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Whistleblowing on accounting-related misconduct: A synthesis of the literature

Gladys Lee[a,*], Xinning Xiao[b]

[a] The University of Melbourne, Australia
[b] Monash University, Australia

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ABSTRACT

Whistleblowers have been credited for uncovering financial scandals in companies globally, including Enron, Olympus Corporation, and WorldCom. Despite increasing support and incentives for whistleblowing, there generally remains reluctance to blow the whistle. Thus, the purpose of this study is to review: (1) the determinants of internal and external whistleblowing on accounting-related misconduct, (2) U.S. whistleblowing legislation on accounting-related misconduct and related research, and (3) the effects of whistleblowing on firms and whistleblowers. Within each area, suggestions for future research are offered.

1. Introduction

Whistleblowing is the practice of disclosing questionable practices involving an organization or its members, internally or externally (Chiasson, Johnson, & Byington, 1995). Whistleblowing is an effective mechanism to detect fraud (Association of Certified Fraud Examiners, 2014; Deloitte Forensic Center, 2010; KPMG, 2010) and the accounting profession plays an important role in the whistleblowing process. Accountants and auditors are likely to witness accounting-related misconduct, thereby presenting them the opportunity to blow the whistle on misconduct (Liyanarachchi & Adler, 2011; Miethe & Rothschild, 1994). Regulators have acknowledged the importance of whistleblowers in unraveling accounting-related misconduct, stating "whistleblowers who report their concerns to the SEC [Securities and Exchange Commission] perform a great service to investors and help us combat fraud" (SEC, 2014) and "insiders may hold the key to helping our investigators unlock intricate fraudulent schemes" (SEC, 2015). Whistleblowing on accounting-related misconduct has become an important topic and receives attention in the mainstream media (Morgenson, 2017; Vaughan, 2017), in practitioner journals (Andrews & Leblanc, 2013; Archambeault & Webber, 2015), and, increasingly, in scholarly research journals (e.g. Carcello, Hermanson, & Ye, 2011; Trompeter, Carpenter, Desai, Jones, & Riley Jr, 2012 call for more research on whistleblowing in the accounting context).

Although there are prior reviews of the whistleblowing literature (see for e.g. Mesmer-Magnus & Viswesvaran, 2005; Near, 1992, 2005; Miceli, Near, & Dworkin, 2008; Near & Miceli, 1996; Vadera, Aguilera, & Caza, 2009), it is important to understand whistleblowing in the accounting context because different types of wrongdoings are inherently different in nature and therefore result in different whistleblowing processes (Dandekar, 1990; Near, Rehg, Van Scotter, & Miceli, 2004).[1] The whistleblowing literature in the

* Corresponding author at: Department of Accounting Level 8, 198 Berkeley St, The University of Melbourne, VIC 3010, Australia.
E-mail address: gladys.lee@unimelb.edu.au (G. Lee).

[1] Accounting-related misconduct is distinct from other forms of misconduct such as robbery, sexual harassment, safety violation or environmental pollution, in that they are often less visible, more complex, and there is typically no physical harm is caused (Croall, 2001). Near et al. (2004) find that theft, discrimination, waste or safety issues are less likely to be reported than misconduct relating to sexual harassment, legal violation and mismanagement. There is also specific legislation relating to whistleblowing on accounting-related misconduct, this is discussed in Section 5 of this review.

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accounting context is diverse with rapid growth in recent years. This growth has been driven by the important implication of whistleblowing for firms and its stakeholders as well as the heightened concern about retaliation against whistleblowing. The topic has been examined through a variety of theoretical lens, using archival (see for e.g. Bowen, Call, & Rajgopal, 2010; Call, Kedia, & Rajgopal, 2016; Lee & Fargher, 2017), experimental (see for e.g. Arnold & Ponemon, 1991; Boo et al., 2016; Kaplan, Pany, Samuels, & Zhang, 2009b ; Seifert, Sweeney, Joireman, & Thornton, 2010) and survey research methods (see for e.g. Alleyne, Charles-Soverall, Broome, & Pierce, 2017; Reckers-Sauciuc & Lowe, 2010; Schultz, Johnson, Morris, & Dyrnes, 1993). The whistleblowing literature in the accounting context not only represents a great variety of perspectives, but also covers a wide range of research questions and issues. Despite the importance and breadth of whistleblowing literature in the accounting context, no comprehensive review of this literature is available.[2] The objective of paper is to synthesize the substantial volume of empirical work in the whistleblowing literature in the accounting context. This paper also attempts to identify critical gaps in our current knowledge in this area and to suggest potentially fruitful areas for future research.

Specifically, this paper reviews whistleblowing literature concerning the determinants, legislation, and effects of whistleblowing on accounting-related misconduct. First, this review synthesizes research on the factors that affect the decision to blow the whistle internally *and* externally on accounting-related misconduct. A whistleblower can report misconduct internally (internal whistleblowing) or externally (external whistleblowing). Both channels of whistleblowing have important but different implications for firms and its stakeholders. Internal whistleblowing is preferable to firms because it provides an opportunity for management to correct misconduct in a timely manner and minimize the costs of misconduct (Barnett, Cochran, & Taylor, 1993; Berry, 2004). In contrast, firms subject to an external whistleblowing allegation potentially face negative publicity, regulatory investigations, legal liability (Barnett et al., 1993). External whistleblowing is preferable to external parties (such as investors, regulatory agencies, and the public) who would otherwise not be aware of misconduct and is particularly valuable in cases where internal whistleblowing did not result in corrective action. Given that internal and external whistleblowing have different implications for the organization (Barnett et al., 1993; Paul & Townsend, 1996), understanding the factors associated with both decisions is important to firms, investors and regulators. This review thus synthesizes the determinants of internal and external whistleblowing.

Second, this paper reviews U.S. whistleblowing legislation on accounting-related misconduct. In the U.S., the passage of the Sarbanes-Oxley (SOX) Act in 2002 introduced provisions to protect corporate whistleblowers and provisions that mandate companies to establish an internal whistleblowing system. The Dodd-Frank Act, enacted in 2010, further introduced a whistleblowing rewards program that provides monetary incentives for corporate whistleblowers. Researchers have examined how these regulations alter whistleblowing behavior, and this review synthesizes research in this area.

Third, this paper synthesizes research on the effects of whistleblowing on accounting-related misconduct. A whistleblowing event affects both the firm involved in the misconduct and the whistleblower. This review summarizes research findings on the firm-level consequences of a whistleblowing event. This review also examines the effects of whistleblowing on whistleblowers, such as whistleblowing retaliation.[3] The Ethics Resource Center (2014, p. 9) highlights that “the rate of retaliation is alarmingly high … [and] reducing retaliation is one of the most important challenges facing businesses as they strive for strong ethics culture.” To be able to effectively protect whistleblowers who report accounting-related misconduct, it is important to understand the factors that make a whistleblower more or less susceptible to retaliation. This review thus summarizes research findings on the factors associated with whistleblowing retaliation.

The remainder of this review is organized as follows. Section 2 describes the scope of this review. Section 3 describes the whistleblowing process. Section 4 reviews research on the factors associated with internal and external whistleblowing, and offers suggestions for future research. Section 5 discusses U.S. legislation relating to whistleblowing on accounting-related misconduct and related research. Suggestions for future research are provided. Section 6 reviews research on the effects of whistleblowing on the firm and the whistleblower, and offers suggestions for future research. Section 7 concludes this review.

2. Scope of review

The scope of this review includes empirical whistleblowing research published in peer-reviewed journals in the English language. To identify such studies, an internet search using the Google search engine was conducted using terms such as “whistleblowing” and “whistle-blowing”. Theses, dissertations, or working papers that were not published in peer-reviewed journals were excluded. Because the purpose of this review is to provide a comprehensive review of the whistleblowing in the accounting context, the scope of this review includes whistleblowing studies published in accounting journals as well as studies published in non-accounting journals that examined whistleblowing on accounting-related misconduct. The search resulted in 59 studies from years 1991 to 2017. A list of the empirical studies reviewed for this review and their key findings are presented in Table 1.

[2] A related paper is a recent review by Gao and Brink (2017) which summarizes accounting research on whistleblowing in experimental studies. Our review relates to but differs from Gao and Brink (2017) by expanding the scope of review to include all types of empirical work on whistleblowing in the accounting context. Our review also differs from Gao and Brink (2017) by reviewing other aspects of whistleblowing research including the legislative perspectives of whistleblowing and the effects of whistleblowing on firms in addition to the determinants of whistleblowing.

[3] Whistleblowing retaliation is defined as an undesirable action taken against a whistleblower who reported wrongdoing internally or externally (Near & Miceli, 2008; Rehg, Miceli, Near, & Van Scotter, 2008).

Table 1
Studies that examine whistleblowing on accounting-related misconduct.

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
Alleyne et al. (2017)	Financial fraud, identified as including embezzlement, misappropriation of assets, corruption and bribery	Survey	282 Barbadian accountants.	• Greater personal responsibility to blow the whistle increases internal but not external whistleblowing intentions. • Greater personal costs of whistleblowing reduce internal and external whistleblowing intentions. • Gender, work experience, ethics training and perceived seriousness of wrongdoing do not affect internal or external whistleblowing intentions.	Internal, External
Alleyne et al. (2016)	Violation of Code of Ethics	Survey	226 Barbadian accountants.	• Perceived organizational support decreases external whistleblowing intentions but does not affect internal whistleblowing intentions. • Positive attitude toward whistleblowing increases internal but not external whistleblowing. There is a significant interaction between positive attitude toward whistleblowing and greater perceived organizational support which increases internal whistleblowing intentions and decreases external whistleblowing intentions. • Greater perceived behavioral control increases internal and whistleblowing intentions. There is a significant interaction between greater perceived behavioral control and greater perceived organizational support which increases internal whistleblowing intentions and decreases external whistleblowing intentions. • Greater commitment to auditor independence increases internal but not external whistleblowing intentions. There is a significant interaction between greater commitment to auditor independence and greater perceived organizational support which increases internal but not external whistleblowing intentions. • Greater perceived responsibility for reporting increases internal but not external whistleblowing intentions. There is a significant interaction between greater perceived responsibility for reporting and greater perceived organizational support which increases internal but not external whistleblowing intentions. • Greater perceived personal cost of reporting decreases internal but not external whistleblowing intentions. There is a significant interaction effect between greater perceived personal cost of reporting and greater perceived organizational support which increases both internal and external whistleblowing intentions. • Gender and tenure has no effect on internal and external whistleblowing intentions.	Internal, External
Andon et al. (2016)	Fraudulent financial reporting	Experiment	80 U.S. accountants.	• External whistleblowing intentions are higher when there are financial incentives provided by regulators. • Perceived seriousness of the wrongdoing increases accountants' intention to blow the whistle externally. • There is a significant interaction between the provision of financial incentives and perceived seriousness of the wrongdoing on external whistleblowing intentions. External whistleblowing intentions are higher when perceived seriousness of the wrongdoing is higher, regardless of whether financial incentives are provided or not. However, when perceived seriousness of the wrongdoing is lower, the provision of financial incentives results in higher external whistleblowing intentions. • External whistleblowing intentions are higher when accountants are older and have taken more ethics training. • Females are more likely to report compared to males.	External
		Experiment			General

(continued on next page)

Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
Arnold and Ponemon (1991)	Fraudulent financial reporting		106 internal auditors that attended professional training program in the U.S.	• Higher level of moral reasoning increases whistleblowing intentions. • The threat of retaliation reduces whistleblowing intentions. • Auditors are influenced by the threat of retaliation relating to a penalty to the whistleblower rather than a penalty to the whistleblowers' affiliates.	
Baloria et al. (2017)	N/A	Archival	188 pairs of lobbying and non-lobbying firms.	• Firms with weaker whistleblowing program are more likely to lobby against the whistleblowing program proposed in the Dodd-Frank Act. • Firms that lobbied against whistleblower legislation experienced positive stock market returns around events linked to the implementation of such provisions.	N/A
Berger et al. (2017)	Fraudulent violation of the government contract.	Experiment	166 Masters of Accounting students in two large North American universities.	• Participants are more likely to report fraud when regulators provide financial rewards. • Compared to the condition where financial rewards are not available, participants are less likely to report fraud and are more likely to delay reporting of fraud when financial rewards are available but the size of the fraud is less than the prescribed minimum threshold.	External
Boo et al. (2016)	Fraudulent financial reporting	Experiment	123 Singaporean auditors.	• A penalty-based career-related incentive scheme increases auditors' whistleblowing intentions. • In a reward-based career-related incentive scheme, auditors' whistleblowing intentions are lower when there is presence of a close working relationship with the wrongdoer than in its absence.	Internal
Bowen et al. (2010)	Earnings management, overbilling, improper disclosure, insider trading, securities law violation, misappropriation of assets, price-fixing, tax fraud, other accounting-related allegations and corporate governance issues	Archival	218 U.S. external whistleblowing cases from years 1989 to 2004. Of which, 81 are obtained from press articles and 137 are whistleblowing retaliation complaints filed with the OSHA under §806 of SOX Act.	• Firms subject to external whistleblowing events are larger, growing more rapidly, have relatively poorer internal communication channels, and relatively weak external monitoring. • Firms that experienced external whistleblowing are associated with lower subsequent stock market performance, weaker subsequent operating performance, and a higher likelihood of a subsequent lawsuit. • Firms that experienced external whistleblowing are more likely to improve subsequent corporate governance by reducing the size of their board, increasing board independence, replacing the CEO and having less busy board members when such firms are targeted by a public external whistleblowing event (i.e. whistleblowing to the press), but not when targeted by less public external whistleblowing (i.e. whistleblowing to the OSHA).	External
Brennan and Kelly (2007)	Financial statement fraud, improper financial practices, misappropriation of cash	Survey	100 accountancy students of the Institute of Chartered Accountants in Ireland.	• Training increases confidence in internal reporting structures but not external reporting structures. • Larger firms are more likely to provide formal reporting structures. • A larger firm size increases confidence in internal reporting structures but not in external reporting structures. • Awareness of legislative protection for whistleblowing does not affect confidence in internal or external reporting structures. • Greater severity of misconduct increases whistleblowing intentions.	Internal, External
Brink et al. (2017)	Fraudulent financial reporting and insider trading	Experiment	82 MBA students from a major U.S. university.	• Perceived responsibility for reporting increases internal but not external whistleblowing intentions. • Internal reporting intentions are greater when misconduct involves insider trading compared to fraudulent financial reporting. Perceived responsibility for reporting mediates the relationship between the type of misconduct and internal reporting intentions. The type of misconduct does not affect external reporting intentions.	Internal, External

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Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
				• A greater level of perceived seriousness is associated with higher external but not internal whistleblowing intentions. • A high anxiety orientation toward money increases internal whistleblowing intentions but does not affect external whistleblowing intentions. • Distrust of money increases internal and external whistleblowing intentions. • A high power orientation toward money decreases internal and external whistleblowing intentions.	
Brink et al. (2013)	Fraudulent financial reporting	Experiment	72 MBA students from two major U.S. universities.	• Greater strength of evidence of misconduct and the presence of an internal incentive increase the likelihood of reporting internally rather than to the SEC. • When evidence strength of misconduct is weak, the presence of an internal incentive decreases reporting intentions to the SEC.	Internal, External
Brown et al. (2016)	Fraudulent accounting activity	Survey	284 professional accountants.	• Positive attitudes toward whistleblowing and greater perceptions of control over whistleblowing are positively associated with whistleblowing intentions. • Females are more likely to blow the whistle compared to males. • Participants at senior management level have significantly higher whistleblowing intentions.	General
Call et al. (2016)	Financial/accounting fraud	Archival	63 U.S. external whistleblowing cases from years 1992 to 2010 obtained from press articles.	• Firms that grant more stock options to rank and file employees are less likely to experience an external whistleblowing event. • Firms that grant more unvested stock options to rank and file employees are less likely to experience an external whistleblowing event. • The likelihood of external whistleblowing is higher when firms are older, reputable, have more internal control weaknesses, operate in a qui tam industry and when fraud has a longer duration.	External
Call et al. (2017)	Financial/accounting fraud	Archival	148 external whistleblowing cases: 110 are cases filed with the OSHA, 13 are qui tam cases and 25 are enforcement actions.	• Whistleblowing leads to higher regulatory penalties and longer enforcement proceedings.	External
Casal and Zalkind (1995)	General – misconduct is defined as wrongdoing or wrongful act	Survey	219 members of the Institute of Management Accountants.	• Greater responsibility to raise questions on unethical or illegal behaviors, support from supervisor and alternative job opportunities reduce the negative consequences of reporting (as captured by experiencing threats or retaliation).	General
Curtis (2006)	Violation of Code of Professional Conduct	Experiment	220 senior accounting students enrolled in an auditing course.	• Negative affect and greater perceived personal cost reduce the likelihood of reporting. • The relationship between seriousness of misconduct on reporting intentions is mediated by negative affect. • The relationship between personal responsibility on reporting intentions is mediated by negative affect.	Internal
Curtis and Taylor (2009)	Violation of either auditing standards or the Code of Professional Conduct	Experiment	122 auditors attending an international firm training program.	• The likelihood of reporting is lower under a disclosed identity format; there is no significant difference between anonymous and protected identity formats. • There is a greater likelihood of reporting when the misconduct is a violation of audit standards than a professional code violation. • Auditors are more likely to report when they have greater trust in the firm to investigate the report, an internal locus of control and a higher level of moral intensity. • Trust is negatively correlated to reporting format such that trust becomes more important when identity protection declines.	Internal
Curtis et al. (2012)	Violation of auditing standards and Code of Professional Conduct	Experiment	527 students from China, Japan, Mexico and the U.S.	• Whistleblowing intentions are higher when participants are older, have greater justice perceptions	Internal

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Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
				and perceive lower power distance between the whistleblower and wrongdoer. ● Gender does not affect reporting intentions.	
Dyck et al. (2010)	Securities violations covered under the provisions of the Federal 1933/1934 Exchange Acts.	Archival	216 fraud cases for the period 1996 to 2004, data obtained from Securities Class Action Clearinghouse database.	● Reputational incentives to blow the whistle in general are weak, except for journalists. Journalists who blew the whistle were more likely to obtain a promotion than journalists that were non-whistleblowers. ● Compared to auditors that were non-whistleblowers, auditors who blew the whistle were more likely to lose the account of the firm involved in perpetrating fraud, and did not gain significantly more new accounts. ● Monetary incentives provided by regulators increase the likelihood of external whistleblowing by employees.	External
Erkmen et al. (2014)	Fake invoices; fraudulent financial reporting and questionable bank account	Survey	116 accounting professionals.	● Working circumstances, total tenure, age, membership in occupational association and number of customers do not affect whistleblowing intentions. ● Older accounting professionals are more likely to report fraud that involves fraudulent financial reporting. ● Female accounting professionals are more likely to blow the whistle than males.	Internal
Gao et al. (2015)	Fraudulent payments	Experiment	369 business students at a U.S. public university.	● Reporting intentions are higher when others are aware of the wrongdoing, when misconduct is perceived to be more serious, there are greater personal costs and when an externally (compared to an internal) administered hotline is provided. ● Reporting intentions are lower when the wrongdoer is more powerful.	Internal
Guthrie and Taylor (2017)	Misappropriation of assets	Experiment	295 U.S. adults with current or prior work experience.	● When the threat of retaliation is low compared to high, whistleblowing intentions are higher, and this relationship is mediated by organizational trust. ● Monetary incentives provided by the firm moderate the relationship between retaliation threat and trust such that when retaliation threat is low, monetary incentives increases organizational trust, and in turn result in higher whistleblowing intentions. However when retaliation threat is high, monetary incentives do not affect trust. ● When threat of retaliation is high and monetary incentives are present, intrinsically motivated individuals report lower levels of trust compared to extrinsically motivated individuals.	Internal
Guthrie et al. (2012)	Fraudulent financial reporting	Experiment	45 CAEs and 39 deputy CAEs from U.S. organizations.	● CAEs rate anonymous whistleblowing reports to be significantly less credible than non-anonymous reports. ● CAEs assess lower credibility ratings for the reports alleging wrongdoing by the exploitation of substantial weaknesses in internal controls (compared to when wrongdoing occurred due to circumvention of internal controls), but allocate more resources to investigating these allegations.	Internal
Hwang et al. (2008)	General – misconduct described as “illegal, immoral or illegitimate practices”	Survey	439 participants from CPA firms, corporations, professional associations and universities in Taiwan	● Reporting intentions are higher when individuals perceive greater severity of wrongdoing and have a greater sense of professional ethics and morality. ● Reporting intentions are lower when there is good personal relationship with the wrongdoer and when there is a fear of media attention and retaliation.	General
Kaplan & Schultz (2007)	Misappropriation of assets, fraudulent financial reporting and misrepresentation	Experiment	73 MBA students	● Reporting intentions are lower for anonymous reporting channel compared to non-anonymous reporting channel. ● Internal audit quality does not affect reporting intentions.	Internal
Kaplan and Whitecotton (2001)	Violation of Code of Professional Conduct	Experiment	73 audit seniors in a large international CPA firm.	● Reporting intentions of auditors are stronger when personal costs of reporting are perceived to be lower and when personal responsibility for reporting is perceived to be higher.	Internal

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Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
				• Professional commitment is not associated with reporting intentions.	
Kaplan et al. (2009a)	Fraudulent financial reporting	Experiment	113 MBA students from a major university.	• Reporting intentions to an anonymous reporting channel are higher for females compared to males. • Gender does not influence reporting intentions to a non-anonymous reporting channel. • Neither gender of the perpetrator nor the interaction between participants' gender and gender of perpetrator affect reporting intentions to anonymous or non-anonymous reporting channel. • Male and female participants differ in the extent to which they perceive the reduction in personal costs of an anonymous compared to a non-anonymous reporting channel and that reduction in personal costs mediates the relationship between participant's gender and reporting intentions to an anonymous reporting channel.	Internal
Kaplan et al. (2009b)	Misappropriation of assets and fraudulent financial reporting	Experiment	91 MBA students from a major university.	• Intentions to report fraud are greater when the fraud is the misappropriation of assets compared to financial statement fraud. • Intentions to report fraud are greater in the weaker procedural safeguards compared to stronger procedural safeguards condition. • Reporting intentions are greater under an internally administered hotline as compared to an externally administered anonymous hotline.	Internal
Kaplan et al. (2012)	Fraudulent financial reporting	Experiment	65 MBA students from a major university.	• Negative outcomes of a previous non-anonymous whistleblower (occurrence of retaliation against that person compared to no negative repercussions to the previous transgressor) reduce participants' non-anonymous reporting intentions, but do not affect participants' anonymous reporting intentions. • When there are no previous negative whistleblowing outcomes, participants' reporting intentions do not differ between the anonymous and non-anonymous channels.	Internal
Kaplan et al. (2010)	Misappropriation of assets and fraudulent financial reporting	Experiment	77 MBA students from a major university.	• When there has been an unsuccessful social confrontation with the transgressor, reporting intentions to the transgressor's supervisor are stronger than to an internal auditor. In the absence of social confrontation with the transgressor, there is no difference in reporting intentions to the transgressor's supervisor and the internal auditor. • The type of fraudulent act does not influence reporting intentions or the relation between social confrontation and reporting intentions.	Internal
Kaplan et al. (2011)	Misappropriation of assets and fraudulent financial reporting	Experiment	207 MBA students from a major university.	• Individuals are more likely to report to an inquiring auditor compared to a non-inquiring auditor. • Reporting intentions to an internal auditor are stronger than their reporting intentions to an external auditor. • Inquiry strengthens reporting intentions for external auditors to a greater extent than internal auditors. • The type of fraudulent act does not affect reporting intentions.	Internal
Kaplan et al. (2015)	Misappropriation of assets and fraudulent financial reporting	Experiment	171 professional accountants and managers.	• Internal reporting intentions to the manager are greater when the manager is likeable rather than unlikeable. • Internal reporting intentions are greater when the fraud involves misappropriation of assets compared to fraudulent financial reporting. • Managerial procedural safeguards (strong versus weak) do not affect reporting intentions.	Internal
Latan et al. (2017)	Violations of auditing standards and the auditors' professional code of conduct	Survey	256 Indonesian public accountants.	• Attitude toward whistleblowing, perceived behavioral control, commitment to auditor independence, personal responsibility for reporting, have a positive effect on both internal and external whistleblowing intentions.	Internal, External

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Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
				• Personal cost for reporting has a negative effect on both internal and external whistleblowing intentions. • Perceived organizational support moderates the relationship of attitude toward whistleblowing with both internal and external whistleblowing intentions. • Perceived organizational support moderates the relationships of personal cost for reporting with both internal and external whistleblowing intentions. • Team norms moderate the relationship of personal responsibility for reporting with both internal and external whistleblowing intentions. • Moral intensity moderates the relationship of attitude toward whistleblowing with both internal and external whistleblowing intention. • Moral intensity moderates the relationship of perceived behavioral control with both internal and external whistleblowing intentions.	
Lee and Fargher (2013)	N/A	Archival	107 Australian companies.	• Firms are more likely to implement a stronger internal whistleblowing system when firms are larger, cross-listed in the U.S., have more geographical business segments and when there is greater organizational support for whistleblowing.	N/A
Lee and Fargher (2017)	Bribery, fraudulent financial reporting, improper disclosure, insider trading, market manipulation, misappropriation of assets, price-fixing and tax fraud	Archival	Australian data on 318 external whistleblowing and internal reporting cases obtained through press articles from 1992 to 2015.	• A high-quality audit committee is associated with a lower likelihood that misconduct is reported externally relative to internally. • A high-quality audit committee is associated with a lower likelihood of retaliation. • A high-quality audit committee is more likely to implement a stronger internal whistleblowing system, which in turn reduces the likelihood of external relative to internal reporting.	Internal, External
Liyanarachchi and Adler (2011)	Fraudulent financial reporting and questionable bank account/transaction	Experiment	98 CPA accountants.	• The threat of retaliation does not affect reporting intentions. Older accountants and males are more likely to report. • A significant three-way interaction effect of retaliation, age, and gender is reported: For male accountants, whistleblowing intentions are higher in the middle-aged (35–44) group compared to the younger (25–34) and older (45 and above) age groups, but their whistleblowing intentions under weak versus strong retaliation do not depend on their age. For female accountants, when the threat of retaliation is strong, female accountants in the middle-aged (35–44) group are more willing to blow the whistle compared to the younger (25–34) and older (45 and above) age group.	General
Liyanarachchi and Newdick (2009)	Fraudulent financial reporting	Experiment	51 senior undergraduate students in New Zealand.	• Greater level of moral reasoning and a lower threat of retaliation increase whistleblowing intentions. The interaction effect between the two factors does not affect whistleblowing intentions.	General
Lowe et al. (2015)	Misappropriation of asset	Experiment	54 MBA students in a major U.S. university.	• When sub-certification of fraud is present compared to absent, there is lower perceived personal responsibility and lower intentions to report fraud. • Timing of the discovery of the fraudulent act (before or after financial report is filed with the SEC) does not influence perceived management responsiveness or reporting intentions.	Internal
Pittroff (2014)	N/A	Survey	85 German organizations.	• The implementation of a whistleblowing system is associated with a larger firm size, perceptions that whistleblowing systems are important to maintain organizational legitimacy and higher benefits to costs of providing such a system. • Firms do not implement whistleblowing systems in order to comply with the law, prevent reputational damage or reduce capital costs.	N/A
Pope and Lee (2013)	Fraudulent financial reporting	Experiment	97 MBA students.	• When the company provides a financial incentive, reporting intentions are greater and individuals are more willing to disclose their identity.	Internal

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Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
Reckers-Sauciuc and Lowe (2010)	Misappropriation of asset, fraudulent reimbursement and fraudulent financial reporting.	Survey	65 working professionals enrolled in an MBA program in the U.S.	● Providing an anonymous, compared to non-anonymous, reporting channel does not affect reporting intentions. ● Whistleblowing intentions are higher when individuals are older and are relatively intolerant of ambiguity. ● Internal whistleblowing intentions are lower when there is greater happiness and fear. ● Internal whistleblowing intentions are higher when there is greater arousal. ● Sadness do not affect whistleblowing intentions.	Internal
Robertson et al. (2011)	Violation of Code of Professional Conduct	Experiment	190 auditors.	● Auditors are more likely to report a wrongdoer that has a reputation for being a poor performer and that is less likeable. Auditors are most likely to blow the whistle when the wrongdoer is both less likeable and has a reputation for being a poor performer. ● Auditors with greater audit experience are more likely to blow the whistle. ● Auditors are more likely to report internally rather than externally; and through non-anonymous rather than anonymous hotline. ● Auditors are more likely to report misconduct internally and externally when there are greater professional repercussions for not reporting and when reporting has positive performance effects.	Internal, External
Robinson et al. (2012)	Misappropriation of assets and fraudulent financial reporting	Experiment	138 U.S. participants.	● Employees are less likely to report when the type of fraud is financial statement fraud than theft, when fraud is less material, when the wrongdoer is aware that the potential whistleblower has knowledge of the fraud, and when there are fewer observers of fraud.	Internal
Rose et al. (2017)	Fraudulent violation of the government contract.	Experiment	115 MBA students from a large business school at a university in U.S.	● The likelihood of reporting to the SEC is greater when the size of the potential reward provided by the SEC is larger. ● Compensation form (restricted stock vs. unrestricted stock) does not affect whistleblowing intentions. ● There is a significant interaction effect between reward size and compensation form. When compensated with unrestricted stock, intentions to blow the whistle do not differ significantly between the small and large reward conditions. However, when compensated with restricted stock, larger rewards have more influence on intentions to blow the whistle.	External
Schultz et al. (1993)	Three of six scenarios involved accounting-related misconduct	Survey	145 managers and professional staff from France, Norway and U.S.	● Greater perceived severity of misconduct, personal responsibility for reporting and perceived cost of reporting increase whistleblowing intentions.	Internal
Seifert et al. (2010)	Fraudulent financial reporting	Experiment	447 U.S. internal auditors and management accountants.	● Whistleblowing policies and mechanisms incorporating higher levels of procedural justice, distributive justice, and interactional justice increase the likelihood that an organizational accountant will internally report financial statement fraud.	Internal
Seifert et al. (2014)	Fraudulent financial reporting	Experiment	437 U.S. internal auditors and management accountants.	● Internal whistleblowing intentions are higher when there is a greater level of trust in the organization and a greater level of trust in supervisors. ● Organizational trust mediates the relationship between organizational justice and internal whistleblowing intentions. ● Supervisor trust mediates the relationship between organizational justice and internal whistleblowing intentions.	Internal
Somers and Casal (1994)	Ten forms of financial fraud based on the typology in Bologna (1984)	Survey	222 management accountants.	● Organizational commitment has a curvilinear relationship with reporting to the immediate supervisor and internal auditor, but not to the audit committee. Relatively high and low levels of	Internal

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Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
				organizational commitment inhibit internal whistleblowing, moderate levels of organizational commitment increase internal whistleblowing. ● Organizational commitment is not associated with external whistleblowing.	
Soni et al. (2015)	Fraudulent financial reporting	Experiment	157 trainee accountants employed at a large audit firm in South Africa.	● Trainee auditors are more likely to blow the whistle when there are higher levels of distributive, interactional and procedural justice. ● Gender, age, seniority and the importance of religion do not affect whistleblowing.	Internal
Stikeleather (2016)	Misappropriation of assets	Experiment	118 participants at a large American university.	● Higher level of fixed compensation paid to workers, higher perceived level of moral obligation and presence of an internal reward increase internal whistleblowing intentions.	Internal
Taylor and Curtis (2010)	Violation of Code of Professional Conduct	Experiment	120 auditor seniors from an international Big 4 firm.	● Greater moral intensity increases the likelihood of reporting and perseverance in reporting. ● A higher level of professional identity increases reporting intentions and likelihood of reporting. ● Auditor's commitment to the organization compared to colleague drives perseverance in reporting.	Internal
Taylor and Curtis (2013)	Violation of Professional Standards	Experiment	106 senior-level U.S. auditors from a Big 4 firm.	● Whistleblowing intentions are greater when there is lower power distance between wrongdoer and the whistleblower. ● Strong compared to a prior organizational response to a report does not affect reporting intentions. ● Auditors are unaffected by power distance when the organization was responsive to a prior report, but are less willing to report superiors than their peers when the organization was unresponsive to a prior report. ● Moral intensity increases whistleblowing intentions. Auditors with lower moral intensity are much more influenced by power distance than those with higher moral intensity.	Internal
Trongmateerut and Sweeney (2013)	Misappropriation of assets	Survey	78 accounting students in the U.S. and 223 accounting students in Thailand.	● Favorable personal attitudes toward whistleblowing and subjective norms supportive of whistleblowing increase reporting intentions. ● Compared to American subjects, whistleblowing intentions of Thai participants are more strongly influenced by subjective norms for whistleblowing.	Internal
Wainberg and Perreault (2016)	Violation of auditor independence and Code of Professional Conduct	Experiment	68 graduate students in the U.S. with auditing experience.	● Auditors assess the risk of reporting as higher when explicit protections are included to an audit firm's whistleblower hotline policy and as a result, are less likely to report misconduct through the hotline. ● Job security does not affect whistleblowing intentions.	Internal
Wilde (2017)	Financial violations covered under §806 of the SOX Act.	Archival	279 U.S. external whistleblowing cases filed with the OSHA from years 2003 to 2010.	● Firms subject to external whistleblowing are subsequently less likely to engage in financial misreporting and tax aggressiveness, compared with control firms. ● Whistleblower firms have significantly lower (less income increasing) accruals in the year of the allegation, consistent with accrual reversals from prior periods.	External
Xu and Ziegenfuss (2008)	Fraudulent financial reporting	Experiment	201 internal auditors.	● Internal auditors are more likely to report internally when cash incentives are provided by the organization. ● Internal auditors that have lower levels of moral reasoning are more sensitive to cash incentives.	Internal
Zhang (2008)	Fraudulent reporting on production costs	Experiment	60 undergraduate students.	● Reporting intentions are higher when a higher wage level is given compared to a lower wage level.	Internal
Zhang et al. (2009)	Misappropriation of assets	Survey	364 Chinese employees of ten banks in China.	● A higher level of whistleblowing judgment is associated with higher whistleblowing intentions. ● Organizational ethical culture moderates the relationship between whistleblowing judgment and whistleblowing intentions.	Internal

(*continued on next page*)

Table 1 (*continued*)

Study	Type of misconduct examined	Method	Sample	Key findings	Type of whistleblowing
Zhang et al. (2013)	Fraudulent financial reporting	Experiment	130 MBA students.	• Whistleblowing intentions are greater when the reporting hotline is administered externally compared to internally. • Whistleblowing intentions to an external hotline are greater when there was poor organizational responsiveness to prior whistleblowing and when employees are low on the proactivity scale.	Internal

Table 1 summarizes the studies that examine internal and external whistleblowing. Studies are classified as general, internal or external whistleblowing based on the whistleblowing measure employed in the respective study. A study is classified as a "general" whistleblowing study when the whistleblowing measure either did not distinguish between internal or external whistleblowing, or used a composite measure that captured both internal and external whistleblowing.

3. Whistleblowing process

The whistleblowing process is illustrated in Fig. 1. The process of whistleblowing begins with an individual witnessing misconduct and making a decision whether or not to blow the whistle. Individuals who decide to blow the whistle have to choose whether to report misconduct internally within the organization or report to external parties such as to regulators or the media. Whistleblowers generally prefer to report internally than externally.[4]

After the whistle is blown, organizations react and respond to the whistleblowing report (Near & Miceli, 2016). Organizations might react favorably to a whistleblowing report by conducting an adequate investigation, correcting misconduct (if needed), protecting the whistleblower against retaliation or rewarding the whistleblower. Organizations might however react unfavorably to a whistleblowing report by failing to conduct a proper investigation, failing to take corrective actions (if needed) or retaliating against whistleblowers. The whistleblowing process ends when the outcome of whistleblowing is satisfactory to the whistleblower. When the outcome of whistleblowing is unsatisfactory to the whistleblower (i.e. report was ignored, misconduct was not corrected or the whistleblower experienced retaliation), the whistleblower may make a subsequent attempt at blowing the whistle and in such cases will typically choose to blow the whistle externally instead of internally (Miceli et al., 2008). The whistleblower might also decide to remain silent after an unsuccessful initial attempt, ending the whistleblowing process.

4. Determinants of internal and external whistleblowing

Early research view internal and external whistleblowing as related phenomena (Near & Miceli, 1996). Subsequent research however has suggest that the predictors of internal and external whistleblowing are different (Kaptein, 2011).[5] Dworkin and Baucus (1998, p. 1283) highlight that "we know little about how whistleblowing processes differ for internal versus external whistleblowers, such as antecedent conditions or consequences of relying on internal versus external channels". Miceli and Near (2005, p. 106) similarly suggest a need to consider whether the predictors are similar for the different types of whistleblowing. While prior reviews of whistleblowing research generally do not differentiate between the predictors of internal and external whistleblowing (Mesmer-Magnus & Viswesvaran, 2005; Near, 1992, 2005; Miceli et al., 2008; Near & Miceli, 1996; Vadera et al., 2009), this review synthesizes research on the factors of internal and external whistleblowing separately. The categorization of studies into internal and external whistleblowing is based on the whistleblowing measure employed in the study.[6]

This review summarizes research on the predictors of internal and external whistleblowing in three broad areas: (i) characteristics of the whistleblower, (ii) characteristics of the organization, and (iii) characteristics of the misconduct and wrongdoer.

4.1. *Characteristics of the whistleblower*

4.1.1. *Sociodemographics*

Internal and external whistleblowers who report on accounting-related misconduct do not have a "typical" demographic profile.[7]

[4] Survey findings on the pathway to whistleblowing indicate that internal whistleblowing is preferred. Bjørkelo, Einarsen, Nielsen, and Matthiesen (2011) report that 98.5 percent of whistleblowers in their study only or initially reported internally. A survey of public sector whistleblowers in Australia report that 97 percent initially made an internal report (Smith, 2010).

[5] Kaptein (2011) examine eight dimensions of ethical culture, and find that the effects on internal and external whistleblowing are different for all eight dimensions.

[6] Studies were initially classified into general, internal, or external whistleblowing, as reported in Table 1. A study was classified as a "general" study when the whistleblowing measure either did not distinguish between internal or external whistleblowing, or used a composite measure that captured both internal and external whistleblowing. The findings of studies that employ a general measure of whistleblowing are generally comparable to the internal whistleblowing studies. Given that individuals generally prefer internal whistleblowing and believe that internal whistleblowing is more appropriate than external whistleblowing (Bjørkelo et al., 2011; Near & Miceli, 2008; Smith, 2010), the respondents are more likely to have indicated internal whistleblowing intentions or behaviors when presented with a general measure of whistleblowing. Accordingly, in this review, studies that employ a general measure of whistleblowing are regarded as "internal" whistleblowing studies.

[7] Whistleblowing studies on non-accounting related misconduct similarly do not find that internal or external whistleblowers have a "typical" demographic profile (see for e.g. Cassematis & Wortley, 2013; Rothschild & Miethe, 1999).

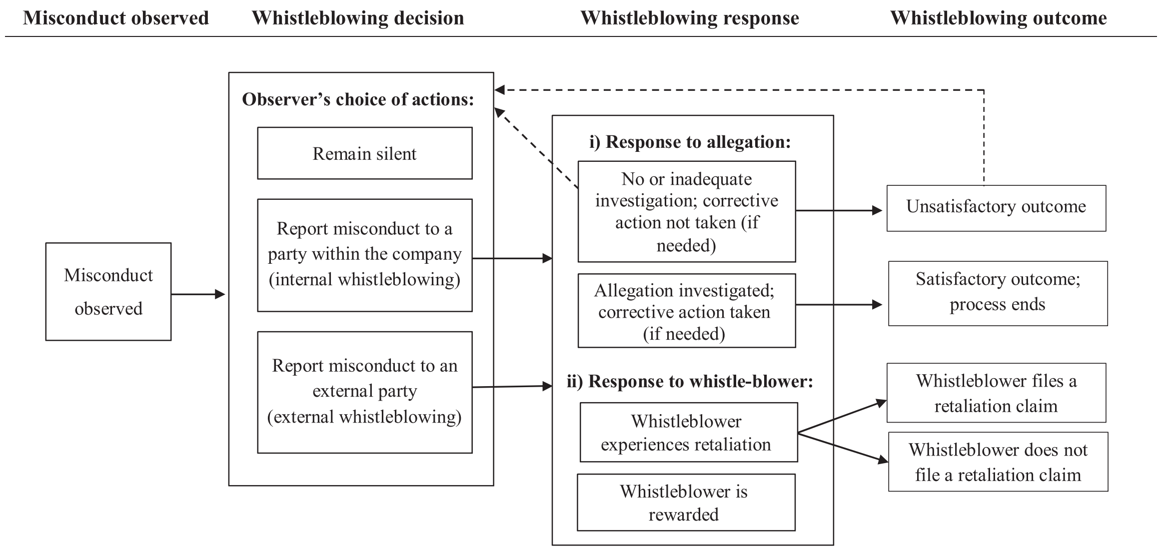

Fig. 1. The whistleblowing process based on the model in Miceli and Near (1992).

Studies generally do not find evidence, or find mixed evidence, that internal and external whistleblowing intentions are associated with sociodemographics such as gender (Alleyne et al., 2017; Curtis, Conover, & Chui, 2012; Erkmen, Çalışkan, & Esen, 2014; Soni, Maroun, & Padia, 2015; Zhang et al., 2009), educational level (Zhang et al., 2009), tenure (Alleyne, Hudaib, & Haniffa, 2016; Erkmen et al., 2014; Zhang et al., 2009), seniority (Soni et al., 2015; Zhang et al., 2009) and religiosity (Soni et al., 2015).[8] One socio-demographic factor that is significantly related to whistleblowing intentions is age.[9] Whistleblowers who are older are more willing to blow the whistle internally (Liyanarachchi & Adler, 2011; Reckers-Sauciuc & Lowe, 2010) and externally (Andon, Free, Jidin, Monroe, & Turner, 2016).

4.1.2. *Attitudes toward whistleblowing and perceived behavioral control*

Researchers have drawn on the theory of planned behavior which proposes that individuals are more likely to perform the behavior when they have favorable attitudes toward a behavior and greater perceived behavioral control (i.e. perception of the ease or difficulty of performing the behavior) (Alleyne et al., 2016; Latan, Ringle, & Jabbour, 2017; Trongmateerut & Sweeney, 2013). Applied to the context of whistleblowing, studies find that individuals are more willing to report accounting misconduct internally and externally when they have favorable attitudes toward whistleblowing (Alleyne et al., 2016; Brown, Hays, & Stuebs, 2016; Latan et al., 2017; Trongmateerut & Sweeney, 2013). Consistent with the theory of planned behavior, studies also find that internal and external whistleblowing intentions on accounting-related misconduct are higher when there is greater perceived behavioral control (Alleyne et al., 2016; Brown et al., 2016; Latan et al., 2017).

Taken together, research generally finds that favorable attitudes toward whistleblowing and greater perceived behavioral control increase internal and external whistleblowing intentions.

4.1.3. *Perceived responsibility for reporting*

Whistleblowing is considered to be a pro-social behavior in which individuals are more likely to blow the whistle when they perceive greater responsibility for reporting (Schultz et al., 1993; Somers & Casal, 1994). There is ample evidence that there are higher internal whistleblowing intentions (Alleyne et al., 2017; Brink, Lowe, & Victoravich, 2017; Kaplan & Whitecotton, 2001; Latan et al., 2017; Schultz et al., 1993) and higher external whistleblowing intentions (Latan et al., 2017) to report accounting-related misconduct when individuals perceive greater personal responsibility for reporting.

Lowe, Pope, and Samuels (2015) examine personal responsibility to report fraud in the context of sub-certification of financial statements. They find that participants assess less personal responsibility for reporting fraud and accordingly report lower internal whistleblowing intentions when there is sub-certification by a superior that no fraud exists compared to when sub-certification is absent. Latan et al. (2017) further find a significant interaction effect between perceived personal responsibility for reporting and team norms such that the positive effects of personal responsibility for reporting on auditors' internal and external whistleblowing intentions are strengthened when team norms are supportive of whistleblowing.

[8] These findings are consistent across countries. For example, Zhang et al. (2009) examine whistleblowing intentions of bank employees in China; Soni et al. (2015) study whistleblowing intentions of trainee accountants in South Africa; and Alleyne et al. (2017) investigate whistleblowing intentions of accountants in Barbados.

[9] This finding differs from non-accounting whistleblowing studies which generally document no significant relationship between age and whistleblowing intentions (see for e.g. Dalton & Radtke, 2013; Gundlach et al., 2008; Gundlach et al., 2008; Nayir & Herzig, 2012).

4.1.4. Costs and benefits of whistleblowing

Theoretical research argues that whistleblowing is a pro-social behavior because it is not purely altruistic, but that the decision to blow the whistle is also driven by the perceived costs and benefits to the whistleblower (Dozier & Miceli, 1985; Miceli et al., 2008; Near & Miceli, 1987). The perceived costs of reporting to the whistleblower include the trouble, risk and discomfort of reporting (Kaplan & Whitecotton 2001; Schultz et al., 1993). Another cost of whistleblowing to the whistleblower is organizational retaliation; the findings of organizational retaliation on whistleblowing are discussed later in Section 4.2.2.

Research finds that greater perceived personal cost of reporting reduces internal whistleblowing intentions (Alleyne et al., 2017; Alleyne et al., 2016; Curtis, 2006; Gao, Greenberg, & Wong, 2015; Kaplan & Whitecotton, 2001; Latan et al., 2017; Schultz et al., 1993) and external whistleblowing intentions (Alleyne et al., 2017; Latan et al., 2017) on accounting-related misconduct. Robinson, Robertson, and Curtis (2012) find that potential whistleblowers have lower internal whistleblowing intentions when the wrongdoer is aware that the potential whistleblower has knowledge of fraud. They argue that this is because potential whistleblowers are more likely to anticipate retaliation from the wrongdoer. Alleyne et al. (2016) and Latan et al. (2017) further document that perceived organizational support helps to mitigate perceived personal cost of reporting. Alleyne et al. (2016) and Latan et al. (2017) both find that when perceived personal cost of reporting are higher, internal and external whistleblowing intentions are higher when there is stronger perceived organizational support.

Studies also examine whistleblowers' perceived costs of failing to report misconduct. These studies find higher internal and external whistleblowing intentions when whistleblowers perceive greater costs for failing to report misconduct. Robertson, Stefaniak, and Curtis (2011) find that auditors have lower internal and external whistleblowing intentions when there are greater professional repercussions for not reporting misconduct. Similarly, Boo et al. (2016) document that auditors' internal reporting intentions are higher when there is penalty-based career-related (i.e. be disciplined, including a dismissal, for failing to report a questionable act) incentive scheme. These studies collectively demonstrate that greater perceived costs of whistleblowing decrease internal and external whistleblowing intentions while greater perceived costs for not reporting misconduct increase internal and external whistleblowing intentions.

In addition to the costs of reporting and the costs of not reporting, whistleblowers also take into consideration the benefits of whistleblowing. The benefits of whistleblowing for the whistleblower include monetary rewards for reporting, career advancement and recognition. Robertson et al. (2011) find that auditors are more likely to report misconduct internally and externally when reporting has positive performance effects for the auditor. Studies document that monetary rewards are effective at encouraging whistleblowing. Internal whistleblowing intentions are higher when monetary rewards to report are provided *by the firm* (Pope & Lee, 2013; Xu & Ziegenfuss, 2008). As further discussed in Section 5.5, the provision of monetary rewards *by regulators* also increases external whistleblowing intentions (Andon et al., 2016; Berger, Perreault, & Wainberg, 2017).

Studies have further investigated the circumstances under which internal rewards are more or less effective in encouraging whistleblowing. Brink, Lowe, and Victoravich (2013) find a significant interaction effect between internal rewards and strength of evidence of misconduct on external whistleblowing intentions. Specifically, they find that in the absence of an internal reward, intentions to report externally to the SEC did not differ between weak or strong evidence. However, when an internal reward is provided, intentions to report externally to the SEC are lower when evidence of misconduct is weak relative to strong. Xu and Ziegenfuss (2008) find a significant interaction effect between moral reasoning and cash incentives on internal auditors' whistleblowing intentions. They find that internal auditors with relatively low levels of moral reasoning are more willing to blow the whistle internally when cash incentives are provided. Guthrie and Taylor (2017) also find that when the threat of retaliation is low, a firm's provision of monetary incentives for whistleblowing increases organizational trust, and in turn results in higher internal whistleblowing intentions.

Taken together, the perceptions of the costs and benefits of whistleblowing to the whistleblower are crucial to their decision on whether to blow the whistle on accounting-related misconduct internally and externally. Internal and external whistleblowing intentions are higher when there are greater perceived benefits of whistleblowing and greater perceived costs for not reporting. In contrast, internal and external whistleblowing intentions are lower when there are greater costs of whistleblowing.

4.1.5. Sense of morality

A potential whistleblower's level of moral reasoning affects their recognition and interpretation of ethical issues and in turn influences their decision to blow the whistle (Curtis & Taylor, 2009; Liyanarachchi & Newdick, 2009). Research finds that a higher sense of morality affects internal and external whistleblowing intentions on accounting-related misconduct. Internal whistleblowing intentions are greater when individuals perceive a moral obligation to report (Stikeleather, 2016), have a higher level of moral reasoning (Arnold & Ponemon, 1991; Liyanarachchi & Newdick, 2009) and when moral intensity is stronger (Curtis & Taylor, 2009; Taylor & Curtis, 2013).

Examining auditors' whistleblowing intentions, Latan et al. (2017) find that moral intensity has a significant moderating effect on internal and external whistleblowing intentions. Specifically they find that when auditors have more favorable attitudes toward whistleblowing, greater moral intensity increases both internal and external whistleblowing intentions. Latan et al. (2017) also find that when auditors have greater perceived behavioral control of whistleblowing, greater moral intensity increases both internal and external whistleblowing intentions.

4.1.6. Attitudes toward the organization and profession

Research has examined the association between whistleblowers' attitudes toward the organization and whistleblowing intentions. Studies generally find that positive attitudes toward the organization increase internal but not external whistleblowing intentions.

Taylor and Curtis (2010) find that higher organizational commitment is positively associated with internal whistleblowing intentions among auditors. Somers and Casal (1994) further document a curvilinear relationship between management accountants' organizational commitment and their intentions to blow the whistle internally. Specifically, they find that relatively high and low levels of organizational commitment inhibit internal whistleblowing while moderate levels of organizational commitment increase internal whistleblowing. Somers and Casal (1994) also examine the relationship between organizational commitment and external whistleblowing and do not find that organizational commitment predicts external whistleblowing intentions. Seifert, Stammerjohan, and Martin (2014) examine whistleblowers' trust in their organization and supervisor. Using a sample of internal auditors and management accountants, Seifert et al. (2014) find higher internal whistleblowing intentions when there is a greater level of trust in the organization and in supervisors. Together, research generally finds that positive attitudes toward the organization increase internal but not external whistleblowing intentions.

Studies also investigate whether attitudes toward the accounting profession affect whistleblowing intentions. Taylor and Curtis (2010) examine whether auditors' internal whistleblowing intentions are affected by their level of professional identity, which is defined as the affinity for and identification with the audit profession. They find that a higher level of professional identity increases auditors' internal whistleblowing intentions. Two studies examine auditors' commitment to the professional value of auditor independence and find that greater commitment to auditor independence increases auditors' internal whistleblowing (Alleyne et al., 2016; Latan et al., 2017) and external whistleblowing intentions (Latan et al., 2017). Taken together, research generally finds that positive attitudes toward the accounting profession increase both internal and external whistleblowing intentions.

4.1.7. Affective states

A stream of research examines individuals' affective states as a predictor of whistleblowing. Affect is a term used to describe the broad range of trait-based and state-based feelings that a person has (Reckers-Sauciuc & Lowe, 2010; Zhang et al., 2009). Affective states can be broadly categorized into positive or negative affect (Reckers-Sauciuc & Lowe, 2010). Studies have examined whether internal whistleblowing intentions are predicted by positive or negative affect. Zhang et al. (2009) conducted a survey with Chinese banks employees and did not find that positive affect is associated with internal whistleblowing intentions. Curtis (2006) investigates the effect of negative affect on whistleblowing using a sample of accounting students. She finds that negative affect decreases whistleblowing intentions. She further documents that perceived seriousness of wrongdoing and perceived responsibility to report wrongdoing mediate the relation between negative affect and whistleblowing intentions.

Reckers-Sauciuc and Lowe (2010) investigate specific types of affective states using a sample of MBA students with working experience. They examine two types of positive affective states (happiness and arousal), and find that greater happiness decreases internal whistleblowing intentions while greater arousal increases internal whistleblowing intentions (Reckers-Sauciuc & Lowe, 2010). Reckers-Sauciuc and Lowe (2010) also examine two types of negative affective states (sadness and fear) and find that a higher level of fear decreases internal reporting intentions but do not find that sadness affects internal reporting intentions.

Together, these studies find that affective states influence internal whistleblowing intentions. There is a lack of research to summarize the association between affective states on external whistleblowing.

4.1.8. Summary of whistleblower characteristics' effect on whistleblowing

Panel A of Table 2 presents a summary of the general findings regarding the characteristics of whistleblowers in relation to internal and external whistleblowing. In general, characteristics of whistleblowers have similar directional influences on internal and external whistleblowing:

1. Sociodemographics, with the exception of age, do not affect internal or external whistleblowing. Older employees are more likely to report both internally and externally.
2. Favorable attitudes toward whistleblowing and greater perceived behavioral control increase both internal and external whistleblowing.
3. Greater perceived personal responsibility toward whistleblowing increases both internal and external whistleblowing.
4. Greater perceived benefits of whistleblowing increase both internal and external whistleblowing.
5. Greater perceived costs of whistleblowing decrease both internal and external whistleblowing.
6. Greater perceived costs for failing to blow the whistle increase both internal and external whistleblowing.
7. Higher sense of morality increases internal whistleblowing.
8. Positive attitudes toward the organization increase internal whistleblowing, but have no effect on external whistleblowing.
9. Positive attitudes toward the profession increase internal and external whistleblowing.
10. Affective states and emotions affect internal whistleblowing.

4.2. Organizational characteristics

4.2.1. Perceived organizational responsiveness toward whistleblowing

Internal whistleblowing intentions are higher when the organization is perceived to be more responsive toward whistleblowing reports. Curtis and Taylor (2009) find that auditors have higher internal reporting intentions when they have greater trust that the firm will investigate the whistleblowing allegation. Kaplan, Pope, and Samuels (2011), using a sample of MBA students, find that internal reporting intentions are higher when the whistleblowing report recipient is inquiring as compared to non-inquiring. Taylor and Curtis (2013) further find that prior organizational responsiveness affects whether auditors will internally report a more powerful

Table 2
Summary of the predictors of internal and external whistleblowing.

Effect on:	Internal whistleblowing	External whistleblowing
Panel A: Characteristics of the whistleblower		
Sociodemographics (with the exception of age)	0	0
Age	+	+
Favorable attitudes toward whistleblowing	+	+
Perceived behavioral control over whistleblowing	+	+
Perceived responsibility for whistleblowing	+	+
Cost and benefits of whistleblowing		
Perceived benefits of whistleblowing	+	+
Perceived costs of whistleblowing	−	−
Perceived costs for failing to blow the whistle	+	+
Higher sense of morality	+	M
Favorable attitudes toward the organization	+	0
Positive attitudes toward the profession	+	+
Affective states		
Positive affect	0	N/A
Happiness	−	N/A
Arousal	+	N/A
Negative affect	−	N/A
Fear	−	N/A
Sadness	0	N/A
Panel B: Organizational characteristics		
Organizational response		
Responsiveness to whistleblowing	+	−
Retaliation for whistleblowing	−	+
Firm characteristics		
Firm size, age, reputation and past performance	N/A	+
Corporate governance	0	−
Employee compensation		
Fixed compensation	+	N/A
Stock option grants and unvested options	N/A	−
Panel C: Characteristics of the misconduct and wrongdoer		
Characteristics of misconduct		
Severity of misconduct	+	+
Evidence of misconduct	+	N/A
Timing of fraud discovery	0	N/A
Type of misconduct	0	0
Positive social relationship with the wrongdoer	−	N/A
Power of the wrongdoer	−	N/A
Panel D: Whistleblowing legislation		
Internal whistleblowing system		
Procedural safeguards	0	N/A
Fairness of procedures and policies	+	N/A
Anonymous reporting channel	M	N/A
Type of hotline administrator	0	N/A
Likeability of report recipient	+	N/A
Explicit communication of legal protection	−	N/A
Provision of financial rewards by regulators	N/A	+

Table 2 summarizes the general empirical findings on the predictors of internal and external whistleblowing. "+" indicates a positive association; "−" indicates a negative association; "0" indicates mixed evidence or no significant association; "N/A" indicates insufficient evidence to summarize association; "M" indicates a moderating effect.

wrongdoer. Specifically, they find that auditors are less willing to internally report superiors than their peers when the organization was unresponsive to a prior whistleblowing report. Organizational responsiveness toward whistleblowing reports also predicts external whistleblowing intentions. Using a sample of MBA students, Zhang, Pany, and Reckers (2013) find that a negative organizational response to a prior whistleblowing report leads to higher external whistleblowing intentions.

While these studies demonstrate that organizational responsiveness toward whistleblowing reports affects whistleblowing intentions, there is little research on the factors that affect organizational responsiveness to whistleblowing reports. An exception is Guthrie, Norman, and Rose (2012) who examine factors that affect the credibility of whistleblowing allegation and the allocation of resources to investigating an whistleblowing allegation. They recruited Chief Audit Executives (CAEs) for their experiment and find that, compared to non-anonymous reports, CAEs view anonymous reports to be less credible. They also find that CAEs allocate more investigatory resources when they perceive greater responsibility for the occurrence of misconduct (Guthrie et al., 2012).

4.2.2. Organizational retaliation

A stream of research examines perceived or actual organizational retaliation as a predictor of internal and external whistleblowing. Retaliation against whistleblowers can be formal and official, such as job termination and selective downsizing, or informal and unofficial, such as tighter scrutiny of daily activities by management (Hedin & Månsson, 2012), social confrontation, and threat (Bjørkelo & Matthiesen, 2011). Studies consistently find lower internal whistleblowing intentions when there is a greater perceived threat of retaliation (Arnold & Ponemon, 1991; Guthrie & Taylor, 2017; Hwang, Staley, Chen, & Lan, 2008; Liyanarachchi & Newdick, 2009). Lee and Fargher (2017) obtain whistleblowing cases from press reports and find that whistleblowing retaliation is associated with a higher likelihood of external whistleblowing.

Arnold and Ponemon (1991) further differentiate between two types of whistleblowing retaliation: penalty to the whistleblower (i.e. whistleblowing will lead to the whistleblower losing his or her job) versus penalty to the whistleblowers' affiliates (i.e. whistleblowing will lead to closure of a firm's plant that employs two close friends of the whistleblower). They find that auditors' whistleblowing intentions are influenced by the threat of retaliation relating to a penalty to the whistleblower rather than a penalty to the whistleblowers' affiliates. A study by Guthrie and Taylor (2017) examines how the perceived threat of retaliation affects internal reporting intentions. Guthrie and Taylor (2017) argue that managers who allow retaliation to occur create an organizational culture that is lacking in trust, thereby discouraging employees to report misconduct. Using a sample of participants with current or prior work experience, Guthrie and Taylor (2017) provide evidence that the relationship between the threat of retaliation and internal whistleblowing intentions is mediated by organizational trust.

Taken together, prior research finds that the threat of (or actual) organizational retaliation decrease internal whistleblowing and increases external whistleblowing. Further, the threat of retaliation is more salient when the threat directly affects the whistleblower rather than when it affects the whistleblower's associates.

4.2.3. Operating, economic and corporate governance characteristics

Studies that examine the effects of a firm's operating and economic characteristics on whistleblowing mostly adopt an archival approach by obtaining actual cases of external whistleblowing on accounting-related misconduct from press articles and regulators. These studies generally find that firms are more likely to experience an external whistleblowing event when firms are more visible. For example, firms subject to an external whistleblowing event are larger (Bowen et al., 2010; Lee & Fargher, 2017), older (Call et al., 2016), more reputable (Bowen et al., 2010; Call et al., 2016) and have stronger past share performance (Bowen et al., 2010; Lee & Fargher, 2017). The likelihood of external whistleblowing is also lower when there is more stringent external monitoring, stronger board-level corporate governance (Bowen et al., 2010) and a higher quality audit committee (Lee & Fargher, 2017).

There is less research on how internal whistleblowing is affected by a firm's operating, economic and corporate governance characteristics. One exception is Kaplan and Schultz (2007) who did not find that internal audit quality affects internal whistleblowing intentions.

4.2.4. Employee compensation

Recent studies have investigated the effect of employee compensation on whistleblowing. A group of studies examine the effect of fixed compensation on internal whistleblowing intentions. Stikeleather (2016) finds among a sample of university students that paying a higher level of fixed compensation is associated with higher internal reporting intentions. Similarly, Zhang (2008) finds among a group of undergraduate business students that internal reporting intentions are higher when agents are given a higher wage level by the principal. She argues that the wage level is a measure of the agents' fairness perception of the principal, and explains that agents are more likely to report when paid a higher wage level because they perceive the principal to be fairer.

Studies have also examined how stock compensation affects external whistleblowing. Call et al. (2016) adopt an archival approach using actual cases of external whistleblowing obtained from press articles and examine the compensation of rank and file employees. They find that firms that grant more stock options to rank and file employees are less likely to experience an external whistleblowing event. They also find that firms that provide more unvested options to rank and file employees are less likely to experience an external whistleblowing event. Using a sample of MBA students as experimental subjects, Rose, Brink, and Norman (2017) examine the effect of two forms of stock compensation (restricted stock versus unrestricted stock) on external whistleblowing intentions. While they do not find any differences in external whistleblowing intentions between these two forms of compensation, they find a significant interaction between compensation form and size of monetary reward for whistleblowing by the SEC. Specifically, Rose et al. (2017) find that when participants are compensated with restricted stock, a large compared to small monetary reward provided by the SEC has a greater influence on intentions to blow the whistle externally to the SEC. When compensated with unrestricted stock, external whistleblowing intentions are not significantly affected by the size of monetary rewards provided by the SEC.

4.2.5. Summary of organizational characteristics on whistleblowing

Panel B of Table 2 presents a summary of the general findings of the organizational characteristics associated with internal and external whistleblowing. In general, organizational characteristics generally have different directional influences on internal and external whistleblowing:

1. When organizations are perceived to be more responsive toward whistleblowing reports, internal whistleblowing is more likely and external whistleblowing is less likely.
2. When there is a higher threat of organizational retaliation or actual retaliation, internal whistleblowing is more likely and external

whistleblowing is less likely.
3. Firms are more likely to experience an external whistleblowing event when they are larger, older, more reputable, have stronger past share performance and weaker corporate governance.
4. Employees that receive higher fixed compensation are more likely to report internally. Employees that are granted more stock options and have more unvested options are less likely to report externally.

4.3. Characteristics of the misconduct and wrongdoer

4.3.1. Characteristics of the misconduct

There is mixed evidence that the type of accounting misconduct (such as theft, misappropriation of assets, or fraudulent financial reporting) affects internal and external whistleblowing intentions (Brink et al., 2017; Kaplan, Pope, & Samuels, 2010; Kaplan et al., 2011; Kaplan, Pope, & Samuels, 2015). Rather, research consistently documents that the severity of misconduct affects the whistleblowing decision. When accounting misconduct is more severe, individuals are more likely to blow the whistle internally (Brennan & Kelly, 2007; Gao et al., 2015; Hwang et al., 2008; Schultz et al., 1993) and externally (Andon et al., 2016; Brink et al., 2017; Lee & Fargher, 2017). Call et al. (2016) examine actual cases of external whistleblowing in the U.S. and find that a longer duration of fraud leads to a higher likelihood of external whistleblowing.

Research also finds higher internal whistleblowing intentions when there is more convincing evidence of misconduct as when there is stronger evidence of misconduct (Brink et al., 2013) and when there are more observers of misconduct (Gao et al., 2015; Robinson et al., 2012). Lowe et al. (2015) investigate whether the timing of the fraud discovery affects whistleblowing intentions. They do not find that the timing of fraud discovery (fraud is discovered before compared to after financial reports are filed with the SEC) affects internal whistleblowing intentions.

4.3.2. Characteristics of the wrongdoer

Powerful wrongdoers are more likely to be protected by an organization because of the organization's dependence on the wrongdoer, and this reduces reducing the whistleblower's power in whistleblowing (Miceli & Near, 1992; Rehg et al., 2008). A powerful wrongdoer can also increase perceptions of the threat of retaliation, thereby influencing the decision to blow the whistle on accounting-related misconduct (Gao et al., 2015). Studies find that internal whistleblowing intentions are lower when the wrongdoer is powerful, such as when the wrongdoer is in a powerful organizational position (Gao et al., 2015), the wrongdoer has a reputation for being a good performer (Robertson et al., 2011) and when there is greater power distance between the whistleblower and wrongdoer (Curtis et al., 2012; Taylor & Curtis, 2013).

Studies also find that the social relationship between the whistleblower and wrongdoer affects the whistleblowing decision. Using auditors as experimental participants, Robertson et al. (2011) find that internal whistleblowing intentions are lower when the wrongdoer is more likeable. Robertson et al. (2011) also find a significant interaction effect between likeability and the performance of the wrongdoer on whistleblowing intentions, such that auditors are more likely to report a wrongdoer who is less likeable and a poor performer. Boo et al. (2016) similarly find that closeness to the wrongdoer affects auditors' internal whistleblowing intentions. They find a significant interaction effect between a reward-based career-related incentive scheme and the presence of a close working relationship with the wrongdoer such that when there is a reward-based career-related incentive scheme, auditors are less likely to report a wrongdoer with whom they have a close working relationship.

Taken together, internal whistleblowing intentions are lower when the wrongdoer is more powerful and when there is a closer social relationship with the wrongdoer. Research on the characteristics of the wrongdoer largely focuses on internal whistleblowing and there is a lack of research of the effects of the wrongdoer's characteristics on external whistleblowing.

4.3.3. Summary of wrongdoer and misconduct characteristics' effect on whistleblowing

Panel C of Table 2 presents a summary of the general findings regarding the effects of the characteristics of misconduct and wrongdoer on internal and external whistleblowing. The factors associated with the misconduct and wrongdoer generally have similar influences on internal and external whistleblowing:

1. Internal and external whistleblowing is more likely to occur when misconduct is more severe.
2. Internal whistleblowing is more likely to occur when there are more convincing evidence of misconduct.
3. The timing of fraud discovery and the type of misconduct do not affect internal or external whistleblowing intentions.
4. Internal whistleblowing intentions are lower when the wrongdoer has higher power.
5. Internal whistleblowing intentions are lower when there is a closer social relationship with the wrongdoer.

4.4. Avenues for future research

4.4.1. Whistleblowing on top management

This review highlights that potential whistleblowers are less likely to report accounting-related misconduct when the wrongdoer is powerful (Gao et al., 2015; Taylor & Curtis, 2013), thereby suggesting that whistleblowing might be difficult against powerful individuals in the company such as the chief executive officer (CEO) or chief financial officer (CFO). Given that powerful individuals are often the ones involved in perpetrating egregious accounting-related misconduct, future research can explore the effectiveness of whistleblowing mechanisms or procedures in the presence of a powerful wrongdoer. For example, does an anonymous reporting channel increase the probability of whistleblowing when the wrongdoer is powerful? Or can the provision of monetary incentives increase the probability of reporting a powerful wrongdoer? Addressing these questions can help in arresting and uncovering top management fraud that typically leads to the most severe losses (ACFE, 2016).

4.4.2. Whistleblowing investigation

Research largely focuses on investigating the decision to blow the whistle on accounting-related misconduct. With the exception of Guthrie et al. (2012), there is little research on the factors that affect whistleblowing investigation. More research in this area is needed because whistleblowing is only effective when the whistle is blown *and* when the whistleblowing allegation is properly investigated and addressed (Pope & Lee, 2013). Future research can explore factors that affect report recipient's perception of the credibility of the whistleblowing report as well as factors that affect responsible parties' investigation of whistleblowing allegations.

5. Whistleblowing legislations and related research

The purported effectiveness of whistleblowing as a mechanism to uncover misconduct has led to increasing legislation on whistleblowing worldwide (Campbell, 2013; Miceli et al., 2008) to protect corporate whistleblowers against retaliation as well as to reward whistleblowers.[10] The U.S. has been at the forefront at implementing legislation to encourage and protect corporate whistleblowers whereas whistleblowing laws are relatively less comprehensive in other countries (Wolfe et al., 2014). This section discusses legislations introduced in the U.S. to support whistleblowing on accounting-related misconduct and reviews related research.

In the U.S., the passage of the SOX Act in 2002 introduced provisions to facilitate and protect corporate whistleblowers who report financial reporting and securities violations.[11] The SOX Act requires listed U.S. companies to establish internal whistleblowing systems. Specifically, Section 301(m)(4) of the SOX Act imposes responsibility on the audit committee of listed companies to "establish procedures for the receipt, retention, and treatment of complaints received by the issuer regarding accounting, internal accounting controls, or auditing matters; and the confidential, anonymous submission by employees of the issuer of concerns regarding questionable accounting or auditing matters." The SOX Act also introduced protections for corporate whistleblowers. Section 806 of the SOX Act, 18 U.S.C. 1514A protects whistleblowers employed by publicly traded companies from discrimination. Specifically the Act protects corporate whistleblowers who report on violations of 18 U.S.C. §§ 1341 (mail fraud and swindle), 1343 (fraud by wire, radio, or television), 1344 (bank fraud), 1348 (securities fraud), any rule or regulation of the SEC or any provision of federal law relating to fraud against shareholders.

The Dodd-Frank Act, enacted in 2010, introduced additional provisions relating to whistleblowing. Most significantly, the Act introduced incentives for whistleblowing by authorizing the SEC to reward whistleblowers who voluntarily provide original information that leads to a successful enforcement action (Section 922). Eligible whistleblowers are awarded between 10 and 30 per cent of the amount recovered. In addition to creating the whistleblowing reward program, the Dodd-Frank Act also amended Section 806 of the SOX Act and enhanced protection for corporate financial whistleblowers by increasing the statutory filing period for SOX complaints from 90 to 180 days, allowing parties the right to a jury trial in district court actions, extending the coverage of Section 806 of the SOX Act to include subsidiaries of listed companies, and excluding SOX whistleblower complaints from pre-dispute arbitration agreements (Wellford & Marshall, 2014).

These accounting-related whistleblowing regulations have garnered the attention of accounting researchers who have explored issues relating to the provision of an anonymous channel, the report recipient, legal protection for whistleblowing and monetary incentives for whistleblowing. Research on these areas are discussed in the sub-sections below.

5.1. Internal whistleblowing system

The SOX Act requires companies to implement an internal whistleblowing system. Scholars advocate that establishing a good internal whistleblowing system is advantageous to a company because it facilitates the timely detection of misconduct, thereby permitting the company to correct wrongdoing and minimize the cost of the misconduct (Paul & Townsend, 1996). In addition, because employees are encouraged to act within the code of ethics, this increases the satisfaction of employees, and fosters greater work commitment and loyalty (Miceli, Near, & Dworkin, 2009; Paul & Townsend, 1996).

A group of studies examine the overall design of the internal whistleblowing system. Using disclosures from corporate whistleblowing policy to proxy for strength of internal whistleblowing system, Lee and Fargher (2017) find a lower likelihood of external whistleblowing when there is a stronger internal whistleblowing system. Studies also examine the strength of procedural safeguards of the whistleblowing system[12] but find mixed evidence. Using a sample of MBA students, Kaplan et al. (2009b) find higher internal

[10] Countries such as Australia, Canada, New Zealand, Jamaica, South Africa, South Korea, and the U.K. have enacted some form of legislation to protect whistleblowers against retaliation (Latimer & Brown, 2008). Countries including Hungary, Pakistan, and South Korea provide financial rewards for whistleblowing on anti-competitive or anti-corruption activities. For a summary of whistleblowing legislation across countries, refer to Wolfe, Worth, Dreyfus, and Brown (2014) and Guyer and Peterson (2013).

[11] Prior to the passage of the SOX Act, the False Claims Act, enacted in 1863, contains a *qui tam* provision that allows whistleblowers (known as "relators" in the Act) to file a lawsuit on behalf on the government against an individual or entity that defrauded governmental programs. Whistleblowers are eligible to earn 15 to 25 per cent of recovered damages. The False Claims Act only applies to the extent that the victim of fraud is a government agency.

[12] Procedural safeguards are the policies and controls over the information received from the whistleblowing channel such as the hotline administrator, information controls, whether training is provided or not, ability to seek follow-up information etc. (Kaplan et al., 2009b; Kaplan et al., 2015).

reporting intentions when procedural safeguards are weak compared with strong. Kaplan et al. (2015) do not find that the strength of managerial procedural safeguards affects internal reporting intentions of professional accountants and managers.

Studies also examine the implementation of internal whistleblowing procedures from an organizational justice perspective. The theory of organizational justice propose that when employees perceive fair treatment, they are more likely to reciprocate and act in ways that benefit the organization (Seifert et al., 2010; Soni et al., 2015). Applied to the context of internal whistleblowing systems, these studies find that when internal whistleblowing systems are designed such that there is higher procedural justice (i.e. fair whistleblowing procedures), interactional justice (i.e. fair interactions with management regarding whistleblowing issues) and distributive justice (i.e. fair outcomes), there is greater willingness to report misconduct internally (Seifert et al., 2010; Soni et al., 2015).

Another group of research examine the factors that affect the implementation of internal whistleblowing systems. Unlike in the U.S., the implementation of internal whistleblowing systems in most countries is largely a voluntary choice and studies examine why firms choose to implement internal whistleblowing systems. Studies find that larger firms are more likely to provide a formal structure for internal reporting (Brennan & Kelly, 2007; Lee & Fargher, 2013; Pittroff, 2014). Lee and Fargher (2013) find that Australian firms are more likely to implement a stronger internal whistleblowing system when such firms are cross-listed in the U.S., have more geographical business segments and when there is greater organizational support for whistleblowing. Pittroff (2014) examines the motivations of German firms to implement whistleblowing systems. She finds that firms do not implement whistleblowing systems to comply with the law, prevent reputational damage or reduce capital costs, but rather as a way of legitimizing their activities. She also finds that the implementation of a whistleblowing system is associated with higher benefits to costs of providing such a system.

5.2. Anonymous reporting channel

The SOX Act mandates that companies establish anonymous reporting channels. While some commentators argue that anonymous reporting channels lower the perceived cost of whistleblowing by reducing the threat or fear of retaliation (Day, 2017; Libit, 2014), there are concerns that anonymous reports are less persuasive to report recipients and hinder an effective whistleblowing investigation (Kensicki, 2006). Guthrie et al. (2012) provide evidence on the negative effect of anonymity by showing that CAEs perceive anonymous whistleblowing reports to be less credible compared to non-anonymous whistleblowing reports.

There is generally little evidence that the provision of an anonymous reporting channel increases whistleblowing intentions. Kaplan and Schultz (2007) find among a group of MBA students that reporting intentions are lower when there is an anonymous reporting channel compared to a non-anonymous reporting channel. Similarly among a group of auditors, Robertson et al. (2011) find that auditors prefer whistleblowing through non-anonymous rather than anonymous channels. Pope and Lee (2013) do not find that the provision of an anonymous compared to non-anonymous reporting channel affects whistleblowing intentions. Curtis and Taylor (2009) find that reporting intentions are lower when the whistleblower's identity is disclosed, but do not find any significant differences in reporting intentions between anonymous reporting and when the whistleblower's identity is protected.

While there is generally little evidence of a direct association between an anonymous reporting channel and whistleblowing intentions, studies find that anonymous channels are useful in certain circumstances. Kaplan, Pany, Samuels, and Zhang (2012) find that when there has been no previous negative outcome for whistleblowing, reporting intentions between the anonymous and non-anonymous channels are not significantly different. However, when there has been a previous negative outcome for whistleblowing, reporting intentions to a non-anonymous reporting is lower while reporting intentions to an anonymous reporting channel are not affected. Kaplan, Pany, Samuels, and Zhang (2009a) find that while gender does not influence reporting intentions to a non-anonymous reporting channel, reporting intentions to an anonymous reporting channel are higher for females compared to males. They further document that male and female participants differ in the extent to which they perceive the reduction in personal costs of an anonymous reporting channel compared to a non-anonymous reporting channel, and that reduction in personal costs mediates the relationship between gender and reporting intentions to an anonymous reporting channel.

Taken together, these studies suggest that an anonymous reporting channel encourages whistleblowing when the perceived cost of reporting is high.

5.3. Report recipient

While the SOX Act requires companies to establish an internal reporting channel, the Act does not provide any guidance on the report recipient. A steam of research examines the recipient of the whistleblowing report. A group of studies examine whether the type of hotline administrator (internal versus external administrator) affects internal whistleblowing intentions but find mixed evidence. While some studies find that an external administrator solicits more internal whistleblowing reports (Gao et al., 2015; Zhang et al., 2013), others find that an internal administrator solicits more internal reports (Kaplan et al., 2009b). Kaplan et al. (2011) also find that internal reporting intentions are greater when the report recipient is an internal rather than an external auditor. Zhang et al. (2013) suggest that the effect of the type of reporting channel on reporting intentions depends on previous whistleblowing outcomes. When there was a negative compared to positive previous whistleblowing outcome, internal reporting intentions are higher if the hotline channel is externally administered.

A related stream of research focuses on the characteristics of the report recipient. Kaplan et al. (2015) examine the effect of likeability of the report recipient on internal whistleblowing intentions of professional accountants and managers. They find higher internal reporting intentions when the report recipient is more likeable. Using a sample of MBA students, Kaplan et al. (2010) examine how a report recipient's power within the organization affects internal reporting intentions following an unsuccessful social confrontation. They find that when an unsuccessful social confrontation has occurred, internal reporting intentions to the transgressor's supervisor (the more powerful report recipient) are higher than internal reporting intentions to the internal auditor (the less powerful report recipient).

5.4. Legal protection

Some countries, including the U.S., provide legal protection for corporate whistleblowing. Brennan and Kelly (2007) find that awareness of legislative protection for whistleblowing does not affect trainee auditors' confidence in internal or external reporting structures. Wainberg and Perreault (2016) examine whether the communication of legal protection for whistleblowing affects whistleblowing intentions among a sample of graduate students with auditing experience. They argue that the communication of explicit whistleblowing protections increases vividness of the message, which in turns evokes fearful mental imagery. They find that when explicit whistleblowing protections are provided (i.e. using vivid descriptions of whistleblowing retaliation) in a whistleblower hotline policy, auditors perceive higher reporting risk and are subsequently less willing to report violations of auditor independence and code of professional conduct through the hotline. Their findings thus caution on the use of explicit whistleblowing protection.

5.5. Whistleblowing rewards program

Another area that has garnered the interest of accounting researchers is the introduction of whistleblowing rewards program under the Dodd-Frank Act. Baloria, Marquardt, and Wiedman (2017) find that firms with weaker whistleblowing systems lobbied more against the whistleblowing program proposed in the Dodd-Frank Act. They also find that firms which lobbied against whistleblower legislation experienced positive stock market returns around events linked to the implementation of the Dodd-Frank Act, and explain that this is because the markets perceived the whistleblowing program to be more essential to such firms.

Outside the U.S., some regulators are hesitant to provide monetary rewards to financial whistleblowers because of concerns about the effectiveness of using financial rewards to motivate whistleblowing. For example, the U.K.'s Financial Conduct Authority (2014) argued there is no empirical evidence that incentives increase the number or quality of whistleblowing reports and thus recommended against offering financial incentives for whistleblowing. Recent studies investigate the concern with the use of financial rewards. Studies generally find that external whistleblowing intentions are higher when regulators provide financial rewards for whistleblowing (Andon et al., 2016; Berger et al., 2017). Andon et al. (2016) further find a significant interaction effect between the provision of financial incentives and perceived seriousness of the wrongdoing on external whistleblowing intentions. They find that regardless of whether financial incentives are provided or not, external whistleblowing intentions are higher when misconduct is perceived to be serious. However, when perceived seriousness of the wrongdoing is lower, the presence of financial incentives increases external whistleblowing intentions.

Other studies examine the design of the whistleblowing rewards program. Rose et al. (2017) examine the effect of the size of financial reward provided by the SEC and find that reporting intentions to the SEC are higher when the size of the reward is larger. The whistleblowing rewards program run by the SEC contains a minimum threshold feature where rewards are provided only if the recoverable fraud amount exceeds US$1 million. Berger et al. (2017) examine the effect of whistleblowing rewards program having minimum value thresholds for reward eligibility and find that having a minimum threshold feature could lead to unintended consequences. Specifically, they find that when financial rewards are available but when the size of the fraud is less than the prescribed minimum threshold to obtain the reward, participants are less likely to report fraud and are more likely to delay reporting of fraud compared to the condition where financial rewards are not mentioned.

5.6. Summary of research findings

Whistleblowing legislation in the U.S. requires companies to establish an internal whistleblowing system that allow anonymous reporting, protects whistleblowers against retaliation and provides financial rewards for whistleblowing. Panel D of Table 2 presents a summary of the general findings of the above-mentioned factors in relation to internal and external whistleblowing. Specifically:

1. Anonymous reporting channels are effective at encouraging internal whistleblowing when the perceived costs of reporting are higher.
2. There is mixed evidence that the strength of procedural safeguards affects internal whistleblowing.
3. Internal whistleblowing is more likely to occur when internal whistleblowing systems are perceived to have higher procedural, distributive and interactional justice.
4. Explicit communication of legal protection for whistleblowing reduces internal whistleblowing.
5. Internal whistleblowing intentions are higher when report recipients are likeable.
6. There is mixed evidence that the type (internal versus external) of report recipient affects internal whistleblowing.
7. Financial rewards provided by regulators increase external whistleblowing.

5.7. Avenues for future research

5.7.1. Whistleblowing report recipients

There is little legislative prescription on how whistleblowing reports should be handled.[13] Potential whistleblowers act based on their assessment of the report recipient. They are more (less) likely to report when they (do not) believe the report recipient will adequately manage their report (Moberly, 2014). Despite the importance of report recipients in the whistleblowing process (Moberly, 2014), there is less research on the role of the whistleblowing report recipient. Theoretical research has proposed that the credibility and power of the report recipient encourage individuals to report (Near & Miceli, 1995) but most of these propositions have not yet been tested (Moberly, 2014). An avenue for future research is to examine whether personal traits and attributes of the report recipient – such as expertise, experience, and training – affect whistleblowers' assessment of the credibility and power of the report recipient, and subsequently influence their reporting decision. Additional research on the report recipient will help to inform on the design of whistleblowing systems and provide guidance on best practices in receiving whistleblowing allegations.

5.7.2. Monetary rewards for whistleblowing

More research is needed to inform the debate on the use of monetary rewards to encourage whistleblowing. While some commentators argue that monetary rewards are needed to motivate reporting because whistleblowing is not purely an altruistic behavior (Miceli et al., 2009; Rapp, 2007), others argue that the provision of monetary rewards might lead to unintended consequences, such as an increase in bounty hunters or frivolous whistleblowing reports (Rapp, 2012; Vega, 2012). Another concern with the provision of financial rewards by regulators is that it provides incentives to whistleblowers to bypass the internal whistleblowing system, thus undermining the internal whistleblowing system (Lee, 2011; Luhrs, 2012; Pacella, 2014). Research can explore whether monetary rewards do indeed lead to unintended consequences such as an increase in frivolous or malicious reporting, greater distrust among employees (thereby negatively affecting organizational culture or productivity), or diminished credibility of the whistleblower's testimony in court.[14]

The provision of monetary incentives has the potential to affect the auditor–client relationship. Under the SEC's whistleblowing rewards program, auditors are eligible under certain circumstances for whistleblowing monetary rewards and this can potentially generate mistrust between the auditor and client. Research can explore whether these incentives affect clients' behaviors during auditor–client disagreements, such as their openness of communication and demonstration of concern (Rennie, Kopp, & Lemon, 2010). Such research will inform on the effect of offering monetary rewards on the auditor–client relationship.

6. The effects of whistleblowing

6.1. The effects of whistleblowing on firms

Researchers generally find negative firm-level consequences following an external whistleblowing event. Bowen et al. (2010) examine U.S. cases of external whistleblowing made to the press and the Occupational Safety and Health Administration (OSHA). They find that external whistleblowing leads to detrimental firm consequences such as a lower subsequent stock market performance, negative subsequent operating performance and a greater likelihood of a subsequent lawsuit. Call, Martin, Sharp, and Wilde (2017) examine a sample of U.S. firms that face an enforcement action and find that whistleblowing firms experience higher regulatory penalties and longer enforcement proceedings compared to non-whistleblowing firms.

Although firms subject to an external whistleblowing allegation subsequently suffer negative firm economic consequences, these firms are more likely to improve their corporate governance and financial reporting quality. Bowen et al. (2010) find that firms subject to a public external whistleblowing event (whistleblowing to the press) are more likely to improve subsequent corporate governance by reducing the size of their board, increasing board independence, replacing the CEO and having less busy board members. They, however, do not find improvements in corporate governance when firms are subject to less public external whistleblowing (whistleblowing to the OSHA). Wilde (2017) examines cases of external whistleblowing made to the OSHA and finds that firms subject to external whistleblowing are less likely to subsequently engage in financial misreporting or aggressive tax practices.

Together, these studies document that while an external whistleblowing event is economically costly for a firm, such an event leads to subsequent improvements in financial reporting quality and corporate governance.

6.2. The effects of whistleblowing on whistleblowers

Whistleblowing affects whistleblowers' well-being and job. At times, whistleblowing results in favorable consequences to the whistleblower. For example, Dyck, Morse, and Zingales (2010) examine actual cases of corporate fraud in the U.S. and find that journalists who blew the whistle on fraud were more likely to obtain a promotion than non-whistleblowers. Other times, whistleblowers experience an adverse response for whistleblowing. Dyck et al. (2010) find that auditors who blew the whistle were more

[13] Prior studies document wide variation in the selection of whistleblowing report recipients across companies (Hassink, de Vries, & Bollen, 2007; Kaplan & Schultz, 2006).

[14] For example, Schmidt (2012) document that audit litigants are more likely to settle a litigation action and for a larger amount if they perceive jurors are more likely to argue that auditor independence was impaired. Likewise, whistleblowers' credibility can be impaired if perceived to be blowing the whistle for the financial rewards.

likely to lose the account of the firm involved in perpetrating fraud, and did not gain significantly more new accounts after blowing the whistle than non-whistleblowers. Dyck et al. (2010) also observe a high number of employees who blew the whistle were retaliated against. Surveys similarly report that whistleblowing retaliation is not uncommon. The 2011 and 2013 National Business Ethics Survey find that more than 20 percent of whistleblowers experienced retaliation (Ethics Resource Center, 2012, 2014). Given that retaliation creates an atmosphere of fear and deters whistleblowing, it is important to review studies that examine the factors that exacerbate or reduce retaliation.

Research on whistleblowing retaliation draws on theories of power and proposes that retaliation is more likely to occur when the wrongdoer has relatively greater power than the whistleblower, when the organization is more dependent on the wrongdoer, and when the organization is more dependent on the misconduct (Miceli & Near, 1989; Miceli, Near, & Schwenk, 1991; Near & Miceli, 2008; Rehg et al., 2008; Rothschild & Miethe, 1999). Empirical research also finds that whistleblowers who report on accounting-related misconduct are more likely to experience threats or retaliation when they perceive lower responsibility for reporting (Casal & Zalkind, 1995) and when there is less organizational support from supervisors (Casal & Zalkind, 1995). Lee and Fargher (2017) find that retaliation is more likely to occur when the audit committee is of lower quality and when fraud is more severe (proxy by the dollar amount of fraud). Taken together, research evidence suggests that retaliation against whistleblower can be attributable to power of wrongdoer, responsibility and support received by the whistleblower, quality of audit committee and the severity of fraud.

6.3. Avenues for future research

Compared to studies that investigate the determinants of whistleblowing, there is less research on the factors that affect retaliation against whistleblowers who report accounting-related misconduct. Understanding the incidence of retaliation is important to encourage and realize the benefit of internal whistleblowing on accounting-related misconduct. A better understanding of the factors affecting retaliation is also important because retaliation may damage organizational culture and employee morale, as well as expose the firm to greater litigation risk. We thus suggest several areas for future research. First, researchers can investigate whether various design features of an internal whistleblowing system can insulate whistleblowers from retaliation. For example, do mechanisms such as providing a whistleblowing protection officer, conducting training on anti-retaliation, or a regular review of the status of the whistleblower help to protect whistleblowers from retaliation? Such research can inform on the design of internal whistleblowing systems and contribute to our understanding of factors that encourage internal whistleblowing.

Second, researchers can explore other determinants of whistleblowing retaliation. Near and Jensen (1983) propose that retaliation might be a rationalistic organizational response to reported misconduct, whereby an organization retaliates in proportion to the degree of threat it experiences. Their proposition suggests that firms are more likely to retaliate against whistleblowers when firms are more dependent on an accounting-related misconduct or are more reliant on a wrongdoer; future research can test these propositions. Future studies can also examine whether other corporate governance characteristics such as the tone at the top or board characteristics might prevent or exacerbate retaliation. Third, researchers can also investigate the costs of retaliation such as litigation costs, reputational costs, or effects on workforce productivity. Given the detrimental impact of retaliation on firm and whistleblowers, empirical evidence on the above proposed research areas should be of interest to management, employees and regulators.

7. Concluding comments

The accounting profession plays an important role in the whistleblowing process because accountants and auditors are often best positioned to detect and report fraudulent misconduct. This study provides a comprehensive review of whistleblowing research on accounting-related misconduct. This review first synthesizes the determinants of internal and external whistleblowing on accounting-related misconduct. The review finds that factors relating to the characteristics of the whistleblower, the misconduct and wrongdoer generally have similar directional influences on internal and external whistleblowing. In contrast, organizational characteristics generally different directional influences on internal and external whistleblowing. In particular, organizational responsiveness and receptivity to whistleblowing increase internal whistleblowing and decrease external whistleblowing.

This review also discusses U.S. whistleblowing legislation on accounting-related misconduct and synthesizes related research. The SOX Act requires U.S. companies to provide an anonymous reporting channel. Research findings suggest that providing an anonymous reporting channel helps to encourage whistleblowing when the perceived costs of reporting are high. The Dodd-Frank Act introduced financial rewards for whistleblowing. Research findings document that financial rewards are positively associated with whistleblowing intentions, suggesting that financial rewards are effective at encouraging whistleblowing.

This review further synthesizes the research on the consequences of whistleblowing to firms and to whistleblowers. Research generally finds that firms subject to an external whistleblowing event experience negative firm economic consequences; such firms however are more likely to subsequently improve their financial reporting quality and corporate governance. Research also finds that whistleblowers are more likely to experience retaliation when they have lower responsibility for reporting, when there is less support for whistleblowing from organizational members, when the audit committee is of a poorer quality and when fraud is more severe. Avenues for future research have been provided in the respective sections. Addressing those questions will help contribute to a better understanding on whistleblowing on accounting-related misconduct.

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