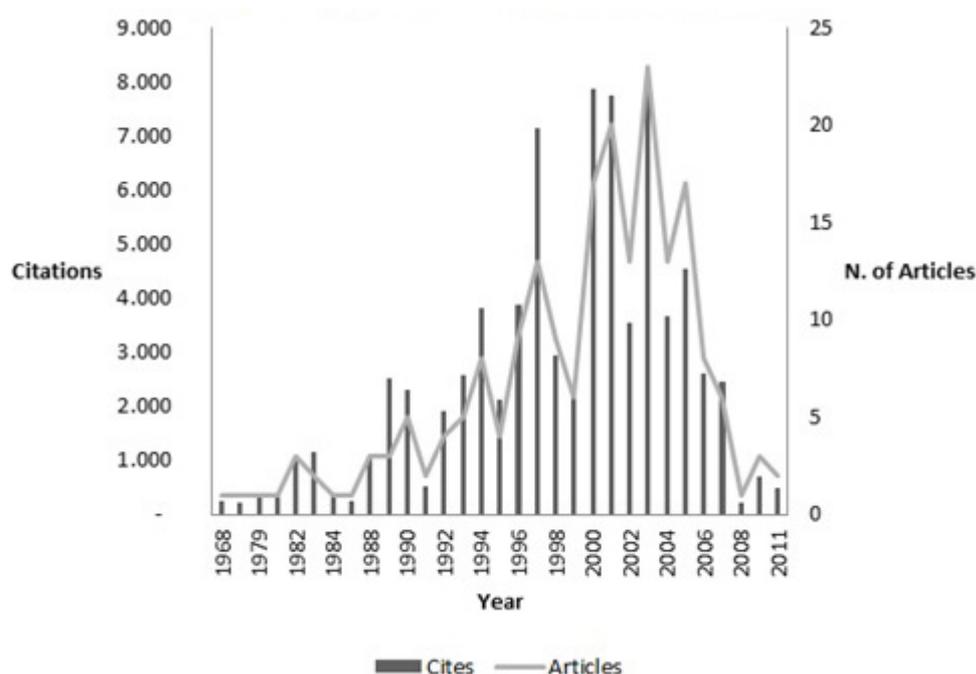
When it comes to *Subject Categories* used by *Web of Science* to classify the sample documents (Figure 3), the following stand out: *Business* (127; 62%), *Management* (110; 54%) and *Economics* (31; 15%). It is noteworthy that some have been catalogued as *Psychology-Applied* (14; 6.9%), in fact even more than those listed under *Sociology* (10; 4.8%), like Alvarez & Busenitz (2001) for example. It is pertinent in this context to point out that each document may appear in one or several *Subject Categories*. In the above-mentioned example they were *Business*, *Psychology-Applied* and *Management*. The article deals with the cognitive ability of entrepreneurs to recognise new opportunities. As there is no specific category for entrepreneurship, it was included in those more closely related to its subject area.

On the other hand, it is interesting to see that "entrep" appears 113 times in the sample titles, specifically in 108 documents. That means more than 50% of them contain the word entrepreneur, entrepreneurship or other variants in the title of their work. This gives a representative idea of the sample.

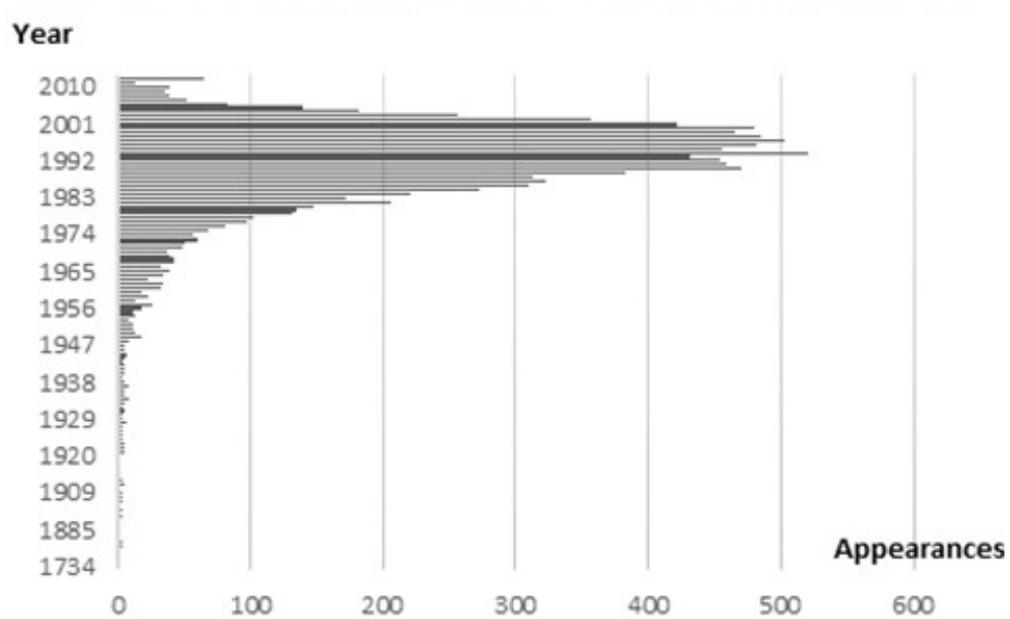
**Table II.** Top 10 articles by citations received

Order	Title	Author	Year	Cites	%
1	Social structure and competition in interfirm networks: The paradox of embeddedness	Uzzi, B.	1997	2,602	3.3%
2	The promise of entrepreneurship as a field of research	Shane, S.; Venkataraman, S.	2000	2,090	2.7%
3	Clarifying the entrepreneurial orientation construct and linking it to performance	Lumpkin, G.T.; Dess, G.G.	1996	1,419	1.8%
4	Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance	Teece, D.J.	2007	1,124	1.4%
5	Market orientation and the learning organization	Slater, S.F.; Narver, J.C.	1995	1,115	1.4%
6	From managerialism to entrepreneurialism - the transformation in urban governance in late capitalism	Harvey, D.	1989	1,078	1.4%
7	Prior knowledge and the discovery of entrepreneurial opportunities	Shane, S.	2000	1,020	1.3%
8	Corporate culture, customer orientation, and innovativeness in Japanese firms - a quadrad analysis	Deshpande, R.; Farley, J.U.; Webster, F.E.	1993	961	1.2%
9	Entrepreneurship - productive, unproductive, and destructive	Baumol, W.J.	1990	888	1.1%
10	Fools rush in - the institutional context of industry creation	Fiol, C.M.; Aldrich, H.E.	1994	854	1.1%
Total				13,151	16.7%

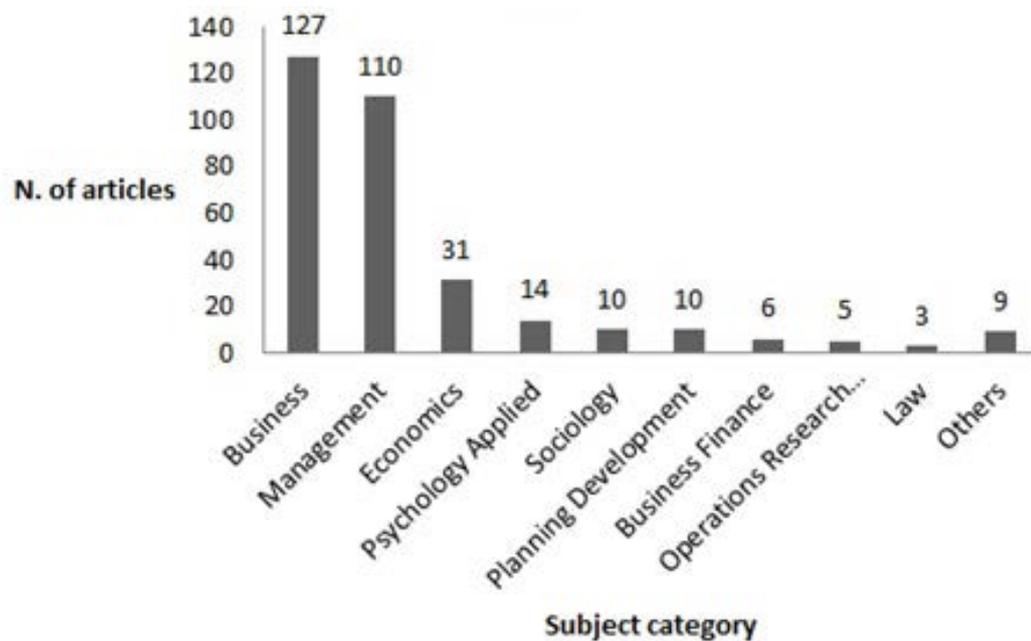
**Figure 1.** Distribution of articles and citations by year



**Figure 2.** Number of appearances per year in knowledge base



**Figure 3.** Subject Categories of H-Classics



## 4.2. Authors

### *Citing authors: H-Classic*

The 205 citation classics bring together 346 authors (including co-authors). Table III shows a ranking with the 10 most visible authors among the H-Classics, including the sum of total citations of their works in the H-Classics and the percentage they represent among the total citations (78.776), author's affiliation, country of origin and main areas of research. The most prolific ones are: Scott Shane stands out with 7 papers, Shaker Zahra with 6 and Howard E. Aldrich with 5.

Table III shows that the most influential academics come from a management background (Aldrich), from economics (McDougall; Obiat) or sociology (Uzzi). An important nucleus of those authors has practically dedicated their entire career to researching entrepreneurship (Shane; Lumpkin; Sapienza). Uzzi, who occupies the second place in the ranking, has not specialised directly in the subject and, yet, has received wide recognition from its community.

The vast majority of the "top" researchers have a number of publications in the H-Classics and cover an extensive time period: Aldrich (1990, 1991, 1994, 2003) or Lumpkin (1996, 1997, 2001, 2007); this is an indicator of the strength and level of consolidation of their disciplinary focus.

During the elaboration of the ranking the authors' affiliations at the moment of publication were used. Their mobility is worth noting, as the immense majority have changed university and currently occupy new positions related to a greater or lesser extent to entrepreneurship research.

The American academics and universities predominate in this discipline. It would be difficult to single out one research centre as the top source, but, in the sample group of the classics, works from affiliates of the *University System of Georgia* and from *Harvard University* predominate, both with a 5.85% of the total (12 classics respectively), followed by the University System of Maryland and the University of North Carolina, each with a 4.78% (10 classics).

The central core of documents is affiliated with institutions from the USA (176) and Canada (16), but the sum of European producers (England, Sweden, Germany, France, Netherlands, Scotland, Spain, Switzerland, Finland and Denmark) makes up 27% of the samples. That is to say that the old continent does not go unnoticed in the list of classics and enjoys strong support and visibility. This phenomenon is brought to light by the collaboration networks that have been established between North American and European researchers, as is the case of Amit and Zott (2001).

**Table III.** Top 10 most visible H-classic authors by number of citations

R.	Author	N. Docs	SSCI cites	SSCI %	Affiliation	Country	Field of research
1	Shane, S.	7	4844	6.15%	University of Maryland College Park	USA	Economic/Entrepreneurship
2	Uzzi, B.	1	2602	3.30%	Northwestern University	USA	Sociology/Business Administration
3	Lumpkin, G. T.	4	2335	2.96%	University of Texas Arlington	USA	Entrepreneurship
4	Venkataraman, S.	1	2090	2.65%	University of Virginia	USA	Business Administration
5	Dess, G. G.	3	2077	2.64%	Arizona State University	USA	Management
6	Aldrich, H. E.	5	1947	2.47%	Cornell University	USA	Sociology / Entrepreneurship
7	McDougall, P.P.	4	1853	2.35%	Georgia State University	USA	Business & Economics, Manag. and Entrepreneurship
8	Oviatt, B. M.	4	1853	2.35%	Georgia State University	USA	Int. Economics, Industrial Org., Develop. Economics
9	Zahra, S. A.	6	1766	2.24%	Georgia State University	USA	Entrepr. & capability, develop. in global industries
10	Sapienza, H. U.	3	1738	2.21%	University of Minnesota System	USA	Strategic Management Entrepreneurship

**Cited authors: Knowledge base**

In the previous section the focus was on the classic authors, knowledge users or researchers who have contributed to the development of the field by basing their work on seminal works on entrepreneurship and other more consolidated areas. Below, the main results relating to the authors who make up the DNA of the discipline will be presented in more detail. The starting point were the 9,423 references in the H-Classics, from which a total of 5,704 referenced authors were extracted. These cited authors will have more weight within the sample group if they appear repeatedly in a significant number of documents (Table IV).

Only 8% of those authors appear in five or more documents and 72% do so only once. Thus, a ranking can be elaborated where the first places are formed by those authors who have contributed the most to entrepreneurship, having been cited most often in the classics (Table V).

As can be seen, the first three positions are occupied by Schumpeter with seven references, which appear in a total of 71 documents, followed by Aldrich with 38 references in 54 documents and Shane with 29 references in 46 classics.

**Table IV.** Frequency of appearance. Knowledge base

Authors who appear in H-Classic documents				
1 Doc.	2 Doc.	3 Doc.	4 Doc.	5 or more
4.121	682	289	168	444
72%	12%	5%	3%	8%

**Table V.** Top 10 most cited authors in H-Classic, Knowledge Base

Ranking	Author	References	Documents
1	Schumpeter J.A.	7	71
2	Aldrich H. E.	38	54
3	Shane S. A.	29	46
4	Barney J. B.	23	44
5	Porter M.E.	20	44
6	Kirzner I.M.	26	40
7	Miller D.	27	38
8	Zahra SA	42	38
9	Eisenhardt K.M	16	38
10	Teece DJ	27	37

To determine the essential works in entrepreneurship research it would be necessary to visualise the times each reference has appeared in the H-Classics. In the case of Schumpeter see Table VI.

Clearly, his most influential works have been: *The Theory of economic development* which appeared in 53 classics and *Capitalism, socialism and democracy* with 26 appearances.

Repeating the process for each author, the true seed of the discipline can be reached. Table VII lists the 20 most influential documents according to their appearance among the H-Classics.

Even with all these reservations, the documents obtained using this methodology are consistent, up to date and represent the core of those works which have had the greatest influence on entrepreneurship as a discipline. Though only the first 20 places in the ranking are presented, it must be mentioned that it is made up of a total of 3,293 references, counting only those that appear in five or more documents. It must also be stressed that beyond those 20 first places, major authors like Knight (in 64<sup>th</sup> place), Timmons (67<sup>th</sup> place), Oviatt (78<sup>th</sup>), Audretsch (80<sup>th</sup>), Bird (81<sup>st</sup>) and many more make their appearance.

Another aspect that must be taken into account when referring to those works is the privileged position they find themselves in. This applies to the H-Classics as well as the knowledge base within the area. Especially Shane & Venkataraman (2000), Lumpkin & Dess (1996) or Miller (1983) stand out in this context. The importance of their research in the area has made them real leaders in the progress and construction of entrepreneurship as a discipline, and they represent the maximum influence within a community, which uses them regularly as their maximum exponents.

**Table VI.** References Schumpeter J.A. in H-Classics per year and number of appearances

Title	Year	N. Doc.
<i>The theory of economic development</i>	1934	53
<i>Capitalism, socialism and democracy</i>	1942	26
<i>Business cycles: A theoretical, historical and statistical analysis of the capitalist process</i>	1939	8
<i>Economic theory and entrepreneurial history, change and the entrepreneur</i>	1949	2
<i>History of economic analysis. Psychology press</i>	1954	1
<i>The creative response in economic history</i>	1947	1
<i>The Fundamental phenomenon of economic development</i>	1971	1

**Table VII.** Top 20 most influential documents among the H-Classics, Knowledge Base

R.	Author	Title	Year	Nr of Docs
1	Schumpeter, J.A	<i>The theory of economic development</i>	1934	53
2	Barney, J.B.	<i>Firm resources and sustained competitive advantage</i>	1991	36
3	Shane S. and Venkataraman S.	<i>The promise of entrepreneurship as a field of research</i>	2000	30
4	Lumpkin, G. T. and Dess	<i>Clarifying the entrepreneurial orientation construct and linking it to performance</i>	1996	27
5	Schumpeter, J.A	<i>Capitalism, socialism and democracy</i>	1942	26
6	Kirzner, I.M.	<i>Competition and entrepreneurship</i>	1973	24
7	Miller, D.	<i>The correlates of entrepreneurship in three types of firms</i>	1983	23
8	Porter, M.E.	<i>Competitive strategy: techniques for analyzing industry and competitors</i>	1980	22
9	Stinchcombe, A.L. and March J.G	<i>Social structure and organizations</i>	1965	22
10	Tushman, M.L. and Anderson, P.	<i>Technological discontinuities and organizational environments</i>	1986	21
11	Nelson, R. and Winter	<i>An evolutionary theory of the firm</i>	1982	20
12	Cohen, W.M. and Levinthal, D.A.	<i>Absorptive capacity: a new perspective on learning and innovation</i>	1990	20
13	Penrose, E.T.	<i>The theory of the growth of the firm</i>	1959	20
14	Aldrich, H.E and Zimmer	<i>Entrepreneurship through social networks</i>	1986	19
15	March, J.G.	<i>Exploration and exploitation in organizational learning</i>	1991	19
16	Covin, J.G. and Slevin	<i>Strategic management of small firms in hostile and benign environments</i>	1989	18
17	Aldrich, H.E and Fiol	<i>Fools rush in? the institutional context of industry creation</i>	1994	16
18	Burt, R.	<i>Structural holes: the social structure of competition</i>	1992	16
19	DiMaggio, P.J and Powell, W.W.	<i>The new institutionalism in organizational analysis</i>	1983	16
20	McClelland, D.	<i>The achieving society</i>	1961	15

As far as the characterisation of the most influential authors and documents is concerned, they represent the research front. If results are compared with previous works like the already mentioned Cornelius et al. (2006) and Landström et al. (2012), it becomes obvious that they are practically identical. The positions in the ranking vary, but the central axis remains unchanged: the same authors, the same titles. Positions vary depending on the different needs and tendencies within the community and researchers use one author or another in order to find information that allows them to solve whatever problem they are facing. These tendencies are reflected in the citation pattern of the H-Classics in this case.

There is definitely a firm theoretical knowledge base for entrepreneurship, which is sustained by economics (Schumpeter, Knight, Casson, Kirzner or Shane), the social sciences with the study of the characteristics of the entrepreneur as an individual (McClelland), management in its more behavioural approach (Gartner, Aldrich, Cooper) and its study of the phenomenon as such, its evolution and process (Stinchcombe, Aldrich). This has given rise to other researchers whose main objective has been to build an entrepreneurial paradigm in the sense used by Kuhn (1962). These authors, classics and knowledge base (Shane, Venkatraman, Miller) have transformed the trends they were the source of (Schumpeterian, Kirznerian and Knightian school, or a combination of all of them) into a discipline.

#### 4.3. Journals

The same distinction as between the H-Classics (citing authors) and the knowledge base (cited authors) was made when the journals were processed. Thus, the 205 classics and their corresponding citations (78,776) appear in a total of 56 journals. The first 15 have published 145 documents, which represent 70% of the sample total and contain practically 76% of all the citations (Table VIII).

In accordance with the *Subject Categories* at *Web of Science*, these classics are published in journals generally specialising in management, economics and business. We have to move down from the 1<sup>st</sup> place to the 13<sup>th</sup> and 15<sup>th</sup> to form the core of journals with the greatest focus on entrepreneurship (*Journal of Business Venturing*, *Small Business Economics* and *Entrepreneurship Theory and Practice*). These three add up to 32 documents and approximately 14% of the citations.

Even if the 1<sup>st</sup> place is occupied by the *Journal of Business Venturing*, the position would actually correspond to *Strategic Management Journal* if visibility is taken into account (number of citations). Beyond the 15<sup>th</sup> place, the sample group is much more eclectic with a privileged position for sociology journals taking 14<sup>th</sup>, 20<sup>th</sup> and 24<sup>th</sup> places: *Annual Review of Sociology*, *American Journal of Sociology*, *Journal of Applied Psychology*, with 9 documents and a 4% of total citations.

**Table VIII.** Top 15 journals with the biggest number of published classics. Knowledge Base

R.	Journal	N. of docs	SSCI citations	SSCI%
1	Journal of Business Venturing	24	8338	11%
2	Strategic Management Journal	23	9652	12%
3	Academy of Management Journal	16	4994	6%
4	Academy of Management Review	12	7839	10%
5	Administrative Science Quarterly	9	6448	8%
6	Research Policy	9	2787	4%
7	Journal of Marketing	8	3653	5%
8	Journal of Management	8	2300	3%
9	Journal of Political Economy	7	3433	4%
10	Management Science	6	2357	3%
11	Journal of International Business Studies	6	2242	3%
12	American Economic Review	5	1579	2%
13	Small Business Economics	5	1388	2%
14	Annual Review of Sociology	4	1407	2%
15	Entrepreneurship Theory and Practice	3	1111	1%

Lastly, it needs to be pointed out that the analysis that has been carried out to define the classics of entrepreneurship is a mere vertical approximation. In order to extract more representative conclusions it would be necessary to approach the data longitudinally, dividing the samples into sub-periods using first-generation relational bibliometric indicators in order to discover the co-authoring and co-citing networks established between the 205 classics.

## 5. CONCLUSIONS

It is time to get back to the fundamental issue introduced in the Section 1 and repeated throughout the whole paper: the difficult and unresolved question of the legitimacy of entrepreneurship. Different authors have been mentioned who speak out in favour of (Amit et al., 1993) and against (Bygrave & Hofer, 1991; Croci, 2016) the idea of a common framework, and still there is not a single undisputed definition of the term or the area it describes. How to choose one? Which is the correct one? Professor Veciana (2007, p. 28) expressed himself in the following manner, citing Sedlack & Stanley (1992):

"However, as Sedlack/Stanley correctly maintain -scientists do not deal with real, essentialist definitions in their conceptual language. They do not do so because defining a concept ("entrepreneurship", "strategy", etc.) in essentialist terms is not only a fruitless endeavour but, what is more important, today in philosophy of science it is considered to be of no use. It is a fruitless endeavour because writers trying to elaborate an essentialist definition will never come to an agreement on it."

On the basis of the research carried out here, a possible solution might be to offer a definition for entrepreneur and another for the discipline taken from the works that are most representative of the area. The first one can be found in the knowledge base, the essence absorbed by those that have become the classics of entrepreneurship research today; the second in one of those most cited "classics":

- **Entrepreneur:** *"The function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on. (...) act with confidence beyond the range of familiar beacons and to overcome that resistance requires aptitudes that are present in only*

*a small fraction of the population and that define the entrepreneurial type as well as the entrepreneurial function. This function does not essentially consist in either inventing anything or otherwise creating the conditions which the enterprise exploits. It consists in getting things done."* Schumpeter (1942); *"The typical entrepreneur is more self-centred than other types, because he relies less than they do on tradition and connection and because his characteristic task-theoretically as well as historically-consists precisely in breaking up old, and creating new, tradition."* Schumpeter (1934). According to Carrasco & Castaño (2008) Schumpeter sees an entrepreneur as a person who creates new combinations that can take the shape of new products, processes, markets, organisational forms or supply networks. An entrepreneur is the founder of a new enterprise, an innovator who breaks with traditional ways and established routines; a person with leadership skills and a special talent in determining the right way to proceed at each juncture. It is a person who has the ability to see things in a way that nobody else can. Entrepreneurs are neither Marshall-style managers nor investors. They are a special kind of people.

- **Entrepreneurship:** *"In contrast to previous research, we define the field of entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited (Venkataraman, 1997). Consequently, the field involves the study of sources of opportunities, the processes of discovery, evaluation, and exploitation of opportunities, and the set of individuals who discover, evaluate, and exploit them."* (Shane y Venkataraman, 2000).

What have been the reasons for choosing these two? It is obvious that both appear repeatedly in studies dealing with entrepreneurship. Highly qualified scientists from different areas have made reference to them time and again. Their opinions, subjective or not, are a measure of quality but not of their authenticity or acceptance. However, in order to get to them, an objective and easily reproducible methodology has been employed which coincides with said opinions. The definition of entrepreneur appears in the most referenced work and in the most cited one of those dealing with the discipline. The definition of the area appears in the second most cited work on entrepreneurship in this study.

Following the scientific method, the sources were isolated which made it possible to determine the works that might constitute the discipline and, more importantly, to understand which ones have a higher likelihood of showing those paradigms required to do so. Kuhn (1970) established that the diverse and disorganised activity that precedes the formation of a discipline eventually takes shape when a paradigm appears the majority of the community can adhere to. Here, the process is inverted by using bibliometric indicators. The diverse activity carried out in search of the documents that might enshrine those laws, theories and techniques becomes structured and organised. This approach, though still exposed to plenty of criticism, is a means to an end and not the end itself, as will be explained below in the limitations of this study.

The reasons why some works accumulate more citations than others can be the subject of debate. Perhaps an author is used because of their prestige or a scientist is chosen from somebody's environment in order to "increase their citations". It could be a mere formality and its use actually irrelevant for the research. However, when an entire community makes reference to certain documents and not others in order to make sense of a phenomenon, it is more complicated to put its usefulness in doubt. Moreover, what is hard to omit is that science is contained within those published documents and the scientists who conceive them: De Solla Price (1967), Dobrov (1989), Garfield & Merton (1979), Garfield (1972). The problem suddenly arises when this methodology becomes a scientific system of evaluation, when it becomes an end in itself and not a means to an end. Scientists always prefer to end up in one database and not another, and spend their lives constantly checking their H-Index, which could lead to a situation where they might forget that what really lends "impact" to their work is the relevance measured by its usefulness for science and society as a whole. That means to say that the publication of results is only part of the process. It is the means by which somebody's findings are validated and presented to the community in order to contribute to its overall progress.

As for the limitations of this study, in large part they are the result of the limitations of the chosen database. On the one hand, there is no specific category available at *Web of Science* where studies in *entrepreneurship* are listed. This means that a combination of categories was required in order to find subject-related knowledge. Using the

H-Classic methodology, articles originated in areas as widely different as sociology or management were combined. This meant that citations had to be homogenised somehow. The results depended on a correct normalisation of the units which were the subject of the study. The databases are generally full of errors of all types, especially when it comes to older documents. Innumerable works come without a single indexed word, incomplete and incorrect references, missing dates and other problems. At the same time it is necessary to keep in mind the time lag between the publication of an article and the moment when its influence can be felt in the form of citations. On the other hand the search strategy based on the generic root "entrep\*" can leave out terms related to the discipline such as intrapreneurship, small firms, small enterprises, entry firms, etc. However, according to Schildt et al. (2006), expanding the list of words in the generic root to cover a broader set of entrepreneurship research, would risk biasing the findings toward areas the researcher is particularly familiar with. In this sense, an attempt was made to minimize the margin of error through the H-Core, even at the risk of including highly cited texts that are not strictly in the area, given the multidisciplinary nature of the phenomenon. Finally, a considerable limitation is the fact that it is impossible to determine how the quantity of citations received correlates to a document's quality or usefulness. The loss in effectiveness of this measure is largely the result of bad practices, which can reach extremes where certain authors follow deliberate strategies to make sure their studies are published. Citing other articles published in the same journal where they intend to publish, or citing their own work are just two examples of such practices.

Among the future lines of research which might complete the level of understanding of the subject matter is an analysis of co-citation of authors in order to identify the different tendencies they have followed. Additionally, the references contained in the most cited documents of the discipline can be looked at more closely by carrying out a bibliographic coupling analysis. Using those would establish more stable relationships, which do not depend on citations, as references do not change. Finally, it would be important to validate the results obtained by carrying out new studies in other databases (Google Scholar, Scopus), by combining databases and by carrying out new studies with a specific geographic focus (USA, Europe).

## 6. NOTES

1. Hirsch index of a research area: It is calculated by ordering the publications in descending order of the number of citations received and by examining the resulting list to determine the point in which the order number coincides with the number of citations received (Heradio et al., 2016).
2. In a bibliometric work it is convenient to separate those articles or documents that have been useful for the writing of the research from those others that make up the sample and that are available on request (although many of them appear both in the sample and in the references).

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