

## GENDER AND INVESTMENT BEHAVIOR: A REVIEW AND BIBLIOMETRIC ANALYSIS

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**Abstrak** (11 pt)

The effect of gender differences on investment behavior is a research topic that needs to be explored to understand the phenomena. This paper is to review the literature on gender and investment behavior, as well as their influence on other dimensions. The Publish or Perish software was used to acquire literature data, and the Google Scholar database was chosen. The term used for the title is "gender investment." The initial search yielded 213 publications published between 2016 and 2021. Then, 112 articles were selected from the 213 literatures that were chosen. Using the Mendeley reference manager and the Publish or Perish software, information on the most cited articles was compiled. In addition, the 112 references were processed with the VOS Viewer to generate cluster data containing the items that appear in each cluster. Also demonstrated were the overlay visualization, density visualization, and author network connected with keywords. This study gives an overview of gender issues in investment behavior for future research.

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**INTRODUCTION**

According to numerous conventional financial theories, humans make financial decisions rationally. Nonetheless, numerous studies have demonstrated that human behavior can be influenced by moods and emotions, causing humans to behave in unpredictable or unreasonable ways that influence their decision-making. Further research is required to determine whether demographic and psychographic

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traits of individuals influence investment decision-making behavior (Mahapatra & Mehta, 2015; Halko et al., 2012).

One of the demographic characteristics that is getting a lot of attention is the issue of gender. The significance of gender in investing decisions remains a contentious question. Women have a lower proportion of risky assets (Halko et al., 2012), they are more risk averse (Dohmen et al., 2011), and they are less confident (Barber & Odean, 2001). Recent research suggests, however, that this disparity tends to close when socio-demographic and economic factors, such as financial literacy, are considered (Hibbert et al., 2013) (Almenberg & Dreber, 2015). This presents a novel perspective that incorporates behavioral differences. Investment across genders is not in gender per se, but in socio-demographic-economic inequalities that are tied to gender in our society. The relationship between gender and other factors in influencing the financial behavior of an individual has so far not been extensively explored (Marinelli et al., 2017).

Financial decisions are an integral element of human activity and behavior, and they have an impact on both the present and future quality of life. This applies to both men and women, and women's participation in financial markets has expanded in recent years (Walczak & Pienkowska-Kamieniecka, 2018). In this regard, however, many characteristics of women's conduct differ from those of men. For example, gender influences the utilization of banking services. (Yiu et al., 2007) and (Polasik & Wisniewski, 2009) highlight that women utilize Internet banking much less than males, as do women's lower education and income. Men use internet banking more frequently than women, not only because they prefer this method of communication with banks, but also because they are more familiar with computers. In contrast, women are less interested in internet banking's new features (Safeena et al., 2014). (Riquelme & Rios, 2010) note that gender and age are not the only factors to consider when choosing a form of banking; perception of risk, ease of use of tools for banking transactions, and the relative advantage of using particular forms of banking are also significant. Referring to the purchasing of financial services, (Sharpley, 2020) and (Richard et al., 2010) note that gender influences decisions on the use of specific internet-based services. The author

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highlights that the ownership of a debit card may be attributable to differences in the desire to use a debit card. On the one hand, women are more likely to carry balances on their credit cards, while on the other hand, they are less likely to pay their amounts in full (Walczak & Pienkowska-Kamieniecka, 2018).

In addition, research indicates that women are not only characterized by a reasonable approach to making urgent financial decisions, but also display same traits while making decisions pertaining to potential financial concerns later in life. Women are demonstrably less likely to have delinquent obligations that collection agencies must collect. Additionally, women are less likely than men to have revolving loan accounts (Wang et al., 2014). Regarding economic decisions, women avoid incurring debt (Carter et al., 2007). As Fungacova and Weill (2014) point out, this has undesirable consequences. Women borrow less money from family and friends than men. However, because to their lesser income and creditworthiness, they elect to use shadow banking more frequently (Walczak & Pienkowska-Kamieniecka, 2018).

In terms of general finances, women are characterized as risk-averse in a variety of activities, including investing, retirement planning, pay negotiation, company financing, and general money management. In contrast, it appears that particular socialization influences women's trust in financial management. Graham et al. (2002) contend that more complicated psychological elements are relevant to this gender issue. (Mahapatra & Mehta, 2015)(Marlow & Swail, 2014).

Researchers have discovered that gender greatly influences financial perceptions, spending behavior, and financial condition satisfaction (Hira & Mugenda, 2000). Women invest less in equities and are more conservative investors. According to Charles Schwab's (2004) quarterly investment indicator, male investors own an average of 2.5 times more assets than female investors. The tendency of women to consider investing decisions more thoroughly leads in lower trading rates and hence higher returns (Barber & Odean, 2001).

Graham et al. (2002) contend that women's aversion to investment risk and lack of investment confidence results in lower investment returns, smaller pension funds, and lower retirement income. Previous research highlight the influence of

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demographic characteristics, including marital status, employment choice, and full-time status, on women's investment behavior. Dwyer, Gilkeson, and List (2002) discovered that when the financial and investment market knowledge gap eliminated, the impact of gender was dramatically diminished.

The purpose of this paper is to review the literature of previous studies on gender and financial behavior. The articles published and indexed by Google Scholar are collected, selected based on the topics raised (gender and investment behavior), categorized, and analyzed in more depth. The analysis results will show what research constructs are currently being researched related to gender and financial behavior and topics that can be explored for further research. The software used to collect data is Publish or Perish with a Google Scholar database to view the most influential articles and journals on this research topic. Furthermore, the data collection results from PoP were analyzed bibliometrically using the VOS viewer.

## **RESEARCH METHODS**

This study adopted a bibliometric analysis literature review based on a systematic and explicit method (Garza-Reyes, 2015), which follows the five-stage method from (Tranfield et al., 2003) and Setyaningsih et al (2018). The five-stage method can be seen in Figure 1.

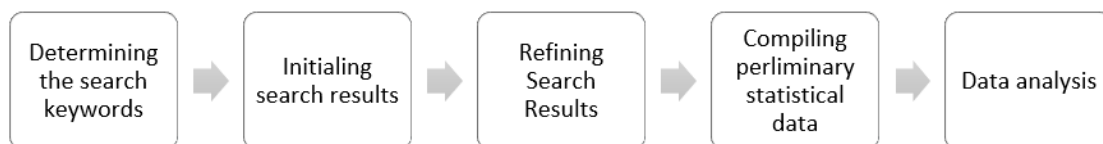


Figure 1. Schematic Diagram of the research

First, the literature search was carried out using the keyword 'gender investment'. The literature search was carried out using the Publish or Perish (PoP) software and the Google Scholar (GS) database. Publish or Perish was chosen because it is currently proven to be quite effective in finding articles. Google Scholar was chosen because it is currently the largest database and can be accessed easily.

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Second, the initial search returned 900 records but many irrelevant titles. Therefore, the search was repeated using the title word 'gender investment' instead of keywords. and the year is limited from 2016-2021. From these steps, 213 articles were produced. The results are stored in a Research Information System (RIS) format to include all important article information such as article title, author, affiliation, abstract, keywords, and references.

Third, the search results were improved. From the 213 data, the appropriate articles indexed in the GS database were then filtered. The data did not

include newspapers, books, book reviews, and book chapters. Only journal articles or proceedings that can be accessed are taken. As a result, 112 articles were obtained that were truly appropriate. Then the results of the repair of the data are stored in the form of a RIS file. Then the RIS data is imported into Mendeley bibliography software and into excel with headers.

Fourth, the data collected are checked for completeness of the articles as journal articles (year of publication, volume, number, pages, etc.). Data analysis is carried out so that articles can be classified based on the year and source of publication, and publisher.

The last is related to data analysis. Bibliographic data retrieval in this study using PoP software. However, the Vos Viewer software was used for analysis and visualization of the bibliometric network. The VoS viewer is used because of its ability to use large data sets effectively and can provide interesting visual and analytical results. ViosViewer can also create publication maps, author maps, and journal maps based on co-citation networks or build keyword maps based on networks.

## **RESULTS AND DISCUSSION**

The initial results of the data search using PoP with the Google Scholar database were 213 articles. Then those articles were selected to match the keywords and article criteria, resulting in 112 articles. The comparison of the data matrix in the initial search results and the search results after further selection can be seen in table 1.

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Furthermore, to see the most relevant contributions in this study, from 112 articles with the title word "gender investment" 10 articles were chosen based on the highest citation value. The results can be seen in table 2.

Table 1. Matrix Comparison

<b>Matrix Data</b>	<b>Initial Search Result</b>	<b>Refine Search Result</b>
Source	Google Scholar	Google Scholar
Year of Publication	2016 - 2021	2016 – 2021
No. of documents	213	112
Citation	8197	3466
Citation / year	1639.40	693.20
Citation / document	40.99	46.21
Author/document	2.63	2.68
h_index	50	32
g_index	81	58
hI_norm	30	22
hI_tahunan	6.00	4.40

Source: Data processed by Researchers (2021)

Table 2. The 10 most cited articles

<b>Cites</b>	<b>Authors</b>	<b>Title</b>	<b>Year</b>	<b>Source</b>	<b>Publisher</b>
318	M Wiswall, B Zafar	“Preference for the workplace, investment in human capital, and gender”	2018	The Quarterly Journal of Economics	academic.oup.com
111	W Montford, RE Goldsmith	“How gender and financial self-efficacy influence investment risk-taking”	2016	International Journal of Consumer Studies	Wiley Online Library
92	S Chen, X Ni, JY Tong	“Gender diversity in the boardroom and risk management: A case of R&D investment”	2016	Journal of Business Ethics	Springer
32	LF Edelman, R Donnelly, T Manolova, ...	“Gender stereotypes in the angel investment process”	2018	International Journal of Gender and Entrepreneurship	emerald.com
26	DWH Alrabadi, SY Al-Abdallah, ...	“Behavioral biases and investment performance: Does gender matter? Evidence from Amman	2018	Jordan Journal of Economic Science	academia.edu

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<b>Cites</b>	<b>Authors</b>	<b>Title</b>	<b>Year</b>	<b>Source</b>	<b>Publisher</b>
		Stock Exchange”			
24	N Marinelli, C Mazzoli, F Palmucci	“How does gender really affect investment behavior?”	2017	Economics Letters	Elsevier
21	RK Goel	“Foreign direct investment and entrepreneurship: Gender differences across international economic freedom and taxation”	2018	Small Business Economics	Springer
18	X Xu, K Sylwester	“The effects of foreign direct investment on emigration: The roles of FDI source country, education, and gender”	2016	Economic Modelling	Elsevier
16	YC Lai, S Sarkar	“Gender equality legislation and foreign direct investment: Evidence from the labour market of Taiwan ROC”	2017	International Journal of Manpower	emerald.com
15	AM Hibbert, ER Lawrence, AJ Prakash	“The effect of prior investment outcomes on future investment decisions: is there a gender difference?”	2018	Review of Finance	academic.oup.com

Source: Data processed by Researchers (2021)

From Table 2 it can be seen that the articles written by (Wiswall & Zafar, 2018) were cited the most by other authors, namely 318 citations. The article was published in The Quarterly Journal of Economics by publisher academic.oup.com. The subjects discussed in the paper are workplace preferences, investment in human resources, and gender. The authors of the paper concluded that on average, women are more ready to pay for positions with greater work flexibility and security. Meanwhile, males are more prepared to pay for positions



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with faster wage growth. Gender differences in preferences account for at least a quarter of the gender wage gap at the start of a career.

Table 2 also shows the research constructs related to gender and investment behavior that are widely cited: (Montford & Goldsmith, 2016) examines the effect of gender and financial self-efficacy on investment risk-taking. The study was undertaken in the United States to determine whether women invest with less risk than males and whether financial self-efficacy is positively correlated with investment portfolio risk. The results show that the hypothesis is accepted, and the analysis results show that financial self-efficacy is the cause of gender differences related to financial risk-taking. (Chen et al., 2016) examined a case study of investment in the research and development department related to gender diversity in the office and risk management. The results show that female directors increase board effectiveness in risk management with respect to R&D investment. The research was conducted at a company in America. Furthermore, research with other constructs related to gender was carried out by (Jamil & Khan, 2018) which raised Inter-gender Behavioral Bias and Investment Performance on the Amman Stock Exchange. Evidence shows no statistically significant difference between men and women regarding behavioral bias in investing in the stock exchange. Another researcher (Lai & Sarkar, 2017) investigated Gender Equality Legislation and Foreign Direct Investment: Evidence from the Taiwan ROC Labor Market. In a country like Taiwan, where the legislature is attempting to address persistent gender disparities in its labor market, passing laws to combat inequality could eventually narrow the wage gap between men and women in the foreign direct investment industry, according to the results of his research. (Hibbert et al., 2018) investigates if there are gender differences in perceptions regarding the impact of past investment performance on future investment decisions. The data indicate that most males continue to invest in stocks after experiencing losses, but most women opt to avoid investing in stocks. Respondents in the study were finance lecturers at universities in the United States.



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The network visualization data related to the corrected title word "gender investment" can be seen in Figure 1. Figure 2 shows the overlay visualization, and Figure 3 studies the density visualization.



Figure 2. Network Visualization  
 Source: Data processed by Researchers (2021)

Figure 1 shows the clusters of each topic area under study. A certain color represents each cluster, and several keywords with the same color can be seen in each cluster. In general, the closer two circles are to each other, the stronger the relationship. Table 2 shows the results of the VOS Viewer extracted from keywords with full calculations with the minimum number of occurrences set to number 4. The result is 1072 terminology occurrences, with 68 terms meeting the threshold. Furthermore, the 68 terms were verified so that 61 items came out. The result is that there are 7 clusters with elements in each cluster, as shown in table 3.

Table 3. Keywords representing each cluster.

No	Cluster	Elements
1	Cluster one (red)	Age, behavioral biases, case, difference, financial literacy, gender difference, individual, individual investor, influence, investment behavior, investment decision making, investor, man, perspective, role, study, survey, woman
2	Cluster two (green)	Child, country, education, equality, gender equality, gender gap, gender perspective, Ghana, investment, quality, relationship, social investment
3	Cluster three (dark blue)	Data, effect, employment, entrepreneurship, foreign direct investment, foreign investment, gender inequality, impact, India, wage
4	Cluster four (yellow)	Board gender diversity, China, company, diversity, employee, firm value, gender diversity, Indonesia,

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No	Cluster	Elements
		research
5	Cluster five (purple)	Anger, anxiety, gender, investment decision, race, relevance
6	Cluster six (light blue)	Firm, risk, value,
7	Cluster seven (orange)	Evidence, venture

Source: Data processed by Researchers (2021)

Figure 2 shows the trend from year to year regarding research related to the selected keywords. The color range is from blue (oldest), then green, and finally yellow (newest). Figure 3 shows the research depth with colors ranging from blue, green to yellow. The more research there is on a keyword element, the closer it gets to yellow. On the other hand, the less research there is on a keyword element, the closer it is to blue.



Figure 3.Overlay Visualization

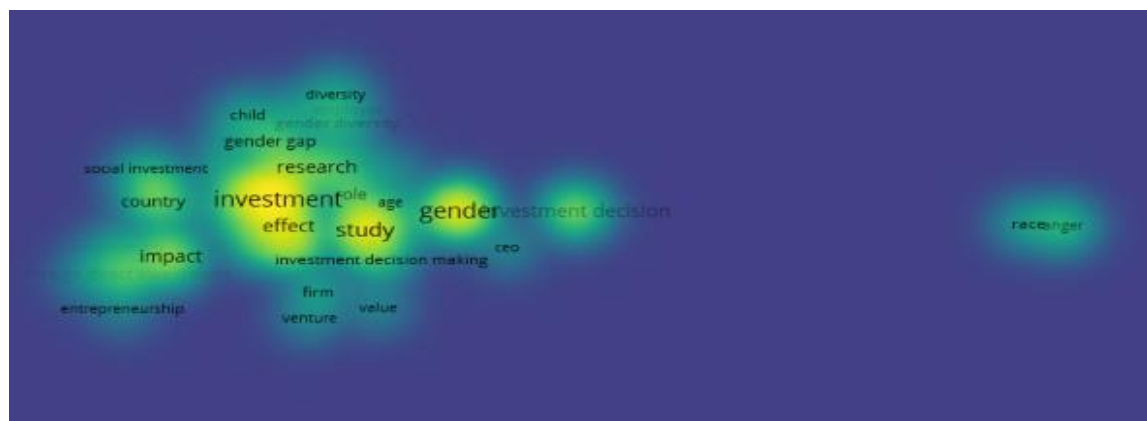


Figure 4. Density Visualization

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## RESULT AND DISCUSSION

The literature review reveals that there are disparities in the investment behavior of men and women. Women are more risk-averse than males when it comes to money, so it is essential to understand how they perceive risks. Women are less assured than males regarding their financial future, retirement needs understanding, and current financial condition. There is a need for specialized educational materials and consultation efforts to determine the areas of money and investment in which women have the least confidence. In addition, it is essential to develop strategies to raise the level of trust among female clients, potentially by boosting their direct participation in investing.

Researchers have examined gender disparities in decision-making and investment behavior for a very little period of time. To yet, the fundamental causes of gender disparities in investment behavior have not been fully addressed. Consequently, gender and investment behavior is a subject that requires additional research.

This study has two constraints. First, this research relies on a limited number of keywords and may also be constrained by the limited database (Google Scholar) employed to collect articles. Second, even though this study employs formal software like as PoP and VOS Viewer, subjective author assessments may still result in errors. For further research, it is recommended to use a more complete and more diverse database.

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