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ARTICLE

Consumer financial vulnerability: Review, synthesis, and future research agenda

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Abstract

Research on consumer financial vulnerability (CFV) was especially encouraged in the aftermath of the 2007–2008 financial crisis, becoming a phenomenon of global interest to academics and policy makers. This paper reviews the existing academic literature on CFV with the aim of mapping out four research fields (i.e., the concept, the measures, the methods, and the drivers of this phenomenon) and providing a roadmap for a future research agenda for this field. To this end, we review the last two decades of academic research on households' financial vulnerability, thereby presenting a hybrid literature review. Evidence from a comprehensive analysis of 98 academic papers suggests that this is still an emerging and highly fragmented field and, therefore, a comprehensive future research agenda is offered, including concrete suggestions for research designs and measurements. The proposal of a homogeneous definition of financial vulnerability, the consideration of measures that include subjective aspects of the phenomenon, the use of qualitative methods, and the development of more detailed theoretical and empirical research on the drivers of CFV, are among the authors' recommendations for future research.

KEYWORDS
financial distress, financial fragility, household financial vulnerability, over-indebtedness, systematic review

1 | INTRODUCTION

Financial vulnerability has been broadly defined as the situation experienced by households or consumers who have high debt relative to income, especially when it comes to consumer debt and unsecured loans (Anderloni et al., 2012; Kim et al., 2016), and/or limited ability to repay (Kim et al., 2016). In contrast to this "narrow" conceptualization that associates consumer financial vulnerability (CFV) with high indebtedness, other authors qualify households as fragile if they cannot afford to do their favorite activities such as eating out with family and friends, taking a holiday or doing leisure pursuits (Worthington, 2006). Non-indebted consumers can also be considered fragile when they are unable to meet an unexpected expense (Demertzis et al., 2020), make ends meet, or pay their utility bills (Bridges & Disney, 2004). Moreover, the possible exposure to adverse economic shocks such as changes in interest rates, correction of asset prices (e.g., housing or retirement accounts), or sudden unemployment (Kim et al., 2016) might leave households in a financially vulnerable position (Ali et al., 2020a). Thus, the term "financial vulnerability" is very multifaceted, complex, dynamic and elusive (Ali et al., 2020a).

Since the 2007–2008 financial crisis, policy makers have been paying more attention to household financial fragility (Azzopardi et al., 2019) due to the increasing levels of indebtedness in Western households (Angel & Heitzmann, 2015; Livshits, 2015). In 2018, Demertzis et al. (2020) reported that more than 30% of EU households could be considered financially fragile. Such a high percentage in a period of moderate growth, and prior to the post-COVID-19 period, explains why the financial vulnerability of consumers has become a growing concern for governments and society. Nevertheless, it is not the only reason. This critical state affects consumption levels and, given that the largest share of wealth in developed economies is held by households (Ampudia et al., 2016), it has an impact on the economy (Ali et al., 2020a; Ampudia et al., 2016). The stability of the financial system also depends on families' ability to meet their financial obligations (Azzopardi et al., 2019; Noerhidajati et al., 2020). Moreover, financially fragile households tend to experience deprivation, which may eventually lead to absenteeism and low productivity at work, as well as financial exclusion (Daud et al., 2019).

Research on household financial vulnerability has increased due to the fact that this issue has become a major concern for governments and for the financial industry. Nevertheless, we should note that the existing literature is highly fragmented in terms of theoretical and empirical approaches. More specifically, the term "financial vulnerability" has been used interchangeably with others such as "financial fragility" and "financial distress" (Ali et al., 2020a; Daud et al., 2019). Common empirical CFV measurements are lacking. Moreover, while a non-negligible number of studies address the influence of demographic and socioeconomic driving forces on CFV, only a few consider other behavioral drivers. On a more practical level, these shortcomings make it difficult to use the findings of the current literature to design interventions aimed at strengthening the financial resilience of households.

This paper has a threefold objective: to review the existing academic literature on CFV, to synthesize prior research findings and to identify gaps that could open new and exciting directions for future research. To this end, we pose the following research question: *How is CFV investigated (i.e.,* *in terms of conceptualization, measurements, and determinants used)?* To answer this question, we have conducted a hybrid review (Paul & Criado, 2020).

This study aims to contribute to the existing literature in four ways. Firstly, it is the first attempt to identify, explore, and systematize the priority areas prevailing in CFV by way of a systematic review of 98 academic papers in the field of CFV published in the last two decades (from January 2000 to July 2022) with the help of bibliometric analyses. Secondly, it further enhances the literature on financial vulnerability by identifying four main lines of research, namely, the conceptualization of CFV, its different measures, the empirical methods used in its analysis and its main drivers (Daud et al., 2019). Thirdly, it provides the basis for progress in the field by organizing the findings as described above, while it allows us to provide a detailed future research agenda. Finally, it helps governments and practitioners to design interventions aimed at reducing the risk of domestic financial fragility as it presents recent findings on the driving forces of CFV.

This paper proceeds as follows: Section 2 presents the methodology; Section 3 details the descriptive results; Section 4 discusses the findings on the conceptualization and measurement of CFV, as well as on its driving forces, thus leading to the future research agenda, which is discussed in Section 5; the conclusions are presented in Section 6.

2 | THE REVIEW PROCESS: OBJECTIVE AND METHODOLOGY

To investigate the state of the art in CFV, a systematic literature review (SLR) has been conducted. This method carefully identifies and synthesizes relevant research on a specific topic, increasing methodological rigor and providing objective, replicable, and reliable results (Moher et al., 2009) from which to draw conclusions (Tranfield et al., 2003).

As previously stated, this paper conducts a hybrid literature review on CFV. Figure 1 depicts the systematic review flow diagram, consisting of the following five stages:

1. *Search.* Existing research has contributed to the literature on CFV at both macro and micro-levels of study. Whereas the former has focused on the resilience of economies and financial systems during specific periods of financial distress, the latter has placed households at the center of the analysis. This systematic review focuses on the second level.

   Financial vulnerability has been used in the literature interchangeably alongside financial fragility, financial distress, financial debt burden, and over-indebtedness, to name but a few (Ali et al., 2020a; Daud et al., 2019). Therefore, a literature search has been conducted using the following search strings in the title, abstract and keywords: [*"financial vulnerab*"* OR *"financial distress"* OR *"financial stabil*"* OR *"indebt*"* OR *"financial debt burden"* OR *"over-indebt*"* OR *"financial fragil*"*] AND [*"household*"*].

   Initially, two databases (i.e., *Web of Science* (*WoS*) and *Scopus*) have been used for the systematic search of academic papers. The searches in *Scopus* have yielded on average 20% more results than those in *WoS*. This second database, as Van der Have and Rubalcaba (2016) acknowledged, does not include less formal, but significant resources in the field of household finances (e.g., the *Social Science Research Network*), which can guide the discussion in an emerging field of knowledge such as CFV.

   More specifically, the searches have yielded a total of 989 studies in *WoS* and 1150 in *Scopus*. All studies considered were written in English and published between January 2000 and July 2022, covering, therefore, at least a bare minimum period of 10 years (Paul & Criado, 2020). A number of inclusion and exclusion criteria have been considered. In this step, studies in areas

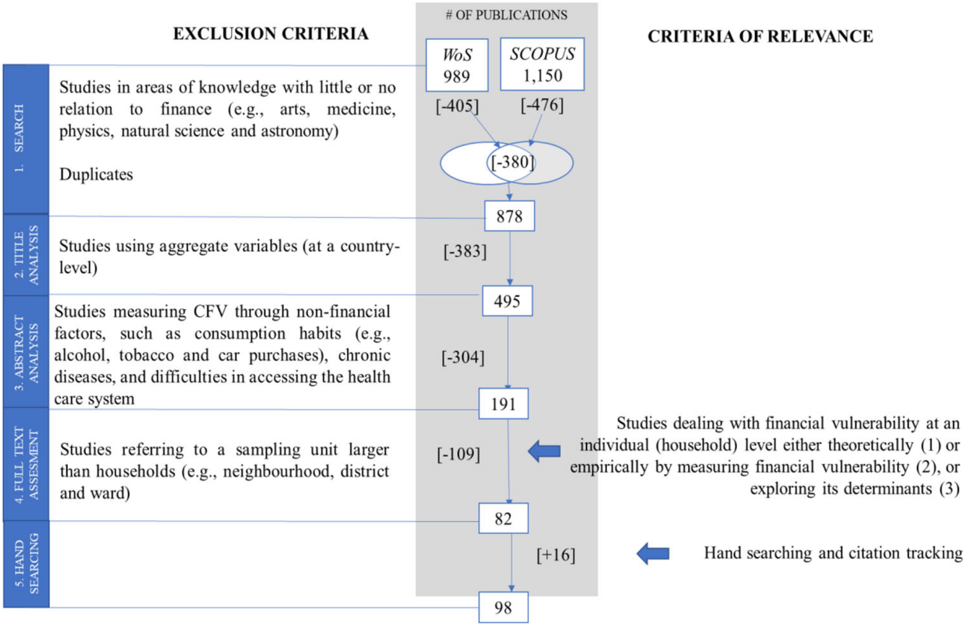


FIGURE 1 Flow diagram of the systematic review. Source: Authors' own elaboration. [Colour figure can be viewed at wileyonlinelibrary.com]

of knowledge with little or no relation to finance (e.g., arts, medicine, physics, natural science, and astronomy) had been discarded through the advanced filtering options of the *WoS* and *Scopus* databases. By doing so, 405 publications have been rejected in *WoS*, and 476 in *Scopus*. After filtering out duplicates, an initial sample of 878 remains.

2. *Title analysis.* The titles of the remaining publications (878 studies) have been screened to discard any studies analyzing CFV through aggregate variables, such as the country's level of consumption or savings, as we consider that these refer to the macro-level of study. At this stage, 383 papers that do not fit the aim of the research have been excluded.
3. *Abstract analysis.* The abstracts of a total of 495 publications have been read to eliminate any that, according to the pre-defined criteria of relevance to the study (Calabrò et al., 2019), are beyond our scope. More specifically, the publications measuring financial fragility through non-financial factors, such as consumption habits (e.g., alcohol, tobacco, and car purchases), chronic diseases and difficulties in accessing the health care system, have been considered off-topic entries. After discarding a total of 304 publications, this screening results in 191 publications for further consideration.
4. *Full-text assessment.* A detailed reading of the 191 resulting publications has allowed for the selection of papers that fit the aim of the research. In doing so, studies that have addressed financial vulnerability at the individual (household) level, either theoretically (1) or empirically, whether it be by measuring financial vulnerability (2) or by exploring its determinants (3), have been selected. On the other hand, studies referring to a sampling unit larger than households (e.g., neighborhood, district, or ward) have been discarded. A total of 82 publications have been admitted to the next stage.
5. *Hand searching.* Finally, via citation tracking, 16 additional publications have been identified, resulting in a final sample of 98 publications.

The final sample has been analysed using an Excel spreadsheet (Calabrò et al., 2019) and a pre-defined coding scheme (Lock, 2019) has been shared with a scholar from the field in order to reach an agreement on the relevant information to be included. All authors of the paper have participated in the data collection and analysis in a collaborative manner. Besides formal variables (e.g., authors, journal, and citation), a range of previously coded variables (e.g., datasets used, methodology, and econometric techniques) and the main results and findings have been gathered for each item. The information collected has been organized and synthesized to provide a complete picture of the state of art in CFV literature. Moreover, *VOSviewer* software (Van Eck & Waltman, 2010), aimed at constructing and viewing bibliometric maps (e.g., co-citation maps, thematic country maps, and keyword concurrence), has been used to process the papers, visualize, and analyze the main information. This software allows the in-depth review of the maps thanks to its functionalities and it is particularly helpful for any which contain at least a moderately large number of items, such as is the case in our literature review.

3 | DESCRIPTIVE RESULTS

Before discussing the main findings, it is worth providing some descriptive elements of the selected publications, as this will also allow us to draw some conclusions. It should be noted that some of the papers analyzed provide results for different subsamples (e.g., countries, age, and groups) and, in these cases, the results by subsamples have been treated individually, meaning that in some of the parameters analyzed, the total number of observations may be greater than the number of papers (i.e., 98).

3.1 | The emerging topic of CFV

The number of publications on CFV displays an upward trend over the period considered (Figure 2). Specifically, three stages can be identified in this evolution. The first, which spans the years 2000–2007 and comprises 3% of the studies, is characterized by the scarcity of publications. This situation could be for two reasons: either the limited interest of the authors in dealing with the subject of analysis or the lack of databases that would have allowed them to be researched at an empirical level.

The second stage began in 2008. The outbreak of the financial crisis and the subsequent recession marked a turning point in the study of this topic and from that year onwards, research on CFV became more constant. The interest probably lay in the social and economic situation at that time. Not in vain, the 13 papers published in the year 2016, when the number of publications at this stage peaked, attempted to analyze CFV in the years immediately following the 2007–2008 financial crisis.

The third stage, starting in 2017 and finishing in 2022[1], which consists of 56% of the studies, is characterized by a steady growth in the number of publications[2]. The 17 that were published in 2021 reached the maximum quantity for the whole period analyzed. This made up almost a third of all the papers published in this last stage, which might be due to the COVID-19 outbreak. The most recent studies have sought to analyze more recent data. Thus, there is a peak in data from 2020 onwards, which might be related to the dissemination of the first surveys analyzing the situation of households after the pandemic began.

This temporal sequencing in the appearance of CFV publications may be for several reasons. Firstly, there used to be a lack of databases on household finances. It was not until the 1980s and

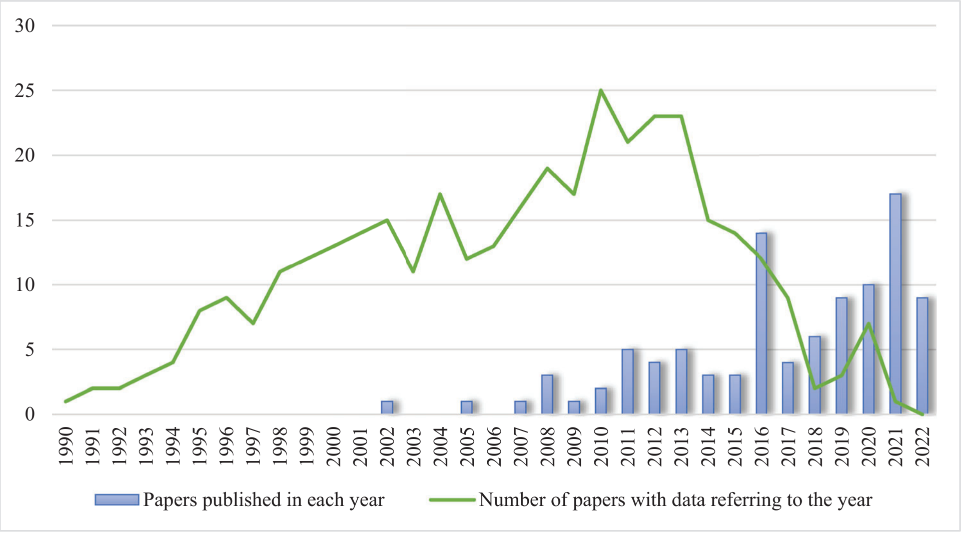


FIGURE 2 Publications by year of publication and year of study (1990–2022). Source: Authors' own elaboration. Note: Publications analyzing empirical data referring to more than 1 year have been computed for all the years for which they have data. This SLR analyses papers published up to July 2022. [Colour figure can be viewed at wileyonlinelibrary.com]

1990s that these became widespread in developed countries. Secondly, many CFV studies have used public databases, sources that tend to accumulate a considerable time lag. This has resulted in a delay between the publish date of papers and the period to which their data refers. As Figure 2 shows, studies on CFV began to be published in 2002, but the earliest ones referred to data from 1990. Thus, 84% of the sample publications have been based on data obtained from public surveys, with an average delay of 7.21 years between the date of the study's publication and the year from which the data were taken. However, the studies that have used self-reported surveys (16%) have tended to have considerably shorter time gaps (3.66 years). Working with more up-to-date data may partly explain why this second group of papers has been published in highly ranked journals (50% of which have been indexed in *WoS* and 44% in *Scopus*). The percentage of publications in highly ranked journals has been slightly lower (89%) for papers using official surveys. Thirdly, the publication of papers on CFV is related to the economic cycle. Thus, beyond the consolidation of the topic as a global trend (see Figure 2), the most notable peaks for publications (in 2016 and 2021) have been associated with the study of the two major economic crises of this century, namely, the 2007–2008 global financial crisis and its subsequent recession, and the COVID-19 crisis. Today's households must cope with an increasingly complex and unstable environment, facing different challenges such as high levels of inflation and loss of confidence. These factors make us expect an even more pronounced trend in the number of publications on this topic, reaching a new high in the next few years (or even sooner, perhaps in 2024 or 2025).

3.2 | Countries' characteristics

Figure 3 shows the 15 most analyzed countries, together with the databases where the journals that published the articles have been indexed. By and large, CFV has been analyzed in the world's

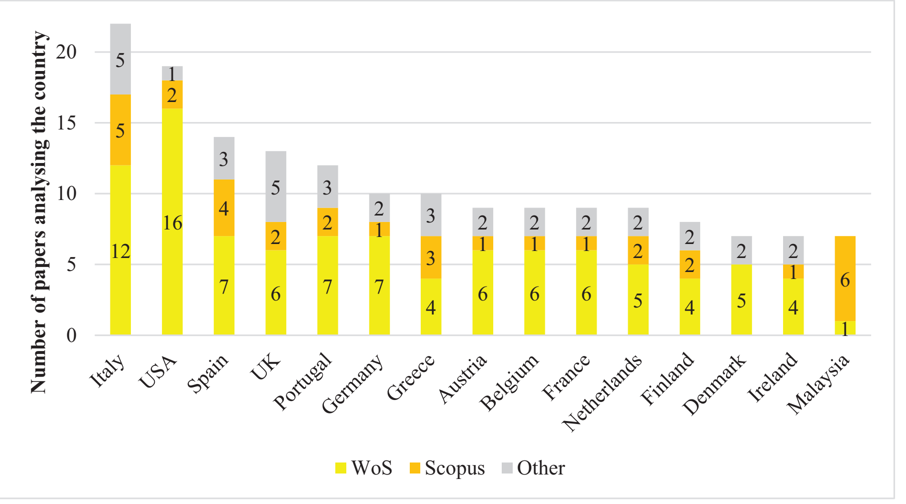


FIGURE 3 The 15 most analyzed countries by database. Note: Whenever the papers analyze data from more than one country, these studies are individually recorded for each of the countries analyzed. Comparative analyses of regional areas are not included. At the geographic level, data are included for countries that are analyzed by a minimum of four studies. The category "Other" includes articles integrated into non-indexed journals, working papers, and studies in other formats (e.g., books, book chapters, or dissertations). [Colour figure can be viewed at wileyonlinelibrary.com]

most economically developed countries, that is, in Europe and the USA. Italy (with 23% of the sample publications), the USA (19%), Spain (14%), the UK (13%), Portugal (12%), and Germany (10%) are the countries that have constituted the geographical focus of most papers. Thus, within Europe, CFV has been most widely studied in Southern countries (i.e., Italy, Portugal, and Spain) and in the UK.

Papers on different countries have displayed different levels of academic impact according to the ranking of the journal. Thus, despite coming top of the most analyzed countries, papers focused on Italy, Spain, the UK, and Portugal have not had as much academic influence when it comes to publication in indexed journals. Nevertheless, those focused on Austria, Belgium, Denmark, and France, fewer in number, have been published mostly in *WoS*-indexed journals. Among the most published and best indexed ones, however, are focused on the USA.

Furthermore, the motivation to analyze CFV has seemed to differ across countries. We should note that studies focusing on the USA have tended to concentrate on specific issues, such as the situation of racial minorities, while those focusing on Europe have usually had a broader perspective, as many of them have analyzed the countries most severely affected by the 2007–2008 financial crisis.

3.3 | The performance of publications

3.3.1 | Journals' performance

Of the 98 papers analyzed in this literature review, 86 are articles published in journals indexed either in the *WoS* or *Scopus* databases, which confirms, once again, the intense interest in this topic. These publications are scattered among 69 indexed journals, of which 12 have published at

TABLE 1 Top 12 journals with at least two publications on CFV.

Journal	Number of publications	Database
Journal of Family and Economic Issues	5	*WoS*
Social Indicators Research	4	*WoS*
International Journal of Social Economics	3	*Scopus*
Journal of Consumer Policy	3	*WoS*
Applied Financial Economics	2	*Scopus*
Economia Politica	2	*WoS*
International Journal of Bank Marketing	2	*WoS*
Journal of Business Research	2	*WoS*
Journal of Economic Studies	2	*WoS*
Journal of Social Sciences	2	*Scopus*
Review of Financial Studies	2	*WoS*
Risks	2	*WoS*

least two papers on CFV (see Table 1), accounting for 35% of the articles published (i.e., 30 articles). Namely, *The Journal of Family and Economic Issues* and *Social Indicators Research* are the most productive journals (five and four papers each, respectively), closely followed by *The International Journal of Social Economics* and *The Journal of Consumer Policy* (three papers each). Other highly ranked journals, such as *The International Journal of Bank Marketing*, *The Journal of Economics Studies* and *The Review of Financial Studies* have published at least two papers each.

3.3.2 | Citation analysis

Figure 4 shows the number of citations, in absolute terms, automatically extracted from the *Scopus* database and supplemented by a manual search on *Google Scholar*. It also includes the number of citations in relative terms calculated as the quotient between the number of citations and the difference between the year 2022 and the year of publication. The total number of citations follows the same pattern as the number of studies published each year (Figure 2), that is, the higher the number of publications, the higher the number of citations. However, publications from 2011, 2016, and 2021 stand out for their high number of citations in relative terms. While the publications from 2011 to 2016 have analyzed the financial aftermath of the 2007–2008 financial crisis, those from 2021 have been contextualized in the COVID-19 crisis and its destabilizing consequences. Although traditional citation dynamics has acknowledged that papers take roughly 2–3 years after publication to reach their peak in citations (Wang, 2013), the relative ones obtained by 2021's publications have only surpassed by those from 2016. This result confirms a growing scientific interest in this research topic.

The 98 sample publications have scored, on average, 18 citations according to *Scopus* whereas *Google Scholar* calculates the figure as 51. Analyzing a topic such as CFV, currently under development, leads to a relatively low median number of citations (6.5 in *Scopus*'s opinion while *Google Scholar* believes it to be 15.5). In addition, the *Scopus* database says that a total of nine papers (9% of the total) have not received any citation, compared to *Google Scholar* at 5%. If we look at the publication dates of these papers, the conclusions are clear; 67% of uncited papers were published

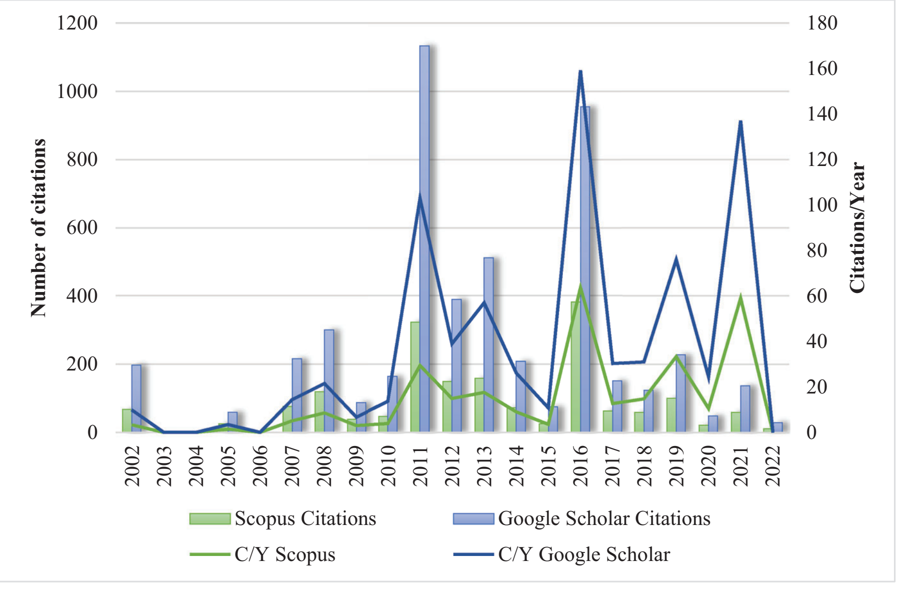


FIGURE 4 Temporal analysis of the citations of CFV studies. Note: The ratio for the number of citations by year (C/Y) has been calculated as the quotient between the number of citations obtained according to each database (*Scopus* or *Google Scholar*) and the difference between the year 2022 and the year of publication. The citations found correspond to July 28, 2022. [Colour figure can be viewed at wileyonlinelibrary.com]

in 2021 and 2022 while in 2020, it was just 22%, claim *Scopus*; *Google Scholar* states that these figures were 80% and 20%, respectively.

As expected, the scientific impact of the papers according to *Google Scholar* is greater than what *Scopus* calculates. We may note that an increase in *Scopus*'s citations leads to a more than proportional increase in *Google Scholar*'s. As previously acknowledged, articles published more recently and barely cited should not be considered to have lower scientific quality because if their number of citations is adjusted for the time elapsed since they were published, those from 2020, very scarcely cited in absolute terms, are of greater scientific interest than any from 2007, 2008, or 2009, for instance.

The most highly cited papers are those that have analyzed empirical data from the USA, the UK, and Italy, as Figure 5 depicts. However, this conclusion should be treated with caution as it could be related to the high number of papers analyzing CFV in these countries. In relative terms, papers focused on the USA and the UK are much more cited than those referring to Southern European countries such as Italy, Spain, and Portugal. Overall, the most cited papers have analysed Northern European countries such as Ireland (in first place), Finland, and the Netherlands.

3.3.3 | Articles and authors' performance

Table 2 lists the publications with more than 60 citations on *Google Scholar*. Among them, the most cited article has been by Lusardi et al. (2011), published in *Brookings Papers on Economic Activity* and cited 628 times until 2022. This is followed by the article by Allgood and Walstad (2016), published in *Economic Inquiry* and cited 485 times, which has also been the most annually cited article.

TABLE 2 Publications with more than 60 citations.

Year	CIT.	C/Y	Title	Journal	First author	COUNT1	Other authors	COUNT2	Study count
2011	628	57.09	Financially fragile households: Evidence and implications	*Brookings Papers on Economic Activity*	Lusardi	USA	Schneider; Tufano	USA; UK	USA
2016	485	80.83	The effects of perceived and actual financial literacy on financial behaviors	*Economic Inquiry*	Allgood	USA	Walstad	USA	USA
2013	249	27.67	Households' indebtedness and financial fragility[b]	*Journal of Financial Management, Markets and Institutions*	Jappelli	Italy	Pagano; Di Maggio	Italy; USA	Austria, Belgium, Denmark, Spain, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal.
2007	216	14.40	Consumer over-indebtedness in the EU: Measurement and characteristics	*Journal of Economic Studies*	Betti	Italy	Dourmashkin; Rossi; Yin	Luxembourg; Italy; UK	Austria, Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, Portugal, Finland
2002	197	9.85	Over-indebtedness in Britain[a]	–	Kempson		–	–	UK
2014	183	22.88	Household debt and social interactions	*Review of Financial Studies*	Georgarakos	Germany	Haliassos; Pasini	Germany; Italy	The Netherlands

(Continues)

TABLE 2 (Continued)

Year	CIT.	C/Y	Title	Journal	First author	COUNT1	Other authors	COUNT2	Study count
2011	177	16.09	Measuring financial capability and its determinants using survey data	*Social Indicators Research*	Taylor	UK	–	–	UK
2012	164	16.40	Household financial vulnerability: An empirical analysis	*Research in Economics*	Anderloni	Italy	Bacchiocchi; Vandone	Italy; Italy	Italy
2008	162	11.57	Household debt and financial assets: Evidence from Germany, Great Britain and the USA	*Journal of the Royal Statistical Society*	Brown	UK	Taylor	UK	UK, Germany, USA
2012	160	16.00	Who feels constrained by high debt burdens? Subjective vs. objective measures of household debt	*Journal of Economic Psychology*	Keese	Germany	–	–	Germany
2013	153	17.00	Household over-indebtedness: Definition and measurement with Italian data[a]	–	D'Alessio	Italy	Lezzi	Italy	Italy
2011	150	13.64	Financial literacy and indebtedness: new evidence for UK consumers[a]	–	Disney	UK	Gathergood	UK	UK

(Continues)

TABLE 2 (Continued)

Year	CIT.	C/Y	Title	Journal	First author	COUNT1	Other authors	COUNT2	Study count
2016	111	18.50	Financial literacy and over-indebtedness in low-income households	*International Review of Financial Analysis*	French	UK	McKillop	UK	Northern Ireland
2016	103	17.17	Financial education is not enough: Millennials may need financial capability to demonstrate healthier financial behaviors	*Journal of Family and Economic Issues*	Friedline	USA	West	USA	USA
2010	100	8.33	Mortgage indebtedness and household financial distress[a]	–	Georgarakos	Germany	Lojschova; Ward-Warmedinger	Germany; Germany	Finland, United Kingdom, Denmark, Germany, the Netherlands, Belgium, France, Austria, Italy, Spain, Portugal, Greece
2008	94	6.71	Drivers of over-indebtedness[a]	–	Disney	UK	Bridges; Gathergood	UK; UK	UK
2011	94	8.55	Behavioral characteristics and financial distress[a]	–	McCarthy	Ireland	–	–	UK, Ireland

(Continues)

TABLE 2 (Continued)

Year	CIT.	C/Y	Title	Journal	First author	COUNT1	Other authors	COUNT2	Study count
2009	87	6.69	Income, wealth and financial fragility in Europe	*Journal of European Social Policy*	Christelis	Italy	Jappelli; Paccagnella; Weber	Italy; Italy; Italy	Sweden, Denmark, Germany, the Netherlands, Belgium, France, Switzerland, Austria, Italy, Spain, Greece
2011	84	7.64	The fragile American: Hardship and financial troubles in the 21st century	*The Sociological Quarterly*	McCloud	USA	Dwyer	USA	USA
2016	71	11.83	Is financial fragility a matter of illiquidity? An appraisal for Italian households	*Review of Income and Wealth*	Brunetti	Italy	Giarda; Torricelli	Italy; Italy	Italy
2010	64	5.33	Over-indebtedness in the Finnish consumer society	*Journal of Consumer Policy*	Raijas	Finland	Lehtinen; Leskinen	Finland; Finland	Finland

Abbreviations: *CIT*, Total number of citations; *C/Y*, Number of citations/(2022 - year of publication). The citations found correspond to July 28, 2022; *COUNT*, Country (*COUNT1* refers to the country of residence of the first author; *COUNT2* to the countries of residence of the second and following authors; and *STUDY COUNT* to the country or countries analyzed by the publication).

[a]Chapter or working paper.

[b]Not indexed in *WoS* or *Scopus*.

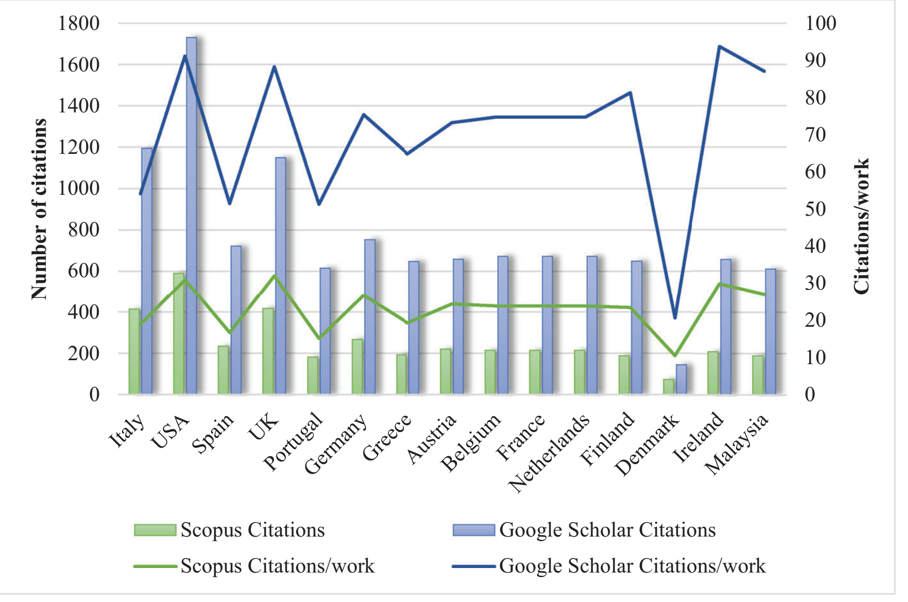


FIGURE 5 Country analysis of the citations of CFV studies. Note: The citation/work ratio has been calculated by dividing the number of citations of the papers that have analyzed each country by the number of papers that have generated them. At the geographical level, data have been included for countries that have been analyzed by a minimum of four studies. The citations found correspond to July 28, 2022. [Colour figure can be viewed at wileyonlinelibrary.com]

In addition to this, Table 2 shows information about the authors. From the *h-index* point of view (e.g., searching on *Google Scholar* for the first authors listed in the table), most of them have been prolific authors whose publications have been influential and widely recognized. However, in terms of CFV, only three authors (viz, Disney, Georgarakos, and Gathergood) have appeared in more than one paper. In short, the CFV has been an under-researched field, even among authors with extensive experience in the field of personal finance.

Collaborations between authors are necessary. Most publications have been co-authored by more than two contributors. Just four papers have been the result of authors of different nationalities working together, and only Jappelli et al. (2013) have had their collaboration made up of authors with nationalities that have had rather different socio-cultural and economic backgrounds.

Overall, authors have tended to focus on the empirical situations of their home countries. In the EU, authors have tended to integrate analyses of several countries, while in the USA, they have often made comparisons at the domestic level, either by focusing on different population groups or by looking for trends among the federal states. Thus, it can be tentatively concluded that research activity, at the geographic level, has been much more concentrated than the analysis of the CFV of the countries studied.

Authors have hardly cited their peers' articles in their own papers, as reflected in the co-citation map (Figure 6). At the level of relationships between articles, on the whole, there has been little connection between the sample articles. Significant links have been found for 90% of the 82 studies obtained from the *Scopus* database. Besides this, the bibliometric software has created a relatively high number of clusters (11 in total), each comprising, on average, 6.7 articles. It can be observed that the relationships between various clusters have been reserved for a particularly cited article of

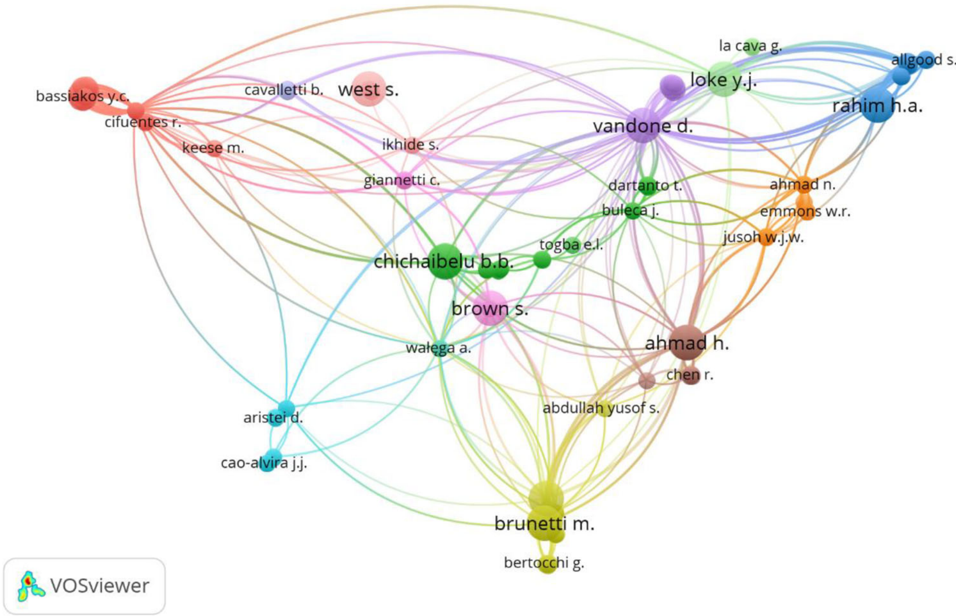


FIGURE 6 Co-citation map. Source: Authors' own elaboration using *VOSviewer*. Note: The size of each circle reflects the proportion of citations of each paper. Some authors have been omitted to make the map clearer. The citations found correspond to July 28. 2022. [Colour figure can be viewed at wileyonlinelibrary.com]

non-recent publication in many cases. The remaining papers in each cluster, mostly quite recent, have had almost no significant relationships with other groups.

Figure 7(a, b) shows two illustrative bibliometric analyses of the top-cited references (Table 2). The map of keyword concurrence (Figure 7a) suggests that these papers have dealt with indebtedness (the yellow cluster) or financial capability (the dark blue cluster). Additional peripheral clusters have entered the main axis via their relationship with one of these two major keywords. Whereas the study of indebtedness is usually related to financial literacy, the analysis of financial capability tends to relate to household consumption. Also, the red cluster related to indebtedness deals with income and wealth. Finally, the papers dealing with emergency savings (the light blue cluster) seem to be in an intermediate position between those analyzing indebtedness and those addressing financial capability.

The nexus role of some keywords could be explained, to some extent, by the co-citation map (Figure 7b). There is hardly any link density among the top-cited references, which may indicate a certain specialization that each author has chosen by away of adopting a specific approach to the topic. Even so, three papers have obtained a central role in this network, which are the most recently published studies. This outcome suggests a certain tendency towards consensus in research, typical of a more mature field of study.

4 | THEMATIC ANALYSIS

4.1 | Financial vulnerability: Concept

Financial vulnerability is a term widely used in previous literature, together with financial distress, financial fragility, financial debt burden, and over-indebtedness (Ali et al., 2020a; Daud

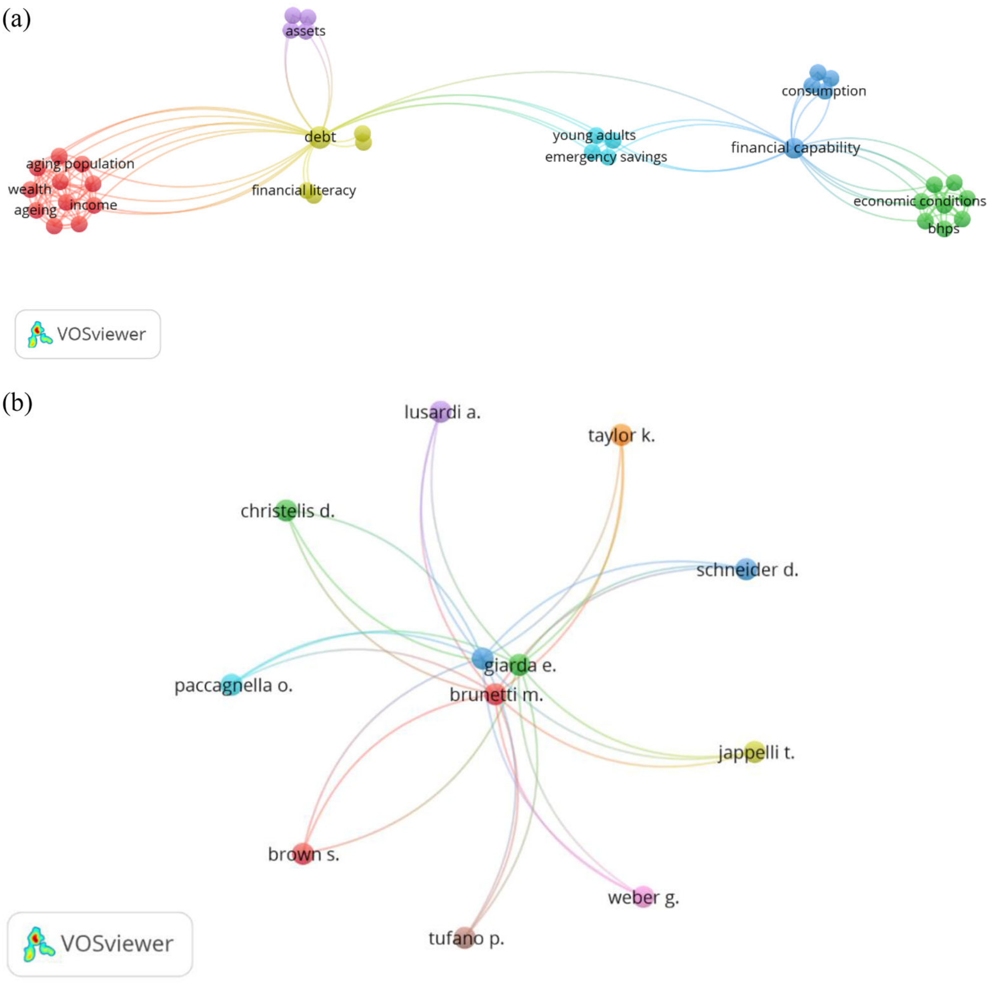


FIGURE 7 (a) Map of keyword concurrence. *Source*: Authors' own elaboration using *VOSviewer*. (b) Co-citation map. *Source*: Authors' own elaboration using *VOSviewer*. *Note*: The bibliometric networks include the 15 papers of Table 2 that have been published in indexed journals. Some terms have been omitted to make the maps clearer. [Colour figure can be viewed at wileyonlinelibrary.com]

et al., 2019). Figure 8 depicts the references clustered according to the term they have mostly used to refer to CFV. As can be seen, over-indebtedness has been the term most frequently used in the references considered in this systematic review (34.7% of the references), followed by financial vulnerability (26.5%). What is more, the two phrases have been the most used terms in the latest references, that is, those published in 2021 and 2022 (34.7% and 26.1% of the references, respectively).

Similarly, the analysis of keyword concurrence considering all sample publications (Figure 9) has revealed the existence of five interrelated clusters. While four of them have been associated with the general terms used in the search process (i.e., financial vulnerability, financial distress, financial fragility, and debt-burden or over-indebtedness), the fifth cluster has grouped the papers related to COVID-19. The clusters referring to financial distress (the green cluster) and financial vulnerability (the red cluster) seem to be the most influential ones, as they have exhibited a higher

Financial vulnerability [26]

- Ali *et al*. (2020a; 2020b); Anderloni *et al*. (2012); Aristei and Gallo (2016); Attinà *et al*. (2020); Azzopardi et al. (2019); Brown (2015); Bruce *et al*. (2022); Chen and Jin (2017); Cifuentes *et al*. (2020); Daud *et al*. (2019); Funke *et al*. (2022); Kim and Wilmarth (2016); Loke (2017); Magli *et al*. (2020); Michelangeli and Rampazzi (2016); Midões and Seré (2022); Noerhidajati *et al*. (2021); O'Connor *et al*. (2019); Russel *et al*. (2013); Sabaté (2018); Sabri *et al*. (2021); Sánchez-Martínez *et al*. (2016); Šubová *et al*. (2021); Taylor (2011); Zhu (2022).

Financial fragility [19]

- Baldini *et al*. (2020); Bertocchi *et al*. (2023); Brunetti *et al*. (2016); Chhatwani and Mishra (2021); Christelis *et al*. (2009); Dang *et al*. (2022); Emmons and Noeth (2013); Fasianos *et al*. (2014); Friedline and West (2016); Jappelli *et al*. (2013); La Cava and Simon (2005); Long (2018); Lusardi *et al*. (2011); McCloud and Dwyer (2011); Pareja-Eastaway and Sánchez-Martínez (2017); Philippas and Avdoulas (2020); West and Mottola (2016); Yusof *et al*. (2015); Yusof (2019).

Financial distress [19]

- Baugh and Correira (2022); Bricker and Thompson (2016); Brown and Taylor (2008); Chamboko and Chamboko (2020); Del-Río and Young (2008); Dorsey-Palmateer (2020); Georgarakos *et al*. (2010); Georgarakos *et al*. (2014); Gerth *et al*. (2021); Giannetti *et al*. (2014); Giarda (2013); Keese (2012); Koulischer *et al*. (2022); Kuhnen and Melzer (2018); Loke (2016); McCarthy (2011); Mussida and Parisi (2021); Parise and Peijnenburg (2019), Yue *et al*. (2022).

Over-indebtedness or financial debt-burden [34]

- Allgood and Walstad (2016); Betti *et a*l. (2007); Boto Ferreira *et al*. (2021); Camões and Vale (2020); Cao-Alvira *et al*. (2021); Cavalletti *et al*. (2020); Chichaibelu and Waibel (2017; 2018); Chotewattanakul *et al*. (2019); Comelli (2021); Coste *et al*. (2020); Czech and Puszer (2021); D'Alessio and Iezzi (2013); Disney *et al*. (2008); Disney and Gathergood (2011); Fatoki (2015); Fernández-López *et al*. (2022); French and McKillop (2016); Haq *et al*. (2018); Kempson (2002); Krumer-Nevo *et al*. (2017); Kurowski (2021); Marsellou and Bassiakos (2016); Mutsonziwa and Fanta (2019); Ntsalaze and Ikhide (2016); Lee and Mori (2022); Raijas *et al*. (2010); Ray *et al*. (2019); Smith *et a*l. (2012); Terraneo (2018); Togba (2012); Wałęga and Wałęga (2021), Wang *et al*. (2022), Wiedemann (2022).

FIGURE 8 Classification of references according to the main term used to refer to CFV. [Colour figure can be viewed at wileyonlinelibrary.com]

number of nodes and more intense relationships. The word "debt" has emerged as the backbone term of the studies analyzing CFV, with this relationship being particularly strong between the terms in the financial distress and over-indebtedness clusters. Thus, consumers' financial vulnerability has most often been identified with a situation of high debt burden and/or over-indebtedness. However, the presence of other scattered and interrelated clusters suggests that to date there is no widely accepted concept in the literature to refer to financial vulnerability.

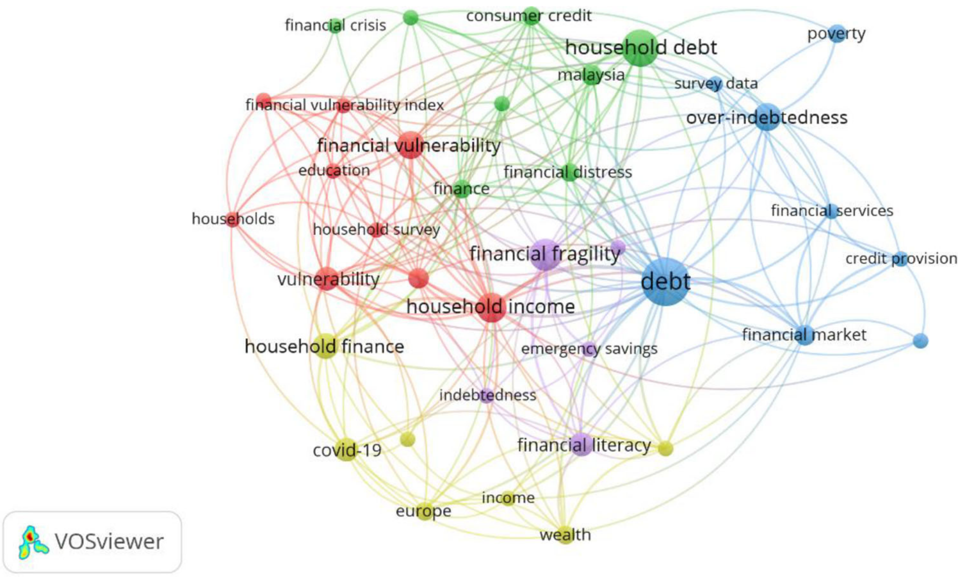


FIGURE 9 Map of keyword concurrence. Note: Only those keywords that have been considered by a minimum of three papers have been included. Some terms have been omitted to make the map clearer. [Colour figure can be viewed at wileyonlinelibrary.com]

Figure 9 also reveals the presence of other keywords that could be relevant in future research on CFV. These refer to financial behavior or situations considered as appropriate proxy variables. Thus, the terms related to financial vulnerability (the red cluster) have been linked to objective aspects of household financial management (e.g., household income or expenditure), while the terms associated with over-indebtedness (the blue cluster) and financial distress (the green cluster) have been mainly related to poverty, financial markets, and financial crises. Authors addressing financial fragility (the purple cluster) have often related it to emergency savings and financial literacy. Although this group has been the least extensive in terms of nodes, it has occupied a central position on the bibliometric map, functioning as a link between the other clusters. Finally, authors mentioning COVID-19 (the yellow cluster) have referred to household income and wealth for the most part. This is a peripheral cluster, under-developed and barely related to the over-indebtedness and financial distress clusters, but with great potential for growth.

4.2 | Financial vulnerability: Measures

The lack of a common concept may partly explain the large number of CFV measures identified in the literature, which can be classified using four criteria. The first distinguishes between measures based exclusively on household debt-related issues and those that consider other financial aspects (mainly savings and consumption). There is a larger number of papers within the latter category. However, there are only a few references that have used both measures, which are based on indebtedness and on saving and consumption capacity (e.g., Anderloni et al., 2012; Disney & Gathergood, 2011; Yusof et al., 2015).

The second classification criterion refers to CFV measures, which can be classified as either objective or subjective: the former are factors external to individuals that may be reported by them or obtained from an outside source (e.g., credit history or financial assets); the latter are factors internal to individuals that cannot be assessed independently of them (O'Connor et al., 2019). It is mostly objective measures which have been used in the literature (i.e., in up to 67% of the sample documents), especially in studies identifying CFV with indebtedness. Furthermore, its use has gradually increased, as Figure 10(a) shows. Nevertheless, further consideration of subjective measures enriches the analysis for two main reasons: firstly, in doing so, the extent to which individuals' own perceptions of their financial circumstances are aligned with objective measures can be checked (O'Connor et al., 2019); secondly, individuals' financial behavior is affected by the perception of their financial situation (Brüggen et al., 2017). In this respect, Figure 10(b) shows that while in Southern European countries (i.e., Italy, Portugal, and Spain), the authors have mainly opted for objective measures to approximate CFV (around 80%), in Northern countries (i.e., Denmark, Ireland, Finland, and the UK), subjective measures have been more frequent (around 35%). This disparity may be due to cultural differences between countries.

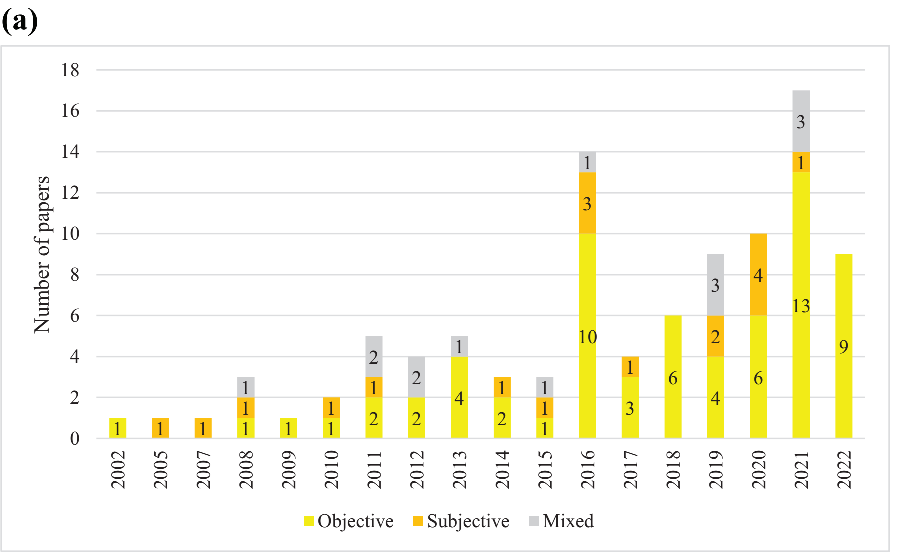
The third classification criterion refers to the number of items on which the CFV measure is based. Some studies have used measures constructed from a single item (e.g., the ability to cover living costs or unexpected expenses). By doing it like this, they have understood CFV as a debt or savings/consumption issue, which may be objective or subjective. In contrast, other papers have utilized one measure calculated from several items (e.g., the debt-to-income ratio or net disposable income after debt payment and living expenses) or several CFV measures each based on a single item (Disney & Gathergood, 2011; McCarthy, 2011). Following these paths, the studies have often given a fragmented view of CFV. To date, only Anderloni et al. (2012) and Daud et al. (2019) have combined several items into a CFV index, drawing on nonlinear principal component analysis, in an attempt to construct a measure more in accordance with the multidimensional nature of CFV.

The fourth, and perhaps most important, classification criterion concerns whether CFV is understood as a binary or a graded phenomenon. Up to now, most research has operationalized CFV on the assumption that a household either "is or is not" financially fragile rather than assuming that it may experience different degrees of financial vulnerability (O'Connor et al., 2019). This empirical choice has been largely determined by the information available to measure CFV; that is, when it shows whether or not a household is able to raise $2000 to deal with an unforeseen expense in the following month (Lusardi et al., 2011; Friedline & West, 2016; West & Mottola, 2016; Philippas & Avdoulas, 2020), CFV is measured as a binary phenomenon. However, many papers that have had continuous variables (e.g., debt-to-income ratio), have often turned them into binary variables (based on a certain threshold) in order to classify households as financially fragile or the opposite.

4.3 | Financial vulnerability: Methods

The methodological approach of the sample studies has been dominated by quantitative methods (98% of the publications), whereas about 2% of the reviewed literature could be labelled as "theoretical". The predominant choice of quantitative methods has been consistent with both the type of research question posed by the papers (i.e., identifying the drivers of CFV) and the data used to answer it.

Thus, a large number of studies have used official surveys (85% of the sample studies) carried out by organizations such as the Bank of Italy, the Federal Reserve System, the University of Essex, Eurostat, the FINRA Foundation, the European Central Bank, the German Research Foundation, and the Pakistan Bureau of Statistics (Table 3).



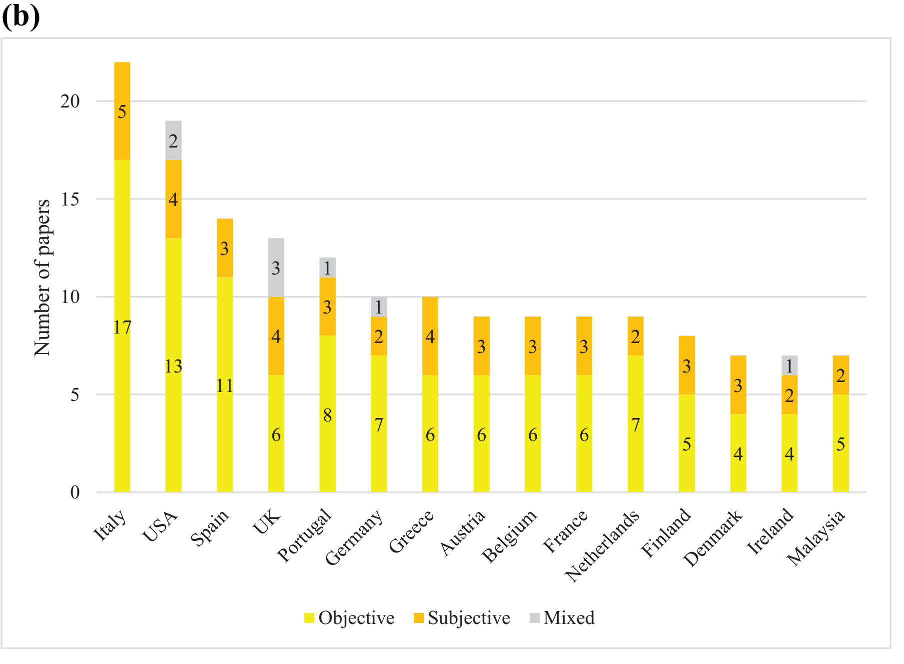


FIGURE 10 Objective vs. subjective measures. (a) Temporal analysis (2002–2022). Source: Authors' own elaboration. Note: The temporal distribution is due to the year of publication of each paper. (b) Geographical analysis. Source: Authors' own elaboration. Note: Whenever papers have studied data from more than one country, these investigations have been registered for all the countries analyzed. Comparative analyses of regional areas have been omitted. This figure lists the countries analyzed by a minimum of four investigations. [Colour figure can be viewed at wileyonlinelibrary.com]

TABLE 3 Official data sources used in two or more publications.

Survey	Entity	Number of articles
Survey on Household Income and Wealth (SHIW)	Bank of Italy	8
Household Finance Consumption Survey (HFCS)	European Central Bank	8
Survey of Consumer Finances (SCF)	Federal Reserve System	7
European Union Statistics on Income and Living Condition (EU-SILC)	Eurostat	5
British Household Panel Survey (BHPS)	University of Essex	4
China Household Finance Survey (CHFS)	Southwestern University of Finance and Economics	4
National Financial Capability Study (NFCS)	FINRA Foundation	3
Household Integrated Economic Survey (HIES)	Pakistan Bureau of Statistics	3
European Community Household Panel (ECHP)	Eurostat	3
Vulnerability in Southeast Asia	German Research Foundation	2
Survey of Health, Ageing and Retirement in Europe (SHARE)	Munich Center for the Economics of Aging	2

One of the advantages of using official data sources is the sheer size of the samples, in order, the largest coming from Peking University in China ($n = 61{,}046$), the Bank of Italy ($n = 52{,}793$), and the FINRA Foundation in the United States ($n = 25{,}509$). The sample size of the studies using customized surveys has been smaller, where, for example, there have been 1647 British households (Kempson, 2002), 1300 Polish households (Kurowski, 2021), and 1006 Zimbabwean households (Chamboko & Chamboko, 2020). In contrast, customized surveys have not only tended to have more up-to-date data, as noted previously, but have also tended to consider more qualitative variables (i.e., capturing the perceptions of individuals) than official surveys have done.

Another potential advantage of official surveys is their regularity over time, which makes it possible to take advantage of the longitudinal nature of the data. However, the analyzed papers relying on official surveys have used either a single wave of data (49%) or several waves as cross-sectional data (i.e., pooled), which makes it difficult to obtain causal relationships (see, e.g., Baugh and Correia (2022), and Emmons and Noeth (2013)).

This review also reveals the extent to which quantitative methods have been used for research on CFV, despite the fact that they are less likely to identify perceptions of financial circumstances. Among the quantitative methods on offer, *probit* or *logit* binary methods have been used in 34% of the publications, OLS regressions in 17%, and *probit* or *logit* ordered regressions in 10%. Less common have been papers using the ANOVA test or K-means clustering algorithm (5%), those using *tobit* models (3%), and those applying more recent quantitative techniques related to microsimulation and machine learning (3%).

4.4 | The drivers of financial vulnerability

From the review of the literature, different driving forces of CFV have been identified. Table 4 summarizes these main drivers, as well as the references that have included these variables in their analyses. Most of these factors refer to household or respondent level (i.e., the micro-level of analysis), although a few references have also considered variables connected to neighborhoods (i.e., the *mezzo* level) and to the country or region in which the household is located (i.e., the macro level).

Macro-level variables classify large population groups according to specific characteristics, their scant ability to discriminate being the reason for their anecdotal presence in the sample publications. These are mostly categorical variables relating to a range of geographical areas (countries and regions) in studies that have disaggregated and compared at a spatial level. Evidence points to a reduction in financial vulnerability in the most economically developed areas.

Micro-level variables, the ones considered in this systematic review, can be divided into socio-demographic, economic, and to a lesser extent, behavioral variables. Some of the most relevant variables identified in the literature on CFV will hereinafter be presented. Among the *socio-demographic drivers*, the following are the most common:

1. *Age*. Most references within this systematic review have included this driver (81% of the analyses[2] to be precise) and just over 50% of the papers that have found a statistically significant relationship have proven that it is a negative one. This scenario has been seen to a greater extent when age interacts with other demographic characteristics, such as being female or living alone.
2. *Gender*. This is a relatively common variable, included in 69% of the analyses, even though most of the estimates have failed to obtain statistically significant results. Among those that have found a statistically significant effect, estimates that positively relate financial vulnerability to males (23%) have slightly outnumbered those that have associated it with females (21%).
3. *Educational attainment*. Overall, the longer spent in education, the lower the probability of becoming financially vulnerable, as corroborated by 46% of the analyses that have included this variable. This relationship has most often been confirmed for higher education, while the effect of basic or intermediate education has, in most cases, not been statistically significant. In this regard, most of the references have analyzed countries belonging to The Organization for Economic Co-operation and Development (OECD), where basic and intermediate education is widespread, and does not act as a differentiating factor. The underlying argument is that higher education leads individuals to better paid and more stable jobs and/or to the development of cognitive skills that allow a better understanding of households' financial management to be gained.
4. *Marital status*. Being married or living with a partner reduces the risk of financial vulnerability, especially when it is measured through subjective variables, unlike objective ones; with the latter, it has been found that couples tend to suffer from a higher level of indebtedness (especially if they have children), although their ability to make ends meet is higher than for single people. Marital status, rather than being a stand-alone variable, is often studied as a moderating variable for others, such as household size.
5. *Household size*. The greater the number of dependent children, the greater the level of indebtedness and financial stress, as noted by 43% of the analyses that have considered this

TABLE 4 Main drivers of CFV and references that have considered them.

Driver	Studies
Age	Allgood and Walstad (2016), Anderloni et al. (2012), Aristei and Gallo (2016), Azzopardi et al. (2019), Baldini et al. (2020), Bertocchi et al. (2023), Betti et al. (2007), Bricker and Thompson (2016), Brown and Taylor (2008), Brown (2015), Bruce et al. (2022), Brunetti et al. (2016), Camões and Vale (2020), Cao-Alvira et al. (2021), Cavalletti et al. (2020), Chamboko and Chamboko (2020), Chen and Jin (2017), Chhatwani and Mishra (2021), Chichaibelu and Waibel (2017), Chichaibelu and Waibel (2018), Chotewattanakul et al. (2019), Cifuentes et al. (2020), Comelli (2021), Coste et al. (2020), Daud et al. (2019), Del-Río and Young (2008), Disney et al. (2008), Disney and Gathergood (2011), Dorsey-Palmateer (2020), Emmons and Noeth (2013), Fasianos et al. (2014), Fernández-López et al. (2022), French and McKillop (2016), Georgarakos et al. (2010), Georgarakos et al. (2014), Giannetti et al. (2014), Giarda (2013), Haq et al. (2018), Kempson (2002), Kim and Wilmarth (2016), Koulischer et al. (2022), Kurowski, 2021, La Cava and Simon (2005), Lee and Mori (2021), Loke (2016, 2017), Lusardi et al. (2011), Marsellou and Bassiakos (2016), McCarthy (2011), Midões and Seré (2022), McCloud and Dwyer (2011), Mutsonziwa and Fanta (2019), Noerhidajati et al. (2020), Ntsalaze and Ikhide (2016), Philippas and Avdoulas (2020), Ray et al. (2019), Russell et al. (2013), Sánchez-Martínez et al. (2016), Smith et al. (2012), Taylor (2011), Togba (2012), West and Mottola (2016), Wiedemann (2022), Yue et al. (2022), Yusof (2019), Zhou (2022).
Age squared	Allgood and Walstad (2016), Aristei and Gallo (2016), Baldini et al. (2020), Bertocchi et al. (2023), Brunetti et al. (2016), Chotewattanakul et al. (2019), Cifuentes et al. (2020), Coste et al. (2020), Fasianos et al. (2014), Koulischer et al. (2022), McCarthy (2011), McCloud and Dwyer (2011), Mutsonziwa and Fanta (2019), Sánchez-Martínez et al. (2016), Taylor (2011), Togba (2012), Yue et al. (2022).
Education level	Ali et al. (2020a), Ali et al. (2020b), Allgood and Walstad (2016), Anderloni et al. (2012), Aristei and Gallo (2016), Azzopardi et al. (2019), Baldini et al. (2020), Bertocchi et al. (2023), Bricker and Thompson (2016), Brown and Taylor (2008), Brown (2015), Bruce et al. (2022), Brunetti et al. (2016), Camões and Vale (2020), Cao-Alvira et al. (2021), Cavalletti et al. (2020), Chamboko and Chamboko (2020), Chen and Jin (2017), Chhatwani and Mishra (2021), Chichaibelu and Waibel (2017), Chichaibelu and Waibel (2018), Cifuentes et al. (2020), Comelli (2021), Coste et al. (2020), Daud et al. (2019), Del-Río and Young (2008), Disney and Gathergood (2011), Disney et al. (2008), Dorsey-Palmateer (2020), Emmons and Noeth (2013), Fasianos et al. (2014), Fernández-López et al. (2022), French and McKillop (2016), Friedline and West (2016), Georgarakos et al. (2010, 2014), Giannetti et al. (2014), Giarda (2013), Haq et al. (2018), Keese (2012), Kim and Wilmarth (2016), Koulischer et al. (2022), Kuhnen and Melzer (2018), Kurowski, 2021, Loke (2016, 2017), Lusardi et al. (2011), McCarthy (2011), McCloud and Dwyer (2011), Midões and Seré (2022), Mussida and Parisi (2021), Mutsonziwa and Fanta (2019), Ntsalaze and Ikhide (2016), Parise and Peijnenburg (2019), Philippas and Avdoulas (2020), Ray et al. (2019), Russell et al. (2013), Sánchez-Martínez et al. (2016), Smith et al. (2012), Šubová et al. (2021), Taylor (2011), Togba (2012), West and Mottola (2016), Wiedemann (2022), Yue et al. (2022), Yusof et al. (2015), Yusof (2019), Zhou (2022).

(Continues)

TABLE 4 (Continued)

Driver	Studies
Employment status	Ali et al. (2020a), Ali et al. (2020b), Allgood and Walstad (2016), Anderloni et al. (2012), Aristei and Gallo (2016), Azzopardi et al. (2019), Baldini et al. (2020), Bertocchi et al. (2023), Bricker and Thompson (2016), Brown and Taylor (2008), Brown (2015), Bruce et al. (2022), Brunetti et al. (2016), Camões and Vale (2020), Cao-Alvira et al. (2021), Cavalletti et al. (2020), Chamboko and Chamboko (2020), Chhatwani and Mishra (2021), Chen and Jin (2017), Chichaibelu and Waibel (2017), Chichaibelu and Waibel (2018), Chotewattanakul et al. (2019), Cifuentes et al. (2020), Comelli (2021), Czech and Puszer (2021), Del-Río and Young (2008), Disney et al. (2008), Fasianos et al. (2014), Fernández-López et al. (2022), Friedline and West (2016), Georgarakos et al. (2010, 2014), Giannetti et al. (2014), Giarda (2013), Haq et al. (2018), Jappelli et al. (2013), Keese (2012), Kempson (2002), Kim and Wilmarth (2016), Koulischer et al. (2022), Krumer-Nevo et al. (2017), La Cava and Simon (2005), Lusardi et al. (2011), Marsellou and Bassiakos (2016), McCarthy (2011), McCloud and Dwyer (2011), Midões and Seré (2022), Mussida and Parisi (2021), Mutsonziwa and Fanta (2019), Ntsalaze and Ikhide (2016), Parise and Peijnenburg (2019), Philippas and Avdoulas (2020), Russell et al. (2013), Sánchez-Martínez et al. (2016), Smith et al. (2012), Šubová et al. (2021), Taylor (2011), Togba (2012), West and Mottola (2016), Yusof (2019), Zhou (2022).
Ethnicity	Allgood and Walstad (2016), Azzopardi et al. (2019), Bertocchi et al. (2023), Bricker and Thompson (2016), Brown and Taylor (2008), Bruce et al. (2022), Chen and Jin (2017), Chhatwani and Mishra (2021), Chichaibelu and Waibel (2018), Coste et al. (2020), Emmons and Noeth (2013), Friedline and West (2016), Georgarakos et al. (2010), Kim and Wilmarth (2016), Loke (2016, 2017), Lusardi et al. (2011), McCloud and Dwyer (2011), Ntsalaze and Ikhide (2016), Philippas and Avdoulas (202020), Smith et al. (2012), Togba (2012), West and Mottola (2016), Wiedemann (2022), Yusof et al. (2015), Yusof (2019).
Financial literacy	Allgood and Walstad (2016), Anderloni et al. (2012), Cao-Alvira et al. (2021), Chhatwani and Mishra (2021), Chotewattanakul et al. (2019), Daud et al. (2019), Disney and Gathergood (2011), Friedline and West (2016), Giannetti et al. (2014), Kurowski, 2021, Loke (2016, 2017), Lusardi et al. (2011), McCarthy (2011), Mutsonziwa and Fanta (2019), Parise and Peijnenburg (2019), Philippas and Avdoulas (2020), Ray et al. (2019), West and Mottola (2016), Yusof et al. (2015).
Gender	Ali et al. (2020a), Ali et al. (2020b), Allgood and Walstad (2016), Anderloni et al. (2012), Aristei and Gallo (2016), Baldini et al. (2020), Bertocchi et al. (2023), Brown and Taylor (2008), Brown (2015), Bruce et al. (2022), Brunetti et al. (2016), Cao-Alvira et al. (2021), Chamboko and Chamboko (2020), Chen and Jin (2017), Chhatwani and Mishra (2021), Chichaibelu and Waibel (2017, 2018), Cifuentes et al. (2020), Coste et al. (2020), Daud et al. (2019), Disney et al. (2008), Fasianos et al. (2014), Fernández-López et al. (2022), French and McKillop (2016), Friedline and West (2016), Georgarakos et al. (2014), Giannetti et al. (2014), Giarda (2013), Keese (2012), Kurowski, 2021, La Cava and Simon (2005), Lee and Mori (2021), Loke (2016, 2017), Long (2018), Lusardi et al. (2011), Magli et al. (2020), Marsellou and Bassiakos (2016), McCarthy (2011), McCloud and Dwyer (2011), Midões and Seré (2022), Mussida and Parisi (2021), Mutsonziwa and Fanta (2019), Ntsalaze and Ikhide (2016), Philippas and Avdoulas (2020), Sánchez-Martínez et al. (2016), Smith et al. (2012), Šubová et al. (2021), Togba (2012), West and Mottola (2016), Wiedemann (2022), Yue et al. (2022), Yusof et al. (2015), Yusof (2019), Zhou (2022).

(Continues)

TABLE 4 (Continued)

Driver	Studies
Household size	Allgood and Walstad (2016), Anderloni et al. (2012), Aristei and Gallo (2016), Azzopardi et al. (2019), Baldini et al. (2020), Bertocchi et al. (2023), Bricker and Thompson (2016), Brown and Taylor (2008), Brown (2015), Bruce et al. (2022), Brunetti et al. (2016), Camões and Vale (2020), Cao-Alvira et al. (2021), Chichaibelu and Waibel (2017, 2018), Cifuentes et al. (2020), Disney et al. (2008), Dorsey-Palmateer (2020), Emmons and Noeth (2013), Fasianos et al. (2014), Fernández-López et al. (2022), French and McKillop (2016), Friedline and West (2016), Georgarakos et al. (2010, 2014), Giannetti et al. (2014), Giarda (2013), Haq et al. (2018), Keese (2012), Kempson (2002), Koulischer et al. (2022), La Cava and Simon (2005), Loke (2016), Loke (2017), Lusardi et al. (2011), Marsellou and Bassiakos (2016), McCarthy (2011), Midões and Seré (2022), Mussida and Parisi (2021), Mutsonziwa and Fanta (2019), Ray et al. (2019), Russell et al. (2013), Smith et al. (2012), Šubová et al. (2021), Taylor (2011), Togba (2012), West and Mottola (2016), Wiedemann (2022), Yusof et al. (2015), Zhou (2022).
Income	Ali et al. (2020b), Allgood and Walstad (2016), Anderloni et al. (2012), Aristei and Gallo (2016), Azzopardi et al. (2019), Baldini et al. (2020), Baugh and Correia (2022), Bertocchi et al. (2023), Betti et al. (2007), Bricker and Thompson (2016), Brown and Taylor (2008), Brunetti et al. (2016), Camões and Vale (2020), Cao-Alvira et al. (2021), Cavalletti et al. (2020), Chamboko and Chamboko (2020), Chhatwani and Mishra (2021), Chen and Jin (2017), Chichaibelu and Waibel (2017, 2018), Chotewattanakul et al. (2019), Comelli (2021), Coste et al. (2020), Daud et al. (2019), Del-Río and Young (2008), Disney et al. (2008), Dorsey-Palmateer (2020), Emmons and Noeth (2013), Fasianos et al. (2014), Fernández-López et al. (2022), French and McKillop (2016), Friedline and West (2016), Georgarakos et al. (2010, 2014), Giannetti et al. (2014), Giarda (2013), Haq et al. (2018), Kempson (2002), Koulischer et al. (2022), Kuhnen and Melzer (2018), Kurowski, 2021, La Cava and Simon (2005), Lee and Mori (2021), Loke (2016, 2017), Long (2018), Lusardi et al. (2011), Magli et al. (2020), McCloud and Dwyer (2011), Marsellou and Bassiakos (2016), McCarthy (2011), Mussida and Parisi (2021), Mutsonziwa and Fanta (2019), Noerhidajati et al. (2020), Ntsalaze and Ikhide (2016), Parise and Peijnenburg (2019), Philippas and Avdoulas (2020), Ray et al. (2019), Russell et al. (2013),Togba (2012), West and Mottola (2016), Wiedemann (2022), Yusof et al. (2015), Yusof (2019).
Indebtedness	Anderloni et al. (2012), Aristei and Gallo (2016), Azzopardi et al. (2019), Baldini et al. (2020), Bricker and Thompson (2016), Brunetti et al. (2016), Camões and Vale (2020), Chichaibelu and Waibel (2017, 2018), Chotewattanakul et al. (2019), Cifuentes et al. (2020), Coste et al. (2020), Daud et al. (2019), Del-Río and Young (2008), Dorsey-Palmateer (2020), Emmons and Noeth (2013), Fasianos et al. (2014), Fatoki (2015), Georgarakos et al. (2010), Gerth et al. (2021), Giannetti et al. (2014), Giarda (2013), Jappelli et al. (2013), Kurowski, 2021, La Cava and Simon (2005), McCarthy (2011), Noerhidajati et al. (2020), Philippas and Avdoulas (2020), Russell et al. (2013), Sánchez-Martínez et al. (2016), Smith et al. (2012), Šubová et al. (2021), West and Mottola (2016).

(Continues)

TABLE 4 (Continued)

Driver	Studies
Marital status	Ali et al. (2020a), Ali et al. (2020b), Allgood and Walstad (2016), Anderloni et al. (2012), Aristei and Gallo (2016), Azzopardi et al. (2019), Baldini et al. (2020), Bertocchi et al. (2023), Bricker and Thompson (2016), Brown and Taylor (2008), Brown (2015), Bruce et al. (2022), Brunetti et al. (2016), Camões and Vale (2020), Cao-Alvira et al. (2021), Chamboko and Chamboko (2020), Chen and Jin (2017), Chichaibelu and Waibel (2017, 2018), Chotewattanakul et al. (2019), Cifuentes et al. (2020), Comelli (2021), Coste et al. (2020), Daud et al. (2019), Disney et al. (2008), Emmons and Noeth (2013), Fasianos et al. (2014), Fernández-López et al. (2022), French and McKillop (2016), Friedline and West (2016), Georgarakos et al. (2010, 2014), Giannetti et al. (2014), Kim and Wilmarth (2016), Koulischer et al. (2022), La Cava and Simon (2005), Lee and Mori (2021), Loke (2016), Lusardi et al. (2011), Magli et al. (2020), McCloud and Dwyer (2011), Marsellou and Bassiakos (2016), McCarthy (2011), Mutsonziwa and Fanta (2019), Ntsalaze and Ikhide (2016), Russell et al. (2013), Sánchez-Martínez et al. (2016), Smith et al. (2012), Taylor (2011), Togba (2012), West and Mottola (2016), Wiedemann (2022), Yusof (2019), Zhou (2022).
Population density	Ali et al. (2020a), Ali et al. (2020b), Azzopardi et al. (2019), Chamboko and Chamboko (2020), Chen and Jin (2017), Mutsonziwa and Fanta (2019), Togba (2012).
Credit card holding	Cavalletti et al. (2020), Fasianos et al. (2014), Gerth et al. (2021), La Cava and Simon (2005), Noerhidajati et al. (2020), Russell et al. (2013).
Real assets	Anderloni et al. (2012), Baldini et al. (2020), Bertocchi et al. (2023), Brunetti et al. (2016), Camões and Vale (2020), Cavalletti et al. (2020), Chen and Jin (2017), Chichaibelu and Waibel (2018), Chhatwani and Mishra (2021), Cifuentes et al. (2020), Comelli (2021), Daud et al. (2019), Del-Río and Young (2008), Fasianos et al. (2014), Fatoki (2015), French and McKillop (2016), Georgarakos et al. (2014), Giannetti et al. (2014), Giarda (2013), Haq et al. (2018), Kuhnen and Melzer (2018), La Cava and Simon (2005), Lee and Mori (2021), Loke (2017), Lusardi et al. (2011), Mussida and Parisi (2021), Mutsonziwa and Fanta (2019), Noerhidajati et al. (2020), Ray et al. (2019), Russell et al. (2013), Sánchez-Martínez et al. (2016), Smith et al. (2012), Šubová et al. (2021), Taylor (2011), Togba (2012), West and Mottola (2016), Yusof et al. (2015).
Risk aversion	Bertocchi et al. (2023), Chichaibelu and Waibel (2018), Fasianos et al. (2014), Fernández-López et al. (2022), Giarda (2013), Kuhnen and Melzer (2018), Loke (2016, 2017), Parise and Peijnenburg (2019), Yusof et al. (2015).
Saving	Ali et al. (2020b), Bricker and Thompson (2016), Chamboko and Chamboko (2020), Chichaibelu and Waibel (2018), Chotewattanakul et al. (2019), Comelli (2021), Disney et al. (2008), Emmons and Noeth (2013), Giannetti et al. (2014), Kim and Wilmarth (2016), Marsellou and Bassiakos (2016), Noerhidajati et al. (2020), Philippas and Avdoulas (2020), Russell et al. (2013).

explanatory variable. Debtors with dependents need to spend more to sustain their household members.

6. *Ethnicity*. Considered by 29% of the analyses, it is far from being regarded as a widely studied driver. Its inclusion, mainly in the case of countries with high immigration rates, such as the USA and Malaysia, has revealed that ethnic minority groups usually have a greater

risk of financial vulnerability, possibly because of their greater difficulty in achieving social integration.

Among the *economic drivers*, the following stand out:

7. *Indebtedness*. This tends to be used as a dependent variable to objectively measure financial vulnerability; hence, its presence as an independent variable is infrequent (with half of the analyses having omitted it). Nevertheless, when used, it has been one of the drivers with the clearest effect upon financial vulnerability. Not in vain, 73% of the analyses that have considered it, have confirmed a positive relationship, that is, the higher a household's indebtedness, the higher the probability of its members becoming financially vulnerable.
8. *Credit card holding*. This is a variable that approximates household indebtedness, albeit partially. Only 8% of the analyses have included it, finding in almost half of the cases (46%) that holding a credit card increases households' risk of financial vulnerability. Cavalletti et al. (2020) has warned of the risk of cardholders using this means of payment inappropriately, as it would increase their level of indebtedness.
9. *Income*. This is a widely analyzed determinant, 78% of the analyses having used it. On the whole, the higher the income, the greater the capacity to pay off debts, to save and to make ends meet, as well as the better the households' perception that they can live more comfortably. However, it would be wise to note that the source of income also plays an important role (La Cava & Simon, 2005), that is, anyone receiving public aid may be at greater risk of financial vulnerability.
10. *Employment status*. Like the income variable, this has also been widely used (73%). As is the case with the findings of Cavalletti et al. (2020), 37% of the papers considering this variable have found that unemployment or self-employment indicates a more favorable financial situation. Broadly speaking, these two groups manage their resources better; that is, as they suffer from greater job instability, they tend to avoid indebtedness. Nonetheless, the percentage of papers finding the opposite relationship is almost the same (36%).
11. *Real assets*. Studies have considered either a household's net wealth or the ownership of certain assets, such as housing and jewelry. Although few studies have found a statistically significant relationship, those that have done (35%), have noticed that owning real assets decreases the risk of financial vulnerability. Nevertheless, some authors have stated that homeownership makes it difficult to make ends meet, while living as a tenant makes it easier to cope with unexpected expenses.

Last but not least, we have found some variables that do not clearly fit within the socio-demographic or economic variable parameters. There are a few variables that refer to personality traits or other aspects which could be classified as *behavioral drivers*, two of which are:

12. *Financial literacy*. This variable is usually defined as categorical according to the number of correct answers to questions concerning financial knowledge (e.g., compound interest and risk diversification). Few of the analyses (22%) have included this determinant, but its influence upon vulnerability is negative (51% of these cases), that is, the greater the level of financial literacy, the lower the probability of financial vulnerability.
13. *Risk aversion*. This driver has only been considered by 14% of the analyses, 32% of which have noticed a negative relationship. Therefore, the empirical evidence has confirmed that, overall, those who prefer safety and liquidity to profitability tend to be at lower risk of financial vulnerability.

In general, most of the reviewed papers have not introduced a clear theoretical framework from which to approach the study of CFV. The life-cycle theory has been the most common

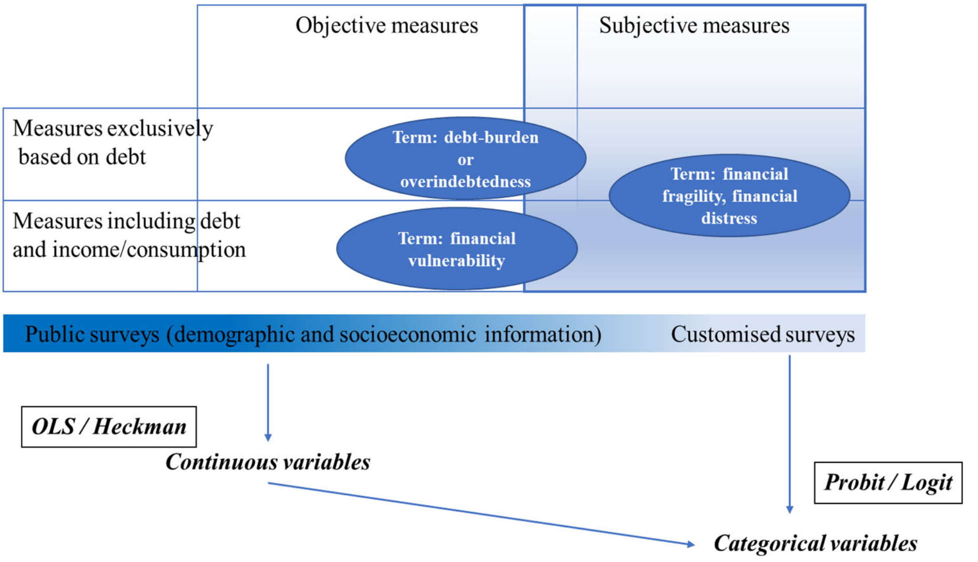


FIGURE 11 Outline of terms, measures, databases, quantitative methods, and groups of CFV determinants. [Colour figure can be viewed at wileyonlinelibrary.com]

theoretical lens for looking at the phenomenon [e.g., Fasianos et al. (2014), Ali et al. (2020a), and Keese (2012)]. Less common have been the permanent income hypothesis (Friedman, 1957) and the relative income hypothesis of Duesenberry (1949), mentioned by Ray et al. (2019), and Georgarakos et al. (2014), respectively. Exceptionally, some authors have related financial vulnerability to personality traits, which has paved the way for behavioral theories to be introduced.

By way of summary, Figure 11 illustrates the main results discussed above. Thus, the lack of a common definition of CFV has forced its measures to be largely conditioned by the availability of data. In practice, researchers have mostly used the information from official surveys, which often contain quantitative and objective information on household debt, and income and consumption. This would explain why these have been the most common types of measures used to proxy for CFV in the empirical analyses. To be more precise, studies defining financial vulnerability based on debt burden or over-indebtedness have mainly considered objective measures (70%), whereas subjective measures have been more frequent in studies focused on financial distress (15%) and financial fragility (41%).

Moreover, official surveys often contain socio-demographic and economic data and, to a lesser extent, information on the personality traits or behavior (either financial or non-financial) of respondents. The latter may partly explain why it has scarcely been used in the study of CFV determinants.

The range of CFV measures explain the use of different quantitative methods in empirical analyses. Thus, continuous variables provide greater flexibility in the selection of quantitative methods, by allowing the application of OLS or *Heckman* models, as well as *logit* or *probit* models after they have been converted into dichotomous or categorical variables. The latter type of variable (and, consequently, model) has been more frequent in research that has used subjective CFV measures.

5 | AGENDA FOR FUTURE CFV RESEARCH

Studies regarding CFV have delved into some of its aspects, which have been reviewed throughout this paper. In about 20 years of research, academics have uncovered key features, measures, methodology, and drivers or determinants of CFV. Here we propose directions for future research for each of the main fields of which this review comprises.

5.1 | The concept of CFV

Despite the increasing use of the term "financial vulnerability" by authorities, practitioners, and academics, there has been little debate about the concept in research on household finances. The indiscriminate use of a set of terms to refer to the financial vulnerability of households (Ali et al., 2020a; Daud et al., 2019) leaves questions unanswered about what the actual boundaries of CFV are. Firstly, a more homogeneous and comprehensive definition of the term should be agreed upon. More specifically, the first step should be to consider financial vulnerability as a graded phenomenon rather than a binary one. In other words, stating whether or not a household is financially vulnerable is not straightforward, so it would be better to assume that any household could be financially vulnerable to some degree (O'Connor et al., 2019). Given that CFV is multifaceted, the second step should deal with decisions upon which issues to include for CFV, such as debt-related ones alone or incorporating other financial circumstances related to households (e.g., income, emergency funds, and financial capability). Thirdly, a consensus should be sought on the role that the (subjective) perception of the individual should play when it comes to the concept of financial vulnerability. Coming to such decisions may become even more challenging when the debate opens up as to whether CFV should go beyond the financial scope of a consumer's own household to include other topics such as the option of borrowing from friends and family to pay off debts (Demertzis et al., 2020).

Secondly, even if a homogenous definition of CFV is achieved, it is not clear whether it will be valid for all contexts. As noted, most of the literature has referred to economically developed countries, leaving others with high rates of poverty and probably a high proportion of financially fragile households in the background. It does not seem credible that the same concept of CFV can be applied to households in the USA and in Malaysia alike, meaning that the debate should go further to construct a context-dependent definition of CFV.

Defining household financial vulnerability more precisely and comprehensively remains a major challenge. If it is not tackled, the statistics provided by various studies may cause cynicism among society at large and, more worryingly, among the authorities responsible for designing appropriate policies aimed at reducing CFV.

5.2 | The measures of financial vulnerability

Financial vulnerability is a multifaceted phenomenon and is, therefore, difficult to measure. Perhaps the Achilles heel in the design of CFV measures is the lack of prior debate about what it means. To illustrate this lack of consensus, the following question could be asked: Which household is more vulnerable: one with a high debt-to-income ratio due to a mortgage or one with a low debt-to-income ratio but whose debts are owed to several moneylenders?

In the absence of an in-depth debate about the term "financial vulnerability", researchers have designed and constructed CFV measures from the information available. There have been several drawbacks of the CFV measures in household finance literature, causing a non-negligible number of studies to have used single-item measures, which refer to a single dimension of CFV (either debt or savings/consumption, and either an objective or subjective perspective). Even the studies with measures constructed from two or more items have often had the same problem in that only one CFV dimension is shown (mostly savings and consumption-related from an objective perspective). Moreover, in most papers, CFV has been measured in binary terms (classifying households as financially vulnerable or the opposite). Therefore, directions for future research point to the need for CFV measures that include subjective as well as objective indicators, while balancing debt-based and consumption- and savings-based issues. Lastly, a continuous or graded indicator of financial vulnerability should be provided.

5.3 | The methodological approaches to the study of financial vulnerability

Most studies have been conducted with quantitative methods and relatively large samples, because they add robustness and representativeness to the results and allow consistency with the mainstream research goal (i.e., identifying CFV drivers). With this in mind, we have made three broad observations on the quality of the research on CFV in terms of the methodologies used. Firstly, studies have taken a considerable amount of information from official surveys from central banks and other supranational bodies such as Eurostat. This approach provides quantitative information, especially on the volume of debt, and household income and expenses. However, it has several drawbacks, one of which, as previously acknowledged, is that the data are usually published with a considerable delay in relation to the period to which it refers. This reduces the timeliness of the analyzed phenomenon, as well as the speed of proposing measures to mitigate CFV. Another disadvantage is that the use of secondary data often lacks the necessary information to consider, in addition to household debts and income, other aspects that would help to construct subjective or mixed measures of the phenomenon of CFV. A further issue is that although official surveys are usually published periodically, they do not always allow panel data to be constructed. The availability of longitudinal data would let the same household or individual be analyzed at different points in time (e.g., before and after COVID-19), in turn enriching the study of the effect that macroeconomic shocks may have on microeconomic units. Finally, if developed economies already make a considerable effort to design these types of surveys and the data obtained has certain drawbacks, in less economically developed countries, these problems may be aggravated by the shortage or absence of information. This may partly explain the bias of the studies towards countries with more developed economies. The institutions responsible for these official surveys should ensure that, besides quantitative (objective) information, they incorporate subjective questions, and that the information is readily available and comparable with similar surveys in other countries.

A second downside is that the methods used provide little guidance for coping with potential endogeneity or understanding the direction of causality between CFV and its driving forces. Endogeneity may arise for four reasons (Wooldridge, 2010): omitted variable bias, simultaneity, measurement error, and selection. As a result, the coefficients of conventional regressions are biased, failing to capture the real effect of the explanatory variables on the dependent variable. Endogeneity problems must be considered in the empirical study of CFV for the reasons previously mentioned. There are unobservable (omitted) variables that will potentially affect both the financial vulnerability and its determinants. Additionally, it is very likely that there will be simultaneity in the determination of the dependent and independent variables; that is, it is expected that consumer indebtedness will increase the probability of CFV, but simultaneously higher CFV may increase consumer indebtedness (i.e., reciprocal causality). Last of all, when measuring CFV by answering questions in a questionnaire, measurement errors may exist. Statistics provide different methods to overcome the endogeneity problem and to establish causal relationships. These extensive methods can be used to address specific causes of endogeneity and include experiments with random assignments of participants, estimation by double differences, propensity score matching, instrumental variable estimations and panel data techniques to name a few.

Thirdly, the literature on CFV should make more room for qualitative research. CFV is a multifaceted phenomenon that is difficult to measure. Using qualitative methods (e.g., interviews or observations) would help to achieve a more complete description of the phenomenon and to advance theory building as well.

5.4 | The drivers of financial vulnerability

Studies exploring the determinants of CFV have provided a rich set of answers to the question of what the most common profile of financially vulnerable households is. Nevertheless, more detailed theoretical and empirical research on these determinants could benefit not only the literature on the topic, but also the policy-makers responsible for addressing such a great challenge.

One shortcoming lies in the fact that there has been no clear distinction among the groups of determinants tested in studies on CFV. Most of the publications have not grouped factors into categories, but when they have done, socio-demographic and economic factors, which have been the most widely analyzed variables, have not been explicitly differentiated.

A second weakness is that there are some gaps in the review, which we have identified. The first set of them refers to the behavioral determinants of CFV. To our knowledge, only three publications have analyzed the relationship between financial capability and CFV, even though the former has proved to be more decisive in explaining some financial behavior than financial literacy has (Friedline and West, 2016), which has been used in 24% of the analyses. Similarly, behavioral variables such as individuals' self-control have been overlooked despite their playing a leading role in much financial behavior, such as indebtedness (Gathergood, 2012; Strömbäck et al., 2017), which can lead to financial vulnerability. This could be partly due to the scarcity of data linked to behavioral aspects in official surveys. Therefore, it is necessary to incorporate more behavioral variables as drivers of CFV in order to obtain a complete picture of the profile of vulnerable households. This requires the prior inclusion of such variables in the CFV survey questionnaires.

The second set of gaps pertains to macroeconomic factors. Just as CFV may jeopardise the stability of the financial system and the economy (Ali et al., 2020a; Ampudia et al., 2016; Azzopardi et al., 2019; Noerhidajati et al., 2021), macroeconomic shocks can trigger CFV (IMF, 2021). Therefore, it would be interesting to explore how CFV changes after adverse shocks in the financial system and/or in the employment market. In addition, it is relatively easy to have longitudinal aggregate indicators to subsequently test them in empirical analyses.

The third set of gaps pertains to social factors. A relevant stream of literature in household finance has analyzed debt, which constitutes an essential ingredient in most definitions and CFV measures from a sociological and/or cultural approach, focusing on issues such as the Joneses effect (Georgarakos et al., 2014), the influence of religion (Renneboog & Spaenjers, 2012) and the social stigma attached to high indebtedness (Mewse et al., 2010). These aspects, along with others such as unexpected life events, medical problems and political preferences, should be considered in future research as local culture and norms have been shown to strongly influence stigma perceptions about over-indebtedness. It might be beneficial for future research to obtain information (through questionnaires and/or qualitative methods) that allows these types of variables belonging to the sociological and/or cultural domain to be constructed.

The incorporation of macroeconomic and sociological/cultural factors opens up a new line of research at the methodological level. Thus, the literature on CFV has mostly focused on a single level of analysis, either at the macroeconomic level, when studying aggregate indicators by country, or at the microeconomic or household level. However, in practice, CFV is likely to be a result of forces at all levels of analysis. Future studies could consider more than one level of analysis; for instance, financial vulnerability can be negatively related to consumers' financial literacy at the micro level, and positively related to the existence of a large informal credit market (e.g., moneylenders and pawnbrokers) at the country level. Using multilevel modelling in empirical analyses would facilitate the exploration of effects across levels. This methodology would also allow different theoretical perspectives to be applied, thus complementing the view of the CFV phenomenon. Consequently, while the life-cycle hypothesis of consumer saving and consumption behavior looks at the household (or individual) level, the institutional theory points to the influence of norms and regulations at the institutional level (e.g., interest rates and credit ratings for individuals).

In addition, the determinants of CFV could be studied separately, distinguishing between different subsamples. To date, most studies have considered global samples of the adult population and only some of them have focused on specific subsamples (Friedline & West, 2016; Philippas & Avdoulas, 2020; Smith et al., 2012). This latter group of studies has mainly used demographic criteria to construct the subsamples, although it would be enriching to apply other criteria. Thus, given that social norms and values can affect stigma perceptions associated with debt (Mewse et al., 2010) and that these aspects are shared by different groups, it would also be worthwhile to explore the degree to which the drivers identified for the general population still hold across religions or generations. With regard to the latter, it has been documented that millennials tend to be highly consumption-oriented (Burnsed & Bickle, 2015), which could affect their financial vulnerability.

6 | CONCLUSIONS

Although the financial vulnerability of households has been a concern since the mid-1990s (Russell et al., 2013), much more attention has been given to it in the last few decades. This is due to the dire consequences of the 2007–2008 financial crisis for household finances (Azzopardi et al., 2019), the subsequent instability of the financial system and the economy, and most recently in the wake of COVID-19. Over the course of two decades, academic research has attempted to provide a more complete picture of CFV and, particularly, of its determinants. Despite these valuable contributions, CFV is still an emerging and highly fragmented field, yet "financial vulnerability" remains an ambiguous concept for its plurality of terms, which are used interchangeably to refer to it.

To date, no systematic review on CFV has been published. Therefore, this paper aims to promote a greater understanding of the CFV phenomenon and provide a roadmap for future research on this challenging field. We have attempted to do so by basing the study on bibliometric analyses and systematic review methodologies, thus creating a hybrid review in accordance with Paul and Criado (2020).

When it comes what the results have revealed, we have observed several points. Firstly, research on CFV is relatively recent in the academic literature, but it is attracting the interest of researchers from different fields of knowledge, whose academic papers are increasingly being published in international indexed journals. This interest initially spiked in Western countries following the increase in household indebtedness in the aftermath of the 2007–2008 financial crisis, which exacerbated financial stress for many households. More recently, the interest on the topic has been fueled by concerns about what the consequences of COVID-19 will be for household finances. The effects of high inflation since 2021, especially for resources such as energy, suggest that interest in CFV will increase by the end of this decade.

Secondly, most of the current literature refers to economically developed countries. Fundamentally, three large countries/regions can be highlighted: the USA, the UK and the European Union countries with Italy at the forefront. Moreover, in the EU, a significant percentage of publications refer to Southern economies, which have been hardest hit by the Great Recession of the 21st century. Based on these first two conclusions we can infer that the growing interest in CFV is highly context-dependent.

Thirdly, the authors' review shows that CFV is quite an unexplored field, even by the most experienced authors who specialize in the topic of household finances. Authors have tended to publish in teams of two or more, and have not usually collaborated with each other or cited their colleagues' research in their own. Evidence also reveals that authors have tended to focus on the empirical reality of their home countries. These features confirm therefore that CFV is still a highly fragmented field of research.

Fourthly, CFV refers to a wide range of terms (e.g., financial fragility, financial distress, debt-burden, over-indebtedness and so on), but there has been neither debate nor agreement about what the "financial vulnerability" means. In this sense, it is essential to establish a definition of this concept that takes into account that any household can be financially vulnerable to some degree and that does not just consider them in financial or indebtedness terms. Such a conceptualization needs to be context-dependent and regularly reviewed (i.e., the symptoms of financial fragility associated with the 2007–2008 financial crisis may not be the same as those associated with COVID-19 or high levels of inflation).

Fifthly, this systematic review reveals that there are some important drawbacks to CFV measures, one of which is that a large number of studies have used those constructed from just one item, meaning that they have captured a single dimension of CFV (either debt or savings/consumption, and either an objective or subjective perspective). Even when they have been calculated from two or more items, they have often reported only one dimension of CFV in binary terms (i.e., either a household is financially vulnerable or it is not). It might be beneficial for future research to construct continuous CFV measures that include subjective and objective aspects based on debt and consumption as well as savings-related issues.

Sixthly, many studies have used quantitative methods and relatively large samples often obtained from official surveys. However, these data sources have significant shortcomings, including outdated information due to how long it takes for it to be released, lack of data for many less developed economies and shortage of subjective characteristic details that would provide a more comprehensive view of the concept of CFV. Those responsible for these official surveys should strive to ensure that, together with quantitative (objective) information, subjective information be captured by way of questionnaires, and that the information be up-to-date and comparable with similar questionnaires. Furthermore, researchers should, whenever possible, take advantage of the longitudinal nature of the data included in such surveys to test causal relationships. Qualitative methods such as interviews, observations or experiments are needed so that the research can advance.

Finally, the determinants of CFV have been extensively investigated at the micro level; although the socio-demographic and economic drivers have received wide attention in the literature, the study on behavioral drivers has been rather limited. This, as previously stated, has probably been due to a lack of information on these aspects in the datasets used (mostly official surveys). In the previous section of this paper, many new and promising research paths to enrich the study of these determinants have been proposed. This is undoubtedly an ongoing process.

Despite the efforts to embrace much of the research on financial vulnerability at the household level, we recognize that this review could not be completely inclusive bearing in mind the research that is currently available. It is the research method in particular which has been applied in the sample selection that has its limitations. For instance, there may be relevant contributions that have been published in languages other than English. Furthermore, the need to balance scope, scale, and depth has led us to discard studies in which financial vulnerability has "worked" as an independent variable, especially in the fields of health economics and labor economics. In this regard, future review studies should connect these different fields of research on CFV together and analyze how they relate to the results in this study. The drivers of CFV lack a discussion of methodological issues such as potential endogeneity problems that could be addressed with future research. Another limitation is that our findings may not hold in the future as CFV is such a rapidly growing field of knowledge, especially fueled by the financial stress experienced by households during and after economic shocks. As previously noted, a growing number of studies analyzing the consequences of the COVID-19 crisis or high inflation rates for household finances could be expected in the near future.

Despite these limitations, we believe that this paper makes an interesting contribution to the CFV literature. Through our review, we have mapped the different terms, methods, and empirical measures used to proxy for the CFV, while also explaining how socio-demographic and economic households' characteristics may impact financial vulnerability. Based on a non-negligible stock of publications in the field, we have developed a research agenda suggesting unexplored directions for future research. We also hope that the findings related to the drivers of CFV provide policy makers and practitioners with valuable insights to support households in their quest to adapt their financial behavior in order to improve their financial resilience in the face of unpredictable economic and non-economic shocks.

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ENDNOTES

[1] Four papers published in this time period (viz, Bertocchi et al., 2023; Funke et al., 2022; Noerhidajati et al., 2021; Philippas and Avdoulas, 2020; and Wałęga and Wałęga, 2021) have been analysed as if they had been published in the year prior to their publication, as they were only published online at the time of conducting this SLR.

[2] As previously explained, in the case of the references that include separate estimations for different countries or regions, all of them have been considered in the review, as in many cases, the effect of the drivers varies depending

on the country or region studied. Therefore, we have accounted for 98 papers in this systematic literature review even though the number of estimations is higher, which, in this section, we refer to as analyses.

[3] This SLR analyses papers published up to July 2022.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

Ali, L., Khan, M. K. N., & Ahmad, H. (2020a). Financial fragility of Pakistani household. *Journal of Family and Economic Issues*, *41*(3), 572–590. https://doi.org/10.1007/s10834-020-09683-y

Ali, L., Khan, M. K. N., & Ahmad, H. (2020b). Education of the head and financial vulnerability of households: Evidence from a Household's survey data in Pakistan. *Social Indicators Research*, *147*(2), 439–463. https://doi.org/10.1007/s11205-019-02164-2

Allgood, S., & Walstad, W. B. (2016). The effects of perceived and actual financial literacy on financial behaviors. *Economic Inquiry*, *54*(1), 675–697. https://doi.org/10.1111/ecin.12255

Ampudia, M., Vlokhoven, H. V., & Zochowski, D. (2016). Financial fragility of euro area households. *Journal of Financial Stability*, *27*, 250–262. https://doi.org/10.1016/j.jfs.2016.02.003

Anderloni, L., Bacchiocchi, E., & Vandone, D. (2012). Household financial vulnerability: An empirical analysis. *Research in Economics*, *66*(3), 284–296. https://doi.org/10.1016/j.rie.2012.03.001

Angel, S., & Heitzmann, K. (2015). Over-indebtedness in Europe: The relevance of country-level variables for the over-indebtedness of private households. *Journal of European Social Policy*, *25*(3), 331–351. https://doi.org/10.1177/0958928715588711

Aristei, D., & Gallo, M. (2016). The determinants of households' repayment difficulties on mortgage loans: evidence from Italian microdata. *International Journal of Consumer Studies*, *40*(4), 453–465. https://doi.org/10.1111/ijcs.12271

Attinà, C. A., Franceschi, F., & Michelangeli, V. (2020). Modelling households' financial vulnerability with consumer credit and mortgage renegotiations. *International Journal of Microsimulation*, *13*(1), 67–91. https://doi.org/10.34196/ijm.00213

Azzopardi, D., Fareed, F., Lenain, P., & Sutherland, D. (2019). Assessing household financial vulnerability: Empirical evidence from the US using machine learning. In D. Sutherland (ed.), *OECD economic survey of the United States: Key research findings* (pp. 121–142). OECD Publishing. https://doi.org/10.1787/75c63aa1-en

Baldini, M., Gallo, G., & Torricelli, C. (2020). The scars of scarcity in the short run: An empirical investigation across Europe. *Economia Politica*, *37*(3), 1033–1069. https://doi.org/10.1007/s40888-020-00187-4

Baugh, B., & Correia, F. (2022). Does paycheck frequency matter? Evidence from micro data. *Journal of Financial Economics*, *143*(3), 1026–1042. https://doi.org/10.1016/j.jfineco.2021.12.002

Bertocchi, G., Brunetti, M., & Zaiceva, A. (2023). The financial decisions of immigrant and native households: evidence from Italy. *Italian Economic Journal*, 9, 117–174. https://doi.org/10.1007/s40797-022-00186-3

Betti, G., Dourmashkin, N., Rossi, M., & Yin, Y. P. (2007). Consumer over-indebtedness in the EU: Measurement and characteristics. *Journal of Economic Studies*, *34*(2), 136–156. https://doi.org/10.1108/01443580710745371

Boto Ferreira, M., Costa Pinto, D., Maurer Herter, M., Soro, J., Vanneschi, L., Castelli, M., & Peres, F. (2021). Using artificial intelligence to overcome over-indebtedness and fight poverty. *Journal of Business Research*, *131*, 411–425. https://doi.org/10.1016/j.jbusres.2020.10.035

Bricker, J., & Thompson, J. (2016). Does education loan debt influence household financial distress? An assessment using the 2007–2009 Survey of Consumer Finances panel. *Contemporary Economic Policy*, *34*(4), 660–677. https://doi.org/10.1111/coep.12164

Bridges, S., & Disney, R. (2004). Use of credit and arrears on debt among low-income families in the United Kingdom. *Fiscal Studies*, *25*(1), 1–25. https://doi.org/10.1111/j.1475-5890.2004.tb00094.x

Brown, S. (2015). Household repayment behaviour and neighbourhood effects. *Urban Studies*, *52*(6), 1169–1188. https://doi.org/10.1177/0042098014533393

Brown, S., & Taylor, K. (2008). Household debt and financial assets: Evidence from Germany, Great Britain and the USA. *Journal of the Royal Statistical Society*, *171*(3), 615–643. https://doi.org/10.1111/j.1467-985X.2007.00531.x

Bruce, C., Gearing, M. E., DeMatteis, J., Levin, K., Mulcahy, T., Newsome, J., & Wivagg, J. (2022). Financial vulnerability and the impact of COVID-19 on American households. *PLoS One*, *17*(1), e0262301. https://doi.org/10.1371/journal.pone.0262301

Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research*, *79*(1), 228–237. https://doi.org/10.1016/j.jbusres.2017.03.013

Brunetti, M., Giarda, E., & Torricelli, C. (2016). Is financial fragility a matter of illiquidity? An appraisal for Italian households. *Review of Income and Wealth*, *62*(4), 628–649. https://doi.org/10.1111/roiw.12189

Burnsed, K. A., & Bickle, M. C. (2015). Comparison of U.S. generational cohorts' shopping mall behaviors and desired features. *International Journal of Sales, Retailing & Marketing*, *4*(6), 18–30. https://www.circleinternational.co.uk/wp-content/uploads/2021/01/IJSRM4-6.pdf

Calabrò, A., Vecchiarini, M., Gast, J., Campopiano, G., Massis, A. D., & Kraus, S. (2019). Innovation in family firms: A systematic literature review and guidance for future research. *International Journal of Management Reviews*, *21*(3), 317–355. https://doi.org/10.1111/ijmr.12192

Camões, F., & Vale, S. (2020). I feel wealthy: A major determinant of Portuguese households' indebtedness? *Empirical Economics*, *58*(4), 1953–1978. https://doi.org/10.1007/s00181-018-1602-9

Cao-Alvira, J. J., Novoa-Hoyos, A., & Núñez-Torres, A. (2021). On the financial literacy, indebtedness, and wealth of Colombian households. *Review of Development Economics*, *25*(2), 978–993. https://doi.org/10.1111/rode.12739

Cavalletti, B., Lagazio, C., Lagomarsino, E., & Vandone, D. (2020). Consumer debt and financial fragility: Evidence from Italy. *Journal of Consumer Policy*, *43*(4), 747–765. https://doi.org/10.1007/s10603-020-09458-w

Chamboko, R., & Chamboko, R. K. (2020). Consumer financial distress during economic downturn: evidence from five provinces of Zimbabwe. *International Journal of Social Economics*, *47*(9), 1123–1142. https://doi.org/10.1108/IJSE-10-2019-0640

Chen, Z., & Jin, M. (2017). Financial inclusion in China: Use of credit. *Journal of Family and Economic Issues*, *38*(4), 528–540. https://doi.org/10.1007/s10834-017-9531-x

Chhatwani, M., & Mishra, S. K. (2021). Does financial literacy reduce financial fragility during COVID-19? The moderation effect of psychological, economic and social factors. *International Journal of Bank Marketing*, *39*(7), 1114–1133. https://doi.org/10.1108/IJBM-11-2020-0536

Chichaibelu, B. B., & Waibel, H. (2017). Borrowing from "pui" to pay "pom": Multiple borrowing and over-indebtedness in rural Thailand. *World Development*, *98*, 338–350. https://doi.org/10.1016/j.worlddev.2017.04.032

Chichaibelu, B. B., & Waibel, H. (2018). Over-indebtedness and its persistence in rural households in Thailand and Vietnam. *Journal of Asian Economics*, *56*, 1–23. https://doi.org/10.1016/j.asieco.2018.04.002

Chotewattanakul, P., Sharpe, K., & Chand, S. (2019). The drivers of household indebtedness: Evidence from Thailand. *Southeast Asian Journal of Economics*, *7*(1), 1–40. https://so05.tci-thaijo.org/index.php/saje/article/view/178438

Christelis, D., Jappelli, T., Paccagnella, O., & Weber, G. (2009). Income, wealth and financial fragility in Europe. *Journal of European Social Policy*, *19*(4), 359–376. https://doi.org/10.1177/1350506809341516

Cifuentes, R., Margaretic, P., & Saavedra, T. (2020). Measuring households' financial vulnerabilities from consumer debt: Evidence from Chile. *Emerging Markets Review*, *43*, 100677. https://doi.org/10.1016/j.ememar.2020.100677

Comelli, M. (2021). The impact of welfare on household debt. *Sociological Spectrum*, *41*(2), 154–176. https://doi.org/10.1080/02732173.2021.1875088

Coste, T., Henchoz, C., & Wernli, B. (2020). Debt and subjective well-being: Does the type of debt matter? *Swiss Journal of Sociology*, *46*(3), 445–465. https://doi.org/10.2478/sjs-2020-0022

Czech, M., & Puszer, B. (2021). Impact of the COVID-19 pandemic on the consumer credit market in V4 countries. *Risks*, *9*(12), 229. https://doi.org/10.3390/risks9120229

D'Alessio, G., & Iezzi, S. (2013). *Household over-indebtedness: Definition and measurement with Italian data*. Bank of Italy. http://doi.org/10.2139/ssrn.2243578

Dang, C., Chen, X., Yu, S., Chen, R., & Yang, Y. (2022). Credit ratings of Chinese households using factor scores and k-means clustering method. *International Review of Economics & Finance*, *78*, 309–320. https://doi.org/10.1016/j.iref.2021.12.014

Daud, S. N. M., Marzuki, A., Ahmad, N., & Kefeli, Z. (2019). Financial vulnerability and its determinants: Survey evidence from Malaysian households. *Emerging Markets Finance and Trade*, *55*(9), 1991–2003. https://doi.org/10.1080/1540496X.2018.1511421

Del Río, A., & Young, G. (2008). The impact of unsecured debt on financial pressure among British households. *Applied Financial Economics*, *18*(15), 1209–1220. https://doi.org/10.1080/09603100701604233

Demertzis, M., Domínguez-Jiménez, M., & Lusardi, A. (2020). *The financial fragility of European households in the time of COVID-19*. Bruegel Policy Contribution.

Disney, R. F., & Gathergood, J. (2011). *Financial literacy and indebtedness: new evidence for UK consumers*. University of Nottingham. http://doi.org/10.2139/ssrn.1851343

Disney, R. F., Bridges, S., & Gathergood, J. (2008). *Drivers of Over-indebtedness*. University of Nottingham.

Dorsey-Palmateer, R. (2020). Outsized impacts of residential energy and utility costs on household financial distress. *Economic Bulletin*, *40*(4), 3061–3070. http://www.accessecon.com/Pubs/EB/2020/Volume40/EB-20-V40-I4-P266.pdf

Duesenberry, J. S. (1949). *Income, saving and the theory of consumer behaviour*. Harvard University Press.

Emmons, W. R., & Noeth, B. J. (2013). Economic vulnerability and financial fragility. *Federal Reserve Bank of St. Louis Review*, *95*(5), 361–388. http://doi.org/10.20955/r.95.361-388

Fasianos, A., Godin, A., Kinsella, S., & Wu, W. (2014). *Household indebtedness and financial fragility across age cohorts, evidence from European countries*. University of Limerick.

Fatoki, O. (2015). The causes and consequences of household over-indebtedness in South Africa. *Journal of Social Sciences*, *43*(2), 97–103. https://doi.org/10.1080/09718923.2015.11893427

Fernández-López, S., Daoudi, D., & Rey-Ares, L. (2022). Do social interactions matter for borrowing behaviour of the Europeans aged 50+? *International Journal of Bank Marketing*, *40*(1), 27–49. https://doi.org/10.1108/IJBM-02-2021-0077

French, D., & McKillop, D. (2016). Financial literacy and over-indebtedness in low-income households. *International Review of Financial Analysis*, *48*, 1–11. https://doi.org/10.1016/j.irfa.2016.08.004

Friedline, T., & West, S. (2016). Financial education is not enough: Millennials may need financial capability to demonstrate healthier financial behaviors. *Journal of Family and Economic Issues*, *37*(4), 649–671. https://doi.org/10.1007/s10834-015-9475-y

Friedman, M. (1957). *A theory of the consumption function*. Princeton University Press.

Funke, M., Sun, R., & Zhu, L. (2021). The credit risk of Chinese households: A micro-level assessment. *Pacific Economic Review*, *27*(3), 254–276. https://doi.org/10.1111/1468-0106.12367

Gathergood, J. (2012). Self-control, financial literacy and consumer over-indebtedness. *Journal of Economic Psychology*, *33*(3), 590–602. https://doi.org/10.1016/j.joep.2011.11.006

Georgarakos, D., Haliassos, M., & Pasini, G. (2014). Household debt and social interactions. *Review of Financial Studies*, *27*(5), 1404–1433. https://doi.org/10.1093/rfs/hhu014

Georgarakos, D., Lojschova, A., & Ward-Warmedinger, M. E. (2010). *Mortgage indebtedness and household financial distress*. European Central Bank. https://doi.org/10.2139/ssrn.1456593

Gerth, F., Ramiah, V., Toufaily, E., & Muschert, G. (2021). Assessing the effectiveness of covid-19 financial product innovations in supporting financially distressed firms and households in the UAE. *Journal of Financial Services Marketing*, *26*(4), 215–225. https://doi.org/10.1057/s41264-021-00098-w

Giannetti, C., Madia, M., & Moretti, L. (2014). Job insecurity and financial distress. *Applied Financial Economics*, *24*(4), 219–233. https://doi.org/10.1080/09603107.2013.872759

Giarda, E. (2013). Persistency of financial distress amongst Italian households: Evidence from dynamic models for binary panel data. *Journal of Banking & Finance*, *37*(9), 3425–3434. https://doi.org/10.1016/j.jbankfin.2013.05.005

Haq, W., Ismail, N. A., & Satar, N. M. (2018). Household debt in different age cohorts: A multilevel study. *Cogent Economics & Finance*, *6*(1), N°1455406. https://doi.org/10.1080/23322039.2018.1455406

International Monetary Fund (2021). *Global financial stability report: Preempting a legacy of vulnerabilities*. IMF.

Jappelli, T., Pagano, M., & Maggio, M. D. (2013). Households' indebtedness and financial fragility. *Journal of Financial Management, Markets and Institutions*, *1*(1), 23–46. https://doi.org/10.12831/73631

Keese, M. (2012). Who feels constrained by high debt burdens? Subjective vs. objective measures of household debt. *Journal of Economic Psychology*, *33*(1), 125–141. https://doi.org/10.1016/j.joep.2011.08.002

Kempson, E. (2002). *Over-indebtedness in Britain*. Department of Trade and Industry.

Kim, K. T., & Wilmarth, M. J. (2016). Government subsidies and household debt burden after the great recession. *Journal of Family and Economic Issues*, *37*(3), 349–358. https://doi.org/10.1007/s10834-016-9492-5

Kim, Y. I., Kim, H. C., & Yoo, J. H. (2016). Household over-indebtedness and financial vulnerability in Korea: Evidence from credit bureau data. *KDI Journal of Economic Policy*, *38*(3), 53–77. https://doi.org/10.23895/kdijep.2016.38.3.53

Koulischer, F., Perray, P., & Tran, T. T. H. (2022). COVID-19 and the mortgage market in Luxembourg. *Journal of Risk and Financial Management*, *15*(3), 114. https://doi.org/10.3390/jrfm15030114

Krumer-Nevo, M., Gorodzeisky, A., & Saar-Heiman, Y. (2017). Debt, poverty, and financial exclusion. *Journal of Social Work*, *17*(5), 511–530. https://doi.org/10.1177/1468017316649330

Kuhnen, C. M., & Melzer, B. T. (2018). Noncognitive abilities and financial delinquency: The role of self-efficacy in avoiding financial distress. *Journal of Finance*, *73*(6), 2837–2869. https://doi.org/10.1111/jofi.12724

Kurowski, Ł. (2021). Household's overindebtedness during the COVID-19 crisis: The role of debt and financial literacy. *Risks*, *9*(4), 62. https://doi.org/10.3390/risks9040062

La Cava, G., & Simon, J. (2005). Household debt and financial constraints in Australia. *Australian Economic Review*, *38*(1), 40–60. https://doi.org/10.1111/j.1467-8462.2005.00351.x

Lee, K. O., & Mori, M. (2021). Conspicuous consumption and household indebtedness. *Real Estate Economics*, *49(S2)*, 557–586. https://doi.org/10.1111/1540-6229.12305

Livshits, I. (2015). Recent developments in consumer credit and default literature. *Journal of Economic Surveys*, *29*, 594–613. https://doi.org/10.1111/joes.12119

Lock, I. (2019). Explicating communicative organization-stakeholder relationships in the digital age: A systematic review and research agenda. *Public Relations Review*, *45*(4), 101829. https://doi.org/10.1016/j.pubrev.2019.101829

Loke, Y. J. (2016). Living beyond one's means: evidence from Malaysia. *International Journal of Social Economics*, *43*(1), 2–18. https://doi.org/10.1108/IJSE-11-2013-0248

Loke, Y. J. (2017). Financial vulnerability of working adults in Malaysia. *Contemporary Economics*, *11*(2), 205–218. https://doi.org/10.5709/ce.1897-9254.237

Long, M. G. (2018). Pushed into the red? Female-headed households and the pre-crisis credit expansion. *Forum for Social Economics*, *47*(2), 224–236. https://doi.org/10.1080/07360932.2018.1451762

Lusardi, A., Schneider, D., Tufano, P., Morse, A., & Pence, K. M. (2011). Financially fragile households: Evidence and implications. *Brookings Papers on Economic Activity*, 83–150. https://doi.org/10.2139/ssrn.1809708 >

Magli, A. S., Sabri, M. F., & Rahim, H. A. (2020). The influence of financial attitude, financial behaviour, and self-belief towards financial vulnerability among public employees in Malaysia. *Malaysian Journal of Consumer and Family Economics*, *25*, 175–193. https://www.majcafe.com/the-influence-of-financial-attitude-financial-behaviour-and-self-belief-towards-financial-vulnerability-among-public-employees-in-malaysia/

Marsellou, E. G., & Bassiakos, Y. C. (2016). Bankrupt households and economic crisis. Evidence from de Greek courts. *Journal of Consumer Policy*, *39*(1), 41–62. https://doi.org/10.1007/s10603-015-9309-1

McCarthy, Y. (2011). *Behavioural characteristics and financial distress*. European Central Bank.

McCloud, L., & Dwyer, R. E. (2011). The fragile American: Hardship and financial troubles in the 21st century. *The Sociological Quarterly*, *52*(1), 13–35. https://doi.org/10.1111/j.1533-8525.2010.01197.x

Mewse, A. J., Lea, S. E., & Wrapson, W. (2010). First steps out of debt: Attitudes and social identity as predictors of contact by debtors with creditors. *Journal of Economic Psychology*, *31*(6), 1021–1034. https://doi.org/10.1016/j.joep.2010.08.009

Michelangeli, V., & Rampazzi, C. (2016). *Indicators of financial vulnerability: A household level study*. Bank of Italy. http://doi.org/10.2139/ssrn.2934248

Midões, C., & Seré, M. (2022). Living with reduced income: An analysis of household financial vulnerability under COVID-19. *Social Indicators Research*, *161*(1), 125–149. https://doi.org/10.1007/s11205-021-02811-7

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Group, Prisma. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Medicine*, *6*(7), e1000097. https://doi.org/10.1371/journal.pmed.1000097

Mussida, C., & Parisi, M. L. (2021). Social exclusion and financial distress: Evidence from Italy and Spain. *Economia Politica*, *38*(3), 995–1024. https://doi.org/10.1007/s40888-021-00228-6

Mutsonziwa, K., & Fanta, A. (2019). Over-indebtedness and its welfare effect on households: Evidence from the Southern African countries. *African Journal of Economic and Management Studies*, *10*(2), 185–197. https://doi.org/10.1108/AJEMS-04-2018-0105

Noerhidajati, S., Purwoko, A. B., Werdaningtyas, H., Kamil, A. I., & Dartanto, T. (2021). Household financial vulnerability in Indonesia: Measurement and determinants. *Economic Modelling*, 96, 433–444. https://doi.org/10.1016/j.econmod.2020.03.028

Ntsalaze, L., & Ikhide, S. (2016). Household over-indebtedness: Understanding its extent and characteristics of those affected. *Journal of Social Sciences*, *48*(1-2), 79–93. https://doi.org/10.1080/09718923.2016.11893573

O'Connor, G. E., Newmeyer, C. E., Wong, N. Y. C., Bayuk, J. B., Cook, L. A., Komarova, Y., & Warmath, D. (2019). Conceptualizing the multiple dimensions of consumer financial vulnerability. *Journal of Business Research*, *100*, 421–430. https://doi.org/10.1016/j.jbusres.2018.12.033

Pareja-Eastaway, M., & Sánchez-Martínez, M. T. (2017). Have the edges of homeownership in Spain proved to be resilient after the Global Financial Crisis? *International Journal of Housing Policy*, *17*(2), 276–295. https://doi.org/10.1080/14616718.2016.1185275

Parise, G., & Peijnenburg, K. (2019). Noncognitive abilities and financial distress: Evidence from a representative household panel. *The Review of Financial Studies*, *32*(10), 3884–3919. https://doi.org/10.1093/rfs/hhz010

Paul, J., & Criado, A. R. (2020). The art of writing literature review: What do we know and what do we need to know? *International Business Review*, *29*(4), 101717. https://doi.org/10.1016/j.ibusrev.2020.101717

Philippas, N. D., & Avdoulas, C. (2020). Financial literacy and financial well-being among generation-Z university students: Evidence from Greece. *The European Journal of Finance*, *26*(4–5), 360–381. https://doi.org/10.1080/1351847X.2019.1701512

Raijas, A., Lehtinen, A. R., & Leskinen, J. (2010). Over-indebtedness in the Finnish consumer society. *Journal of Consumer Policy*, *33*(3), 209–223. https://doi.org/10.1007/s10603-010-9131-8

Ray, S., Mahapatra, S. K., & Nath, S. (2019). Over-indebtedness and its drivers among microfinance borrowers in India. *Economic and Political Weekly*, *54*(7), 47–54. https://www.epw.in/journal/2019/7/special-articles/over-indebtedness-and-its-drivers-among.html

Renneboog, L., & Spaenjers, C. (2012). Religion, economic attitudes, and household finance. *Oxford Economic Papers*, *64*(1), 103–127. https://doi.org/10.1093/oep/gpr025

Russell, H., Whelan, C. T., & Maître, B. (2013). Economic vulnerability and severity of debt problems: An analysis of the Irish EU-SILC 2008. *European Sociological Review*, *29*(4), 695–706. https://doi.org/10.1093/esr/jcs048

Sabaté, I. (2018). To repay or not to repay: financial vulnerability among mortgage debtors in Spain. *Etnográfica. Revista do Centro em Rede de Investigação em Antropologia*, *22*(1), 5–26. https://doi.org/10.4000/etnografica.5130

Sabri, M. F., Awb, E. C. X., Rahim, H. A., Burhan, N. A. S., Othman, M. A., & Simanjuntak, M. (2021). Financial literacy, behavior and vulnerability among malaysian households: Does gender matter? *International Journal of Economics & Management*, *15*(2), 241–256.

Sánchez-Martínez, M. T., Sanchez-Campillo, J., & Moreno-Herrero, D. (2016). Mortgage debt and household vulnerability: Evidence from Spain before and during the global financial crisis. *International Journal of Housing Markets and Analysis*, *9*(3), 400–420. https://doi.org/10.1108/IJHMA-07-2015-0038

Smith, H. L., Finke, M. S., & Huston, S. J. (2012). Financial sophistication and housing leverage among older households. *Journal of Family and Economic Issues*, *33*(3), 315–327. https://doi.org/10.1007/s10834-012-9293-4

Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D., & Tinghög, G. (2017). Does self-control predict financial behavior and financial well-being? *Journal of Behavioral and Experimental Finance*, *14*, 30–38. https://doi.org/10.1016/j.jbef.2017.04.002

Šubová, N., Mura, L., & Buleca, J. (2021). Determinants of household financial vulnerability: Evidence from selected EU countries. *E&M Economics and Management*, *3*, 186–207. https://doi.org/10.15240/tul/001/2021-3-011

Taylor, M. (2011). Measuring financial capability and its determinants using survey data. *Social Indicators Research*, *102*(2), 297–314. https://doi.org/10.1007/s11205-010-9681-9

Terraneo, M. (2018). Households' financial vulnerability in southern Europe. *Journal of Economic Studies*, *45*(3), 521–542. https://doi.org/10.1108/JES-08-2016-0162

Togba, E. L. (2012). Microfinance and households access to credit: Evidence from Côte d'Ivoire. *Structural Change and Economic Dynamics*, *23*(4), 473–486. https://doi.org/10.1016/j.strueco.2012.08.002

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, *14(3)*, 207–222. https://doi.org/10.1111/1467-8551.00375

van der Have, R. P., & Rubalcaba, L. (2016). Social innovation research: An emerging area of innovation studies? *Research Policy*, *45*(9), 1923–1935. https://doi.org/10.1016/j.respol.2016.06.010

van Eck, N. J., & Waltman, L. (2010). Software survey: *VOSviewer*, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Wałęga, G., & Wałęga, A. (2021). Over-indebted households in Poland: Classification tree analysis. *Social Indicators Research*, *153*(2), 561–584. https://doi.org/10.1007/s11205-020-02505-6

Wang, J. (2013). Citation time window choice for research impact evaluation. *Scientometrics*, *94*(3), 851–872. https://doi.org/10.1007/s11192-012-0775-9

Wang, Z., Zhang, D., & Wang, J. (2022). How does digital finance impact the leverage of Chinese households? *Applied Economics Letters*, *29*(6), 555–558. https://doi.org/10.1080/13504851.2021.1875118

West, S., & Mottola, G. (2016). A population on the brink: American renters, emergency savings, and financial fragility. *Poverty & Public Policy*, *8*(1), 56–71. https://doi.org/10.1002/pop4.130

Wiedemann, A. (2022). How credit markets substitute for welfare states and influence social policy preferences: Evidence from US states. *British Journal of Political Science*, *52*(2), 829–849. https://doi.org/10.1017/S0007123420000708

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT Press.

Worthington, A. C. (2006). Debt as a source of financial stress in Australian households. *International Journal of Consumer Studies*, *30*(1), 2–15. https://doi.org/10.1111/j.1470-6431.2005.00420.x

Yue, P., Korkmaz, A. G., Yin, Z., & Zhou, H. (2022). The rise of digital finance: Financial inclusion or debt trap? *Finance Research Letters*, *47*(A), 102604. https://doi.org/10.1016/j.frl.2021.102604

Yusof, S. A. (2019). Ethnic disparity in financial fragility in Malaysia. *International Journal of Social Economics*, *46*(1), 31–46. https://doi.org/10.1108/IJSE-12-2017-0585

Yusof, S. A., Rokis, R. A., & Jusoh, W. J. W. (2015). Financial fragility of urban households in Malaysia. *Jurnal Ekonomi Malaysia*, *49*(1), 15–24. http://journalarticle.ukm.my/9026/1/jeko_49%281%29-2.pdf

Zhou, J. (2022). Debt, financial vulnerability, and repayment behaviour in older Canadian households. *Canadian Public Policy*, *48*(1), 108–123. https://doi.org/10.3138/cpp.2020-095

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