Mixed Methods in Finance Research: The Rationale and Research Designs

International Journal of Qualitative Methods Volume 17: 1–13 © The Author(s) 2018 Article reuse guidelines: sagepub.com/journals-permissions DOI: 10.1177/1609406918801730 journals.sagepub.com/home/ijq



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Abstract

The purpose of this study is to uncover the rationale (why) and the types of designs (what) for application of mixed method approaches in finance research using a systematic literature review approach. The findings revealed that there are four main research gaps in mixed method applications in finance: (a) poorly or nonformulated research questions, (b) lack of identification of the rationale for mixed methods, (c) poor identification of mixed methods and design, and (d) the manuscript reviewing gap. Finance studies based on quantitative methods and proxy variables can be further validated through mixed method approaches, thereby increasing the validity, completeness, and confirmation of findings, and minimizing the inherent weaknesses of monomethod approaches. We suggest that researchers in the finance discipline should justify their research methodology in order to eliminate the biases that arise through the selection of convenient methodologies. Thus, future studies should incorporate both qualitative aspects when formulating mixed method research questions, emphasize the rationale, and choose appropriate mixed method designs to achieve a high level of scientific rigor in mixed methods research. Also, editors of nonmixed method journals need to have reviewing support from mixed method experts or adhere to the guidelines proposed by Onwuegbuzie and Poth when evaluating mixed method manuscripts to achieve a high level of quality and accuracy in their mixed methods research publications in finance.

Keywords

finance, methodology, mixed methods, research questions, validity

What Is Already Known?

Mixed method approaches can be used in the research studies in the finance discipline.

What This Paper Adds?

This is the first study that discusses the rationale (why) and the types of designs (what) for application of mixed method approaches in finance research.

Introduction

Quantitative research methodology has been one of the most popular approaches in finance research during the past seven decades (Dewasiri & Weerakoon, 2016). Baker, Singleton, and Veit (2011) noted that empirical studies in finance tend to rely on a large number of financial observations, resulting in robust statistical power and analysis of cross-sectional variation, and identify the fact that "researchers have limited ability to deal with non-quantifiable issues" as a major problem in the discipline. Dewasiri and Weerakoon (2016) argued that most finance studies (68%) in the last seven decades have used proxy variables in behavioral models. For instance, Turner, Ye, and Zhan (2013) conducted a study based on secondary fiscal data on traded companies in the London Stock Market between 1825 and 1870 to investigate the "dividend puzzle," in particular, why companies pay dividends and what factors affect dividend policy. However, it remains debatable whether their results derived from the use of proxy variables are valid in explaining the behavioral decision to pay dividends. The investigation of the dividend puzzle still remains as a controversial issue in finance research even though it has been investigated

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for decades through quantitative approaches. As stated by Frankfurter et al. (2002), there is inability to understand the dividend puzzle simply by analyzing the secondary (market) data. As Bruner (2002, p. 50) stated, "The task must be to look for patterns of confirmation across approaches and studies much like one sees an image in a mosaic of stones."

We argue that real behaviors may be very distinct from what is captured by proxy explanations; hence, further investigation is required to achieve more consensual accounts of financial behavior. In turn, there is a room for supplementary approaches in finance to achieve its behavioral reality. Burton (2007) identified the importance of the qualitative approach as a supplementary method in finance, highlighting early financial studies (e.g., Lintner, 1956) based on qualitative data. We argue here that confirmation of findings by two different approaches or methodologies pave the way to greater completeness, validity, and generalizability of findings than by a single methodology as supported by Baker et al. (2011). For instance, Fetters and Freshwater (2015) quantitatively argued that "1 + 1 = 3. That is, qualitative + quantitative = more than the individual components."

The paradigmatic differences among methodological approaches are being widely discussed by scholars when mixing two different methodological approaches in a single study (Mayoh & Onwuegbuzie, 2015). Johnson, McGowan, and Turner (2010) emphasized using multiple methodologies within an overarching paradigm as a way of conducting mixed method research by negotiating paradigmatic differences, making it possible to argue that methodological paradigms do not always pave the way toward particular research methods (Mayoh & Onwuegbuzie, 2015). Hence, despite ontological and epistemological differences, the combination of qualitative and quantitative methods in a single study is possible while employing an overarching paradigmatic model/framework.

Scholars such as Bruner (2002), Baker et al. (2011), and Dewasiri and Weerakoon (2016) strongly recommend mixed method/triangulation approaches in finance research, but they have not elaborated on the rationale and its specific designs. Accordingly, the current study will contribute to the finance research phenomenon by filling this methodological gap emphasizing the rationale and mixed method designs while identifying it as an alternative approach in finance research in order to minimize the inherent weaknesses of monomethod approaches. The lack of studies for decades, based on empirical mixed methods in finance, the contradictions in the findings of quantitative approaches on financial issues (such as the dividend puzzle, capital structure puzzle) and scarcity of theoretical and methodological articles on mixed method approaches in finance have motivated our study.

Research Methodology

The systematic literature review approach has been utilized to find out the available research studies conducted through the mixed method approach/methodological triangulation in the finance discipline. Initially, we hand searched the available

finance-related mixed method research in leading multidisciplinary mixed method journals, namely, Journal of Mixed Methods Research, International Journal of Qualitative Methods, International Journal of Multiple Approaches, Field Methods, Social Research Methodology, International Journal of Methodology (Quality and Quantity), Sociological Methods and Research, Organizational Research Methods, International Journal of Social Research Methodology, and Electronic Journal of Business Research Methods. We found only one mixed method research paper (Buckley, 2015) in the discipline of finance, which was published in the Electronic Journal of Business Research Methods. Then, we carried out a hand search on the available mixed methods studies in leading finance journals: The Journal of Finance, Review of Finance, Review of Corporate Financial Studies, Journal of Corporate Finance, Journal of Banking and Finance, Journal of Empirical Finance, Accounting and Finance, Critical Finance Review, Journal of Financial Economics, International Review of Economics and Finance, International Review of Finance, Journal of Applied Corporate Finance, and the Journal of Behavioral Finance. In this search too, we identified only one study conducted through mixed methodology published in the Journal of Financial Economics (Brav, Graham, Harvey, & Michaely, 2005). Then, we conducted a generic search identifying key words, published time period, databases, and formulating inclusion criteria related to the discipline. We conducted this data base search considering the year 2000 as the initial year since we focused on novel/recent contributions of mixed method studies to the discipline of finance. We initially screened the available relevant articles in Sage, Emerald, EBSCO host, Wiley, ScienceDirect, and a few other publishers using the important key words of mixed method, triangulation, finance, accounting, economics, validity, and methodology. We focused on the research papers published in peer-review journals in English with full-text access, different article types, and articles carrying the key words in the title, key words, or abstract. We searched 41 important articles in various disciplines out of which six articles were selected for the analysis based on their relevance to the finance discipline. Accordingly, our literature search resulted in eight research studies that were conducted through mixed methodology. Table 1 indicates a summary, highlighting the methodological characteristics of each of them.

Discussion

The findings indicated in Table 1 show that most of the studies (except Brav et al., 2005; Buckley, 2015) have poorly formulated their research questions in order to suit their mixed method studies. For instance, Englund and Gerdin (2015) conducted their study through two qualitatively bounded data sources (i.e., data triangulation/within the method triangulation) even though the research is driven by one qualitative (how) and one descriptive quantitative (what) research question that required a mixed method inquiry. Moreover, most of the studies (e.g., Chithambo & Tauringana, 2017; Hampshire,

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Study	Research Topic and Methodology/ Approach	Rationale for the Selection of Mixed Method Approach	Timing	Weighting	Mixing
Hampshire (2017)	"A mixed methods empirical exploration of United Kingdom consumer perceptions of trust, risk, and usefulness of mobile payments" A poor identification of the research design	The rationale is not clearly emphasized in the study, though they have mentioned, "to obtain subjective and socially constructed meanings and discovery of the unexpected"	Quantitative data are followed by Qualitative data/Sequential Timing	Quantitative	Data analysis stage
Chithambo and Tauringana (2017)	"Corporate governance and greenhouse gas disclosure: a mixed methods Approach." Even though the researchers termed this study as a mixed methods approach, two quantitative data sources are used in the study. Hence, it could not be categorized as a mixed-method approach	Even though they have emphasized the rationale for mixed methods as emphasized by Teddlie and Tashakkori (2003) and Brannen (2005, p. 12), their use of mixed methods is questionable since they emphasize the closed-ended questionnaire as the qualitative approach in the whole study. This could be identified as a misleading attempt even though the articles are published in an esteemed journal.	Timing is not clearly indicated in the research, but it seems a concurrent strategy used in data collection and analysis of quantitative data	A similar weight is allocated for both quantitative data sources	Data analysis stage
Tauringana and Chithambo (2016)	"Determinants of risk disclosure compliance in Malawi: a mixed methods approach" The research design is not clearly indicated in the study, but it could be identified as a sequential explanatory design	Divergent views Stronger inferences Elaboration and expansion Initiation and complementarity Contradictions: Discusses only others' views on the rationale for mixed methods.	Quantitative data are followed by Qualitative data/Sequential Timing	Quantitative	Data analysis stage
Englund and Gerdin (2015)	Developing Enabling Performance Masurement Systems: On the Interplay Between Numbers and Operational Knowledge" The study could be categorized under the case study method, but the qualitative data triangulation abproach is used in the case study	The rationale of using multiple qualitative data sources is not clearly emphasized, but they focus on one qualitative and one quantitative question (how and what) in conducting the study.	Sequential timing for qualitative data collection; observations, interviews and archival sources	Qualitative	Data analysis stage
Buckley (2015)	"Using Sequential Mixed Methods in Enterprise Policy Evaluation: A Pragmatic Design Choice" A sequential explanatory research design	The rationale is clearly emphasized highlighting the corroboration, confirmation, and complementary purposes and the researcher has formulated quantitatively (what) and qualitatively (why and how) driven research questions to suit their mixed methodology.	Quantitative data are followed by the qualitative data	There is no clear indication of weighting, but the evidence shows that the study is quantitatively weighted.	Data analysis stage
					(continued)

Table 1. Used Methodologies, Rationale, Timing, Weighting, and Mixing of the Sample Studies.

Study	Research Topic and Methodology/ Approach	Rationale for the Selection of Mixed Method Approach	Timing	Weighting	Mixing
Davila and Foster (2007)	"Management Control Systems in Early-Stage Startup Companies" Although the design is mentioned as multimethod, we identified it as a seminarial explanatory design	The rationale is not clearly indicated though they focus on convergence and complementary findings.	Timing is not clearly stated in the study, but it seems that quantitative data are followed by the qualitative phase	Quantitative	Data analysis stage
Brav et al. (2005)	"Payout policy in the 21st century" The design is not clearly indicated in the study, but it could be categorized under the sequential explanatory design	The research questions are properly formulated to suit the mixed method. The rationale for mixed method study is not clearly discussed; however, they emphasize the "realism of the assumptions that underpin many academic models" as a coal of the study	Even though the timing is not clearly indicated in the study, the study shows that the quantitative data are followed by the qualitative data	Quantitative	Data analysis stage
Graham et al. (2005)) "The economic implications of corporate financial reporting". The design is not clearly indicated in the study, but it could be categorized under the sequential explanatory design	They clearly point out the rationale for their mixed method study	Timing is not clearly stated in the study, but the study shows that the quantitative data are followed by the qualitative data	Quantitative	Data analysis stage

Note. This table shows the used methodologies, rationale of their application, timing of the quantitative and qualitative data phases, weighting of the methodology, and mixing stage of the sample studies considered for the analysis.

Table 1. (continued)

2017) have not mentioned their research questions or problems in their studies. Thus, we identified "poorly/nonformulated research questions" as the first research gap in the mixed method studies conducted in the finance discipline.

The use of the mixed method is not applicable for all research studies. We argue that methodology selection should be based on the nature and the context of the research problem/ questions/topic (Sekaran & Bougie, 2010), which eliminate the convenient methodology selection bias. Hence, it is important to identify the nature of the research problem/questions at the first phase. Six of the eight sample studies (Brav et al., 2005; Chithambo & Tauringana, 2017; Davila & Foster, 2007; Englund & Gerdin, 2015; Hampshire, 2017; Tauringana & Chithambo, 2016) indicated in Table 1 have not clearly emphasized the rationale of the selected mixed method. The lack of identification of the research gap of the mixed method study has been identified as the second research gap of the mixed method studies conducted in the finance discipline.

In the following section, the researchers intend to discuss the rationale for each methodological paradigm while comprehensively discussing the types of research questions that are required in a mixed method investigation in answering the first and second research gaps of the study. It is necessary to discuss the rationale for other methodological approaches (quantitative and qualitative) at the first phase, which will provide a pathway to understand the rationale and research questions for mixed method studies.

The Rationale for a Quantitative Inquiry

As Onwuegbuzie and Leech (2006) emphasize, the research problems/questions that need a quantitative inquiry fall into four categories: descriptive, comparative, relationship bound, and historical. Descriptive questions seek quantitative analysis on more than one variable. Usually, the questions that start with "What" fall under the descriptive category. For instance, "what are the determinants of capital structure?" and "what are the factors effecting payout decisions?" could be considered as descriptively bound research questions that need a quantitative inquiry. Sekaran and Bougie (2010, p. 105) assert that quantitative studies intend to describe characteristics of the variables which could be considered under the descriptive category.

The comparative category of research questions/problems seeks to compare one or more explanatory variables with the dependent variable. Quantitatively driven questions investigate the impact, effect, or differences between the dependent and one or more independent variables. For instance, the impact of capital structure on organizational performance, the effect of macroeconomic variables on stock price volatility, what is the difference in leverage ratio between dividend payers and nonpayers exemplify the comparative nature of quantitatively bounded research problems/questions.

The third type includes the "relationship nature" of the research questions. For instance, when we investigate the relationship between liquidity and stock split initiation, advertising expenditure and organizational performance, the relationship nature comes into play. Onwuegbuzie and Leech (2006) argued that these types of questions include words such as "relate," "relationship," "association," or "trend" in developing questions/research problems.

The historical type of questions/problems seeks to predict the future through past financial trends. The impact of lagged dividend payout on current dividend policy, the past investments of research and development on current performance exemplify such historically based research problems/questions. The quantitative type of research problems is predominantly based on the deduction approach that involves hypotheses development and testing, dependent and independent variables in investigating the problem at hand. Onwuegbuzie and Leech (2006) suggested that researchers should not start a research problem in the form of "does," "Do," "is," or "are" since they lead to yes/no responses.

The Rationale for a Qualitative Inquiry

Sekaran and Bougie (2010, p. 103) stated that "An exploratory (qualitative) study is undertaken when not much is known about the situation at hand, or no information is available on how similar problems have been solved in the past." Onwuegbuzie and Leech (2006) noted that research questions that have qualitative leanings discourse on "how" and "what" questions. In addition, Agee (2009) argued that questions which start with the "why" form are required in a qualitative inquiry that deals with human interactions. Creswell (1998) emphasized that qualitative research questions are "evolving, open-ended, and nondirectional." As emphasized in quantitative research problems, the nature of the problem also drives the qualitative research design (e.g., case study, phenomenology, ethnography). For instance, research problems such as "why do companies pay dividends?" "how does the director board select its board members?" "what are the implications of insider holdings on corporate identity?" and "what finance decisions lead to a socially oriented culture in an organization?" require qualitative inquiries since those problems are qualitative in nature.

The Rationale for a Triangulation/Mixed Method Inquiry

It is imperative to highlight that the rationale for the application of mixed method approach is not clearly indicated in all of the sample studies except for Graham et al.'s study in 2005. Chithambo and Tauringana (2017) emphasized their rationale for mixed method selection as emphasized by Teddlie and Tashakkori (2003) and Brannen (2005, p. 12), but Chithambo and Tauringana (2017) have not conducted a mixed method research, instead, they proceeded with two data sources in the quantitative paradigm (same tradition). Therefore, examples from other disciplines have been taken to gain a deeper understanding about the phenomenon. The rationale for the mixed method approach has received a little attention in quantitative/ behavioral finance: why mixed methods? is it necessary? and under what circumstances can it be meaningfully integrated? To answer these broader issues, researchers should revisit the research problem at the first phase as discussed in the rationale for quantitative and qualitative studies.

Teddlie and Tashakkori (2003) stated that mixed method studies are superior as they can answer research problems/ questions that the other approaches/methodologies cannot, it provides better inferences, and it has greater diversity. According to Onwuegbuzie and Leech (2006, p. 483), formulation of research questions is more difficult in mixed methods than in a single method. They argued that "mixed methods research questions are questions that embed both a quantitative research question and a qualitative research question within the same question." Accordingly, the research questions that need a triangulated or mixed methods inquiry are combined with both qualitative and quantitative aspects. For instance, Creswell and Tashakkori (2007) emphasized that "when a project explores mixed research questions with interconnected qualitative and quantitative components or aspects (e.g., questions including 'what and how' or 'what and why'), the end product of the study (conclusions and inferences) will also include both approaches." For instance, Graham, Harvey, and Rajgopal (2005) investigated the economic implications of corporate financial reporting through both quantitatively and qualitatively bound research questions: what factors motivate firms to exercise discretion and how?

Onwuegbuzie and Leech (2006) argued that the mixed method design should also be based on the nature of the research problem. For instance, when determining the impact of investor sentiment on asset price movements, it is imperative to get information about both investor sentiment (qualitative, independent variable) and stock price movements (quantitative, dependent variable). In the qualitative phase, the investor's overall attitude (sentiment) toward a particular stock price movement could be determined through interviews. In the quantitative phase, the overall attitude can be measured by applying the instruments/indicators already available along with information gathered on the level of price movements in a 5-point scale. Then, it is possible to investigate the relationship between attitude and the level of price movements through a regression analysis and the indicators of the respective dimensions should be computed as single variables for the analysis. Finally, it is possible to triangulate the results of both phases leading to a comprehensive discussion about the phenomenon. The overall research design then is concurrent because the qualitative phase did not inform the quantitative phase or vice versa (Creswell & Plano Clark, 2011). On the other hand, if the researcher has quantitative leanings, he will give priority to the quantitative phase if not otherwise. For instance, Hampshire (2017), Tauringana and Chithambo (2016), Davila and Foster (2007), Graham et al. (2005), and Brav, Graham, Harvey, and Michaely (2005) conducted their finance-based studies assigning priority to the quantitative phase. We on the other hand argue that if there are no indicators to measure a concept or phenomenon, the qualitative design (e.g., in-depth interviews) takes priority followed by the developed indicators with a quantitative design (e.g., survey).

There are some research questions that require a causal comparative research design. For instance, if a researcher develops his research question as "What is the difference in overall attitude of male and female investors regarding stock price movements?" the overall research design is concurrent, but the researchers should purposively select male and female investors to proceed with the study. Initially, the attitude of male and female investors should be investigated through a qualitative method (e.g., in-depth interviews) and then compare them. Similarly, a quantitative design (e.g., survey) could be carried out developing the indicators, computing them, and comparing them between the two groups through an independent sample t test. Finally, it is possible to triangulate the findings of the two approaches. Moreover, there are instances where researchers have to investigate qualitatively and quantitatively bound separate questions in a single study. For instance, the dividend puzzle has been investigated through the quantitative paradigm for decades (Dewasiri & Weerakoon, 2016) even though it includes qualitative and quantitative questions in a single puzzle: "Why do companies pay dividends and what are the factors effecting dividend policy?" Our contention is that the dividend puzzle should be investigated through mixed methodology since it contains both quantitatively and qualitatively bound research questions. Newman and Benz (1998) and Tashakkori and Teddlie (1998) also argued that research questions drive the methods used in a mixed method study.

In addition to the nature of the research problem, if there are inconsistencies occurring in similar research studies in similar contexts through a single approach, we suggest proceeding with a mixed method approach in a single study for a confirmation. For instance, Hesse-Biber (2010) emphasized that one reason behind the transformation of quantitative methods to mixed method practice is to address the inconsistent results occurring in quantitative data. The capital structure puzzle, dividend puzzle, and investor sentiment could be considered as a few of the contradictory areas in finance that have prevailed for decades. Moreover, Hasse-Biber (2010) emphasized the increase in generalizability of research findings and the increase in validity and reliability of research findings as key motivations for the transformation of qualitative methods to mixed method practice. We too propose the same rationale for transforming quantitative methods to mixed method practice.

Jick (1979) combined qualitative and quantitative approaches and emphasized the multiple advantages of triangulation: increasing the confidence of findings, suggesting new ways to capture research problems, and synthesizing theories applied to the same phenomenon. He demonstrated the use of triangulation by investigating the impact of job insecurity on turnover through multiple methods: surveys, coworker observations, qualitative interviews, archival sources, and unobtrusive methods. His multiple methods provided consistent and convergent results; however, problems may arise when there are discrepancies across findings. Shih (1998) identified two main reasons for implementing triangulation: completeness and confirmatory purposes. Jack and Raturi (2006) also pointed out that triangulation engenders completeness, confirmation, and contingency, and recommended its application to management research. In finance research, Graham et al. (2005) pointed out that the limitations of one method could be compensated for by other approaches to uncover new explanations or stylized facts that could be considered as the rationale behind their mixed method selection. They also criticized the use of proxy variables which they said are nontrivial. Collins, Onwuegbuzie, and Sutton (2006) proposed a four-dimensional model emphasizing the reasons or rationale for conducting a mixed research study: participant enrichment, instrument fidelity, treatment integrity, and significant enhancement.

Participant enrichment supports to optimize the sample. For instance, a qualitative study with a small sample could be optimized by surveying a larger sample that increases the participant enrichment. Instrument fidelity (IF) supports to increase the appropriateness of the instruments/indicators/variables used in a study. For instance, if there are any applications of proxy variables, we highly recommend proceeding with mixed methods within a single study since two approaches provide a dual confirmation for such application. Graham et al. (2005) emphasized that developing a good proxy for a variable (e.g., earnings management) is nontrivial. Baker and Wurgler (2004) used the proxy of dividend premium (the difference between the market to book value ratio of dividend payers and nonpayers) to investigate investor preference. Wang, Ke, Lin, and Huang (2016) investigated the impact of investor preference on dividend policy using the same proxy variable. They were able to proceed with a mixed method approach in order to minimize the inherent weakness of proxy while increasing IF. It led to solving the issue of validity in a finance-based research.

Treatment integrity refers to the mixing of qualitative and quantitative techniques to ensure fidelity of interventions, programs, or treatments. Here, the intervention or treatments should be conducted as planned ensuring internal validity, and it is categorized as explicit and implicit interventions (Collins, Onwuegbuzie, & Sutton, 2006). In the explicit intervention, it is assumed that participants or the investigator intervene in some way to address the problem. It is assumed that setting or context is not intentionally manipulated by the researchers in the implicit intervention. For instance, if a researcher intends to investigate the relationship between corporate governance and dividend policy, the researcher should not collect only the data on dependent and independent variables but also the study setting through interviews to gather data on the organization, industry, and country. Because the findings of that study could differ from these of another setting (implicit intervention) when generalizing the findings. Accordingly, a mixed method or triangulation study could be conducted with the purpose of ensuring treatment integrity. Collins et al. (2006, p. 89) argue that,

"A quantitative study may be transformed to a mixed methods study via the treatment integrity rationale if the researcher uses qualitative techniques to refine interventions during a pilot study (i.e., before), to gain more information about the intervention (i.e., during), or to determine the level of implementation of an intervention (i.e., after)."

Significant enhancement refers to mixing qualitative and quantitative methods with the purpose of enhancing the significance of the study. For instance, when determining the impact of investor sentiment on stock price movements, the qualitative phase could provide insights with special reference to "why" and "how" questions than the traditional quantitative question of "what is the impact of investor sentiment on stock price movements."

Greene, Caracelli, and Graham (1989) emphasized that the motivation for the mixed method approach as 5-fold. They argued that it could be used to increase the validity while minimizing bias, triangulation could be used to enhance the strengths while minimizing weaknesses of single methods, complementarity allows analysis from different perspectives, initiation helps development of one method to enhance the other method, development expands the overall scope of the study, and expansion. Green et al.'s (1989) rationales were later supported by Brannen (2005). Mayoh and Onwuegbuzie (2015), who proposed that the mixed method help to explore unanticipated findings, enhance the generalizability and utility, triangulation, and theory generation and testing while providing a phenomenological orientation.

Accordingly, we have identified participant enrichment, IF, treatment integrity, significant enhancement, triangulation, complementarity, development, expansion, confirmation, increasing validity and reliability, addressing inconsistent results, and completeness as the main rationales for conducting mixed method research in the finance discipline.

Mixed Method Research Design/ Methodological Triangulation/Between or Across Methods Triangulation

The summary analysis stated in Table 1 indicates that none of the studies have explicitly identified the mixed method research design except Buckley (2015). Hampshire (2017) identified his design as a sequential exploratory design even though the study should have been categorized as a "sequential explanatory design" where a quantitative approach is followed by a qualitative phase. Further, some of the studies (e.g., Graham, Harvey, & Rajgopal, 2005) didn't identify their studies as mixed method research. Moreover, in the whole article, Chithambo and Tauringana (2017) emphasized their approach as a mixed method research, but it is not conducted through a mixed method approach. They conducted their study through two quantitative data sources, namely, survey and market data, and it can be considered as a data triangulation approach. Moreover, they emphasized the survey approach (close ended) as the qualitative phase. Hence, it revealed a research gap in the proper identification of a mixed method and its respective design in the finance discipline. This research gap is dealt with in the section that follows.

Campbell and Fiske (1959) laid the foundation for methodological triangulation by identifying the multimethod technique as an important tool to achieve validation and convergence. Denzin (1978) interpreted this approach as "between or across methods of triangulation," a view later supported by Jick (1979) and Thurmond (2001). Jick (1979) first defined this approach as the most popular method of methodological triangulation, as it is based on the use of multiple methodologies (qualitative and quantitative) to investigate a phenomenon. Methodological triangulation is also known as "within-method triangulation," where multiple data collection is carried out within a single study, thereby achieving higher internal consistency or reliability. Denzin (1978) emphasized data, theoretical, methodological, and investigator triangulations as the other key triangulation mechanics. Moreover, Molina-Azorin, Bergh, Corley, and Ketchen (2017) identified methodological triangulation as "mixed method research" that includes both quantitative and qualitative methods in a single study. Methodological triangulation reduces deficiencies and biases that could derive from a single method approach. Additionally, the strengths of one method could compensate for the weaknesses of others.

Unlike other triangulation approaches, methodological triangulation/mixed method research has been applied in management research areas such as marketing, human resources, operational management, and business administration, but very seldom in financial studies. The problem often starts at the first step of analysis, in particular for selecting between the qualitative or quantitative method as the first method, or conducting both concurrently. Johnson, Onwuegbuzie, and Turner (2007) identified mixed methods as the third methodological paradigm and suggested that mixed method studies could be categorized into three designs based on priority: equal-status mixed research, qualitative-dominant mixed research, and quantitative-dominant mixed research. Here, the sequencing or timing of the mixed methods is based on the priority decision as emphasized by Morgan (2007). Later, Creswell (2009) emphasized that mixed method research could be categorized into six research designs, whereas Mayoh and Onwuegbuzie (2015) emphasized mixed methods phenomenological research as 5-fold.

Creswell (2009) discussed the mixed method designs based on four important factors: timing, weighting, mixing, and theorizing. Timing refers to determining when to conduct the qualitative and quantitative data collection, and whether to proceed with sequential or concurrent phases. If sequential phases are the preferred choice, the decision whether to proceed firstly with a qualitative or quantitative study in the research process will depend on the researcher's intention. When qualitative data are collected first, the intention is to explore the phenomenon. When data are collected concurrently, implementation should be simultaneous (Creswell, 2009). Weighting refers to whether priority is given to the quantitative or qualitative design that depends on factors such as the researcher's interest, audience, and the purpose of the study. Mixing refers to establishing how to mix data collection and analysis based on multiple methods. According to Creswell (2009), mixing could occur in three phases: connected mixed methods, integrating data, and embedding data. In the connected mixed methods, either qualitative or quantitative data collection or analysis occurs first, followed by the other approach. In the integrating stage, researchers proceed with qualitative and quantitative data collection concurrently, followed by simultaneous analysis. Under the embedded method, the aim is to collect one type of data, while the other type only provides supporting information. Theorizing (or the "transforming lens") refers to the use of theoretical perspective to guide the entire research study: this entails the operationalization of concepts, the sampling procedure, data collection methods, determining potential implications of the study, among other aspects.

Even though these four factors (timing, weighting, mixing, and theorizing) do not exhaust all the possibilities, six major methodological designs were derived from them by Creswell (2009). Five major methodological designs were derived by Mayoh and Onwuegbuzie (2015) to explain mixed methods phenomenological research. In the following section, we discuss six mixed methods epistemological finance research designs based on the methodological designs derived by Creswell, Plano Clark, Gutmann, and Hanson (2003), Creswell (2009), and Mayoh and Onwuegbuzie (2015). However, we here propose an alternative design for mixed methods data/ within the method triangulation.

Sequential Explanatory or Quantitative-Phenomenology Design

In the sequential explanatory design, quantitative data collection and analysis takes place first, followed by qualitative data collection and analysis. Finally, an interpretation of the entire analysis is conducted by the researcher. It is useful when researchers show a strong quantitative intention. For instance, six of the eight sample studies (Brav et al., 2005; Buckley, 2015; Davila & Foster, 2007; Graham et al., 2005; Hampshire, 2017; Tauringana & Chithambo, 2016) followed a sequential explanatory design even though they were unable to explicitly term it as a sequential explanatory or quantitativephenomenology design. Hence, it could be categorized as the most common mixed method design in the finance discipline, though Mayoh and Onwuegbuzie (2015) assert that "there are fewer studies using this methodological sequence" in a qualitatively weighted discipline.

Brav et al. (2005) proceeded with the sequential explanatory design since they have strong quantitative leanings, but unexpected results have arisen within the paradigm in the recent past. Brav et al. (2005) conducted a survey followed by qualitative interviews. Even though Brav et al. (2005) properly formulated their research questions in the study to suit the selected methodology, the study is mainly based on survey data, while there is little evidence of in-depth interviews. The rigor of the mixed method approach in this study is questionable, since it employed a minor qualitative phase with the purpose of quantifying the same.

The sequential explanatory design is being widely used when there is a possibility for deduction at the initial stage of a research while the qualitative phase is expected to provide a supporting role. The drawback of this method is the time, complexity, and cost involved in the two separate phases (Mayoh & Onwuegbuzie, 2015), but it contributes to development and validity (Greene, Caracelli, & Graham, 1989), orientation (Mayoh, Bond, & Todres, 2012), confirmation, completeness, and convergence of the findings. Creswell et al. (2003) and Creswell (2009) emphasized this design as the sequential explanatory design, whereas Mayoh and Onwuegbuzie (2015) termed it as the quantitative-phenomenology design.

Sequential Exploratory/Phenomenology Quantitative Design

In the sequential exploratory design, qualitative data collection and analysis takes place first, followed by quantitative data collection and analysis. The final stage is the interpretation of all results. Creswell et al. (2003) and Creswell (2009) termed this design as sequential exploratory design, whereas Mayoh and Onwuegbuzie (2015) emphasized it as phenomenology quantitative design. Englund and Gerdin (2015) proceeded with the data triangulation/within the method triangulation (two qualitative data sources) approach even though they intended to investigate both qualitatively and quantitatively bound research questions. If they had strong qualitative leanings, and the intention was to capture new insights into the phenomenon, they would had to proceed with the sequential exploratory design, instead of the data triangulation approach which is more suitable for their research questions. Mayoh and Onwuegbuzie (2015) argued that "it is much more difficult to locate examples of quantitatively driven work adopting this sequence (phenomenology-Quantitative)." Due to the lack of studies conducted in sequential exploratory design in the finance discipline, an example from the management discipline is discussed. For instance, Brandon-Jones (2017) conducted an exploratory design, initially conducting a literature review and 58 in-depth interviews to support the construct development and measures in operations and supply management. Then, a quantitative study was conducted with 274 survey respondents. Accordingly, the quantitative phase was informed by the qualitative phase of the study. Employing the mixed method design in multi-item scale development and validation, the outcome provided some new insights into the phenomenon. Creswell (2009) argued that sequential exploratory design is especially valuable when a researcher is developing a new instrument or narrows the focus of possible variables in an unknown construct (Creswell, Plano Clark, Gutmann, & Hanson, 2003). In the finance discipline, researchers could use the meta-framework (instrument development and construct validation [IDCV]) developed by Onwuegbuzie, Bustamante, and Nelson (2010) for instrument development in a sequential exploratory design.

There are some research questions being investigated through quantitative models that require a sequential exploratory design. For instance, Jiraporn, Leelalai, and Tong (2015) investigated the relationship between dividend policy and managerial ability through a quantitative study using proxy variables, and the results showed that more talented managers are more likely to pay dividends. Since it is a new investigation and a requirement exists for IDCV, especially for managerial ability, we suggest that the next step should be to proceed with a qualitative study (e.g., in-depth interviews) followed by a study of quantitative methods (e.g., survey), which could provide sound support to new insights into or confirmation of the new explanation.

Sequential Transformative Design

The sequential transformative design is also driven by one qualitative and one quantitative phase (either qualitative or quantitative design followed the other), but the whole study is guided by strong theoretical support. However, this design is seldom in use. In particular, Creswell (2009, p. 213) argued, "Unfortunately, because little has been written to date on this approach, one weakness is that there is little guidance on how to use the transformative vision to guide the methods." Mertens (2010, p. 473) emphasized that "the transformative paradigm serves as an umbrella for research theories and approaches that place priority on social justice and human rights."

In the corporate finance, there are numerous theories explaining the dividend puzzle, but in their study, Turner et al. (2013) only dealt with a limited number of theories such as information asymmetry, catering, agency, prospect theories, and liquidity hypotheses in investigating the dividend puzzle. Their study could have rested on a stronger theoretical framework by amalgamating life cycle, free cash flow theories, behavioral explanations, and rent extraction hypotheses, which also attempt to explain the dividend puzzle. If the researchers could amalgamate all the "relevance theories" in a single study and investigate them through a sequential design, it could be categorized as a sequential transformative design.

Concurrent Triangulation Strategy/Phenomenology + Quantitative Approach

Creswell and Plano Clark (2011) emphasized that data collection and analysis of qualitative and quantitative data occur concurrently with the purpose of achieving analytical convergence, confirmation (cross-validation), and corroboration in a single study. They identified this strategy as the convergent parallel design, whereas Creswell et al. (2003) and Creswell (2009) identified the same as concurrent triangulation strategy. Mayoh and Onwuegbuzie (2015) termed it as "phenomenology + quantitative approach" where equal priority is given to each approach. Creswell (2009) argued that through this strategy the inherent weaknesses of one method could be offset by the other. Since there is no consensus regarding the best proxy for corporate social performance, with contradictory results in the findings, Soana's (2011) study should be readdressed under the concurrent triangulation strategy. This would require qualitative interviews and field survey concurrently, thereby offsetting the weaknesses of one method through the other. Creswell (2009, pp. 213–214) stated, "This traditional mixed method model is advantageous because it is familiar to most researchers and can result in well-validated and substantiated findings." The limitations of this method could be identified as the great effort and expertise required in the study.

Even though the concurrent strategy provides a better validation and corroboration, the problem arises when we analyze the question roused by Sale, Lohfeld, and Brazil (2002, p. 5): "How can the results be similar if the paradigms are supposedly looking at different phenomena?" As a justification for this incompatibility thesis, Howe (1988, p. 10) proposed the "whatever works mechanism" but we believe that using multiple methodologies within an overarching paradigm is a way of conducting concurrent mixed method research by negotiating paradigmatic assumptions, as proposed by Johnson et al. (2010).

Concurrent Embedded Strategy

Unlike the concurrent triangulation strategy, the concurrent embedded strategy focuses on a single phase of both qualitative and quantitative data collection. This approach therefore is less time, effort, and value consuming. Priority is given to one method based on the researcher's primary aims, while the other method plays a supporting role. An embedded strategy, instead of concurrent triangulation, results in a supportive role played by the qualitative strategy. Tashakkori and Teddlie (1998) identified this method as a multilevel research design. For instance, if the intention is to gather information from an organization, the employees could be surveyed quantitatively and managers could be interviewed qualitatively in a concurrent design. Even though there is a paucity of this design in the finance discipline, we encourage future researchers to proceed with the same since it could be completed within a single data collection phase with less effort and time than the other strategies.

Concurrent Transformative Strategy

In the concurrent transformative strategy, both quantitative and qualitative data collection occur at the same time in a single phase, and mixing of evidence occurs during the connecting, integrating, or embedding stages while having a strong theoretical support. There is a lack of supporting examples of the concurrent transformative strategy (Creswell, 2009). Wang et al. (2016) carried out a study to investigate the "catering theory" using a proxy variable to explain investor demand or preference. Since this study was driven by a theoretical model, further confirmation is required to explain investor preference (behavioral explanation), for which we recommend the concurrent transformative strategy where the researchers could have data collection at one phase (qualitative interviews of the investors, quantitative survey on investors) and mixing data during the connection, integration, or embedding stages.

An Alternative Design to Mixed Method Designs: Epistemology and Quantitative Design (Quantitative + Quantitative)/Phenomenology and Qualitative Design (Qualitative + Qualitative)

Mayoh and Onwuegbuzie (2015) argued that there is an ongoing debate on what represents the mixed methods. For instance, Morse and Niehaus (2009) proposed that two or more qualitative or quantitative approaches (either qualitative or quantitative) within a single study could be categorized as a mixed method research. Accordingly, Mayoh and Onwuegbuzie (2015) proposed an additional research design for mixed methodology emphasizing two qualitatively bound approaches in a single study terming it a phenomenology and qualitative design (qualitative +qualitative). However, we argue that it should be termed an alternative triangulation design instead of a mixed method design, since it uses multiple data sources/methods in a single paradigmatic approach. This multimethod design could be categorized as epistemology and quantitative design or phenomenology and qualitative design where two quantitative or qualitative data sources or approaches are being exclusively used in a single study. For instance, Chithambo and Tauringana (2017) conducted a research of epistemology and quantitative design using two quantitative data sources even though they mistakenly identified close-ended questions as a qualitative approach while terming it a mixed method study.

Moreover, Englund and Gerdin (2015) conducted their study using two qualitatively driven approaches that could be categorized under the phenomenology and qualitative design as per Mayoh and Onwuegbuzie (2015). Here, we argue that the selected multimethod design should be driven by the research questions in the study. For instance, Englund and Gerdin (2015) conducted their study through both qualitatively and quantitatively driven questions even though they mistakenly proceeded with a phenomenology and qualitative design. We propose therefore that the study proceed with an epistemology and quantitative mixed method research design for the quantitatively driven research questions while using a phenomenology and qualitative design for the qualitatively driven research questions. In triangulation history, the use of similar methodologies/approaches/data sources in a single study is categorized as a multimethods data triangulation approach or within the method triangulation approach (Denzin, 1978).

The Manuscript Reviewing Gap

Our systematic literature review revealed that there are several issues with regard to the methodologies applied in the mixed method studies conducted in the finance discipline. Table 2 shows some major methodological issues in the sample studies.

The findings of the rigorous literature review have divulged that the methodological issues described in Table 2 have not been addressed throughout the reviewing process of the respective journals. Hence, we suggest that editors of finance journals have reviewing support from mixed method

 Table 2. Methodological Issues of the Sample Studies.

Study	Major Methodological Issues
Hampshire (2017)	Poor identification of its research design: Even though Hampshire (2017, p. 357) emphasized the approach as a "Sequential Exploratory Design," it should be methodologically described under the "Sequential Explanatory Design" as per Creswell (2009). Moreover, the rationale for mixed methods application is not clearly discussed in the paper.
Chithambo and Tauringana (2017)	The researchers termed this study as a mixed methods approach emphasizing the use of qualitative and quantitative approaches in a single study. But, two quantitative data sources used in this study. Moreover, they poorly termed the survey strategy that had close-ended questions, as a qualitative approach
Tauringana and Chithambo (2016)	They discussed other researchers' views on the rationale for mixed methods but were unable to relate it to their research, as to why they proceeded with a mixed design
Englund and Gerdin (2015)	They conducted their study on both qualitatively and quantitatively driven research questions (one qualitative and one quantitative question). Hence, the use of multiple qualitative data (observations, interviews and archival sources) for the investigation is questionable, leading us to believe that "between method triangulation/mixed method approach" is more appropriate than the data triangulation approach used in this study.
Buckley (2015)	The researcher conducted the study through a sequential explanatory design, but a low weight is given for the data analysis and results of the study. For instance, there is little evidence in the results of the logistic regression model, no evidence in the case studies, semistructured depth interviews, and archival data. Hence, the scientific rigor, use of gualitative phases, and data integration in this research is problematic
Davila and Foster (2007)	The researchers discuss their study mainly based on survey data, and there is little evidence of the interviews and publicly available data. The supporting role of qualitative data is not clearly emphasized, and the rigor of the mixed methods approach is questionable. There is no effective data integration either
Brav et al. (2005)	The researchers discuss their study mainly based on survey data, and there is little evidence in the in-depth interviews. The rigor of the mixed methods approach is questionable, since they used the qualitative phase with the purpose of quantifying the same and only to support the quantitative findings of the study giving low weight (only a small paragraph just after a rigorous quantitative analysis under each research question) to the qualitative phase

experts to review the articles. We emphasize the evidencebased guidelines for reviewing mixed method research manuscripts suggested by Onwuegbuzie and Poth (2016). They have proposed a 32-item assessment instrument with six meta themes (warrantedness; 7 themes, justification; 6 themes, writing issues; 6 themes, lack of transparency; 6 themes, lack of integration; 5 themes, philosophical issues; 2 themes) for reviewers of the mixed method manuscripts. By adhering to these guidelines, both the authors and editors may improve the quality and accuracy of their mixed method research publications in finance.

Conclusion and Implications of the Study

The findings of the systematic review have resulted in the emergence of four major research gaps in mixed method studies conducted in the finance discipline: (1) poorly or nonformulated research questions, (2) lack of identification of the rationale for mixed methods, (3) poor identification of mixed methods and its design, and (4) the manuscript reviewing gap. We suggest that finance researchers avoid the selection of convenient methodologies while applying the mixed methodology only when the studies allow them to do so; the mixed studies should be conducted developing both qualitatively and quantitatively bound research questions and the rationale for mixed methodology should be justified. In this study, the participant enrichment, IF, treatment integrity, significant enhancement, triangulation, complementarity, development, expansion, confirmations, increasing validity and reliability, addressing the inconsistent results, and completeness have been identified as the main rationales for conducting mixed method research in the finance discipline.

Moreover, the researchers could select the appropriate research design based on the factors emphasized by Creswell (2009): timing, weighting, mixing, and theorizing and also the nature of the research questions. Further, it is vital to adhere to the article reviewing guidelines proposed by Onwuegbuzie and Poth (2016) or hire mixed method experts to review the articles in order to maintain quality, accuracy, and scientific rigor in a mixed method study in the finance discipline.

The article also contributes to the finance discipline through highlighting mixed method possibilities while reviewing the seldom but already published research studies in the discipline. In turn, despite numerous challenges and issues faced by researchers, it is possible to propose a creation of a new hybrid discipline in finance research by merging incongruent binaries within the same tradition. This new discipline would contribute in reducing the quantitative–qualitative methodological divide, while bridging the gaps between contradictory areas in management/finance research.

Acknowledgments

The authors wish to acknowledge with gratitude the support given to us by the mixed methods program, University of Michigan. The authors also thank the resource panel of the PhD program of the Faculty of Graduate Studies, University of Colombo, and the Research Center at Faculty of Management Studies and Commerce, University of Sri Jayewardenepura.

Declaration of Conflicting Interests

The author(s) declare that there is no potential conflict of interests with reference to the whole research study and publication of this research article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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