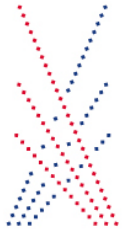

BRITISH ACADEMY
OF MANAGEMENT

BAM
CONFERENCE

3RD-5TH SEPTEMBER
ASTON UNIVERSITY BIRMINGHAM UNITED KINGDOM

This paper is from the BAM2019 Conference Proceedings

About BAM

The British Academy of Management (BAM) is the leading authority on the academic field of management in the UK, supporting and representing the community of scholars and engaging with international peers.

http://www.bam.ac.uk/

Measuring the unmeasurable: A Methodological Review

Sonal Jain

(PhD Student)
Audencia Business School
8 Route de la Jonelière, 44312 Nantes (France)

Email: sonu.22avril@gmail.com

Bertrand Venard

(Professor)
Audencia Business School
8 Route de la Jonelière, 44312 Nantes (France)

Email: venard@audencia.com

Abstract

Misconducts and organizational crimes are of interest to scholars due to their negative impacts on society, firms, and individuals. However, doing empirical research about the matter is with multiple challenges. Thus, when misconduct is punished by law, the people involved are not willing to discuss the matter, making it difficult to measure forbidden behaviors in an organization since being hidden. The aim of our paper is then to investigate the methodologies used to study a type of misconduct: corruption. We investigate the methodologies of academic articles about corruption published in top journals listed in Financial Times over the 33-year. The result compares and contrasts various kinds of research articles, methodologies, paradigmatic and research designs used in the literature. A clear contribution of the article is to show the weaknesses of the actual literature about corruption and to propose some important avenues for future research.

Keywords: Corruption, methodology, statistics, empirical, non-empirical

Introduction

The globalization of the economy and the emergence of a borderless environment have placed corruption in sharper relief. This is exemplified by government, international organizations, and multinational companies being subjected to increasing pressure from individuals, anti-corruption NGOs, and international associations. Scholars are not out of the list, the increasing number of research in the field of corruption depicts greater interest among scholars in developing a better understating of corruption. They have published research into every corner of the corruption edifice, from its impact on political decision to a decline in average life expectancy. Researchers have created surveys and indexes to measure corruption. They have contributed enormously to the understanding of several issues related to corruption in the field of business, law, economy, marketing, politics, and others.

The earlier scholarly work on corruption are significant but weak on measurement and quantification (Campos and Pradhan, 2007). They had a profound appreciation for the significance of understating the complexity of corruption and addressing its roots. However, it lacks the empirical base upon which particular measures for combating corruption could be built. The early 1990s witness the rise of cross-country, perception-based assessment of country governance and corruption. The focus of these researches was mainly based on the interest of multinational firms expanding or investing in emerging markets.

To make sure, empirical research has made progress in this direction over the period. This research hopes to contribute to this effort by systematically analyze the methods, techniques, and contents of academic articles published between 1986 and 2017. This research aims to provide a structured understanding on how do researchers in multiple disciplines gain knowledge about corruption. However, this research does not aims to provide definitive road maps or indicator sets. Rather, it attempts to open the dialogue that will motivate scholars and practitioners to develop more refined and informative maps and indicators.

We argue that the applicability of empirical approaches can both encourage and permit for the testing of new inquiries. This argument is supported by the proliferation of data and availability of advanced statistical software. There are many potentially valid approaches to empirically test corruption research questions. Armed with a greater understanding of the uncertainties associated with the empirical study, a scholar can make more effective use of scientific evidence and advance the research in the growing and significant field of corruption studies. Further, by

analyzing the methodological challenges and opportunities found within corruption research, this research respond to scholarly calls for the enhancement and enrichment of empirics in the field of corruption.

Sample

The paper studies published academic articles about corruption over time from 1986 through 2017. To identify our sample of empirical articles, we first screened each of the articles published by 43 top journals listed in the Financial Times under different disciplines, such as, accounting, entrepreneurship, ethics, finance, human resource, international business, management, marketing, operation and information systems, and organization behavior. We identified empirical studies as quantitative, qualitative, or mixed method (Colquitt and Zapata-Phelan, 2007; Yu *et al.*, 2012).

A total of 212 articles were deemed relevant for our analysis, out of this, 152 were empirical studies and 60 were non-empirical studiers. Of these, 91% (193/212) were published in the past 15 years of our sampling time frame (2003-2017), compared with 9% (19/212) published in the first 15 years (1986-2002).

Insert Table 1 - Pattern of article distribution by discipline

Each of the articles published from 1986 to 2017 was identified electronically using the following criteria: The article was published in one of the 43 journals listed in Financial Times; The language of the published article is English; The article included the word 'corruption' in title, abstract, or keywords; 'Corruption' should be one of the key variables.

To identify the articles, which meet the relevant criteria from among these journals, we performed a key word search. The reference lists of all the articles obtained through initial search were analyzed further to search for additional articles.

Insert table 2 – Frequency of empirical and non-empirical articles

Study Design

To provide a systematic basis for coding methodology, coding categories were developed. Consistent with protocol found in similar reviews, we combined categories from five articles of research methods in the organizational sciences: Podsakoff and Dalton (1987); Stone-Romero, Weaver, and Glenar (1995); Scandura and Williams (2000); Austin, Scherbaum, and Mahlman (2002); McLeod, Payne, and Evert (2016). Other reviews exist, but we do not describe them in detail because they either address specific research domains (Casper *et al.*, 2007) or they do not address design, measurement, and analysis topics as we do herein (Shook *et al.*, 2003; Taylor III, Goodwin and Cosier, 2003; Dean, Shook and Payne, 2007).

Following the methodology of these five articles, we examined the following attributes in our sample of articles: 1) time horizon, 2) data collection method, 3) source of data, 4) geographical scope, 5) statistical techniques approach, 6) business discipline focus, 7) level of analysis, 8) sample size, 9) time frame of study, 10) number of dependent variable, 11) type of sample, 12) content area, 13) primary means of data collection, 14) study design and, 15) paradigm. Over the period of our review, several research techniques were found. We decided to add them to the coding process. The coding scheme was further refined with our initial review of several articles within our sample.

Consistent with protocol found in similar reviews (Stone-Romero, Weaver and Glenar, 1995), the nature of our coding was exhaustive, screening each occurrence of a technique used in the article. The analysis proceeded by systematically coding the articles using an excel spreadsheet.

Research Design

Articles were coded as quantitative, qualitative, and mixed methods. We categorize studies as quantitative when a study has used numeric data collection methods and analyzed it using statistical methods. Thus, questionnaire surveys are under the category: quantitative methods. When the data are drawn from observations, interviews, and documentary evidence and analysis it is categorized as qualitative research. If a study has used both qualitative and quantitative empirical methods, then the study is categorized as a mixed method research (Creswell *et al.*, 2003). Of the 152 empirical articles, 108 were quantitative, 27 were qualitative, 17 used mixed methods. This is significant as qualitative, quantitative, or mixed method has unique strength and weaknesses (Aluko, 2006). It is also important to note how the publication of articles using research methods, such as qualitative, quantitative, or mixed-method approaches, has evolved over the time.

Insert table 3 – Distribution pattern of articles by age

As shown in table 3, between qualitative, quantitative, and mixed-method articles, there are close similarities in the distribution of articles in case of qualitative and mixed method. In fact, in categories such as "0 to 5 year old publications", "6 to 10 years old publication", "21 to 25 year old publications", and "more than 26 year old publications" the number of qualitative articles are nearly the same as those for mixed-method articles. In both types, the last ten years comprised the largest proportion of all published articles, followed by 11 to 15 years old. Quantitative articles stand out in the distribution of articles in comparison to qualitative and mixed method. The categories such as "0 to 5 year old publications" and "6 to 10 years old publication" are nearly the same. The publication of quantitative articles have doubled in the past 10 years. This result is partly due to the development of indexes of corruption by international organizations. To develop a better understanding of a complex phenomenon, like corruption the use of various research method is important.

We also collected data regarding the number of authors in relation to methodological approach. For methodological approach articles coded qualitative, quantitative, and mixed methods were analyzed to view which methods are the most frequently used by both single and co-authors, which can highlight methodological trends in the field of corruption.

Insert table 4 – Authorship pattern of articles

Among single authors studies, quantitative approaches were used more frequently (n= 19), followed by mixed method (n= 5) and qualitative (n= 7). Studies with two authors has similar trend, with qualitative approaches (n= 37) as the most frequent, followed by qualitative (n= 10). There were similar number of mixed method (n= 6) and qualitative (n=8) studies with three authors. Articles with three authors also followed the same format for quantitative (n= 34), as the majority of the articles used quantitative methods. Articles with four and more authors also projected the strong presence of quantitative methods.

The majority of non-empirical studies were written by single authors (n= 34), with only 9 theoretical studies written by two authors and 12 by three authors. There were only 4 studies

written by four or more authors. Qualitative research was published more frequently by two authors (n=10). Quantitative was dominated by two (n= 37) and three (n= 34) authors. Mixed method approach was similarly spread across the number of authors, but in much small number. The single authors counting 5 mixed methods articles, two authors penning 6 articles, and three authors contributing 6 articles.

The time horizon was coded as either cross-sectional or longitudinal (Scandura and Williams, 2000). We define cross-sectional as a study, which collects data about various variables of the sample at one point in time in order to uncover relationships existing among those variables. This is like doing a "snapshot" of the social reality at a given time. On the contrary, a longitudinal study collects data from the same sample of people on more than one occasion over a period. So that, possible relationships among variables can reveal by examining the changes that take place during the time. Between 2008 and 2017, the number of cross-sectional studies have doubled in volume. Early work in corruption research were understandably cross-sectional statistical studies. What is interesting in the field of corruption is the rising trend in cross-sectional design towards the use of data collected over longer period, such as three to ten years. However, if their exploratory studies are successful, they should be followed by more systematic studies that work towards the development of theory. The current standard of the academic community working on corruption is to use secondary data. The goal should be establishment of casual relationship among variables means that more longitudinal work is needed. Longitudinal work are more difficult and expensive than cross sectional studies, but the advantage are considerable. As they can start to provide researchers with more confidence about causality to provide the basis of theoretical model building and experimental research.

Research about corruption could be done at different levels as individual, organizational, and national. Each level of analysis provides unique insight and that the synthesis of these insights yields a richer understand of the phenomena. Further, studying corruption at several levels simultaneously could allow to understand the complex relationships between different stake-holders. But the multi-levels analysis is difficult. Thus, the analysis of corruption done by individuals and corruption in a country require different methodological designs and conceptual framework.

Multi-level analysis, obviously expose researchers to challenges in selecting theories (Klein, Dansereau and Hall, 1994). However, most of the research to date has been at a single level of analysis. Considering the complex nature of corruption, the success in fight against corruption will be affected by factors that can only be observed at different levels of analysis. Missing one of the perspectives implies having a narrow understanding of corruption. For example, focusing on the unique level of the Nations allows to build a diagnostic concerning the reasons or consequences of corruption at a national level without any idea of the individual and organizational dynamics that play a role in the development of corruption. Over the past five years there is a significant rise in the number of studies analyzing corruption at multiple levels. Concurrently, the gap between the single level and multiple level is narrowing.

Insert table 5 - Time horizon, data collection and level of analysis

In this analysis, 72% (152/212) of the papers reviewed are empirical in nature. As the study deals with the methodological issues, the focus will be on the 152 articles that we believe are representative of the empirical work found in the mainstream body of corruption research. 61% (93/152) of the empirical papers used secondary data.

Primary data collection method utilized by each article was coded as a questionnaire survey, interview, multiple data collection methods, and others. If a study used multiple data collection methods, then it was coded under multiple methods. Of the 32% (48/152) studies using primary data, 42% (20/48) of the studies used questionnaire survey, 21% (10/48) used interview methodologies, and 25% (12/48) used multiple data collection methods (two or more primary data collection methods). The questionnaire-survey research articles involve data collection via questionnaires. Questionnaires could be self-administrated or interviewer-administrated. There are certain limitations of the questionnaire survey design. Thus since there is no universal description of corruption, respondents to a questionnaire could respond questions based on their understandings of the term corruption. This difference in perception influences the answers and the researchers' analysis. The dominating method in interview method was semi-structured interview. Direct observation and lab experiment were not used by any of the researchers. By lab experiment, we refer to a manipulation of independent variables; controls for intervening variables; conducted in controlled settings (Alavi and Carlson, 1992). Further, 78% (118/152) of the empirical studies were 10 years old that could be due to the rising impact and concern towards the corruption that has prevailed in our society since a long period.

Almost 61% (93/152) of the studies used secondary data source, so they were not coded under data collection category. However, the most frequently used source of secondary data collection was an international index of corruption. Total, 15 secondary sources of data were used by empiricists studying corruption. Two most commonly used indexes for measuring corruption were cross-national indicators - Corruption Perception Index (CPI) by Transparency International (n= 37) and World Business Environment Survey (WBES) by World Bank (n= 12). The use of secondary data source has increased dramatically in the past 10 years, for example out of 93 empirical studies using secondary data, 78% (73/93) of the studies published in last 10 years used secondary data. Both the indexes do a significant job in presenting statistically a general view (at national level for CPI) about corruption.

Both the indexes are the most commonly used corruption indicators by the researchers. The success of both indexes in their use by the academic community is due to the difficulty in conducting empirical research about crimes in general. Indeed, any illegal action is secretive and so hard to observe the criminals. The secrecy of corruption also makes the data collection difficult (Leys, 1965) for empirical research since witness of this crime may be reluctant to talk about it.

As corruption is very difficult to observe directly, researchers have not done much empirical research themselves. The clear added-value of corruption indexes done by international organizations is to provide the academic community with data on the phenomena. Academically, these indexes have made possible large data studies on corruption (Lancaster and Montinola, 2001). While contributing towards a better understating of the causes and effects of corruption by studying corruption at comparative and cross-national level.

Insert table 6 – Features of measures of corruption indexes (CPI & WBES)

97 out of 152 studies did not report the sector of activity, that is, a private sector, public sector, non-profit organizations, or other. One reason for this lack of information in describing the sample could be due to the extensive used of secondary data. With 93 out of 152 studies using secondary data as their key data sources, the researchers may not have the access to the complete description of the secondary data they used. However, 26% (40/152) of the sample was drawn from the private sector among the empirical studies.

Geographical location was coded as North America, South America, Europe, Asia, Africa, rest of the world, multiple counties, and not specified. The frequency and percentage are summarized in table 7. In corruption, research geographic becomes an important aspect of methods since regions and cultures are likely to have a strong effect on corruption. A majority of study used secondary data, especially international indexes. As a result, studies covering multiple countries at the same time (49%, 74/152) dominated the field. Corruption research is diverse in terms of geographical coverage considering the studied countries. 51% (78/152) of studies focus on single countries such as the United State (19), China (8), Africa (8), India (5), and Germany (4). Investigations were also found in countries such as Russia, United Kingdom, and Canada. This single country focus represents a certain amount of ethnocentrism in the field. Curiously, we did not find any empirical article that did not specify the geographical location for their studies. The diversity of covered countries is a positive trend for the corruption field. Indeed, the corruption literature seems to reflect the globalization of research.

Insert table 7 - Geographical distribution pattern

All the statistical techniques performed in the 152 empirical articles were coded. The analysis and coding included simple inferential statistics, techniques analyzing the structure of data, Technique examining multiple relations with both independent variables and dependent variables, regression, and analysis of variance. The qualitative articles were coded using the methods used for gathering data (i.e. interview, observation, archival) into the themes. Overall, the analytic approaches are relatively sophisticated (See table 8).

Correlation (64%, 98/152) was the most commonly used simple inferential statics in the sample of quantitative and mixed methods. Ordinary regression was the most commonly used regression, followed by multiple regression and ordinary least square regression. Factor analysis was not one of the most commonly used statistical technique.

Insert table 8 – Statistical techniques used to analyze data

74% (113/152) of the articles specify the sample size. While secondary data was utilized frequently in the empirical studies, non-structured and semi-structured interviews and questionnaire survey also made their position in empirical work as primary data collection method. When the researcher uses interviews as a data collection method, the sample size (primary data) ranged from 5 participants (Mària and Arenas, 2009) to a maximum of 40 participants (Rama, 2012). Interview method can be more helpful to examine situations where there is a deviation in clamed attitude and actual behavior, which is often the case in corruption context. Semi-structured interviews were opted by 8 out of 9 researchers. This method help researcher to gain flexibility while embracing the open discussion, mainly when the research topic is complex and dynamic like corruption. The self-administered questionnaire survey method was used more frequently in the quantitative studies; it is worth noting that scholar's questionnaire survey data size ranged from 19 participants to 1210 participants. Corruption research is not generally characterized as using large samples in spite of the criticism of small samples found in the corruption literature. Research using case studies with multiple firms expose to a serious methodological flaw inherent in this type of small sample research is the sparse distribution of the overall sample of firms. However, if researcher is not aiming for generalization then a smaller set of case studies could lead to meaningful findings.

Paradigmatic review

Knowledge is not neutral, it is important to understand that different types of research are based on different sets of belief (Guba and Lincoln, 1994; Killam, 2013) and methodology (Saunders, Lewis and Thornhill, 2009; Bryman and Bell, 2015). To understand research, one must examine the philosophy that underpins researcher's paradigms, in relation to methodology of the study.

This research assumes that paradigms is a shared belief system that influence the kind of knowledge researchers seeks and how they interpret the evidence, they collect. Within the field of paradigm, differences exist on the actual reference pertaining to types of paradigms vis-à-vis philosophies, approaches and strategies. Guba and Lincoln (1994) categorized paradigms as positivism, critical theory, and interpretivism. Cluett and Bluff (2006) referred as qualitative and quantitative. Killam (2013) included axiology or value, epistemology or knowledge, ontology or reality, and doxology or belief in types of paradigm. Guarino (1998) considered philosophies such as epistemology and ontology. While, several researchers (Newman and Benz, 1998; Seale, 1999; Saunders and Lewis, 2012) used philosophies like positivism and critical theory. The description of the term paradigm rely upon the components' such as, ontology, epistemology, and methodology belief. This makes the analysis of paradigms in the field of corruption challenging.

Articles are examined for the underlying epistemology, which guided the research. This article follows classification of research epistemologies into positivist, interpretive, and critical studies. This paper reviews 152 empirical articles. All the articles were categorized in this study by their underlying paradigmatic basis.

In a given research articles, the research paradigm was recorded, based on the noted presence of designated elements of the paradigm. Positivist are used to analyze prior fixed relationships within phenomena using structured instrumentation. Hence, to increase the predictive understanding of phenomena such studies are primarily used to test theory. The criteria for classifying studies as positivism were evidence of formal propositions, quantifiable measures of variables, hypothesis testing, model formulation, and the drawing of inferences about a phenomenon from the sample to a stated population (Orlikowski and Baroudi, 1991).

Interpretive is based on the assumption that a phenomena can be understood by accessing the meanings that participants assign to the phenomena. The criteria for selection of studies are three folded. First, the article should not include any positivist indicators described above. Second, the intention of the researcher should be to understand the deeper structure of a phenomenon within cultural and contextual situations. The primary source of understanding and investigating the phenomena is participants' perspectives. Lastly, the participants' perspective about the phenomena is examined in its natural setting, that is, where researchers do not impose any prior understating on the situation (Orlikowski and Baroudi, 1991).

Critical study mainly focus on exposing the structural contradictions within social systems, and thereby to transferring these alienating and restrictive social conditions. The criteria for classification were evidence of a critical stance towards taken-for-granted assumptions about corruption and a dialectical analysis to disclose the historical, ideological, and contradictory nature of existing social practices (Orlikowski and Baroudi, 1991).

Pragmatism is a deconstructive paradigm that promote the use of mixed method research. The researchers focus more on "what works as the truth regarding the research questions under investigation" (Teddlie and Tashakkori, 2003). It rejects the choice associated with the paradigm wars. The criteria for selection are that two type of data collected simultaneously or

with minor lag, inference is based on the analysis of both type of data, and one type of data provided a base for collection of another type of data.

The research articles did not had an explicit identification of their philosophical or paradigm foundations. The result came as no surprise that the dominant methodological orientation for most disciplines in the field of corruption followed a positivist paradigm, accounting for 81% (125/152). However, give the rising number of articles using qualitative and mixed method research and the debate on paradigm war (Guda, 1990). It is surprising that in a field of corruption, which shows a promising attitude towards mix of methodologies, few mentions of the various research methods have been used.

Definition analysis

One of the biggest challenges faced when conducting research in corruption is to provide a definition. Despite the abundance of definitions, it is generally accepted that there is no consensus on a single universally accepted definition of corruption. This complexity is due to the nature and context of the phenomena. The absence of a clear definition of corruption is observed in corruption studies regardless of whether they use empirical or non-empirical. As shown in table 9a, 9b, there is a limited progress is the number of articles defining corruption. There is a close similarity in the distribution of definition of corruption in the categories such as "16 to 20 year old publications", "21 to 25 year old publications", and "26 year and plus old publications". However, in the past 10 years there is a rise in the use of definition by the researchers. This result is as anticipated given the rise in legal and economic consequences associated with corruption and anti-corruption policies. This raises the significance of definition as to make, articulate, and defend legal decisions; definition will serve as the base or foundation.

We find an uneven split between articles defining the term corruption and the articles avoiding any definition. What is interesting is that, where 65% (99/152) of the empirical articles did not define the term corruption, only 35% (53/152) of empirical studies defined corruption. However, in the case of non-empirical articles the gap is none existing with 52% (31/60) defining corruption and 48% (29/60) of the articles without any definition of the term corruption.

Insert table 9a – Analysis of definition pattern year wise
Insert table 9b – Analysis of definition based on discipline

Dialogue about diverse definition expresses a strong concern about the efficacy of research about corruption. This concern is problematic because, without a definition, no measures of efficacy can be meaningful.

The corruption definition is describing a phenomenon but fail to present any guidance on how to manage the challenges within this phenomenon. Therefore, the challenge for us is not so much to defines, as it is to understand how corruption is socially constructed in a specific context and how to consider this when business strategies are developed. Any attempt to define corruption should in the first instance recognize that the definition can differ from country to country and can be influenced by factors such as culture, belief, norms and legal regulations. This variability contributes to the inability to formulate a single universally accepted definition.

Discussion and conclusion

A perennial problem in the field of corruption is what we mean when we talk about corruption. A long time has been spent in defining what corruption is and there are probably as many definitions of corruption as there are researchers. Some researchers have suggested changes in definition over time. There are, at present, a large number of terms, definitions and taxonomies proposed used to describe corruption. The definitions are predominantly congruent and making the lack of one universally accepted definition less problematic than it might seem at first glance. We used literature review method to provide an overview of the development of corruption. The corruption definitions are describing a phenomenon but did not provide any guidance on how to manage challenge within this phenomenon. So an additional layer of difficulty is added to the field of corruption along with the definition is to understand how corruption is socially constructed in a specific context. For example, out of 152 empirical articles only 53 articles defined corruption. The absence of definition may be due to the willingness to not select any definition or it could be a strategy to cover different phenomena. However, we argue that the diversity is so important that in fact two articles covering corruption without any clear definition may be in fact speaking of two different phenomena.

The study analyzed the focus of the different articles in terms of disciplines. The most studies business disciple in the empirical and non-empirical is ethics (60%, 128/212). We went a step further to analyze when different business discipline started working on corruption. Ten years back there were no research published on corruption in several disciplines such as, Accounting, Finance, Marketing, Operations & Information Systems. Even today, the number of articles addressing corruption as a key concept are so few that one can count on fingers. Organizational Behaviour and Entrepreneurship also fall in this category.

The study also brings to light that outside of Journal of Business Ethics relatively handful of empirical studies on corruption have been published. This is alarming because Financial Times list only the most widely read and cited journals. Besides the fact that most of the journals in the list were more general and will not have a special focus on corruption studies, the key point is issues surrounding corruption is not reaching readers in various disciplines.

The analysis of the articles published in top-tier management journals represents a significant shift in what is being emphasized in research methods. To publish in the top management journals researchers are using research strategies and methodology approach that is a convergence of measurements taken from two other distinct points. There is a significant rise of studies using secondary data sources; they involve the trade-off of high generalization and low precision control. These cross-sectional correlation studies lack evidence on reliability. This could be due to a number of reasons, such as the change in the preference of editors and review boards. Corruption is a sensitive topic, so experimental studies may be more difficult due to challenges of gaining access to sites that allow open communication on the topic. These explanations are not a justification for the trade-off.

The result also suggests that quantitative method dominates the research. Questionnaire survey was one in 20 of the 115 quantitative studies. A further four studies applied a quantitative archive method as their primary methodology. A significant increase in the use of secondary data source as survey methods can be observed over time. For example, several academics have used the Corruption Perception Index (CPI), often in combination with other data on the same macro-level. A common trend in the use of secondary data is that they are mainly used as dependent/independent variables. The researchers need to start raising questions towards statistical methodology and validity of the secondary data source. As most of them use sub-indicators to create index, the quality of these sub-indicators are never questioned. In addition, most of the sub-indicators do not focus directly on corruption, in fact corruption counts only as

one or two questions. In addition, there is no transparency in terms of definition used by these sub-indictors to define corruption, that is, does all the indicators use similar definition or they have their respective definition or they do not care to define the term. As already discussed in the article corruption means different things to different people. In addition, a definition is the foundation for measurement. The secondary data should be critically viewed and should be used with a more careful analysis in academia.

There are very few mixed method research. The closeness and the creativity of the corruption filed requires an understanding of a variety of research methods. For example, the mixed method could allow for the examination of complex problems within a single study by providing evidence to triangulated or corroborated findings with multiple sources of evidence. A mixed method research can help in adding insights and understanding in the formulation of theory and practice. By using more than one method in a study, we would be able to obtain a more complete picture of the corruption phenomena by making the most of both the world, i.e. qualitative and quantitative research method. For example, we can use qualitative interview data to add to or challenge the evidence from your qualitative questionnaire survey data. Mixed research also has many merits, such as validity and rich description accounts of real world phenomena.

In quantitative method, the trend is multiple authors instead of single author. Out of 108 quantitative articles, 66% (71/108) of the articles used two or three authors. Whereas in case of mixed methods no particular trend could be identified, the distribution of articles was approximately even among single, two, or three authors. Qualitative research was more focused on two and then three authors. In the past 15 years, the number of co-author publication has more than doubled. There are more and more articles with two and three authors in comparison to a single author. Among the reasons to explain the proliferation of multiple-author articles Katz and Martin (1997) identified reasons for the rise in the multiple author per published article. They noted that the motivation in research collaboration in scientific fields are as follows: "(1) changing patterns of funding; (2) the desire of researchers to increase their own popularity, visibility and recognition; (3) escalating demands for the rationalization of scientific manpower; (4) the increase in more complex instrumentation; (5) increased specialization; (6) the demand for higher levels of scientific inquiry;(7) the growing professionalism in academia; (8) the need to gain experience or train apprentices; (9) the desire to cross-fertilize across disciplines; and (10) the need to work in close proximity with others in order to benefit from their skills and tacit knowledge" (Katz and Martin, 1997). In this research, we observed that empirical work is dominated by multiple author, while theoretical/conceptual work generally product papers with fewer co-authors. We might argue that the number of publications have doubled approximately in the past 15 years, that is, 9% (19/212) of the total number of articles are published 15 years back were as in the last 5 years 34% (72/212) of the total number of articles are published. However, this gap is not that evident when we compare last 5 years (34%, 72/212) and 10 years (40%, 85/212). Still the trend of going for three or two author is growing at a fast pace.

Further, most quantitative research is based on macroeconomic research using various corruption indexes. Many empirical studies focused on a country level in the last decade (Mauro, 1995; Ades and Di Tella, 1999) by using the expert-perception indicators of country-level corruption (e.g. Transparency International Corruption Perception Index).

The absence of laboratory research about corruption may be due to the lack of laboratory research in the field of management with relation to lack of interest from journal editors and researchers. Studying corruption in a highly controlled environment can raise concern regarding

whether or not a real corruption behavior is being studied. However, lab experiments can be used to test the validity of specific theoretical propositions linked to corruption.

Most studies were cross-sectional, in multiple settings and correlation. The design used in the corruption research provide limited information about corruption relations over time. Although, field research fits well to answer many research questions in the field of corruption, however, lab experiments or business games could help in isolating the social and psychological process involved in the corruption issues. Alternatively, diary studies or latent growth technique (Lance, Vandenberg and Self, 2000) could be used to develop a better understanding of corruption over time. A longitudinal study would help understand the common interactions between people, organizations, and nations that leads to corruption. To date, there has been no independent examination of corruption phases using longitudinal design. More longitudinal research can help in examining taken for granted assumptions about corruption.

The results regarding sample country of origin clearly state that majority of research is based on samples from multiple countries. This helps the research in a generalization of research findings across different nations and cultures. The figures collectively shows that the field of corruption is not dominated by one topic area or theory. However, there is a prevailing set of assumptions about what constitute acceptable corruption research. This set of assumptions, that appears to influence much of the publications, is that only a handful of studies have been conducted by the researchers, i.e. majority of them have used secondary data as a measure of corruption indicators. Since, the perception of corruption varies, both morally and legally, among culture and nations. An assessment of how and where corruption research is conducted can help us move the field forward. Thus, corruption necessary stem from content dependent, where precisely many authors have stated that corruption is context dependent. What is not clear is that does researchers consciously examine these assumptions or they are taken for granted within the corruption research community.

As shown in Table 5, the questionnaire survey was used most frequently, followed by interviews and archive. Quantitative methods dominated the research method. Most studies collected data from multiple archive sources. Thus, little is known about corruption at an organizational level. Researchers could examine individuals/employees or managers perception on corruption within and outside organizations. Given this heavy reliability on archived sources, great diversity is also needed in data collection methods to increase confidence in this field of research. For instance, if research using semi-structured interviews and questionnaire survey converged as to the consequences of corruption, this would strengthen academic research.

Acknowledging the fact that current field of corruption has made significant growth, still much can be done to take advantage of the new opportunities. From this, the following recommendations emerge: (a) increase the use of primary data source, collected using qualitative method; (b) longitudinal design and lab study could be used to examine causal and dynamic corruption relations; (c) develop research in longitudinal qualitative to add depth and understating to corruption; (d) increase use of convergent or multiple data type to better understand the complexity of corruption relations and establish validity; (e) exploration of corruption relation at multiple levels other than only national, organizational, or individual; (f) greater use of interdisciplinary measures; (g) Scenario design may be used for data collection. Scenario design help in examining decision-makers in the actuals situation without many assumptions, while avoiding misleading proxy measures that are far removed from the consequences that often stem from a decision; (h) closer attention to the validity of perception measures; (i) consistent reporting definition and type of corruption and, when appropriate sample characteristics.

The review has several limitations. As we intentionally included only published journal articles and it probable that other scholarly material does not apply the same strength and limitations. In other words, unpublished papers, dissertations, book chapters, and conference papers were excluded. Unpublished research could be significant for meta-analysis to develop a better understanding of the magnitude of the relationship between different variables. This criterion of including articles that survive peer-review journals, the true extent of problem viewed by excluding unpublished research and other forms of publications. The research question was limited to methodological issues at the expense of other potential aspects in the field of corruption. This strategy of limiting the research scope was significant to address strength and weaknesses of the research objective. Despite these issues, this review summarizes methodological choices in corruption papers published in peer journals, between 1986 and 2017 across a range of disciplines and within distinct corruption topics. Overall, the review highlight that advancement has been made over time, more sophisticated methodologies and statistics need to be developed. The advancement in empirical research will permit a further increase of knowledge of corruption and will have a result better indication on to fight this crime. The hope is that in the coming year's corruption researchers will consider unique methodologies in their research.

Appendix

Table 1: Pattern of article distribution by discipline

Business disciplined focus	0-5 years	6-10 years	11-15 years	16-20 years	21-25 years	+ 26 years	Total
Accounting	6	0	1	0	0	0	7
Entrepreneurship	2	2	0	1	0	0	5
Ethics	36	58	20	11	0	3	128
Finance	7	6	2	0	0	0	15
Human Resources	2	0	1	1	0	0	4
International Business	3	7	7	2	0	0	19
Management	7	11	3	0	0	1	22
Marketing	3	0	0	0	0	0	3
Operations & Information Systems	1	0	1	0	0	0	2
Organizational Behavior	5	1	1	0	0	0	7
Total	72	85	36	15	0	4	212

Table 2: Frequency of empirical and non-empirical articles

Domain	Journal Title	Frequency (Empirical)	Percentage	Frequency (Non-empirical)	Percentage
Accounting					
	Accounting, Organizations and Society	1	1%	1	2%
	The Accounting Review	2	1%	0	0%
	Contemporary Accounting Research	1	1%	0	0%
	Journal of Accounting and Economics	2	1%	0	0%
	Journal of Accounting Research	0	0%	0	0%
	Review of Accounting Studies	0	0%	0	0%
Entrepreneurship					

	Entrepreneurship Theory and Practice	1	1%	0	0%
	Journal of Business Venturing	3	2%	0	0%
	Strategic Entrepreneurship Journal	1	1%	0	0%
Ethics					
	Journal of Business Ethics	83	55%	45	75%
Finance			0%		0%
	The Journal of Finance	2	1%	0	0%
	Journal of Financial and Quantitative Analysis	3	2%	0	0%
	Journal of Financial Economics	6	4%	0	0%
	Review of Finance	1	1%	0	0%
	Review of Financial Studies	3	2%	0	0%
Human Resources					
	Human Relations	2	1%	1	2%
	Human Resource Management	1	1%	0	0%
International Business					
	Journal of International Business Studies	16	11%	3	5%
Management					
	Academy of Management Journal	1	1%	0	0%
	Academy of Management Review	0	0%	6	10%
	Administrative Science Quarterly	0	0%	0	0%
	Journal of Management	2	1%	1	2%
	Journal of Management Studies	2	1%	1	2%
	MIT Sloan Management Review	1	1%	0	0%
	Strategic Management Journal	8	5%	0	0%

Marketing					
	Journal of Consumer Psychology	0	0%	0	0%
	Journal of Consumer Research	1	1%	0	0%
	Journal of Marketing	0	0%	0	0%
	Journal of Marketing Research	0	0%	0	0%
	Journal of the Academy of Marketing Science	0	0%	0	0%
	Marketing Science	1	1%	1	2%
Operations & Information Systems					
	Information Systems Research	0	0%	0	0%
	Journal of Management Information Systems	0	0%	0	0%
	Journal of Operations Management	0	0%	0	0%
	Management Science	0	0%	0	0%
	Manufacturing & Service Operations Management	0	0%	0	0%
	MIS Quarterly	2	1%	0	0%
	Operations Research	0	0%	0	0%
	Production and Operations Management	0	0%	0	0%
Organizational Behaviour					
	Journal of Applied Psychology	0	0%	0	0%
	Organization Science	2	1%	1	2%
	Organization Studies	3	2%	0	0%
	Organizational Behavior and Human Decision Processes	1	1%	0	0%
Total		152	100%	60	100%

Table 3: Distribution pattern of articles by age

	0-5 yrs	6-10 yrs	11-15 yrs	16-20 yrs	21-25 yrs	26+ yrs
Qualitative Articles	11	8	4	3	0	1
Quantitative Articles	45	42	16	4	0	1
Mixed Method Articles	6	6	2	2	0	1
Total	62	56	22	9	0	3

Total number of empirical studies within categories (N=152).

Table 4: Authorship patter of articles

	Single Author	Multiple Authors				
Methodology or approach	1	2	3	4	5 or more	Total
Qualitative	7	10	8	2	0	27
Quantitative	19	37	34	16	2	108
Mixed methods	5	6	6	0	0	17
Non-empirical	34	9	12	4	1	60

Total number of studies within categories (N=212).

Table 5: Time horizon, data collection and level of analysis

Study characteristics	0-5 years	6-10 years	11-15 years	16-20 years	21-25 years	+ 26 years	Total
Time horizon							
Cross-sectional	57	53	21	8	0	3	142
Longitudinal	5	3	1	1	0	0	10
Primary Data collection methods							
Interview	5	4	1	0	0	0	10
Questionnaire survey	5	9	4	1	0	1	20
Multiple data collection methods	4	4	2	1	0	1	12
Others	2	2	0	1	0	1	6
Levels of analysis							
Individual	12	12	3	1	0	2	30
Firm	11	14	2	6	0	0	33
National	8	13	9	1	0	0	31
National & Individual	2	1	0	0	0	0	3
Firm & Individual	3	1	0	0	0	1	5

Firm & National	17	14	7	1	0	0	39
Firm, Individual, & National	1	0	1	0	0	0	2
Industry	0	1	0	0	0	0	1
State & Firm	2	0	0	0	0	0	2
State level	1	0	0	0	0	0	1

Total number of empirical studies within categories (N=152).

Table 6: Features of measures of corruption indexes (CPI & WBES)

Index source	Definition of corruption	Information sources	Coverage	Interpretation
Corruption perception Index (CPI)	The abuse of entrusted power for private gain.	Index relying on surveys and indicators from various sources. The list of sources that are considered subject to availability for each country. In 2017, Transparency International used 13 sources as the basis for its country scores. Sources included the African Development Bank, the World Bank, a survey of executives at the World Economic Forum, country risk ratings from the Economist Intelligence Unit and country risk ratings from Global Insight, among others.	The perceived levels of public sector corruption in 180 countries/territories around the world.	Cross-sectional ranking of perception of corruption focusing on business environment
World Bank Enterprise Survey (WBES)	The indicator captures the prevalence of different types of bribery.	An Enterprise Survey is a firm-level survey of a representative sample of an economy's private sector. The surveys cover a broad range of business environment topics including access to finance, corruption, infrastructure, crime, competition, and performance measures. Private contractors collect the data on the	135,000 interviews in 139 countries	Quantitative comparison of bribe prevalence and cost

		behalf of the World Bank.		

Table 7: Geographical distribution pattern

Geographic scope	Number of countries	Frequency (%)
North America		
Canada	3	2%
USA	19	13%
Mexico	2	1%
South America		0%
Brazil	1	1%
Others	2	1%
Europe	15	10%
UK	2	1%
Asia		0%
China	8	5%
India	5	3%
Others	6	4%
Russia	3	2%
Africa	8	5%
Rest of the world	4	3%
Multiple Countries	74	49%
Not specified	0	0%
Total	152	100%

Total number of empirical studies within categories (N=152).

Table 8: Statistical techniques used to analyze data

Meta-theme and Themes	Frequency	%
Simple inferential statistics		
Correlation (e.g. Pearson, Spearman rank order)	98	64%
T-test (e.g. independent t-test, correlation t test)	12	8%
Chi-Square	22	14%
Technique examining multiple relations with both independent variables and dependent variables		
Structural equation modelling (e.g. structure models)	9	6%

Path analysis	3	2%
Technique examining structure of data		
Cluster analyses	2	1%
Exploratory factor analysis	7	5%
Confirmatory factor analysis	6	4%
Principal component analysis	4	3%
Regression		0%
Ordinary least squares	10	7%
Hierarchal regression	3	2%
Logistic regression	4	3%
Panel regression	1	1%
Linear regression	3	2%
Logit regression	3	2%
Multiple regression	11	7%
Probit regression	2	1%
Binomial regression	2	1%
Ordinary Regression	49	32%
Analysis of variance		0%
ANOVA	8	5%
MANOVA	5	3%
ANCOVA	1	1%
MANCOVA	2	1%

Total number of empirical studies within categories (N=152).

Table 9a: Analysis of definition patter year wise

	Empirical			Non-empirical			Total
Year	Definition	No definition	Total	Definition	No definition	Total	
0-5	16	46	62	4	6	10	72
06_10	25	31	56	19	10	29	85
11_15	9	13	22	7	7	14	36
16_20	3	6	9	1	5	6	15
21_25	0	0	0	0	0	0	0
25 plus	0	3	3	0	1	1	4
	53	99	152	31	29	60	212

Table 9b: Analysis of definition based on discipline

	Empirical			Non-empirical			Total
Discipline	Definition	No definition	Total	Definition	No definition	Total	
Accounting	1	5	6	0	1	1	7
Entrepreneurship	1	4	5	0	0	0	5
Ethics	29	54	83	21	24	45	128
Finance	2	13	15	0	0	0	15
Human Resources	0	3	3	0	1	1	4
International Business	12	4	16	2	1	3	19
Management	6	8	14	7	1	8	22
Marketing	0	2	2	0	1	1	3
Operations & Information Systems	1	1	2	0	0	0	2
Organizational Behaviour	1	5	6	1	0	1	7
Total	53	99	152	31	29	60	212

Table 10: Frequency of occurrence of the abstract's moves

Move	Accounting	Entrepreneurship	Ethics	Finance	Human Resources	International Business	Management	Marketing	Operations & Information Systems	Organizational Behaviour
1-Introduction	4	3	114	12	3	14	15	3	2	7
2-Purpose	2	2	61	3	3	13	11	1	1	3
3-Methods	2	3	68	6	1	9	13	1	2	4
4-Result	6	4	74	10	2	16	14	1	1	5
5-Conclusion	5	2	112	14	4	16	16	3	2	7

Total number of studies within categories (N=212).

References

Ades, A. and Di Tella, R. (1999) 'Rents, Competition, and Corruption', *The American Economic Review*, 89(4), pp. 982–993.

Alavi, M. and Carlson, P. (1992) 'A review of MIS research and disciplinary development', *Journal of Management Information Systems*, 8(4), pp. 45–62.

Aluko, F. S. (2006) 'Social science research: a critique of quantitative and qualitative methods and proposal for an eclectic approach', *IFE Psychologia: An International Journal*, 14(1), pp. 198–210.

Austin, J. T., Scherbaum, C. A. and Mahlman, R. A. (2002) 'History of research methods in industrial and organizational psychology: Measurement, design, analysis', *Handbook of research methods in industrial and organizational psychology*, pp. 3–33.

Bhatia, V. (1993) *Analyzing Genre: Language use in professional contexts*. London: Pergamon.

Bryman, A. and Bell, E. (2015) *Business research methods*. Oxford University Press, USA.

Campos, J. E. and Pradhan, S. (2007) *The Many Faces of Corruption: Tracking Vulnerabilities at the Sector Level*. World Bank Publications.

Casper, W. J. *et al.* (2007) 'A review of research methods in IO/OB work-family research.', *Journal of Applied Psychology*, 92(1), p. 28.

Cluett, E. R. and Bluff, R. (2006) *Principles and practice of research in midwifery*. Elsevier Health Sciences.

Colquitt, J. A. and Zapata-Phelan, C. P. (2007) 'Trends in theory building and theory testing: A five-decade study of the Academy of Management Journal', *Academy of Management Journal*, 50(6), pp. 1281–1303.

Creswell, J. W. *et al.* (2003) 'Advanced mixed methods research designs', *Handbook of mixed methods in social and behavioral research*, 209, p. 240.

Dean, M. A., Shook, C. L. and Payne, G. T. (2007) 'The past, present, and future of entrepreneurship research: Data analytic trends and training', *Entrepreneurship Theory and Practice*, 31(4), pp. 601–618.

Dos Santos, M. B. (1996) 'The textual organization of research paper abstracts in applied linguistics', *Text-Interdisciplinary Journal for the Study of Discourse*, 16(4), pp. 481–500.

Guarino, N. (1998) *Formal ontology in information systems: Proceedings of the first international conference (FOIS'98), June 6-8, Trento, Italy*. IOS press.

Guba, E. G. and Lincoln, Y. S. (1994) 'Competing paradigms in qualitative research', *Handbook of qualitative research*, 2(163–194), p. 105.

Hyland, K. (2000) 'Disciplinary discourses: Social interactions in academic writing: Harlow: Pearson Education Limited'.

Katz, J. S. and Martin, B. R. (1997) 'What is research collaboration?', *Research policy*, 26(1), pp. 1–18.

Killam, L. (2013) *Research terminology simplified: Paradigms, axiology, ontology, epistemology and methodology*. Laura Killam.

Klein, K. J., Dansereau, F. and Hall, R. J. (1994) 'Levels issues in theory development, data collection, and analysis', *Academy of Management review*, 19(2), pp. 195–229.

Lancaster, T. D. and Montinola, G. R. (2001) 'Comparative political corruption: Issues of operationalization and measurement', *Studies in Comparative International Development*, 36(3), pp. 3–28.

Lance, C. E., Vandenberg, R. J. and Self, R. M. (2000) 'Latent growth models of individual change: The case of newcomer adjustment', *Organizational behavior and human decision processes*, 83(1), pp. 107–140.

Leys, C. (1965) 'What is the Problem about Corruption?', *The Journal of Modern African Studies*, 3(2), pp. 215–230.

Mària, J. F. and Arenas, D. (2009) 'Societal ethos and economic development organizations in Nicaragua', *Journal of Business Ethics*, 88(SUPPL. 2), pp. 231–244. doi: 10.1007/s10551-009-0290-y.

Mauro, P. (1995) 'Corruption and Growth', *The Quarterly Journal of Economics*, 110(3), pp. 681–712. doi: 10.2307/2946696.

McLeod, M. S., Payne, G. T. and Evert, R. E. (2016) 'Organizational ethics research: A systematic review of methods and analytical techniques', *Journal of Business Ethics*, 134(3), pp. 429–443.

Newman, I. and Benz, C. R. (1998) *Qualitative-quantitative research methodology: Exploring the interactive continuum*. SIU Press.

Orlikowski, W. J. and Baroudi, J. J. (1991) 'Studying information technology in organizations: Research approaches and assumptions', *Information systems research*, 2(1), pp. 1–28.

Pho, P. D. (2008) 'Research article abstracts in applied linguistics and educational technology: A study of linguistic realizations of rhetorical structure and authorial stance', *Discourse studies*, 10(2), pp. 231–250.

Podsakoff, P. M. and Dalton, D. R. (1987) 'Research methodology in organizational studies', *Journal of management*, 13(2), pp. 419–441.

Rama, M. (2012) 'Corporate Governance and Corruption: Ethical Dilemmas of Asian Business Groups', *Journal of Business Ethics*, 109(4), pp. 501–519. doi: 10.1007/s10551-011-1142-0.

Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research methods for business students*. Pearson education.

Saunders, M. N. and Lewis, P. (2012) *Doing research in business & management: An essential guide to planning your project*. Pearson.

Scandura, T. A. and Williams, E. A. (2000) 'Research methodology in management: Current practices, trends, and implications for future research', *Academy of Management journal*, 43(6), pp. 1248–1264.

Seale, C. (1999) 'Quality in qualitative research', *Qualitative inquiry*, 5(4), pp. 465–478.

Shook, C. L. *et al.* (2003) 'Data analytic trends and training in strategic management', *Strategic Management Journal*, 24(12), pp. 1231–1237.

Stone-Romero, E. F., Weaver, A. E. and Glenar, J. L. (1995) 'Trends in research design and data analytic strategies in organizational research', *Journal of Management*, 21(1), pp. 141–157.

Swales, J. (1990) *Genre analysis: English in academic and research settings*. Cambridge University Press.

Swales, J. M. (1981) 'Aspects of article introductions (Aston ESP research rep. no. 1). Birmingham, England: The University of Aston', *Language Studies Unit*.

Taylor III, L. A., Goodwin, V. L. and Cosier, R. A. (2003) 'Method Myopia: Real or Imagined?', *Journal of Management Inquiry*, 12(3), pp. 255–263.

Teddlie, C. and Tashakkori, A. (2003) 'Major issues and controveries inthe use of mixed methods in the social and behvioral sciences', *Handbook of mixed methods in social & behavioral research*, pp. 3–50.

Yu, A. *et al.* (2012) 'The landscape of family business outcomes: A summary and numerical taxonomy of dependent variables', *Family Business Review*, 25(1), pp. 33–57.