Herding and consumer behaviour in finance: Literature review

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1. Abstract

Recently Consumer Behavioural in Finance and Economics, which affects individual consumer choices and decision-making, is a fast-growing field of research, which encompass both academics and business.

The current publishing effort in this research line, since 2010, has produced a vast amount of literature which requires analysis of the research trends in the field. In this study, the research focus is going to be about herding. Thus, a literature review analysis is going to be performed using bibliographic methodologies, on the recent publications to identify state of art and trends. This analysis is conducted using VOSviewer from Leiden University.

The 339 publications to study are extracted from SCOPUS database. The output from the analysis included top-cited authors, journals and relevant keywords.

It was found in the analysis that consumer herding and herding behaviour is a substantial area of research since 2013 with journals and publications having a sizeable academic presence.

Keywords: *consumer behaviour, herding behaviour, literature review*

Track: *Consumer Behaviour*

2. Conceptual framework

Consumers have generally been considered to behave rational when choosing the financial products, they wish to invest. Market anomalies are considered random results, and they tend to disappear when there are changes in the methodology used to measure them (Fama, 1998). Other authors (Aren, Aydemir , & Şehitoğlu , 2016) subsequently focused on irrational behaviour as the essence to consumers making financial decisions. It is a *theory of behavioural finance*, which considers that the ordinary consumer chooses financial products based on their psychological, sociological and emotional background.

Feldman and Lepori (2016) consider that the existence of irrational consumer investors, together with the rational ones, significantly impacts prices. In the long term, however, only rational investors remain in the market. At the same time, the rest are withdrawn from the market due to the losses suffered. The effects caused by the personalities and prejudices of investors are minor when herd behaviours are significantly reduced (Lakshmi et al., 2013). In general, those investors with herd behaviour, those which decisions are influenced by reputed opinions (Shiller, 2003), are hoping to achieve higher returns than the market (Howard, 2014). Therefore, It is essential, to understand the gap that is generated between the personality of the investor and their perception of the market, which may be affected by their emotions, overconfidence, disposition effect, commitment, retrospection and randomness, as demonstrated by Sadi et al. (2011).

If you take the ordinary consumer, you will have to consider that sometimes their herd behaviours are influenced by their confirmation bias and loss aversion (Wolf, 2005). Loss aversion, regret and anchoring, have been shown to affect experienced investors more than those who have no experience. Added to this, investors with more capital and more experience prefer to invest on their own instead of receiving advice (Bodnaruk & Simonov, 2015).

The amount of private information the consumer as investor possesses affects the degree to which he or she may appear intelligent in applying the herding effect. Intuition in the herding effect translates into improved reputation. Which translates into the following aspects: His or her reputation is increasing more and more, the solidity of the information previously possessed increases, the level of correlation between the knowledge and the herding or herd behaviour increases (Graham, 2003).

There is a need to review the evidence for links between behavioural biases like herding and some socioeconomic variables, particularly concerning gender and cultural differences in geographies. For this reason, new systematic review studies that address these issues are recommended, paying particular attention to the included studies, expanding the scope and including more diverse sources, even some less relevant from an academic point of view, but maintaining the quality criteria in use.

3. Data selection

In this study, 889 articles from the SCOPUS, academic publications database, were selected with the query: (Herding) AND (Financ*), where "*" stands for the wild card. The results are then constrained for publication years 2012-2021, and publication in "Economic and Finance" and "Business and Accounting", yielding a total of 339 bibliographic records to be analysed.

Figure 1 shows the number of documents that have been published related to herding, herd behaviour and financial consumers, between years 2012-2021.

Figure 1. Number of publications in SCOPUS per year.
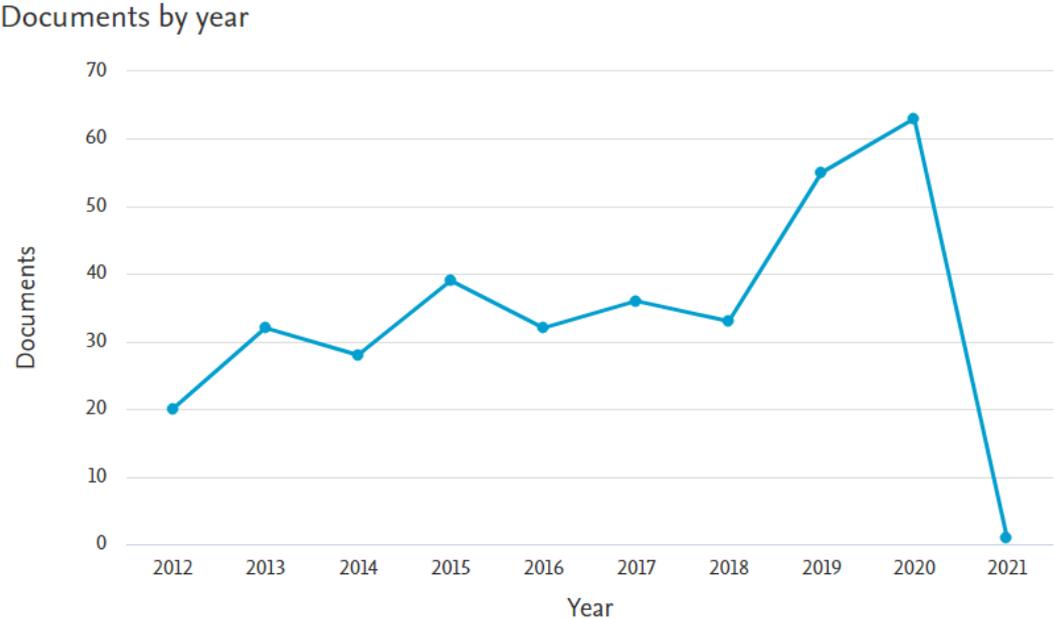
Source: Elaborated with SCOPUS data.

The sources more significant for those documents are the Journal of Behavioral Finance, Review of Behavioral Finance and Journal of Behavioral And Experimental Finance with the increasing number of publications in the last three years.

Concerning the type of publication, 89% are academic journal articles. The knowledge categories for the initial query results (889) are Economics 52,1%, Business and Management 25,3% and from the rest, the more significative is Social Sciences 5,5% and Psychology 5,3%.

4. Methodology

Within the methods of Literature Review techniques (Grant & Boot, 2009) this study is going to be based in the Bibliometric one. Two methods of analysis Bibliometric Coupling and Co-Occurrence (Zupic & Cater, 2015) are going to be used, supported by the bibliographic data produced by the Scopus query.

The use of Network Data Analysis applied to scientific publications, allows to construct networks based on bibliographic data connected by co-authorship, co-occurrence, citation, bibliographic coupling or co-citation links (Van Eck & Waltman, 2014). Associated to a network are two positive numbers. The strength, which indicates the intensity between two items, or nodes. For example, the number of cited references in common between two publications (bibliographic coupling links), the number of publications two authors have co-authored (co-authorship links), or the number of publications in which two terms appears together (co-occurrence links). Another number is the item´s weight associated with attributes and measure the importance of the item. Both strength and weight are more important as higher the value associated with them (distance-based maps). Items can be also grouped into non-overlapping clusters or communities based on similarities.

VOS Viewer (Van Eck & Waltman, 2010) is the software selected for the Bibliometric Network Analysis, providing a visual map of the relations among authors, publications and keywords. It calculates a matrix to represent the relationships, constructs a map applying VOS mapping technique (Visualization Of Similarities) allowing two types of views. Network Visualisation items are represented by a circle with a label, the size of the circle depends on the weight of the item, with different colour depending on the cluster. The lines between the items represent the links, and its length represents the strength, the shortest the strongest. Another

visualisation is the Overlay, similar in aspect to the Network Visualization. Still, with the items with different colours, according to the score value, that is any numerical property of the item other from the weight. Besides the views, there is a set of analysis tools that modify the layout and clustering of the active map, weight and score with different normalisations.

5. Results

5.1. Bibliographic Coupling

Table 1 presents the ten top more essential papers for the bibliographic coupling analysis. The documents are organised in four clusters, based on the distance analysis using the links strength and the weight of citations. Although the steady growth of publications between 2012 and 2020, the more cited papers are dated between 2013-2017. The cluster detail, sorted by each total number of citations, is as follows.

Cluster one includes four references, totalling 124 citations (33,2%). The most cited reference is *Herding in financial markets: a review of the literature* by Spyrou S. (2013) with 73 citations, and main keywords*: Analyst recommendation, Herding and Institutional investors*. The other references in the cluster are *Institutional herding for international markets* by Choi N. and Skiba H. (2015) with 37 citations and *Herding behavior under market condition: empirical evidence* by Ourda M. et al. (2013) with 14 citations.

Cluster four includes two references, with a total of 110 citations (29,5%). The two cited references are first *Herding behaviour in Reits: novel test and the role of financial crisis* by Philippas N. et al. (2013) with 61 citations and associated keywords: *Herding behavior, Investors sentiment, Real State and Reit*. And second reference is *International herding: does it differ across sectors?* By Gebka B. and Wohar M.E. (2013) with 49 citations.

Cluster two includes two references adding to 85 citations (22,8%). The first reference is *Herding on fundamental information: a comparative study* by Galariotis E.C. et al. (2015) with 72 citations and keywords *Financial crisis, Fundamental information and Herding*. The second reference is *Herd behavior in the drybull market: an empirical analysis of the decision to invest in new and retire fleet capacity* by Papapostolou N.C. et al. (2017) with 13 citations.

Cluster three also has two references with a total of 54 citations (14,5%). First *Herding frontiers markets: evidence from African Stock Exchanges* by Guney Y. et al. (2017) with 32

citations and second *Herding dynamics in exchange groups: evidence from Euronext* by Economou F. et al. (2015) with 22 citations.

Table 1 Top Referenced publications Bibliographic Coupling

Author	Reference Paper	Year	Cluster	Citations	Total Link
Spyrou S.	Herding in financial markets: a review of the literature	2013	1	73	193
Choi N., Skiba H.	Institutional herding in international markets	2015	1	37	134
Ourda M. et al.	Herding behaviour under market condition: empirical evidence	2013	1	14	136
Galariotis E.C. et al.	Herding on fundamental infromation: a comparative study	2015	2	72	169
Papapostulou N.C. et al.	Herd behaviour in the drybull market: an empirical analysis fo fleet cap.	2017	2	13	134
Guney Y. et al.	Herding in frontiers markets: evidence from African Stock Exchanges	2017	3	32	203
Economou F. et al.	Herding dynamics in exchange groups: evidence from Euronext	2015	3	22	184
Philippas N. et al.	Herding behaviour in Reits: novel test and the role of financial crisis	2013	4	61	152
Gebka B., Wohar M.E.	International herding: does it differ across sectors?	2013	4	49	134

Source: Produced by authors with VOSviewer results

Table 2 shows the ten top journals with a significant number of publications on herding and consumer behaviour in finances. The journal with more publications in the period and citations corresponds to the Journal of Behavioural Finance, with 27 papers and 126 citations with the highest total link strength. Is interesting to note that this is quite a young journal.

There are two other journals with more than ten publications and also a high citation rate. The International Review of Financial Analysis with 11 publications and 187 citations, and the Review of Behavioural Finance with 12 publications and 101 citations. Another journal with a large number of citations although a low number of publications, is the Journal of International Financial Markets, Institutions and Money with 200 citations but only five publications. The reason could be that hearding works are not significantly present in their publications, but these are cited by many other documents more focused in herding. Another journal is the Journal of Banking and Finance with 161 citations but only five publications, with the previous journal's same circumstances.

5.2.Author keywords Co-Occurrence

Table 3 shows the top ten author keyword occurrences, including the reference year the keyword appeared in the publications.

Table 2 Top Sources Bibliographic Coupling

Source	Papers	Citations	Total Link
Journal of Behavioural Finance	27	126	5786
Internacional Review of Financial Analysis	11	187	3604
Review of Behavioural Finance	12	101	3163
Journal of Int. Financial Markets, Institutions and Money	5	200	2853
Journal of Banking and Finance	5	161	1829
Applied Economics	7	36	1650
Managerial Finance	8	36	1430
Emerging Markets Finance and Trade	7	25	1425
Journal of Behavioural and Experimental Finance	9	45	1321
European Journal of Finance	5	28	630

Source: Produced by authors with VOSviewer results

The most common keyword is herding with the double of occurrences than any other keyword. 112 versus the next 61). Figure 2 presents the network map for the keywords, where it can be observed the presence of three clusters, one build around herding and its related links with more strength. The weight used for the terms is their number of occurrences.

The first cluster with a total of 240 occurrences (81,6%) includes Herding, Herding Behaviour, Behavioural Finance with a high number of occurrences and link strength, and Overconfidence, Financial Markets and Volatility with a low number of occurrences and link strength. This cluster highlight the trends in research associated with these constructs. The period between 2016-2017 is where most of the papers with the author keywords analysed were published.

Table 3 Top Author Keywords in Co-Occurrence

Keyword	Ocurrences	Cluster	Ref. Year	Total Link
Herding	112	1	2016	53
Herding Behaviour	61	1	2017	29
Behavioural Finance	48	1	2017	36
Overconfidence	8	1	2016	9
Financial Markets	6	1	2107	8
Volatility	5	1	2015	8
Financial Crisis	25	2	2016	25
Stock Markets	8	2	2016	8
Market Eficiency	6	2	2018	9
Institutional Investors	9	3	2015	7
Gobal Financial Crisis	6	3	2018	6

Source: Produced by authors with VOSviewer results

Figure 2 Network map Author Keywords Co-Occurrence
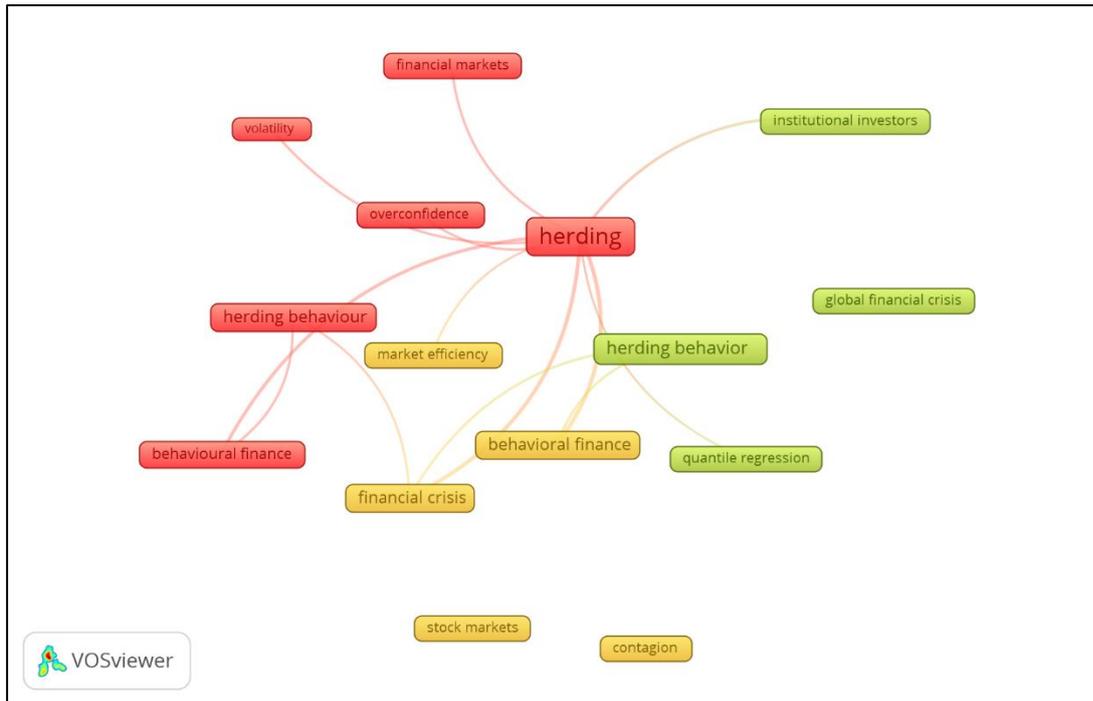
Source: Elaborated with VOSviewer and authors prepared data

The second cluster with 39 occurrences (13,3%) includes Financial Crisis, Stock Markets and Market Efficiency with a low number of occurrences and link strength, except for Financial Crisis.

The third cluster with 5% of occurrences and two keywords with a low number of occurrences and link strength is not relevant for the research trends.

6. Conclusions

Bibliometric analysis is not without its limitations due to the structure of the bibliographic records (depends on the database used) and the analytical methods. The search criteria as detailed in the method section is critical, and checks on the correspondence of the proposed selections by the Bibliographic Coupling and Co-Occurrence and the original data names and terms from the search, is needed to avoid missing information.

Although several reviews of the literature about herding in financial markets research are available (Spyrou, 2013), this study seems to be the first using bibliometric methods. Co-

occurrence analysis identified 933 keywords from which the top-ten were selected, having four clustered with the larger share of ocurrences on related keywords around herding, herding behaviour and overconfidence together with behavioural finance. The bibliographic coupling identified 339 different documents from which 91 met the minimum level of ten citations and then the top ten publications where clustered in four groups. The search and review of evidence about the herding behaviour are common to all of these publications. Regarding the sources (journals) 173 were identified and with the conditions of five citations and five sources per document 11 journals where selected. The most important selection corresponds to the Journal of Behavioural Finance.

This study opens a new way for future research in herding consumer behaviour using literature review methods, from Bibliographic methods used here to investigate state of the art in the field to a more advanced analysis of the constructs using Meta-Analysis and Systematic Review. Thus, the authors are considering a future Systematic Review of the research topic.

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