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Kirti Goyal
Satish Kumar
Jing Jian Xiao
University of Rhode Island, jjxiao@uri.edu

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Citation/Publisher Attribution
Goyal, K., Kumar, S. and Xiao, J.J. (2021), "Antecedents and consequences of Personal Financial Management Behavior: a systematic literature review and future research agenda", International Journal of Bank Marketing, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJBM-12-2020-0612
Available at: https://doi.org/10.1108/IJBM-12-2020-0612

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Accepted for Publication

*International Journal of Bank Marketing*

*(ABDC-A, ABS-2, SSCI Indexed, IF=2.8)*

Antecedents and Consequences of Personal Financial Management Behavior: A Systematic Literature Review and Future Research Agenda

Kirti Goyal, Satish Kumar* and Jing Jian Xiao

1. **Kirti Goyal**, Research Scholar, Department of Management Studies, Malaviya National Institute of Technology Jaipur, Rajasthan, 302017, India. Email: 2019RBM9185@mnit.ac.in

2. **Corresponding Author***: **Satish Kumar**, Associate Professor of Finance, Department of Management Studies, Malaviya National Institute of Technology Jaipur, Rajasthan, 302017, India Email: skumar.dms@mnit.ac.in

**Adjunct Associate Professor**, Swinburne University of Technology, Swinburne Business School, Jalan Simpang Tiga, 93350 Kuching, Sarawak, MALAYSIA

3. **Jing Jian Xiao**, Professor, Department of Human Development and Family Science, University of Rhode Island, Kingston, RI 02881, USA. Email: jixiao@uri.edu
Antecedents and Consequences of Personal Financial Management Behavior: A Systematic Literature Review and Future Research Agenda

Abstract

Purpose – The purpose of this paper is to investigate the current state of research on Personal Financial Management Behavior (PFMB), with a prime focus on its antecedents and the consequences. By analyzing the research trends, methods, determinants, and outcomes, the PFMB literature is synthesized, and agenda for future research is suggested. A framework is presented that portrays PFMB's antecedents and consequences and further specification of the mediation and moderation linkages.

Design/Methodology/approach – The review is based on 160 articles published during 1970-2020. It follows a systematic approach and presents the definitions and theories of PFMB, publication trends based on time, region, sample population, research designs, data collection and analysis techniques, along with antecedents and outcomes through content analysis.

Findings - The synthesis draws upon various factors affecting PFMB, such as demographics, socio-economic, psychological, social, cultural, financial experience, financial literacy (FL), and technological factors. The prominent outcomes of PFMB include financial satisfaction, relationship satisfaction, quality of life, financial success, happiness, financial vulnerability/resilience, and financial well-being. The future research agenda sums up the recommendations in the form of research questions on variables and their linkages, followed by methodological advancements.

Originality/value – This paper covers the scholarly work done in this area in the past 51 years. To the best of authors’ knowledge, this is the first attempt to offer a most comprehensive and collective scholarship of this subject. It further gives an extensive future research agenda.

Keywords Systematic literature review, Personal financial management behavior, Financial management behavior, Financial behavior

Paper type: Literature review
1. Introduction
In today's modernized age with all facets of development, people own much more money than in the past. Robust financial health and overall well-being lead to the objectives of an individual's life (Boon et al., 2011). Furthermore, with an upsurge in cost of living, complexities in making financial choices, liberal credit, and social security reforms, it is imperative that people take charge of planning and managing their finances in their own best interest (Xu and Zia, 2012). "Personal Financial Management Behavior (PFMB) is a process which assimilates all components of individuals' financial interest. These include cash flow management, investments, risk management, retirement planning, tax planning, and estate planning" (Altfest, 2004, p.54). Robust PFMB would make individuals sense security and, eventually, financial freedom (Hilgert et al., 2003). Missteps in managing personal finances can have a profound long-term impact (Estelami, 2014). Recently, unsuccessful PFMB has been avidly concerned (Lusardi et al., 2020). Individuals lack knowledge of financial concepts due to which economic decisions made by them influence their current financial well-being and future saving goals (Schuchardt et al., 2007). Building from consumer financial narratives, perceived financial well-being is conceptualized as stress over current finances and a sense of security about achieving future financial goals (Netemeyer et al., 2018).

Taking charge of finances does not only mean establishing a daily household budget but also saving and investing in building a shield for future expenses, either predictable (buying a house, car, or education) or unpredictable (loss of a job or health issues) along with assuring stress-free post-retirement years through a blanket financial plan (Kidwell and Turrisi, 2004; Copur and Gutter, 2019). In this study, PFMB is defined as a set of multi-dimensional behavioral indicators concerning the planning, implementation, and evaluation comprised in the areas of cash flow, credit, savings and investments, insurance, retirement and estate planning as well as income and money management within a household.

The pursuit of personal finance is interdisciplinary, having omnipresence in psychology, sociology, finance, economics, information technology, and family studies (Schuchardt et al., 2007). Each discipline has diversified theories that offer diverse perspectives on individuals’ and households' financial behavior and money management (Copur and Gutter, 2019). Furthermore, professionals, educators, government, and policymakers aim at developing programs that focus on providing knowledge and preparing "rational human beings" handle their finances in a better way. Nevertheless, in reality, behavioral economics, a blend of psychology and economics, endorses the part that psychological attributes play in personal financial decisions (Hilgert et al., 2003). Certain irrational behaviors such as carrying too much debt, not saving enough, and aggressive trading lead to "sub-optimal" decisions. There are significant other factors that connect to individual financial behavior such as demographics (Allgood and Walstad, 2013), socio-economic factors (Gorniak, 1999; Grable et al., 2009), social factors (shim et al., 2009), FL (Lusardi and Mitchell, 2007) and technological factors (Panos and Wilson, 2020). According to Organization for Economic Cooperation and Development (OECD), FL is defined as the “knowledge and understanding of financial concepts and risks, and the skills, motivation, and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life.” (OECD, 2014). The voluminous prior evidence on PFMB has also centered on its potential lifetime consequences in the form of financial well-being, security, or ultimate satisfaction (Mugenda et al., 1990; Vogler et al., 2008; Miotto and Parente, 2015; Dew et al., 2020). Such a multiplicity of literature from diverse fields has surfaced the need for a composite and systematic summarization of the existing body of knowledge on the subject. Hence, an under-researched yet significant area of PFMB interests an attempt to delve into the domain's collective scholarship. Continued research on financial behavior is needed to gain insights to
inform future financial counseling and education efforts. Further, the topic is crucial for financial service professionals to take benefits of understanding financial management behavior in catering to the needs of their clients. Policymakers may use the information to advocate effective financial education programs to improve consumer financial well-being.

The leading aim of this paper is to compile the scholarly work on PFMB under one umbrella, fielding five principal inquiries:

*RQ1:* What are the existing definitions and theories of PFMB in the extant literature?
*RQ2:* What are the research trends in PFMB in terms of time, sample country, sample population, and structure (contents) of PFMB?
*RQ3:* What are the research methodologies, research designs, data collection techniques, and methods of data analysis that have been employed in PFMB research?
*RQ4:* What are the antecedents and consequences of PFMB?
*RQ5:* What are the gaps in the existing research on PFMB and scope for future research?

### 2. Rationale of the study

PFMB is a complex construct (Xiao and Tao, 2020), and for a considerable discernment of this construct, the subject was investigated broadly, following which the literature synthesis was unveiled. Based on the delineation that PFMB literature revolves around a plethora of its diverse antecedents and observable consequences, the scope of the review – the antecedents and consequences of PFMB – was decided. The extant reviews on PFMB (see Table I) focused on a single aspect of PFMB, with the majority embracing FL as a significant construct or varied widely in their review approach. In fact, the topic of PFMB is greatly overlapped with the literatures of FL (Boon et al., 2011). Huston (2010) conceptualized financial literacy as the knowledge of personal finance as well as the application of that knowledge. Mere knowledge of basic concepts of finance is futile unless it is reflected in financial behavior (Atkinson and Messy, 2012). In fact, OECD measured FL as a combination of three constructs: financial knowledge, financial attitude, and financial behavior (OECD, 2011). Financial literacy and financial capability are used as synonyms (Kempson et al., 2006). People can be financially literate when they have knowledge, understanding, and skills to take care of their personal finances, but they cannot be called financially capable unless reflected in their actual behavior. There are several studies that provide evidence of financial behavior as an outcome of financial literacy (Lusardi and Mitchell, 2011a; Van Rooij et al., 2011; Kaiser and Menkhoff, 2017). For the purpose of this study, we considered PFMB construct as the outcome of financial literacy.

Further, we failed to track any paper putting forth a comprehensive synthesis of the PFMB literature to date. Figuring such deficiencies, this is the first attempt to provide a detailed review on PFMB, putting forth significant developments and trends in the field with antecedents and consequences as its prime focus. The review also suggests a future research agenda in this domain. This study will serve as a pool of up-to-date knowledge on PFMB for academicians. It would also help policymakers and financial educators design programs on PFM that would benefit society and the real economy.

(Insert Table I about here)

Primarily, the research methodology employed in the review has been delineated in the next section. The following section explicates the results relating to the existing definitions and theories of PFMB and research trends. Subsequently, a conceptual framework furnishes a detailed inquiry into the antecedents and consequences of PFMB. The gaps in the extant research and directions for future research are discussed in the next section. The later section expounds implications of the study, followed by wrapping up the study in the conclusion section.
3. Review method
This study pursues a systematic literature review method as a reliable, replicable, and scientific way of producing a stock of knowledge that is not subject to bias (Tranfield et al., 2003). To delve into the literature, a comprehensive review equipped with content analysis canvasses the state-of-the-art literature concerning the theories, concepts, factors, and outcomes of PFMB (Goyal and Kumar, 2021). To conduct the study, we have used the two largest databases of indexed articles: Web of Science by Clarivate Analytics and Scopus. These two multidisciplinary databases are acknowledged to provide extensive results and allow for advanced search options (Rebouças and Soares, 2020). The search was conducted in August 2020. We avoided limiting the search to a specific period to retrieve all relevant papers to date.

Personal finance is the subject of how individuals, households, consumers, and families procure, develop, and allocate financial resources to achieve their present and future financial goals (Hira and Mugenda, 1999). With an intent to not skip any crucial publication for consideration in this review, a comprehensive long string of appropriate search terms was used to run the search in title, abstract, and keywords. Table II shows the search string used for data retrieval. The search in two databases Scopus and Web of Science, yielded 1137 and 523 results, respectively. Limiting the search results to the English language resulted in 1063 and 515 items, totaling 1578. Subsequently, duplicates (n=440) were removed, which derived 1138 items. Upon reading the abstracts, 245 articles were retained for full paper consideration based on the relevance to the subject of PFMB. Inclusion and exclusion criteria were put to limit the articles according to the scope of the review. Out of 245 papers on PFMB, 133 studies accorded with the theme of antecedents and consequences of PFMB. Further, the references of the full papers were also scanned, and 27 relevant records were identified, which were added manually to the list after reading abstracts. The complementary search is helpful in identifying the studies that might have been missed in the primary database search (Harari et al., 2020). Finally, 160 papers corresponded to the scope of the review and were included for analysis. The study constitutes all the relevant book chapters, peer-reviewed journal articles, and reviews. The approach of Rashman (2009) was followed for the selection strategy. Figure 1 illustrates the mechanism of retrieval and selection of articles.

(Insert Table II and Figure 1 about here)

4. Results
This section recapitulates the diverse definitions of PFMB that various researchers have adopted. It intends to provide the readers with a bird's eye view of the concept of PFMB. The extant theories that have been conceived, tested, or applied during PFMB research are also encapsulated. Further, the review was methodized, and content analyzed in a way that sketches a map of current PFMB literature in the form of yearly publication trends, sample country trends, sample population, PFMB components, trends in research design, the conceptual framework, antecedents, and consequences of PFMB.

4.1 Definitions
PFMB has been construed and measured disparately in the extant literature, specifically variegated by the sample. For instance, research focusing on the determinants and outcomes of individuals' PFMB defines it as a set of behavioral components, such as budgeting, cash flow management, consumption, savings, investment, borrowing, or insurance (Joo and Grable, 2000; Dew and Xiao, 2011). On the other hand, studies focusing on the family financial management among couples have defined PFMB as income allocation within the household: pooled income or separate income or household allowance (Pahl, 1989). Similar studies also define PFMB as the division of labor and breadwinning role in a family (Vogler et al., 2006;
Kulic et al., 2020). The measures used in these studies, in terms of behavioral components, differ significantly by researchers. Therefore, the incongruity in the findings has cropped up. Such inconsistencies make our knowledge and understanding of PFMB blurry.

The concept of PFMB is also closely related to FL (Kebede et al., 2015). Classical economists implicitly assume that increases in financial knowledge will result in changes in financial management behaviors (Hilgert et al., 2003). However, empirical shreds of evidence pertinent to the impact of FL on financial behaviors are not irrefutable (Xu and Zia, 2012). Thus, it is necessary to understand the behavioral biases that go against the standard economic theory, moving individuals from rational agents to behavioral agents. Table III has been formed to provide the readers with a glimpse of the diverse definitions of PFMB figured out in the extant literature.

4.2 Extant Theories Employed
Plenty of theories have been impelled by the authors to predicate their research on PFMB and to set the background for empirical investigations on factors influencing it. Figure 2 shows the evolution of theories related to PFMB from the period 1930-2010. The concept of PFMB is primarily based on behavioral finance theories, out of which Theory of Planned Behavior (TPB) is the most prominent one (Ajzen, 1991). It recognizes the psychological aspects by examining the attitude-behavior relationship. According to the TPB, amid other factors, attitude frames behavior, which in turn shapes behavior. The TPB has been endorsed in a wide range of behaviors, including saving (Copur and Gutter, 2019). Another theory, which is the Theory of Reasoned Action (TRA), proposes that the behavior is regulated by an individual's intent to perform the behavior. Intention is determined by attitudes and subjective norms (Ajzen and Fishbein, 1975).

Another intermittent theory that has been ingeniously applied in the literature is the Theory of Consumer Socialization (TCS), especially concerning youth financial learning (Shim et al., 2009, 2010). The TCS provides a framework that delineates the financial socialization agents (teachers, parents, peers, and the media) determining an individual's financial behavior (Moschis, 1987). Shim et al. (2010) contemplated two learning modalities: observational learning and formal learning. Social Learning Theory (SLT) highlights observational learning's role in determining financial behavior (Bandura and Walters, 1977). Observational learning is also explained by the Social Cognitive Theory (Bandura, 1989). The theory proposes that observation of others interacts with one’s own behavior and one’s cognitive process to influence that individual’s behavior.

Further, the life cycle hypothesis of savings explains the PFMB by assuming that individuals consume a uniform portion of their income over the life cycle and are not born with inheritance and die without leaving a bequest (Ando and Modigliani, 1963). Thus, individuals at a young age tend to borrow to acquire education. Individuals in their middle age are expected to pay off debts and save for the future. During their retirement years, they are expected to utilize their accumulated assets. However, many retired people still save and intend to transfer their accumulated wealth to the next generation. A study by Mugenda et al. (1990) focused on the Family Resource Management System Model proposed by Deacon and Firebaugh (1988). The Family Resource Management System Model was conceptualized as composed of inputs, throughputs, and outputs. The input component of the family managerial system was composed of material resources (income, savings, and net worth) and human resources (education and knowledge). The throughput component was comprised of transformation processes which included money management practices and communication. The output component was characterized by satisfaction with financial status and quality of life.
A plethora of other theories forms the ground for various antecedents (discussed later in the paper) of PFMB. Table IV features the theories that have been applied in the extant literature on PFMB, but in no way is the number exhaustive. Therefore, it aims to present the encapsulation of theories (in chronological order) that have been traced from the existing studies.

(Insert Table IV and Figure 2 about here)

4.3 Trend of publication in time

Figure 3 illustrates the progression of publications in PFMB research. Although the research on PFMB exists since the 1970s, it is notable that the gigantic emergence of PFMB research can be seen only during the last decade (2011-2020). Personal finance, a topic of consideration from institutional and consumers' viewpoints, is rather a recent trend (Schuchardt et al., 2007). The concept of PFMB can be traced back around two centuries in the name of home economics (Gross et al., 1980), with barely any attention from economists and business faculty predominantly. The setting up of Financial Counseling and Planning (FCP) offers a ground for personal finance researchers to "generate knowledge, publish information, educate professionals, and provide research programs" (Reynolds and Abdel-Ghany, 2001, p.382). Another event that changed the scenario was introducing the phrase "household finance" by Campbell (2006), who emphasized the fusion of this crucial topic into the vast finance area. Also, a scholar from a consumer science background viewed this topic from consumers’ perspective and used the term “consumer finance” (Xiao, 2008). Professor Tufano viewed this term from a business perspective (Tufano, 2009). In current years, household finance, family finance, consumer finance, personal finance, and individual finance promote research on this topic (Xiao and Tao, 2020). The increasing interest in PFMB and its significant visibility in the research recently can be attributed to the increasing power of money with the individuals, liberal credit policies, shift from defined benefit to defined contribution plans, and lack of money management skills among the individuals (Lusardi et al., 2010; Xu and Zia, 2012). The global financial crisis of 2008, characterized by high consumer debt and inadequate savings, expressed a "teachable moment" for the society at large and called for a policy focus on efficient conventions in FL and consumer protection (OECD, 2009). The government and financial educators are working hand in hand to increase the awareness of the vitality of PFMB. The continued research pieces of evidence pertinent to discerning personal financial behavior are indeed required.

(Insert Figure 3 about here)

4.4 Sample country and population

The analysis reveals that out of the total number of studies under review (n=160), 144 studies derived their samples from single countries. Five studies were based on the data collected from multiple countries, and eleven studies are not country-specific (see table V). By "Not country-specific," the authors mean that the studies are either purely conceptual or review. After further delving into the geographical location of the sample taken into each study (n=144), it was found that most of the PFMB studies have been conducted in the American region (n=62). However, this finding may partly be because just 47% of the US adults report maintaining a budget and tracking their expenses (Consumer Financial Literacy Survey, 2020). According to the National Financial Educators Council (NFCC), the average debt of the US college graduating students increased from $18550 (in 2004) to $28950 (in 2014). Alarmingly, 54% of Americans say that they have not set aside three months' worth of living expenses in case of an emergency (Yakoboski et al., 2020). Next, the studies took place in the Europe region (n=26) and the Asia region (n=22). The finding also remarks that the research on PFMB is skewed towards developed countries like the US and the UK. Less attention has been paid to the regions like
Asia, Australia, and Africa. The results recommend a need to study PFMB in developed as well as developing economies as the subject holds importance across the globe.

Upon manually scrutinizing the sample population in the studies (Figure 4), it was discovered that the adult population (irrespective of a particular age group or a population cohort) was used as a sample in most of the studies (n=52). Further, 26 studies were conducted on young adults, including college students. The effect of various factors on young adults' financial practices has been extensively studied as they enter adulthood with bad experience managing their finances (Lusardi et al., 2010). Personal finance is a sub-discipline of household finance (Schuchardt et al., 2007), and therefore, studies on couples (n=20) and households are manifold (n=14). On similar grounds, the low-income population is the most vulnerable when it comes to financial management as they have to deal with the scarcity of financial resources. Thus, PFMB studies on a low income are noticeable (n=16). "No specific sample" means that the studies are either purely conceptual or review and thus do not include any sample. Results reveal that far fewer studies have been performed on women, older adolescents, professionals, and government employees, signaling a research gap.

(Insert Table V and Figure 4 about here)

4.5 PFMB structure (Contents and measures)
Each of the components of PFMB is vital for overall financial well-being (Xiao, 2008; Riitsalu and Murakas, 2019). Upon manual segregation of the extant literature on PFMB, it was discerned that different researchers measured PFMB through the inclusion of different components as a financial management behavior scale. This shows a non-consensus on the measurement and a lack of a comprehensive measure of PFMB (Dew and Xiao, 2011). Extending the analysis of studies further exposit that there are too many "conceptualizations" of PFMB. For instance, in couples' or household finances, PFMB is conceptualized as the income organization or money management method among couples (pooled income, independent income, or allowance). Contrarily, in the case of an individual's finances, PFMB manages finances in the multiple domains of savings, investment, credit, insurance, retirement, etc. Another interesting finding is that there are some studies ("Not specific") (n=37) in which the researchers have not specified the specific domain in which the PFMB is assessed. Notably, consumption, asset management, wealth accumulation, mortgage repayment, tax planning, estate planning, fintech, and charitable giving are distinct themes found in the literature. Such an exploration could help researchers and policymakers give an eye view on measures related to PFMB, which are not much paid attention to. It should be noted that the studies might have included more than one PFMB component. Figure 5 exhibits the number of studies published on various themes (contents) of PFMB.

Few validated financial management behavior scales exist in the literature. A snapshot of the most popular existing PFMB scales is shown in Table VI. Most of the scales lack psychometric validation except the one developed by Dew and Xiao (2011) and are based on selective financial management behaviors. The OECD measure includes a thorough instrument for measuring financial behaviours. It has been validated and used in many countries around the world. While the inclusion of all the domains of financial management is important to be included in the scale, the development of generalized sample measure is crucial.

(Insert Figure 5 and Table VI about here)

4.6 Trends in research designs
In this section, we manually segregated the studies based on the research method, research design, data collection technique, and data analysis approach (see table VII):

1) empirical studies include research articles that are based on observation, experiments, and measurement of phenomena;
2) conceptual studies include research articles that comprise of the development of some concept, framework or are theoretical;
3) quantitative studies include research articles that are based on statistical, numerical, or mathematical analysis of survey or secondary data;
4) qualitative studies include research articles that are based on the collection and analysis of non-numerical data through focus groups, interviews, first-hand information, etc.;
5) modeling and analytical methodology-based articles rest only on mathematical derivations or simulated/created datasets.

Of 160 studies, 145 are empirical, six are conceptual, five are literature reviews, three are modeling based and analytical, and one is a mixed study (empirical + conceptual). Of the 145 empirical studies, 121 studies used quantitative research design, 18 studies used qualitative methods, and six were based on a mixed-method approach (both qualitative and quantitative methods). There exists a dearth of conceptual studies on the subject.

Further comprehensive analysis shows that most empirical studies are based on surveys (n=113); just one study was based on archival data. Seven studies were based on laboratory experimentation. As identified in the previous section, research on PFMB is in an emerging phase, and that the majority of the publications have taken place in the last few years. Despite this, the focus is on quantitative empirical research methods compared to qualitative methods. This might result in biased, inconsistent, and ambiguous research findings. More qualitative studies are essential to delve deeply into the subject and identify the insightful determinants of PFMB.

As we classify the articles based on data analysis approaches to identify the most prominent techniques/tools, it was discerned that regression is the most frequently applied technique, and OLS regression is the most popular type of regression used. Apart from regression, SEM has been used by some researchers. SEM is a comprehensive approach based on the confirmatory measurement used to assess the models related to psychological studies (Anderson and Gerbing, 1988). Researchers have also applied correlation widely to analyze the relationships. Other techniques applied include descriptives, ANOVA, Chi-Square test, t-test, factor analysis, discriminant analysis, mathematical models, and MANOVA.

5. The conceptual framework
The research done on the subject revolves around the antecedents that are likely to influence PFMB and its consequences, which are either positive, negative, or insignificant. It is an absolute need of the hour to realize the vitality of the concept of PFMB and advance the arguments on its determinants and terminal outcomes. This review proposes an integrated framework that connects various disjointed theoretical fragments. The model (see figure 6) calibrates the peculiar findings and gives a direction to future research.

5.1 Antecedents of PFMB
Over the past few decades, PFMB has stemmed as a process, which is of paramount concern for an individual. Therefore, it is crucial to know the various expediting factors of PFMB. On an extensive inquiry of the literature, it was identified that myriads of factors impact financial behavior. Such factors are demographic and socio-economic characteristics, psychological and personality factors, social factors, FL, professional financial advice, environmental factors, technological factors, circumstantial factors, cultural factors, and financial experience, among others (Table VIII).
PFMB can differ between population sub-groups according to marital status, income, occupation, gender, education, and family structure (Perry and Morris, 2005; Grable et al., 2009; Loke 2017a; Sachitra et al., 2019; Bapat, 2020). In comparison to the work done on demographics and socio-economic factors, research on psychological factors underlying personal financial planning behavior is in an elementary stage (Joo and Grable, 2004; Xiao and Porto, 2019). Based on the existing body of literature, various psychological factors have been accounted for. Behavioral finance theories have acknowledged psychological disposition in determining PFMB (Copur and Gutter, 2019). In the last decade, various researchers have investigated the relationship between financial socialization and financial behavior (Shim et al., 2009; Bamforth et al., 2018; Antoni et al., 2019). Parents are essential socialization agents in how children learn about money and develop financial management behavior, often incidentally (by observation and participation) and through lessons delivered intentionally by parents (Moschis, 1987).

Another most critical factor of PFMB is FL. Academic work has concluded that FL is an antecedent to various healthy financial behaviors such as saving (Pak and Chatterjee, 2016), borrowing (Allgood and Walstad, 2013), investment (Hastings and Mitchell, 2020), and overall personal financial planning (Boon et al., 2011). As with many areas of personal finance, there is little appreciation of precisely how individuals rearrange their portfolios around and during major life events. These are often difficult to plan (West and Worthington, 2019), such as loss of a job, major disability, or long-term illness, divorce/remarriage, starting a family or sudden inheritance. Regarding technological factors, information about financial products and services digitally may also influence financial behavior (Bapat, 2019). Financial advisors are a critical source for improving financial behaviors and well-being among clients and communities (Moreland, 2018).

5.1.1 Indirect effects (Mediators and moderators)
In figure 6 of the study, the potent insights from the literature review have been assembled to provide the readers with an outline of the variables and relationships encompassing PFMB. The direct influence of a determinant on behavior is reported in table VIII, but many factors indirectly influence PFMB. Most of the allied literature on psychology proposes that the relationship between attitude and behavior might be influenced by a third variable, FL (Eagly and Chaiken, 1993). Barbic et al. (2019) found that FL moderates (interaction effect) the relationship between financial attitude and behavior ($\beta=-0.0850, p<0.01$). The attitude-behavior relationship weakens as the FL increases. Moreover, in the study conducted by Topa et al. (2018), Need for Cognitive Closure (NCC) is found to moderate the relationship between Investment Literacy and financial management behavior where the effect was high at the high level of NCC and weak at a low level of NCC. NCC is a socio-psychological term that refers to an individual's inclination for a fixed answer to a question rather than ambiguity and confusion (Webster and Kruglanski, 1994). The differences in NCC may influence an individual's capacity to process information and their decision-making.

Further, upon exploring cross-cultural conceptualization of human behavior, a negative interaction was found between Korean and financial knowledge ($p=.055$) on financial management behavior (Grable et al., 2009). Although greater than $p<.05$ but less than $p<.10$, it indicates a meaningful relationship. In a similar study, it was also found that the culture does not exert an influence (no significant interactions) on the relationship of Locus of Control (LOC) and income with financial behavior. LOC relates to the magnitude to which an individual's success or failure results from their actions (Perry and Morris, 2005). Another variable, excessive lifestyle, which is related to overspending habits, moderates the relationship between PFMB and youth bankruptcy awareness (Azmi et al., 2019) in such a way that the
relationship is more substantial in case of a lower excessive lifestyle ($\beta = 0.109, p<0.05$). Bapat (2020) found that financial risk tolerance moderates the relationship between financial knowledge, financial attitude, internal LOC, and financial management behavior. Another psychological construct of perceived control is to moderate the budgeting intention (Kidwell and Turrisi, 2004). Individual self-regulation would also moderate the relationship between differences in future orientation and investment in a high-risk mutual fund, $F(1,83)=10.03, p<.01$ (Howlett et al., 2008). This means that high future-oriented individuals had a less favorable attitude towards risky investment when self-regulation was high. Materialism is defined as "the importance ascribed to the ownership and acquisition of material goods in achieving major life goals or desired states" (Richins, 2004, p.210). Higher materialism results in higher money management-related stress, but time perspective is found to moderate this relationship (Ponchio et al., 2019).

Besides moderating effects, mediation effects have also been hypothesized in the literature. In the study by Bapat (2020), financial attitude fully mediates the relationship between financial knowledge and financial management behavior ($\beta=0.372, 0.533, p<0.05$). Barbic et al. (2019) also affirm a significant indirect relationship between FL and financial management behavior through financial attitude mediation. This finding focuses on the need to incorporate psychological facets to transform financial knowledge into financial behavior through financial attitude. A study by Ho and Lee (2020) has found that students who accredit power distance still exhibit positive financial behavior if they have a positive financial attitude as a mediator in the relationship ($\beta=0.12, p<0.01$). Power distance is a cultural disposition in which less powerful members of the society accept that power is unevenly distributed (Hofstede, 2001). Higher power distance is likely to result in negative financial behavior (Ho and Lee, 2020). Another psychological construct that completely mediates the relationship between procrastination and financial behavior is financial self-efficacy ($\beta=-0.262, p<0.05$) (Gamst-Klaussen et al., 2019). Therefore, financial self-efficacy, which means an individual's abilities to achieve a financial goal, is critical to financial health. The relationship between investment literacy and financial management behavior is also mediated by investment advice use (Topa et al., 2018). Studies by Perry and Morris (2005) and Grable et al. (2009) reveal that LOC mediates the relationship between FL and financial management behavior. The indirect effect of subjective financial knowledge also exists in the relationship between self-esteem and financial behavior (Tang and Baker, 2016).

5.2 Consequences of PFMB
Table IX furnishes a detailed content analysis of the consequences of PFMB as explored in the literature. It is noteworthy that the researchers' focus in the domain has primarily been on figuring out the antecedents of PFMB. Most of the empirical investigations have considered PFMB as an outcome, and the resultant variable outcomes of such behavior have not received much attention. The existing work exposit that financial behavior can influence financial satisfaction (Mugenda et al., 1990; Gunay et al., 2015). To examine the causal relationships of factors that influence money management tasks, Mugenda et al. (1990) remarked upon the finding that "net worth, savings, debt payments and lack of financial difficulties" are the main predictors of financial satisfaction. Joo and Grable (2004) identified that financial behaviors are closely associated with an individual's financial stress levels. Good financial behaviors are also the predictors of happiness in life through relationship satisfaction mediation (Spuhlera and Dew, 2019). The concept of FL, financial capability, and PFMB are greatly connected (Xiao et al., 2014). Financial capability is having financial knowledge and performing financial behaviors through financial access (Taylor, 2011). Financial capability through desirable financial behaviors results in financial satisfaction (Xiao et al., 2014; Xiao and O’Neill, 2018b).
Borrowing and insurance behaviors positively influence relationship quality between partners and their subjective financial well-being (Baryła-Matejczuk et al., 2020). These dimensions are closely connected to the psychological aspects of satisfaction of routine basic needs. The evidence of such life gains can help service providers motivate clients to perform better financial behaviors. Such behaviors are also the predictors of making defaults in payments and saving for the future (Miotto and parente, 2015).

6. Agenda for future research

Although emerging research on PFMB encompasses sizable contributions in the late years, the literature's coalescence has brought to light profound gaps in understanding of the subject. Such gaps build the momentum for future theory development and research on PFMB. Table X sums up the recommended agenda for different propositions in the form of research questions on variables and their linkages, followed by empirical advancements on methods and measures.

6.1 Theoretical development

This section describes how various theories can be applied to PFMB and how future research can be developed to better comprehend financial behavior, which provides useful information for policymakers. Due to its interdisciplinary nature, the profession of personal finance has various theories to choose from (Schuchardt et al., 2007). The collective scholarship on the behavioral complexities of PFMB happens to come from several interdisciplinary fields, such as behavioral economics, economic psychology, behavioral finance, sociology, family studies, technology, couples’ finances, and consumer research. Future research should be focussed on how theoretical approaches can be used in multiple disciplines can inform PFMB.

The traditional life-cycle hypothesis assumes that individuals are well-informed and behave rationally by smoothing consumption and saving over their life-cycle (Ando and Modigliani, 1963). Notwithstanding, our analysis acknowledges that individuals confront many behavioral biases that are not predicted by the standard theory. Such interplay of psychological attributes must be backed up by the various theories specific to the personal finance domain. In addition to this, the majority of the studies have focused on attitudinal, normative, controlling, and experiential perceptions about financial decisions (Lee and Hanna, 2014; Barbic et al., 2019). Triandis (1994) emphasizes the cultural dimensions that are often overlooked by others in the field. There is a need to develop socio-psychological theories to support behavioral biases due to culture and other social factors. The TTM assumes that self-efficacy plays a significant role in behavior change (Prochaska and DiClemente, 1982). Hence, individuals who doubt their capabilities to handle finances are more likely to reduce effort, making them more susceptible to unhealthy financial behaviors like impulse purchases (Gamst-Klaussen et al., 2019). Relevant theories must be used to identify the stage at which people are willing and able to alter their behavior.

Further, as our review suggests, the TPB and the TTM have been tested on certain financial behaviors (Xiao et al., 2004a; Xiao et al., 2004b) and certain groups of population (Kidwell and Turrisi, 2004; Copur and Gutter, 2019; Bapat, 2020). Further, FL leads to desirable financial behaviors (Hilgert et al., 2003; Lusardi and Mitchell, 2007), but there is some evidence where financial education has been found to have weaker or insignificant effects on financial behaviors (Fernandes et al., 2014). It is of great interest for financial educators to know the influence of financial education on behavior change. While the work that financial education is expected to do has been identified, the role of theory in aiding educators to perform such a role has still not been established. The scholarly work to date creates a promising ground for exploring financial education's theoretical fragments, financial behavior, and life satisfaction.
TCS has been applied to determine the influence of parent-child financial socialization processes on adolescents’ or young adults’ money management practices (Shim et al., 2009). The majority of the studies have focused on parental influence in general rather than specific socialization practices (Sundarasen and Rahman, 2017; Fulk and White, 2018). Such specific domains can be identified through specific realms in social learning theories (Xiao et al., 2011). Other socialization agents, such as peers and media, need further exploration.

The behavior theories reviewed in this paper have been applied in various scientific research studies. Researchers in consumer finance could make use of this line of research to inform financial educators and consumers. Future research should also determine how financial education, financial behavior, and quality of life are related.

6.2 Empirical advancement

6.2.1 Antecedents of PFMB

The empirical work done on the antecedents of PFMB is considerable. The research stream stressed the importance of psychological factors in better comprehending the positive or negative financial outcomes, either directly or indirectly (Hoffmann and McNair, 2019). Given the established relationships, it is critical to understand the processes through which such factors differentially relate to a set of financial outcomes, and for that, theoretical synthesis is fundamental. For instance, saving is a financial decision made within a social context, is based on life-cycle stages and the psychological attributes of the savers (Copur and Gutter, 2019). However, there is a limited research using a comprehensive method to understand the multiple factors that affect financial behavior. PFMB is undoubtedly one of the most prolific research areas in personal finance, yet Copur and Gutter (2019) and Bapat (2020) state that not much is known about the determinants of PFMB.

Notwithstanding the preponderance of studies on PFMB determinants, there are still some issues that constitute entry points for new research in the area. First, there seems different results on the same constructs (negative or positive or insignificant relationships) relating to the impact of factors on various financial behaviors such as income level (Perry and Morris, 2005 vs. Grable et al., 2009), education (Gorniak, 1999 vs. Loke, 2017a), household size (Mugenda et al., 1990 vs. Borda and Kowalczyk-Rólczyńska, 2016), perceived Control/self-Control (Kidwell and Turrisi, 2004 vs. Zulfaris et al., 2020), LOC (Bapat, 2020 vs. Grable et al., 2009), personality traits (Xu et al., 2015 vs. Harrison and Chudry, 2011), financial education (Fulk and White, 2018 vs. Fernandes et al., 2014), and objective FL (Bapat, 2019 vs. Pak and Chatterjee, 2016). Such contradictions need re-investigations. Further, the tested effects of demographics on financial outcomes are not unusual, but the research has discounted how demographics indirectly affect financial outcomes via financial socialization processes (Shim et al., 2009, 2010). The tenets of consumer socialization theory could advance explanations for individual differences in FL and resulting financial behavior (Moschis, 1987, Gudmunson and Danes, 2011). Additional research on hierarchical financial behavior needs to be conducted with other financial behavior such as saving, investing, borrowing, and retirement (Xiao and O’Neill, 2018a). More research is required to examine the relationship between fintech and various consumer financial topics since fintech has changed the overall ecological environment of consumer finance in many ways (Xiao and Tao, 2020). Lastly, as with many areas of personal finance, there is little appreciation of precisely how individuals rearrange their portfolios around and during major life events (West and Worthington, 2019), such as loss of job, major disability or long-term illness, divorce/remarriage, starting a family or sudden inheritance.

Future researchers can advance more work on: socio-demographic and economic factors such as occupation, household size, homeownership, family structure, generational complexity, and gender disparities within couples; psychological factors such as self-
regulation, negative emotions, distrust, cognitive style, motivation, perceived ability, planning horizon, financial optimism, self-other orientation, framing effect, emotional intelligence, and procrastination; social factors such as financial socialization through peers, colleagues, and media; environmental factors; technological factors; financial experience; financial resources and financial vulnerability. It is essential to know how financial socialization and education vary by gender, life stage, race, socio-economic status, education, and ethnicity (Schuchardt et al., 2009). Riitsalu and Murakas (2019) findings show that objective financial knowledge is less related to financial well-being than subjective financial knowledge and financial behavior. Additional research is required to explore antecedents of financial knowledge as such skills are pivotal for good financial behavior (Grable et al., 2009). Future studies need to be careful when getting insights from the perspective of personal, behavioral, and environmental factors and may consider including specific individual behaviors (Bapat, 2019).

6.2.2 Mediators
The pathways between various factors and proper financial management behavior are major research questions that need to be addressed. Financial attitude mediates the relationship between FL and financial behavior (Barbic et al., 2019; Bapat, 2020). First, the mediating relationship of financial attitude between financial socialization and financial behavior needs to be tested as financial socialization influences FL (Shim et al., 2010). Future research should also consider additional psychological factors as mediators between demographics and financial behavior. LOC plays a mediating role in the relationship between financial knowledge and financial behavior (Perry and Morris, 2005), but such an effect may differ for different groups of people. The interplay among various psychological factors is also an exciting research area as they are interrelated (Bapat, 2020). Apart from gender and power in couples' finances (Pepin, 2019; Cineli, 2020), the interactions of social categorizations such as race/ethnicity or socioeconomic status may be useful to understand couples' financial systems and relational outcomes.

6.2.3 Moderators
There are inconsistent results regarding the moderating effects of FL on the relationship between financial attitude and financial behavior. In general, the relationship tends to be firm with high FL and weak with low FL (Eagly and Chaiken, 1993). Nevertheless, in some cases, the moderating effect is negative, i.e., when FL is high, the attitude-behavior relationship weakens (Barbic et al., 2019). Such findings propel deeper inquiry. Research reveals that financial advice influences financial management behavior (Topa et al., 2018; Moreland, 2018). The interaction effects of such advice with FL and financial behavior would be an exciting research proposition. The moderating role of culture on FL and behavior has been tested in Korea (Grable et al., 2009). Such a relationship needs to be explored in other countries as well. The moderating role of additional psychological factors in changing the relationship between demographics, FL, social factors, and financial behavior needs to be incorporated in future studies. Findings suggest that electronic banking positively affects financial behavior (Bapat, 2019). Information about financial products and services digitally may also influence financial behavior. There is also a relationship between FL and fintech. Low FL leads to low adoption of fintech (Morgan and Trinh, 2019). However, how fintech may influence FL is another compelling future research area.

6.2.4 Consequences of PFMB
It is apparent from Figure 6 that a major chunk of PFMB literature has targeted antecedents, and research on its consequences is minuscule. Further exploration is encouraged on the psychological and sociological aspects of financial attitudes and behaviors and their
relationship with financial satisfaction (Xiao et al., 2014; Spuhlera and Dew, 2019). Such studies will help consumer and family economists better understand the motives, drives, and effects that determine individuals' quality of life. Not many studies have empirically confirmed that the amount of money that one makes is less important than the money that one spends (Shim et al., 2009). There has been a continuous debate on the linear relationship between income and happiness (an indicator of subjective well-being) in longitudinal data (Stevenson and Wolfers, 2013). Notably, PFMB and financial access are essential for overall financial well-being yet have not been much explored (Birkenmaier and Fu, 2019). Better financial behavior may result in better financial access and better financial status (Gunay et al., 2015). Again, there is a causality issue implying that financial access succeeds financial behavior and vice-versa (Xiao et al., 2010). In addition to this, other terminal outcomes such as financial resilience in times of emergencies warrant equal attention in the research (Lusardi et al., 2020). According to Salignac et al. (2019, p. 5), "Financial resilience is an individual's ability to access and draw on internal capabilities and appropriate, acceptable and accessible external resources and supports in times of financial adversity." Future research should explore how the economic shocks transform exposure to risk and risk management preferences both at the individual and household levels (Schuchardt et al., 2009).

6.3 Methodological Expansion
6.3.1 PFMB measurement
Following the gap of a very few validated financial management behavior scales in the research, there is a need for the researchers to establish financial behaviors inventory covering all areas of behaviors (Dew and Xiao, 2011). Unfortunately, most of the existing studies measure financial behaviors as per their convenience and lack a comprehensive composition. Such a reliable and validated inventory would be advantageous for financial educators and policymakers when evaluating financial education programs' influence on financial behavior, financial satisfaction, and quality of life. To comment on the robustness of existing measures, such scales must be scrutinized and used at different places and situations and on various samples. This process may contribute to the maturity of the construct and its measurement. Further research should also focus on developing scales that might reflect desirable financial management behaviors, are relevant, and based on respondents' age or life situation. For instance, a retired person might not opt for “long-term savings.” Thus, PFMB is an umbrella term that incorporates multiple behaviors related to individuals, households, and consumers (Xiao and Tao, 2020). Application of other methods such as Factor analysis is also desirable.

6.3.2 Methods
Extant literature shows that quantitative methods have been predominantly applied to understand PFMB so far. Upon scrutinizing the sample countries in our review, we find that the PFMB research should be focused equally on developing economies due to changing the financial markets landscape (Xu and Zia, 2012). Further, our more in-depth inquiry into the various research methods applied in the extant research spotlights eminent gaps in the methodology and possible contributions to enriching knowledge in this area. Future research should be extended to incorporate more conceptual papers focusing on the better conceptualization of the PFMB construct. There is a dearth of studies collecting data from secondary sources and the studies that are qualitative. Theoretical roots of PFMB point out that consumers who are high on money ethics, risk averse, and future-oriented are more likely to show positive financial behavior. Qualitative research is needed to understand such complex frameworks grounded in psychology. Most of the studies are survey-based (Boon et al., 2011), and case-study and interview-based research are lacking. The use of an alternative qualitative approach over quantitative methods may help gain a holistic understanding of the influence
exerted by various factors on PFMB and how, in turn, PFMB influences other outcomes. Qualitative research (e.g., interviews and focus groups) would be useful to dig in the role of attitudes and intentions. Additional methodologies could be applied to examine the factors involved into the field of family financial issues. The researchers have used various data analysis approaches, but regression has been most commonly used by most of them. SEM should be applied in future studies. The mixed method of empirical research (both quantitative and qualitative) has not been often used in PFMB research. Mixed methods are useful in discerning contradictory findings between quantitative and qualitative studies and a better understanding participants' experiences. The mixed methodology can improve study robustness since the usage of the quantitative techniques improves the validity of the research. Future research can include mixed methods, as well. Besides, it is suggested to the researchers to critically compare their findings with varied outcomes of previous results while examining the relationship between various factors and PFMB, positive or negative or insignificant. Moreover, in order to understand the influence of attitudes and socialization process over time and gain better insights on cause-and-effect relationships, future studies using longitudinal data sets are needed (Copur and Gutter, 2019).

(Insert Table X about here)

7. Implications
The results of the study indicate that the determinants and outcomes of short-term and long-term personal financial planning are manifold. These findings have several implications for financial planners who play a significant role in promoting consumer financial well-being. Improving responsible financial management behavior has been a challenge for financial counselors. This study contributes to the academic platform by providing the fundamentals of PFMB under one umbrella. In addition to making academic contributions, the findings can be utilized by business professionals and financial service providers to understand the consumers’ PFMB. It will empower them to develop financial strategies and appropriate financial products and services to meet consumers’ life goals while creating wealth and money for them and giving potential business growth to the professionals. Such a study can be important to the young working professionals who find themselves at the crossroads while making economic decisions. Understanding how money and its literacy influence well-being will help financial advisors to guide individuals in gravitating towards prudent economic decision-making. There is a prompt need to develop an appropriate scale of PFMB. A strong comprehensive measure could assist researchers and practitioners in various domains. Appropriate measurement of financial behavior may have implications on physical health, mental health, and life satisfaction (Xiao et al., 2009).

Further, financial education is one of the educators' primary agendas, social groups, policymakers, businesses, and the government (Fernandes et al., 2014). Financially stable households and individuals are better able to achieve their well-being as well as foster economic growth. Financial educators' goal is not only imparting financial knowledge to the students but also modifying their financial behavior for ultimate financial success (Hilgert et al., 2003). To develop financial, educational programs focusing on behavioral change, personal/consumer finance researchers need to understand better how such behaviors are shaped and modified into desirable actions.

In the wake of the global crisis of 2008, policymakers have shown concern about financial illiteracy and how people handle their finances. The COVID-19 has undeniably led to an aberrant health crisis and has sparked a global financial crisis, which is even worse than the 2008 financial crisis. The novel virus's financial repercussions could be long-lived and develop a long haul in the form of fragilities in the structure. Having emergency funds, investing wisely, conservative borrowing, insurance coverage, and setting financial goals are some of the life-
saving skills that can provide financial resilience in a crisis. The present study can help policymakers, financial educators, consumers, and researchers unbundle the strategies to challenge yet another crisis and take away lessons for future action courses.

8. Conclusion
The panorama of financial decisions confronted during the life course is considerably astounding (Yakoboski et al., 2020). Individuals need to make a myriad of decisions relating to their finance, such as consumption, cash flow, saving, investment, borrowing, retirement, tax planning, estate planning, and insurance. However, all financial decisions are intrinsically intertwined and often involve a trade-off. How efficiently individuals manoeuvre personal financial decisions rests partly on their financial knowledge and money management skills (Lusardi and Mitchell, 2007) and partly on behavioral, cultural, demographic, sociological, economic, and technological factors. Therefore, understanding the evolution of the literature on personal financial decision-making over time counts significantly at both levels, individual and society. To this end, this review was undertaken to gauge the antecedents and consequences of PFMB primarily across the depth and breadth of the subject. The research trends were also examined to deliver the most comprehensive retrospective on the dynamic nuances of PFMB. Like other studies, this review is not clear of limitations. Although we have attempted to ensure that the terms used in the search represent the broad scope of the area, there might be a few studies missing because of the absence of any related term in the search criteria. Secondly, although the search has taken cognizance of maximal studies on the subject, searching other databases can fetch added results. Further, it focuses on the studies published in the English language only, without considering the issues in other languages, which may have comprehended diverse views and arguments about PFMB. Abiding by the review's scope, the research trends have been analyzed only for 160 studies about the antecedents and the consequences of PFMB. Nonetheless, PFMB is most critical in an average individual's life yet underserved discipline from an academic viewpoint.

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| Author(s)                  | Focus of the Review                                                        | Article Type          |
|---------------------------|---------------------------------------------------------------------------|-----------------------|
| Lusardi and Mitchell (2007) | Levels of FL and the linkage of FL with retirement preparedness           | Review + Conceptual   |
| Schuchardt (2007)         | History of personal finance and summary of conceptual foundation          | Review                |
| Xiao et al. (2011)        | Review of few theories on PFMB                                             | Review                |
| Hastings et al. (2013)    | Impact of financial education on FL and financial outcomes                 | Review                |
| Fernandes et al. (2014)   | Impact of FL and financial education on financial behaviour               | Meta-analysis         |
| Kebede et al. (2015)      | FL and personal financial management                                      | Review                |
| Kumar et al. (2018)       | Women’s retirement financial planning                                     | Systematic literature review |
| Sonnenberg (2018)         | Psychology of household money management                                  | Review                |
| Xiao and Tao (2020)       | Definition and the scope of consumer finance/Household finance/Personal finance | Review + Conceptual   |
Table II. Database and search string used for data retrieval

| Database                      | Search String                                                                 |
|-------------------------------|------------------------------------------------------------------------------|
| Scopus and Web of Science     | "personal financ* management" OR "personal financ* behavi?r*" OR "personal financ* planning" OR "personal financ* management behavi?r*" OR "financ* management behavi?r*" OR "manag* personal financ*" OR "personal financ* decision*" OR "personal financ* outcome*" OR "household financ* management" OR "household financ* behavi?r*" OR "household financ* planning" OR "famil* financ* management" OR "famil* financ* planning" OR "famil* financ* behavi?r*" OR "individual financ* management" OR "individual financ* planning" OR "individual financ* behavi?r*" OR "consumer financ* behavi?r*" OR "consumer financ* planning" OR "consumer financ* management" OR "money management" |
Table III. Definitions of PFMB

| Author(s)               | Definitions                                                                                                                                 |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Deacon and Firebaugh   | Performance of behaviours regarding planning, implementing, and evaluating decisions associated with cash, credit management, investments, insurance, and retirement and estate planning. |
| (1988)                 |                                                                                                                                              |
| Pahl (1989)            | It is defined as the income allocation within the household: female whole wage system, male whole wage system, joint pooling, household allowance or independent money management. |
| Altfest (2004)         | It is a process which incorporates all components which are of financial interest to the individuals. These comprise of cash flow management, investments, risk management, retirement planning, tax planning and estate planning. |
| Schuchardt et al. (2007)| It consists of tools like financial statements, checking and savings accounts, debt instruments, mortgages and investment vehicles.            |
| Joo (2008)             | Efficient personal financial behavior is corollary to positive financial well-being and failing in managing personal finances can lead to severe long term consequences. |
| Dew and Xiao (2011)    | The financial behaviors include consumption, cash flow management, savings and investment, credit and insurance.                                |
| S. No. | Theory                                      | Origin              | Example Citations                                                      |
|-------|---------------------------------------------|---------------------|----------------------------------------------------------------------|
| 1     | Motives Theory                              | Keynes (1936)       | Copur and Gutter (2019)                                              |
| 2     | Maslow’s Need Hierarchy Theory              | Maslow (1943)       | Spuhlera and Dew (2019)                                              |
| 3     | Role Theory                                 | Waller and Hill     | Kerkmann et al. (2000)                                              |
| 4     | Modern Portfolio Theory                     | Markowitz (1952)    | Guzman and Paswan (2019)                                             |
| 5     | Social Exchange Theory                      | Thibault and Kelley | Kerkmann et al. (2000)                                              |
| 6     | Life Cycle Hypothesis                       | Ando and Modigliani | Copur and Gutter (2019); Bialowolski (2019); Panos and Wilson (2020) |
| 7     | Asset Pricing Models                        | Sharpe (1964)       | Guzman and Paswan (2019)                                             |
| 8     | Efficient Market Hypothesis                 | Fama (1970)         | Guzman and Paswan (2019); Kusairi et al. (2019)                      |
| 9     | Rational Behavior Theory                    | Ajzen and Fishbein  | Lee and Hanna (2014)                                                |
| 10    | Theory of Reasoned Action                   | Fishbein and Ajzen  | Kidwell and Turrisi (2004)                                           |
| 11    | Self- Efficacy Concept                      | Bandura (1977)      | Xiao et al. (2014); Gamst-Klaussen et al. (2019)                    |
| 12    | Social Learning Theory                      | Bandura and Walters | Sachitra et al. (2018)                                              |
| 13    | Prospect Theory                             | Kahneman and Tversky| Cho et al. (2016)                                                   |
| 14    | Theory of Self Control                      | Thaler and Shefrin  | Xiao and Porto (2019)                                               |
| 15    | Transtheoretical Model of Change            | Prochaska and DiClemente | Bapat (2020)                                                      |
| 16    | Theory of Mental Accounting                 | Thaler (1985)       | Antonides et al. (2011); Miotto and Parente (2015)                  |
| 17    | Theory of consumer Socialization            | Moschis (1987)      | Fulk and White (2018); Antoni et al. (2019)                         |
| 18    | Rational Expectations Theory                | Sargent (1987)      | Guzman and Paswan (2019); Kusairi et al. (2019)                     |
| 19    | Family Resource Management Model            | Deacon and Firebaugh| Mugenda et al. (1990)                                               |
| 20    | Social Cognitive Theory                     | Bandura (1989)      | Copur and Gutter (2019); Asandimitra and Kautsar (2019)             |
| 21    | Theory of Planned Behavior                  | Ajzen (1991)        | Kidwell and Turrisi (2004); Copur and Gutter (2019); Barbic et al. (2019); Bapat (2020) |
| 22    | Theory of Social Behavior                   | Triandis (1994)     | Kidwell and Turrisi (2004)                                           |
| 23    | Hofstede’s Cultural Value Dimensions        | Hofstede (2001)     | Ho and Lee (2020)                                                   |
| 24    | Couples and Finances Theory                 | Archuleta (2008)    | Baryla-Matejczuk et al. (2020)                                       |
Table V. Top regions and top countries in PFMB research based on sample segregation

| Region   | Country    | Single Country (n=144) | Multi Country (n=5) | No country Specific (n=11) |
|----------|------------|------------------------|---------------------|----------------------------|
| America  | US         | 60                     |                     |                            |
|          | Brazil     | 1                      |                     |                            |
|          | Canada     | 1                      |                     |                            |
| Europe   | UK         | 17                     |                     |                            |
|          | Poland     | 5                      |                     |                            |
|          | Turkey     | 4                      |                     |                            |
| Asia     | Malaysia   | 10                     |                     |                            |
|          | India      | 6                      |                     |                            |
|          | China      | 3                      |                     |                            |
|          | Indonesia  | 3                      |                     |                            |
| Australia| Australia  | 4                      |                     |                            |
|          | New Zealand| 1                      |                     |                            |
| Africa   | South Africa| 3                    |                     |                            |
Table VI. Most prominent existing PFMB scales

| Existing Scales of PFMB | Variables | Reference |
|-------------------------|-----------|-----------|
| Frequency of Financial Management Scale | Planning regarding usage of money; Tracking spending; Written budget | Fitzsimmons et al. (1993) |
| Financial Management Behaviors Scale | Consumption; Credit; Cash; Saving; Investment; Risk; Capital; Retirement | Porter & Garman (1993) |
| The Prochaska-Cue Inventory of Financial Management Style (PIFS) | Estate planning; Insurance; Financial record keeping; Budgeting; Saving; Investing | Prochaska-Cue (1993) |
| Household Financial Management Practices Index | Cash flow management; Credit management; Savings; Investment | Hilgert et al. (2003) |
| Financial Behavior Scale | Planning; Saving; Budgeting; Cutting down spending; Credit management | Kim et al. (2003) |
| Financial Behavior Scale | Budgeting; Saving; Controlling spending | Perry and Morris (2005) |
| College Student Financial Literacy Survey (Financial behavior) | Budgeting; Tracking spending; Savings; Borrowing; Insurance | Jorgensen (2007) |
| Executive Personal Finance Scale | Impulse control; Organization; Planning; Motivational drive | Spinella et al. (2007) |
| Financial Behavior Scale | Cash management; Credit Management; Saving | Xiao et al. (2008) |
| The Financial Management Behavior Scale | Consumption; Credit; Cash; Saving; Investment | Dew and Xiao (2011) |
| Money Management Scale | Basic financial management tendencies | Garðarsdóttir and Dittmar (2012) |
| OECD/INFE Financial Behavior Scale | Consumption; Cash flow management; Long term financial goal setting; Responsible budgeting; Active saving; Borrowing | Atkinson and Messy (2012) |
**Table VII.** Classification of 160 studies based on research methods, research designs, data collection approach and data analysis tools

| Research Method | Research Design | Data Collection Technique | Data Analysis Approach | Sub Classification in Analysis tool | Example Citations |
|-----------------|-----------------|---------------------------|------------------------|-------------------------------------|-------------------|
| Empirical (n=145) | Quantitative(n=121) | Survey(n=113) | Descriptive | Correlation | Hilgert *et al.* (2003); Mandell (2008); Boon *et al.* (2011); Lusardi *et al.* (2020) |
| | | | | | Scannell (1990); Grable *et al.* (2009); McHugh and Ranyard (2012); Eberhardt *et al.* (2019) |
| | | | | ANOVA (Analysis of Variance) | Lai and Tan (2009); Nejad and Javid (2018); Xiao and O’Neill (2018b) |
| | | | | T-Test | Lai and Tan (2009); Grable *et al.* (2009); Van Deventer *et al.* (2014) |
| | | | | Chi-Square Test | Mullis and Schnittgrund (1982); Mandell and Klein (2009) |
| | | | Regression | Multiple Regression | Godwin and Carroll (1986); Perry and Morris (2005); Harrison and Chudry (2011); Guzman *et al.* (2019) |
| | | | | Logistic Regression | Gorniak (1999); Fulk and White (2018); Pepin (2019) |
| | | | | Linear Regression | Kidwell and Turrisi (2004); Henchoz *et al.* (2019); Birkenmaier and Fu (2019) |
| | | | | OLS (Ordinary Least Squares Regression) | Kidwell *et al.* (2003); Wiepking and Bekkers (2010); Xiao and Porto (2019); Bapat (2020) |
| | | | | Hierarchical Regression | Hayhoe *et al.* (2012); Gunay *et al.* (2014); Hoffman and McNair (2019) |
| | | | | Sobel Regression | Grable *et al.* (2009) |
| | | | | Probit Regression | Allgood and Walstad (2013); Hanna *et al.* (2015); Loke (2017a) |
| Method                  | Reference                                      |
|------------------------|------------------------------------------------|
| Logit Regression       | Lea *et al.* (1995); Pak and Chatterjee (2016); Hastings and Mitchell (2020) |
| Cox Regression         | Grinstein *et al.* (2012)                     |
| Tobit Regression       | Grinstein *et al.* (2011); West and Worthington (2019) |
| SUR(Seemingly Unrelated)Regression | Farrell *et al.* (2016)               |
| Hybrid Panel Regression| Lott (2017)                                    |
| SEM (Structural Equation Modeling) | Joo and Grable (2004); Shim *et al.* (2010); Barbic *et al.* (2019); Dew *et al.* (2020) |
| Factor Analysis (EFA (Exploratory Factor Analysis); CFA (Confirmatory Factor Analysis) | Pak and Chatterjee (2016); Sundarasesan and Rahman (2017); Vosylis and Erentaite (2019); Antoni *et al.* (2019) |
| Discriminant Analysis  | Grable (2000); Arifin (2017)                   |
| Mathematical Model     | Bialowolski (2019); Feng *et al.* (2019)      |
| Archival (n=1) Regression | OLS (Ordinary Least Squares) Regression | Klopacka (2017) |
| Laboratory (n=7)       | Descriptive                                   |
| Correspondence Analysis| Cho *et al.* (2016)                           |
| ANOVA (Analysis of Variance) | Bailey and kinerson (2005); Cho *et al.* (2016); Gerrans and Heaney (2019) |
| MANOVA (Multivariate Analysis of Variance) | Howlett *et al.* (2008)            |
| Regression             | OLS (Ordinary Least Squares) Regression       |
| Linear Regression      | Cho *et al.* (2012); Skimmyhorn (2016)        |
| Qualitative (n=18)     | In-Depth Interviews/ Focus                    |
|                       | Mugenda *et al.* (1990); Bharucha (2018)      |
| Groups                                      | Survey Type                        | Method               | Reference                                                                 |
|--------------------------------------------|------------------------------------|----------------------|---------------------------------------------------------------------------|
| Mixed (n=6)                                | Survey + Interviews/ Focus groups  | Regression           | Linear Regression                                                          |
|                                            |                                    |                      | Miotto and parente (2015)                                                 |
|                                            |                                    |                      | Logistic Regression                                                        |
|                                            |                                    |                      | Cho et al. (2012); Cineli (2020)                                           |
|                                            |                                    |                      | Multiple Regression                                                        |
|                                            |                                    |                      | Asandimitra and Kautsar (2019)                                             |
|                                            |                                    |                      | OLS (Ordinary Least Squares) Regression                                    |
|                                            |                                    |                      | Cho et al. (2012)                                                          |
|                                            |                                    | SEM (Structural      | Equation Modeling                                                          |
|                                            |                                    |                      | Bapat (2019)                                                              |
|                                            |                                    | Factor Analysis EFA   | (Exploratory Factor Analysis); CFA (Confirmatory Factor Analysis)          |
|                                            |                                    |                      | Miotto and Parente (2015); Bapat (2019)                                    |
|                                            |                                    |                      | Chi-Square Test                                                            |
| Conceptual (n=6)                           |                                    |                      | Nuspl (1972); McKenna et al. (2003); Stendardi et al. (2006); Xiao (2008); Dolan et al. (2012); Van Raaij (2016) |
| Literature Review (n=5)                    |                                    |                      | Lusardi and Mitchell (2007); Xiao et al. (2011); Hastings et al. (2013); Fernandes et al. (2014) |
| Modelling and Analytical (n=3)             | Quantitative                       | Survey               | Bayesian Two-part Latent Variable Regression Model                          |
|                                            |                                    |                      | Feng et al. (2019)                                                        |
|                                            |                                    |                      | Fixed Effects Regression; Simulation                                        |
|                                            |                                    |                      | Lusardi et al. (2017)                                                     |
|                                            |                                    |                      | Probit Regression                                                          |
| Mixed (Empirical + Conceptual) (n=1)       | Mixed                              | Survey               | Descriptive                                                               |
|                                            |                                    |                      | Doda (2014)                                                               |
Table VIII. Summary table of the antecedents of PFMB and their established relationships

| Typology And Socio-Economic | Factor (Antecedent) | Sub-Factor | Citations | Association with PFMB |
|-----------------------------|---------------------|------------|-----------|-----------------------|
| Demographic And Socio-Economic | Age | Allgood and Walstad (2013); Chandra et al. (2017); Loke (2017a); Eberhardt et al. (2018); Sachitra et al. (2019); Bapat (2020) | Positive |
| Marital Status | Mugenda et al. (1990); Pepin (2019); Sachitra et al. (2019) | Positive |
| Gender | Stendardi et al. (2006)*; Lee and Hanna (2014); Doda (2014); Chandra et al. (2017); Loke (2017a); Bharucha (2018); Cho et al. (2016) | Significant |
| Income | Mugenda et al. (1990); Perry and Morris (2005); McHugh and Rob Ranyard (2012); Gunay et al. (2014); Loke (2015); Rodrigues et al. (2016) | Positive |
| Education | Grable et al. (2009) | Insignificant |
| Job Status | Gorniak (1999); McHugh and Rob Ranyard (2012); Gunay et al. (2014); Chandra et al. (2017); Loke (2017a) | Positive |
| Household Size | Loke (2015) | Insignificant |
| Occupation | Gorniak (1999); Bapat (2020) | Positive |
| Race/ Ethnicity | Hanna et al. (2015); Loke (2017a) | Significant |
| Family Income | Gorniak (1999); Sachitra et al. (2019) | Positive |
| Family Structure | Scannell (1990); Borda and Kowalczyk-Rólczyńska (2016) | Positive |
| Generational Complexity (Nuclear/ Joint family) | Singh and Bhandari (2012) | Significant |
| Length of Marriage | Godwin and Carroll (1986) | Positive |
| Category                                | Studies                                                                 | Significance |
|-----------------------------------------|------------------------------------------------------------------------|--------------|
| Home Ownership                          | Copur and Gutter (2019)                                                | Positive     |
| Life Cycle                              | Mullis and Schnittgrund (1982); Nuspl (1972)*; Miotto and Parente (2015) | Significant  |
| Earning Disparities between Partners     | Vogler et al. (2006); Sonnenberg et al. (2011); Lott (2017); Kulic et al. (2019); Pepin (2019); Cineli (2020) | Significant  |
| Gender Egalitarian Beliefs              | Cineli (2020)                                                          | Significant  |
| Gender of the higher earner between Partners | Pepin (2019)                                                       | Significant  |
| Relationship Type                       | Vogler et al. (2006); Lyssens-Danneboom and Mortelmans (2014); Lott (2017) | Significant  |
| Female Labour Market Participation      | Godwin and Carroll (1986); Vogler et al. (2006); Bharucha (2018)       | Significant  |
| Contribution to Family Income/Breadwinning Role | Lyssens-Danneboom and Mortelmans (2014); Bharucha (2018) | Significant  |
| Psychological                           | Cognitive Abilities                                                    |              |
| Psychological                           | Numeracy Experience Based Knowledge                                     | Positive     |
| Psychological                           | Eberhardt et al. (2018); Topa et al. (2018)                            |              |
| Financial Risk Tolerance                | Grable (2000); Joo and Grable (2000); Bailey and Kinerson (2005); Bapat (2020) | Positive     |
| Financial Attitude                      | Kidwell et al. (2003); Kidwell and Turrisi (2004); Gunay et al. (2014); Barbic et al. (2019); Bapat (2020); Ho and Lee (2020) | Positive     |
| Self-Regulation                         | Howlett et al. (2008)                                                  | Positive     |
| Locus of Control                        | Bapat (2020); Kidwell et al. (2003); Lea et al. (1995); Arifin (2017); Perry and Morris (2005); McNair et al. (2016) | Positive     |
| Financial Self                          | Farrell et al. (2016); Gamst-Klaussen et al. (2019); Grable et al. (2009) | Positive     |
| Category                  | Reference(s)                                      | Impact          |
|---------------------------|---------------------------------------------------|-----------------|
| Efficacy                  | Asandimitra and Kautsar (2020)                    |                 |
| Negative Emotions         | Eberhardt et al. (2018)                           | Positive        |
| Distrust                  | Hayhoe et al. (2012)                              | Positive        |
| Cognitive Style           | Guzman and Paswan (2019)                          | Positive        |
| Mental Budgeting          | Antonides et al. (2011); Xiao and O’Neill (2018a) | Positive        |
| Motivation                | Eberhardt et al. (2018)                           | Positive        |
| Anxiety                   | McHugh and Rob Ranyard (2012); Hayhoe et al. (2012); Sachitritra et al. (2019); Grable et al. (2020) | Negative        |
| Self Esteem               | Hira and Mugenda (1999); Tang and Baker (2016); Sachitritra et al. (2019) | Positive        |
| Affect                    | Kidwell et al. (2003); Kidwell and Turrisi (2004) | Positive        |
| Materialism               | Gardarsdöttir and Dittmar (2012)                  | Insignificant   |
| Past Behavior             | Kidwell et al. (2003); Kidwell and Turrisi (2004) | Positive        |
| Subjective Norm           | Kidwell and Turrisi (2004); Copur and Gutter (2019) | Positive        |
| Perceived Control/Self-Control | Kidwell and Turrisi (2004); Miotto and Parente (2015); Barbic et al. (2019) | Positive        |
| Perceived Ability         | Kidwell et al. (2003)                             | Positive        |
| Preference for Credit     | Miotto and Parente (2015)                         | Positive        |
| Planning Horizon          | Copur and Gutter (2019)                           | Positive        |
| Impulsiveness             | Kidwell et al. (2003); Copur and Gutter (2019)    | Negative        |
| Propensity to Plan        | Miotto and Parente (2015); Xiao and O’Neill (2018b) | Positive        |
| Financial Optimism        | Gorniak (1999)                                   | Positive        |
| Financial Threat          | Gorniak (1999)                                   | Negative        |
| Achievement Orientation   | Gorniak (1999)                                   | Positive        |
| Attitudes Towards Money   | Lea et al. (1995); Gorniak (1999); Norvilitis et al. (2006); Harrison and Chudry (2011); Sundarasen and Rahman (2017); Henchoz et al. (2019) |
| Variable                          | References                                                                 | Impact |
|----------------------------------|-----------------------------------------------------------------------------|--------|
| Time Orientation/ Present Bias   | Lea et al. (1995); Antonides et al. (2011); Xiao and Porto (2019); Guzman and Paswan (2019); Hastings and Mitchell (2020) | Positive |
| Framing Effect                   | Howlett et al. (2008)                                                      | Negative |
| Self-Confidence                  | Cho et al. (2016)                                                           | Significant |
| Emotional Intelligence           | Klopocka (2016); Chandra et al. (2017); Białowolski (2019); Sachitra et al. (2019) | Positive |
| Emotional Intelligence           | Asandimitra and Kautsar (2020)                                             | Positive |
| Self-Other Orientation           | Guzman and Paswan (2019)                                                   | Positive |
| Psychological Type               | Extravert; Introvert; Sensing; Intuitive; Thinking; Feeling; Judging; Perceiving | McKenna et al. (2003)* | Significant |
| Procrastination                  | Gamst-Klaussen et al. (2019)                                               | Negative |
| Personality                      | Xu et al. (2015); Gerrans and Heaney (2016); Xu et al. (2017)               | Positive |
| Social                           | Harrison and Chudry (2011)                                                  | Negative |
| Socialization                    | Lea et al. (1995); Shim et al. (2009); Grinstein-Weiss et al. (2011); Cho et al. (2012); Grinstein-Weiss et al. (2012); Sundarasen and Rahman (2017); Fulk and White (2018); Vosylis and Erentaite (2019); Sachitra et al. (2019); Antoni et al. (2019); Lebaron et al. (2020) | Positive |
| Peer Influence                   | Bamforth et al. (2018); Zulfaris et al. (2020)                             | Negative |
| Financial Literacy               | Hilgert et al. (2003); Norvilitis et al. (2006); Lusardi and Mitchell (2007)*; Howlett et al. (2008); Lusardi (2008); Lusardi and Mitchell (2008); Grable et al. (2009); | Positive |
| Subject | Sub-factor | Studies | Direction |
|---------|------------|---------|-----------|
| Environmental | Genetic | Xu et al. (2017) | Significant |
| Professional Financial Advice | | Pak and Chatterjee (2016) | Negative |
| | | Sundarasen and Rahman (2017) | Positive |
| Financial Education | | Godwin and Carroll (1986); Mandell and Klein (2009); Skimmyhorn (2016); Gerrans and Heaney (2016); Fulk and White (2018); Ho and Lee (2020); Mandell (2008); Fernandes et al. (2014) | Positive |
| | | Topa et al. (2018); Moreland (2018); Bapat (2019) | Positive |
| Technological | Fin-Tech | Bapat (2019); Panos and Wilson (2020) | Positive |
| Communication | | Mugenda et al. (1990) | Positive |
| Financial Information | | McHugh and Rob Ranyard (2012); Asandimitra and Kautsar (2020) | Positive |
| Financial Experience | | Lee and Hanna (2014) | Positive |
| Financial Resources | | Rodrigues et al. (2016) | |
| Situational | | Miotto and Parente (2015); West and Worthington (2019) | Significant |
| Cultural | | Grable et al. (2009); Henchoz et al. (2019) | Significant |
| Financial Vulnerability | | Hoffman and McNair (2019) | Negative |

**Note:** The studies marked with * are conceptual and not empirical, but contribute towards the literature conceptually. Also, the directionality of relationships (positive or negative) has been reported as mentioned in the studies. All the studies do not report the direction of the association, ergo, only significance/insignificance has been reported. Different studies on a single sub-factor might have shown either positive, negative or insignificant results which implies a non-consensus.
Table IX. Summary table of the consequences of PFMB and their established relationships

| Outcome Variable (Consequence) | Citations                                                                 | Association with PFMB |
|--------------------------------|---------------------------------------------------------------------------|------------------------|
| Financial Satisfaction         | Mugenda *et al.* (1990); Scannell (1990); Joo and Grable (2004); Xiao *et al.* (2014); Gunay *et al.* (2015); Xiao and Porto (2017); Xiao and O’Neill (2018b); Spuhlera and Dew (2019) | Positive               |
| Quality Of Life                | Mugenda *et al.* (1990); Dew *et al.* (2020)                               | Positive               |
| Relationship Satisfaction      | Clearwater and Harvey (1988); Vogler *et al.* (2008); Bharucha (2018); Kulic *et al.* (2019); Baryła-Matejczuk *et al.* (2020) | Positive               |
| Financial Status               | Gunay *et al.* (2015)                                                      | Positive               |
| Financial Access               | Birkenmaier and Fu (2019)                                                  | Positive               |
| Financial Vulnerability/Frargility | Daud *et al.* (2019); Lusardi *et al.* (2020)                             | Negative               |
| Financial Well-Being           | Xiao (2008)*; Xiao *et al.* (2015); Xiao (2015)*; Xiao and O’Neill (2016); Xiao and Porto (2017); Riitsalu and Murakas (2018); Baryła-Matejczuk *et al.* (2020) | Positive               |
| Financial Anxiety              | Vosylis and Erentaite (2019)                                               | Negative               |
| Happiness                      | Spuhlera and Dew (2019)                                                    | Positive               |
| Net Worth                      | Titus *et al.* (1989)                                                      | Positive               |
| Financial Resilience           | Lusardi *et al.* (2020)                                                    | Positive               |

Note: The studies marked with * are conceptual and not empirical, but contribute towards the literature conceptually. Out of 160 studies, this table contains those studies that relate to the consequences of PFMB.
| Research Gap   | Future Research Questions                                                                                                                                                                                                 | References                                                                                           |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Conceptualization | 1 Whether PFMB is a part of finance, a topic within family or consumer sciences or it is a standalone topic of research?                                                                                           | Altfest (2004); Schuchardt et al. (2007)                                                              |
|               | 2 What is the scope of personal finance construct and how can it be defined universally?                                                                                                                                  | Schuchardt et al. (2007); Xiao and Tao (2020)                                                         |
|               | 3 What are the different terms used for “personal finance”?                                                                                                                                                              | Xiao and Tao (2020)                                                                                  |
| Theories      | 4 How can theoretical approaches used in multiple disciplines can inform the stage at which people are willing and able to alter their various financial behaviors?                                                     | Schuchardt et al. (2007); Xiao (2008); Gamst-Klaussen et al. (2019)                                    |
|               | 5 What is the theoretical foundation for the linkage between financial education, personal financial behavior and life satisfaction?                                                                                    | Xiao (2008); Xiao et al. (2011); Fernandes et al. (2014)                                             |
|               | 6 Develop socio-psychological theories as such to support behavioral biases due to culture and other social factors.                                                                                                   | Triandis (1994)                                                                                      |
|               | 7 Apply the TPB and the TTM on diversified behaviors and populations.                                                                                                                                                | Kidwell and Turrisi (2004); Bapat, (2020)                                                            |
| Antecedents of PFM | 8 What are the processes through which various demographic and socio-economic, social, psychological, cultural, situational and technological factors differentially relate to a set of financial outcomes? | Copur and Gutter (2019)                                                                              |
|               | 9 What are the possible factors and sub-factors of PFMB?                                                                                                                                                              | Copur and Gutter (2019), Bapat (2020)                                                                |
|               | 10 Re-examine through future research the impact of various factors on financial management behaviors such as income level, education, household size, self-control, personality traits, LOC, financial education and FL. | Mugenda et al. (1990); Gorniak (1999); Kidwell and Turrisi (2004); Perry and Morris (2005); Grable et al. (2009); Xu et al. (2015); Pak and Chatterjee (2016); Zulfaris et al. (2020) |
|               | 11 Examine the relationship between fintech and various consumer financial topics.                                                                                                                                   | Xiao and Tao (2020)                                                                                  |
|   | Question                                                                 | Reference(s)                               |
|---|-------------------------------------------------------------------------|--------------------------------------------|
| 12| What are the antecedents of financial knowledge (Objective vs subjective) as a pivotal factor for sound financial behavior? | Grable et al. (2009)                       |
| 13| Explore the hierarchical financial behavior on other behaviors (other than budgeting) such as saving, investing, borrowing, etc. | Xiao and O’ Neill (2018a)                 |
| Mediators of PFM | How demographics indirectly affect financial outcomes via financial socialization processes? | Shim et al. (2009, 2010)                  |
| 14| What are the pathways between various factors and sound financial management behavior? | Barbic et al. (2019)                      |
| 15| What is the effect of a mediating relationship of financial attitude between financial socialization and financial behavior? | Shim et al. (2010)                        |
| 16| What is the effect of psychological factors as mediators between demographics and financial behavior? | Bapat (2020)                              |
| Moderators of FPM | What are the interactions of social categorizations such as race/ethnicity or socio-economic status in couples’ financial systems and relational outcomes? | Pepin (2019); Cineli (2020)              |
| 18| Re-examine the moderating effects of FL on the relationship between financial attitude and financial behavior. | Eagly and Chaiken, (1993); Barbic et al. (2019) |
| 19| What are the interaction effects of professional financial advice with FL and financial behavior? | Topa et al. (2018)                        |
| 20| What is the moderating role of culture on FL and behavior? | Grable et al. (2009)                      |
| 21| What is the moderating role of additional psychological factors in changing the relationship between demographics, FL, social factors and financial behavior? | Miotto and Parente (2015)                 |
| 22| How use of fin-tech may influence FL level and its interaction effect towards financial behavior? | Bapat (2019); Morgan and Trinh (2019)     |
| Consequences of PFM | Whether there is an existence of linear relationship between income, PFM and happiness? | Stevenson and Wolfers, 2013                |
| 24| Whether relationship exists between financial attitude, financial behavior and financial satisfaction? | Xiao et al. (2014); Spuhlera and Dew (2019) |
| 25| Examine the relationship between financial behavior, financial access and financial well-being. | Birkenmaier and Fu (2019) }
|   | Does FL and better financial behavior results in financial resilience? | Lusardi et al. (2020) |
|---|---|---|
| 28 | What are the consequences of PFM behavior? | Xiao et al. (2014) |
| **Measures of PFM** | How can the construct of PFMB be measured/ Which financial behaviors constitute it? | Xiao (2008); Dew and Xiao (2011) |
| 30 | Develop age or life situations specific PFMB scales. | Xiao (2008) |
| **Research methodology** | Extend the research to include more conceptual papers focusing on better conceptualization of the PFMB construct. | Schuchardt et al. (2007) |
| 32 | Add studies that are qualitative in nature and collect data from secondary sources as well. | Boon et al. (2011); Navickas et al. (2014) |
| 33 | Use of SEM in future studies and mixed methodology of research. | Miotto and Parente (2015); Birkenmaier and Fu (2019); Bapat (2020); |
| 34 | How can the causality issue between FL and financial behaviour be resolved? | Lusardi and Mitchell (2014) |
| 35 | How can the causality issue between FL and financial experience be resolved? | Frijns et al. (2014) |
| 36 | Explore the causality issue between financial behavior and financial access. | Xiao et al. (2010) |
Figure 1. Retrieval and selection of articles

Records identified through two databases: Web of Science and Scopus (1578)

1138 records after removal of duplicates

Documents screened on the basis of reading title and abstract relevant to the subject of PFMB (n=245)

133 articles shortlisted on antecedents and consequences of PFMB

Manual addition of 27 relevant articles on antecedents and consequences through cross references

Studies included in the final review (n=160)

After limiting the results to English language

440 duplicates were removed

Retained for full paper consideration
### Figure 2. Evolution of theories on PFMB

| Time Period | Evolution of Theories |
|-------------|-----------------------|
| 1931-1940   | Motives Theory        |
| 1941-1950   | Maslow's Need Hierarchy Theory |
| 1951-1960   | Role Theory; Modern Portfolio Theory; Social Exchange Theory |
| 1961-1970   | Life Cycle Hypothesis; Asset Pricing Models; Efficient Market Hypothesis |
| 1971-1980   | Rational Behavior Theory; Theory of Reasoned Action; Self-Efficacy concept; Social Learning Theory; Prospect Theory |
| 1981-1990   | Theory of Self Control; Transtheoretical Model of Change; Theory of Mental Accounting; Theory of Consumer Socialization; Rational Expectations Theory; Family Resource Management Theory; Social Cognitive Theory |
| 1991-2000   | Hofstede's Cultural Value Dimensions; Couples and Finances Theory |
| 2001-2010   | Theory of Planned Behavior; Theory of Social Behavior |
Figure 3. Publication trend of 160 articles
Figure 4. Overview of sample population used in 160 studies
Figure 5. Number of publications based on PFMB themes across 160 studies
Figure 6. A framework of antecedents and consequences of PFMB