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Lucas Martins Dias Maragno

**The Counterproductivity of Monetary Rewards:** how financial incentives crowd-out  
whistleblower intentions

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Lucas Martins Dias Maragno

**The counterproductivity of monetary rewards: how financial incentives crowd-out whistleblower intentions**

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Orientador: Prof. José Alonso Borba, Dr.  
Coorientador: Prof. Christopher J. Skousen, PhD.

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Lucas Martins Dias Maragno

**The counterproductivity of monetary rewards:** how financial incentives crowd-out  
whistleblower intentions

O presente trabalho em nível de doutorado foi avaliado e aprovado por banca examinadora  
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Certificamos que esta é a **versão original e final** do trabalho de conclusão que foi julgado adequado  
para obtenção do título de doutor em Contabilidade.

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Este trabalho é dedicado à minha família.





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"If I have seen further it is by standing on the shoulders of giants"  
(NEWTON, 1675; BARTH, 2015)

"Dare mighty things"  
(ROOSEVELT, 1905)

"Each dream you leave behind is a part of your future that will no longer exist"  
(STEVE JOBS)



## RESUMO

A denúncia externa envolve relatar irregularidades a uma agência reguladora. A SEC dos Estados Unidos foi uma das primeiras a implementar um programa de recompensa para os denunciantes e aumentou o uso, alegando sua eficácia. Sob a pressão dessas novas mudanças regulatórias para combater a fraude, diversos países propuseram o uso de recompensas monetárias para encorajar os denunciantes. No entanto, os países também estão modificando as políticas de *whistleblowing* de maneira que a *Motivation Crowding Theory* sugere que poderia resultar em efeitos contraproducentes. Esta tese é composta por três estudos sobre *whistleblowing* na perspectiva da Contabilidade. O primeiro estudo demonstrou como os artigos de Contabilidade e Administração abordaram a construção metodológica apropriada de experimentos sobre *whistleblowing*. Com base em uma amostra de 49 artigos que empregaram métodos experimentais entre 1976 e 2018, o primeiro estudo descreve questões metodológicas como, desenho da pesquisa, procedimentos da tarefa e questões da variável dependente, seleção dos participantes e vários aspectos relacionados ao reporte externo a uma agência reguladora. Além disso, examinou diversas políticas de *whistleblowing* de diferentes países. O segundo estudo analisou o efeito das recompensas monetárias e o canal de reporte sobre as intenções dos denunciantes. O experimento contou com 235 online participantes via Mturk. Os resultados mostram que uma recompensa monetária pode incentivar tanto pessoas com Locus de Controle (LOC) interno quanto externo à medida que a recompensa aumenta, independentemente de um canal de reporte anônimo ou não anônimo. Ainda, mostrou uma diferença significativa entre os denunciantes com LOC interno e externo quando não há incentivo monetário e o canal de denúncia não é anônimo. O terceiro estudo analisou o efeito da inclusão de um limite na recompensa monetária e o tamanho da fraude nas intenções dos denunciantes. O experimento contou com 152 online participantes via Mturk. Os resultados mostram uma consequência contraproducente quando uma política de *whistleblowing* inclui um teto para a recompensa monetária. De acordo com a *Motivation Crowding Theory*, um efeito de desincentivo pode ocorrer quando uma recompensa monetária é oferecida a uma escolha ética ou moral. Considerando isso, mostro que, quando há uma recompensa limitada e a fraude é pequena, os denunciantes têm menor probabilidade em denunciar a fraude do que quando nenhuma recompensa é oferecida. Esta dissertação contribui para a literatura da Contabilidade sobre denúncias e para a *Motivation Crowding Theory*. Meus resultados têm implicações importantes para legisladores e reguladores, considerando a adoção de incentivos e proteções monetárias para encorajar os denunciantes.

**Palavras-chave:** *Whistleblowing*. Recompensa monetária. Canal de reporte.



## RESUMO EXPANDIDO

### Introdução

Uma das estratégias na prevenção e no combate às fraudes pode ser o desenvolvimento da inter-relação entre as agências de controle (*enforcement agencies*) e a sociedade por meio de políticas de *whistleblowing*. Políticas de *whistleblowing* que pagam aos indivíduos uma recompensa por divulgarem informações sobre condutas ilegais rapidamente ganharam atenção pública e acadêmica, impulsionando a inserção dessas políticas em várias áreas regulatórias, principalmente, aquelas no combate a fraudes. Visto isso, muitas jurisdições (países) implementaram ou estão implementando essa estratégia para fornecer incentivos a funcionários para que reportem irregularidades corporativas. As fontes da motivação dos indivíduos para fornecerem essas informações podem ser internas ou externas. Alguns optam por oferecerem informações às autoridades competentes por acreditarem ser um dever cívico, ético ou moral. Em outros casos, as autoridades competentes (agências de controle) podem fornecer incentivos externos, monetários, aos indivíduos, em um esforço para tentar convencê-los a atuarem como “agentes privados” de informações. A motivação das pessoas tem sido estudada extensamente em áreas que vão da psicologia à economia. Na literatura econômica, existe a ênfase na importância dos incentivos monetários (isto é, salários, recompensas) como a maneira mais eficaz de induzir as pessoas a exercerem mais esforço, resultando em maior desempenho. Essa abordagem destaca o papel da motivação extrínseca pela qual as pessoas se envolvem em uma atividade por recompensas monetárias, ao mesmo tempo em que desconsideram o fato de que as pessoas podem se engajar em uma atividade por si mesmas (motivação intrínseca), onde não há recompensas materiais. Psicólogos, como Deci (1971) e economistas comportamentais como Frey e Jegen (2001) apontaram a relevância e a interação entre a motivação intrínseca e sua relação com os incentivos extrínsecos (ou seja, monetários). A motivação intrínseca pode ser interpretada como uma característica idiossincrásica das pessoas que poderia ser prejudicada pela presença de incentivos extrínsecos, já que estes podem sobrepor os motivos não monetários, gerando o chamado efeito *crowding-out* e demonstrado por diversos autores (ver Gneezy e Rustichini, 2000; Heyman e Ariely, 2004; Gneezy, Meier e Rey-Biel, 2011; Kamenica, 2012; Beretti, Figuières e Grolleau, 2013; Berger, Perreault e Wainberg, 2017).

### Objetivos

Esta tese é composta por três artigos, sendo um baseado em síntese e análise da literatura e dois experimentos, cada experimento explorou o fenômeno da denúncia (*whistleblowing*) com diferentes incentivos e interações de recompensa monetária. Assim, o objetivo do primeiro artigo foi examinar o que constitui uma pesquisa experimental sobre *whistleblowing* pela perspectiva da Contabilidade e da Administração. O segundo artigo, apresentou como objetivo analisar o efeito das recompensas monetárias e dos canais de denúncias sobre as intenções dos denunciantes (*whistleblowers*). O terceiro artigo apresentou como objetivo analisar se a inclusão de um limite para a recompensa monetária potencialmente diminui a probabilidade de denúncia.

### Metodologia

O primeiro artigo utilizou o ranking do *Australian Business Deans Council* (ABDC) de 2018 para a revisão e síntese de literatura. Concentrei a pesquisa na lista de qualidade de periódicos da ABDC, pois compreende os principais periódicos de Contabilidade e Administração. Para garantir que os dados fossem coletados de uma amostra significativa, eu coletei os artigos de periódicos com as designações A\*, A e B. Os artigos foram coletados manualmente entre 10/09/18 e 26/09/18,

acessando todos os artigos publicados em todas as revistas com a palavra "*whistle*". Depois, examinei cada artigo lendo seu resumo. Com base em uma amostra de 49 artigos que empregaram métodos experimentais entre 1976 e 2018 o estudo descreveu questões metodológicas como, desenho da pesquisa, procedimentos da tarefa e questões da variável dependente, seleção dos participantes e vários aspectos relacionados ao reporte externo a uma agência reguladora. Além disso, examinou diversas políticas de *whistleblowing* de diferentes países. No segundo artigo foi realizado um experimento  $3 \times 2$  entre sujeitos. Eu manipulei as recompensas monetárias e os canais de denúncias. A recompensa monetária foi manipulada em dois níveis (recompensa de 1% vs. recompensa de 20%) e canal de denúncias (anônimo vs. não anônimo). Além disso, incluo uma condição de controle na qual não há recompensa monetária. O experimento contou com 235 participantes via Amazon Mechanical Turk que foram aleatoriamente designados para uma das seis condições de tratamento. O experimento apresenta um cenário hipotético adaptado de Andon et al. (2018), em que adicionei uma decisão em terceira pessoa para controlar o viés de Desejabilidade Social. Também, o experimento utilizou o modelo de Schultz et al. (1993) que adaptou os conceitos de Graham (1986) para a denúncia de irregularidades. O modelo prevê que a percepção de seriedade do ato, a percepção de responsabilidade em reportar e a percepção do custo pessoal influenciam na intenção dos *whistleblowers*. Ainda, controlei pelo locus de controle dos participantes segundo modelo de Rotter (1966). Por fim, os seguintes critérios foram usados para capturar as informações demográficas dos participantes, idade, gênero, estado civil, origem étnica, nível educacional, renda familiar, status de emprego, experiência profissional e experiência com comportamento questionável ou injusto. No terceiro artigo foi realizado um experimento  $2 \times 2$  entre sujeitos. A recompensa monetária (nenhuma recompensa e recompensa limitada) e o tamanho da fraude (pequena e grande) foram manipulados. O experimento contou com 152 participantes via Amazon Mechanical Turk que foram aleatoriamente designados para uma das quatro condições de tratamento. O experimento apresenta um cenário hipotético adaptado de Andon et al. (2018), em que adicionei uma decisão em terceira pessoa para controlar o viés de Desejabilidade Social. O cenário hipotético apresenta uma fraude que envolve o reconhecimento de receitas fictícias cometidas por um diretor financeiro da AgFoods. Também, o experimento utilizou o modelo de Schultz et al. (1993). O modelo prevê que a percepção de seriedade do ato, a percepção de responsabilidade em reportar e a percepção do custo pessoal influenciam na intenção dos *whistleblowers*. Ainda, controlei pelo locus de controle dos participantes segundo modelo de Rotter (1966). Por fim, os seguintes critérios foram usados para capturar as informações demográficas dos participantes, idade, gênero, estado civil, origem étnica, nível educacional, renda familiar, status de emprego, experiência profissional e experiência com comportamento questionável ou injusto.

## **Resultados e Discussão**

O primeiro artigo encontrou 67 artigos publicados em periódicos da área de Contabilidade e 266 artigos publicados em periódicos da área de Administração entre os anos 1976 e 2018 sobre *whistleblowing*. Primeiro, observei que, no período 1976 e 2018, houve um aumento de artigos sobre pesquisas de *whistleblowing*. Por um lado, o aumento nesse período por artigos publicados em periódicos de Contabilidade deveu-se principalmente à trabalhos que utilizaram o método experimental. Por outro lado, uma variedade de métodos de pesquisa foi observada ao longo do período em periódicos da Administração. Ao longo dessas quatro décadas, vários periódicos publicaram pesquisas experimentais sobre denúncia de irregularidades. O meio de publicação mais popular é o *Journal of Business Ethics* (JBE), com 12 artigos, seguido pela *Behavioral Research in Accounting* (BRiA), com oito artigos. A JBE publica artigos sobre *whistleblowing* desde 2005 e BRiA desde 2010. O segundo artigo, sugere que a intenção dos *whistleblowers* depende da



recompensa monetária e, quando uma recompensa monetária está ausente, a motivação intrínseca desempenha um papel importante. Especificamente, os resultados sugerem que as políticas de *whistleblowing* levem em consideração não apenas o canal de denúncia, mas também a motivação intrínseca dos denunciantes (*whistleblowers*), ao determinar se é necessário implementar um canal de denúncia anônimo ou não anônimo. Além disso, indivíduos em condição de canal de denúncia sem recompensa e sem anonimato consideraram a política menos justa. O terceiro artigo, demonstrou que a recompensa limitada interage com o tamanho da fraude. Em contraste com minhas previsões, recompensas limitadas diminuem a probabilidade de reportar uma fraude quando a fraude é pequena, mas não quando a fraude é grande. A falta de um aumento nas intenções dos denunciantes após a adição de uma recompensa é consistente com a *Motivational Crowding Theory*. Isso pode ser o resultado da inclusão de uma recompensa monetária limitada forçando os indivíduos a reformularem suas escolhas morais ou éticas para uma que seja impulsionada por preferências econômicas. Assim, em vez de aumentar a motivação para relatar, o incentivo monetário substitui ou elimina a motivação intrínseca e diminui as intenções dos denunciantes.

### **Considerações Finais**

*Whistleblowing* é “a divulgação pelos membros da organização (antiga ou atual) de práticas ilegais, imorais ou ilegítimas sob o controle de seus empregadores, a pessoas ou organizações que podem ser capazes de efetuar ações” (Near e Miceli, 1985, p.4). Diversos países estão oferecendo recompensas monetárias como um mecanismo de reforço para os denunciantes (*whistleblowers*). Enquanto os denunciantes, normalmente, possuem opções de canais de denúncias internos e externos para denunciarem irregularidades, esta tese se concentra em denúncias externas para uma agência reguladora que fornece incentivos e proteções aos denunciantes (*whistleblowers*). Atualmente, existem diferentes modelos de pagamento para incentivar a denúncia e essa matriz de incentivos varia significativamente, dando às pesquisas a oportunidade de experimentar todos esses diferentes modelos. Para expandir o conhecimento dos estudos sobre *whistleblowing*, o primeiro artigo revisou e sumarizou os artigos sobre *whistleblowing* publicados entre os anos de 1976 e 2018. Em especial, abordou como realizar pesquisas experimentais sobre *whistleblowing* de maneira apropriada nas perspectivas da área de Contabilidade e Administração. Primeiro, os periódicos classificados como Contabilidade concentram-se em pesquisas experimentais e os periódicos em Administração são mais diversos em termos de métodos. Além disso, a pesquisa experimental sobre *whistleblowing* é amplamente caracterizada por estudos baseados em vinhetas, cenários hipotéticos. O tipo de fraude nas vinhetas está concentrado na apropriação indevida de ativos e fraude em relatórios financeiros. Finalmente, há um mix de estudos que controlam e não controlam pelo viés de desejabilidade social. O segundo artigo demonstrou que uma recompensa monetária pode incentivar tanto pessoas com locus de controle (LOC) interno quanto externo à medida que uma recompensa monetária está presente, independentemente de um canal reporte anônimo ou não anônimo. Além disso, demonstrou uma diferença significativa entre denunciantes com LOC interno e externo quando nenhum incentivo monetário é oferecido e o canal de denúncia não é anônimo. Isso significa que indivíduos com um LOC externo provavelmente não se responsabilizarão por denunciar fraudes quando expostos a revelar sua identidade. De fato, é o resultado mais interessante para esse experimento, porque qualquer sociedade é formada por pessoas heterogêneas, variando de LOC interno a externo. O terceiro artigo, demonstrou uma consequência não intencional quando uma política de denúncia inclui uma recompensa monetária limitada. De acordo com a *Motivational Crowding Theory*, um efeito de exclusão pode ocorrer quando uma recompensa monetária é oferecida a uma escolha ética ou moral. Considerando isso, mostrei que, quando havia uma recompensa limitada e a fraude era pequena, os denunciantes

estavam menos inclinados a denunciar a fraude do que quando nenhuma recompensa era oferecida. Em outras palavras, nesse cenário, as recompensas monetárias não aumentaram a probabilidade de denúncias. Por outro lado, quando a fraude aumenta e existe uma recompensa limitada, a probabilidade de denúncia aumentou. O que significa que o efeito de exclusão apenas ocorreu na condição de fraude pequena. Por fim, esta tese possui alguns resultados valiosos que podem ser usados por legisladores e reguladores na implementação de políticas de *whistleblowing*. Embora a denúncia de irregularidades possa ser uma ferramenta para prevenir e combater fraudes e irregularidades, é essencial que os países elaborem políticas eficazes de denúncia de irregularidades para incentivar os denunciantes e não o contrário.

**Palavras-chave:** *Whistleblowing*. Recompensa monetária. Canal de reporte. Denunciante.

## ABSTRACT

External whistleblowing involves the reporting of wrongdoing to a regulatory agency. The United States SEC was one of the first to implement a reward program for whistleblowers and has increased the use of it, going on to claim its effectiveness. Under the pressure of such new regulatory changes to fight fraud, several countries have proposed using monetary incentives to encourage whistleblowers. However, countries are also modifying whistleblowing policies in ways that Motivation Crowding Theory suggests could result in counterproductive effects. This dissertation is comprised of three studies on whistleblowing from an Accounting perspective. The first study demonstrates how papers from Accounting and Management addresses the construction of appropriate methodological experiments in whistleblowing. Also, it examines several regulatory whistleblowing policies from various countries. Based on a sample of 49 paper that employed experimental methods between 1976 to 2018, the first study describes methodological issues such as, research design, task procedures, dependent variable issues, subject selection and several aspects related to external reporting to a regulatory agency. The second study analyzes the effect of monetary rewards and the reporting channel on whistleblower intentions. The experiment employs a hypothetical scenario where 235 Amazon Mechanical Turk (Mturk) subjects answered in a third person question to control for social desirability bias (SDB). The results show that a monetary reward can encourage both internals and externals Locus of Control (LOC) as reward increases, independently of an anonymous or non-anonymous reporting channel. Additionally, I show a difference between whistleblowers with internal and external LOC when any monetary incentive is offered, and reporting channel is non-anonymous. The third study analyzes the effect of the inclusion of a limit on monetary reward and the size of fraud on whistleblower intentions. The experiment was attended by 152 Mturk subjects where they answered in a third person question to control for SDB. The results show an unintended consequence when a whistleblowing policy includes a ceiling to a monetary reward. According to Motivation Crowding Theory, a crowd-out effect could happen when a monetary reward is offered to an ethical or moral choice. Considering this, I show that when there is a capped reward and fraud is small, whistleblowers are less inclined to report fraud than when no reward is offered. This dissertation contributes to previous accounting literature on whistleblowing and to Motivational Crowding Theory. My results have important implications for legislators and regulators considering the adoption of monetary incentives and protections to encourage whistleblowers.

**Keywords:** Whistleblowing. Monetary reward. Reporting channel.



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## ACRONYMS AND ABBREVIATIONS

ABCD	Australian Business Deans Council
ACFE	Association of Certified Fraud Examiners
ANCOVA	Analysis of covariance
ANOVA	Analysis of variance
AOS	Accounting, Organizations and Society
BRiA	Behavioral Research in Accounting
CAD	Canadian dollar
CAR	Contemporary Accounting Research
CCP	Competition Commission of Pakistan
<i>CPA</i>	Certified public accountant
FRA	Federal Regulatory Agency
HITs	Human Intelligence Tasks
HUF	Hungarian Forint
IP	Internet Protocol
KRW	South Korean won
LOC	Locus of Control
MBA	Master of Business Administration
MTurk	Amazon Mechanical Turk
NIS	New Israeli Shekel
OECD	Organization for Economic Co-operation and Development
OSC	Ontario Securities Commission
PCAOB	Public Company Accounting Oversight Board
PKR	Pakistani Rupee
POB	Prosocial Organization behavior
POD	Principled organizational dissent
RC	Reporting channel
SEC	Securities and Exchange Commission
SDB	Social Desirability Bias
SOX	Sarbanes-Oxley Act
TAR	The Accounting Review
UK	United Kingdom
UNODC	United Nations Office on Drugs and Crime
US	United States
USD	United States Dollar



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## 1 INTRODUCTION

Whistleblowing policies that provide monetary rewards signal a strategic push on part of regulatory enforcement agencies to detect fraud through employee collaboration (Dyck, Morse & Zingales, 2010; Call, Martin, Sharp & Wilde, 2018). Currently, several countries provide monetary rewards to individuals who come forward regarding fraud or unethical behavior (Andon, Free, Jidin, Monroe & Turner, 2018). The United States was among the first nations to implement a reward program for whistleblowers and has increased its use, going on to claim its effectiveness. Other countries are basing their rewards programs on the US policy but are also modifying it in ways that Motivation Crowding Theory suggest could result in counterproductive effects. Since research is limited to the US monetary reward program, the scientific knowledge about this field is very limited to this specific setting. No studies have looked at reward level in conjunction with fraud size as influences on whistleblowing, other than those related to the US setting.

Whistleblowing represents a valuable source of information to enforcement agencies in the fraud detection process (Call et al., 2018). Dyck, Morse and Zingales (2010) found that fraud detection does not rely on standard corporate governance actors (e.g., investors, the Securities and Exchange Commission [SEC], and auditors), but instead on several nontraditional actors (i.e. employees, media, and industry regulators). Whistleblowing is the most common method of detection of illegal conduct (e.g., fraud and corruption) at 40%<sup>1</sup> of such cases in 2018. Also, this method increases the probability of detecting fraud by 15% (Dyck, Morse & Zingales, 2010), and increases the likelihood that the SEC imposes monetary sanctions on the accused firm by 8.58% (Call et al., 2018). It would appear that these benefits might justify the promotion of whistleblowing by the SEC.

Several countries provide monetary rewards as a reinforcement mechanism for whistleblowers, to encourage them. These external motivators have been introduced in the United States, Pakistan, Hungary, South Korea, Canada, Mexico, and, to a lesser degree in China and India (Andon et al., 2018). Also, monetary rewards are provided to offset the risks of coming forward and blow the whistle. Some of the risks include dismissal, poor performance evaluations, demotion

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<sup>1</sup> The Association of Certified Fraud Examiners (ACFE) report show in the 40%: 53% were provided by employees of the victim organizations; 32% of the tips that led to fraud detection came from people outside the organization: customers, vendors, and competitors; and 14% of tips came from an anonymous source.

or harassment. Patrick (2010) found that most whistleblowers in the US suffer retaliation even when whistleblowing protections exist by law.

The United States was one of the first to implement a reward program in 1863 under the False Claims Act and has been amended twice since then, in 1943 and in 1986. Following major frauds committed by Enron and WorldCom in the early 2000s, and by Bernard Madoff in the years leading up to 2008, the United States has expanded the role of monetary reward programs for whistleblowers in the context of financial markets: first, with the Sarbanes-Oxley Act in 2002, and then with the Dodd-Frank Act in 2010. The Dodd-Frank Act provides monetary rewards to whistleblowers who voluntarily provide original information that leads to a successful enforcement action by SEC. The amount awarded to the whistleblower ranges between 10% and 30% of the total monetary sanctions collected (12 U.S.C. § 5301, 2010). The 2018 report from the US Office of the Whistleblower shows that the SEC has experienced a significant increase in reporting since 2011. Also, the SEC has since received over 28,000 whistleblower tips, including more than 5,200 in 2018 alone, which have collectively resulted in more than \$975 million in rewards since the beginning of the whistleblowing policy.

Other countries are basing their rewards programs on the US policy with key components tailored to their individual circumstances and settings. Some reward programs are designed to give monetary rewards between 4% and 20% of the penalties assessed (South Korea) or between 5% and 15% (Canada). Others offer 1% of the sanction imposed by the enforcement agency limited to approximately \$180,000 (Hungary) or 10% with a limit amount of \$27,000 (i.e. Brazil, under a still-developing law project). In Pakistan, the reward payments range between \$1,900 and \$4,700 dollars (Rs\$200,000 to Rs\$ 500,000). Thus, it is unclear how effective these whistleblowing reward programs are on a global level, given that existing research focuses only in the US rewards programs.

Previous research has focused on the US whistleblowing monetary reward system to investigate how monetary incentives affect whistleblowing intention. However, these studies have several limitations that merit discussion. In terms of situational characteristics, research could explore specific monetary rewards to whistleblowers with different monetary payoffs, elements of harm to better understand the interaction between incentives and specific elements of seriousness perception as well as how participants would respond to different sizes of fraud (Dyck, Morse &



Zingales, 2010; Brink, Lowe & Victoravich, 2013; Berger, Perreault & Wainberg, 2017; Brink, Lowe & Victoravich, 2017; Andon et al., 2018).

The aim of this dissertation is to investigate the effects of different reward programs on whistleblowing intentions. A concept of key importance to that investigation, Motivation Crowding Theory explains that there is an interaction between intrinsic and extrinsic motivation. Intrinsic motivation exists when a person acts in the absence of a contingency (reward), because one likes the activity or because the individual derives some satisfaction from doing his or her duty (Deci, 1971). Extrinsic motivation is driven by outside factors, such as when a reward is offered. A “crowding” effect takes place when external interventions via monetary incentives or punishments crowd out intrinsic motivation, and, under different identifiable conditions, strengthen it, crowding it in (Frey & Jegen, 2001). If the monetary rewards aren’t large enough, people will reframe their decision to an economic one and ‘forget’ about the moral aspects of prosocial behavior, resulting in a crowding-out effect. Also, prior studies show that a crowding-out effect only happen when monetary rewards are perceived as too small (Gneezy & Rustichini, 2000; Heyman & Ariely, 2004; Ariely, Bracha & Meier, 2009; Beretti, Figuieres & Grolleau, 2013). In the context of whistleblowing research, the findings provided by Brink, Lowe and Victoravich (2013) and Berger, Perreault and Wainberg (2017) are consistent with Motivational Crowding Theory.

I conduct two experiments. In the first one, I manipulate the monetary reward in two levels and reporting channels. I predict that large monetary rewards will increase the likelihood of whistleblowing due to the crowding-in effect. In the second, I include a limit to the reward, and manipulate the size of the fraud in a two-level, hypothetical scenario. A counterproductive effect could happen when there is a ceiling (or a limited on the amount) for the reward: as the magnitude of fraud increases, and the rewards are held constant, the gap between fraud and reward increases as well. Gneezy and Rustichini (2000) explains that this may be important in cases where large payments are impossible, for example, because of legal reasons, which manifests in this experiment’s design as there was a set limit on the reward program. Consequently, I predict that the inclusion of a limit to a monetary reward will decrease whistleblowing intentions as fraud increases (i.e. crowding-out effect).

## 1.2 RESEARCH QUESTIONS

This dissertation seeks to address the following questions:

1. What constitutes whistleblowing experimental research in accounting and management?
2. What is the effect of monetary rewards and whistleblowing reporting channels on whistleblower intentions?
3. Does the inclusion of a limit on monetary reward potentially decrease the likelihood of whistleblowing?

## 1.3 RESEARCH CONTRIBUTIONS

The results of this dissertation provide several contributions for the study of whistleblowing from an accounting perspective. This dissertation contributes in terms of methodological aspects, theoretical and it has practical implications.

First, regarding of methodological contribution, this dissertation aims to enhance comparability between whistleblowing experimental research. A thorough review and summary of a large sample of studies published between 1976 and 2018 from Accounting and Management journals is among its contributions. With this, I identified how papers employed research design, task procedures, dependent variable measurement issues, subject selection and specific aspects of whistleblowing experimental research. Additionally, I summarized several pertinent regulatory policies, in contrast with previous papers which focused solely on US whistleblowing policy.

Second, regarding to theoretical contribution, this dissertation contributes to Motivational Crowding Theory providing insights into several interactions between intrinsic and extrinsic motivation. Especially, how rewards could decrease whistleblowers' intention. Further, I showed that some variables served as moderators – variables employed and analyzed with the intent to increase understanding of whistleblowing.

Third, in addition to previous theoretical implications, this dissertation also provides practical contributions. Specifically, I contribute to the effectiveness of whistleblowing policies. My results should be of interest to regulatory agencies that are implementing new whistleblowing policies worldwide.

## 1.4 ORGANIZATION OF DISSERTATION

This dissertation is composed of three articles, with one based on a synthesis of the literature and two experiments. Each experiment explores the whistleblowing phenomenon with different monetary reward incentives and interactions. The work is organized as follows: in Chapter Two, I present the Theoretical Framework from Motivational Crowding Theory and how could be relate to whistleblowing; in Chapter Three, I review and summarize how papers have addressed methodological issues on whistleblowing experimental research; in Chapter Four, I conduct the first experiment, on the effect of monetary rewards and the reporting channel on whistleblower intentions; in Chapter Five, I conduct the second experiment, on the effect of the inclusion of a limit to a monetary reward and its interaction with fraud size on whistleblower intentions, and, finally, Chapter Six presents conclusions.

## 2 THEORETICAL FRAMEWORK

### 2.1 MOTIVATION CROWDING THEORY

Human behavior is influenced by both intrinsic and extrinsic motivation. The former is described by Deci (1971, p. 105) as “one is said to be intrinsically motivated to perform an activity when one receives no apparent reward except the activity itself”. In short, this behavior results from the motivation to act, in the absence of a contingency (reward), simply because one likes to do it, or because the individual derives some satisfaction from doing his or her duty.

The second - extrinsic motivation - is activated from the outside, when a reward is offered. In particular, individuals follow the generalized law of demand, according to rational economic logic: the price effect. However, in the seminal 1970 work of Richard Titmuss *The Gift Relationship*, the author argues that monetary compensation for blood donation could reduce the supply of donors (Titmuss, 1970). Unlike Titmuss, economists predicted that if monetary compensation were offered for the donation, the total quantity offered would increase according to a normal supply function (Frey & Oberholzer-Gee, 1997). In contrast, social psychologists have argued that there are a "hidden costs of reward" and monetary rewards may reduce intrinsic motivation. Therefore, behavioral economists have proven the effect under different conditions (see Frey & Oberholzer-Gee, 1997; Gneezy & Rustichini, 2000; Ariely, Bracha & Meier, 2009).

Frey and Oberholzer-Gee (1997) argue that the introduction of monetary rewards can reduce the intrinsic motivation to behave altruistically or perform civic duty. The authors demonstrated this by interviewing 305 Swiss regarding the construction of a deposit for radioactive waste near their community. The result indicated that more than half of the respondents (50.8%) would have voted to have the nuclear waste repository built in their community, 44.9% opposed the installation and 4.3% did not care. To test the effect of external compensation, the authors asked the same question, inquiring whether they were willing to accept the construction if the Swiss parliament paid them. The amount offered ranged from US \$2,175 per individual (N = 117) to US \$4,350 (N = 102) and US \$6,525 (N = 86). While 50.8% of respondents agreed to accept the nuclear waste deposit without any compensation, the level of acceptance fell to 24.6% when it was coupled with financial incentive.

Gneezy and Rustichini (2000) conducted an experiment on 160 students from the University of Haifa in which participants were asked to answer a set of 50 questions taken from an

IQ test. The students received a fixed amount of 60 NIS (New Israeli Shekel) for participating in the experiment. They were divided into four different groups corresponding to four different treatments. The first group was asked to answer as many questions as they could. In the second group, there was an additional payment of 10 cents of NIS per question that they answered correctly. In the third group, they pledged an amount of 1 NIS, and those of the fourth group, an amount of 3 NIS per issue. It was observed that the average number of correctly answered questions decreased from just over 28 in the first group to 23 in the second, increased to more than 34 in the third group, and remained stable at 34 in the fourth group.

Ariely, Bracha, and Meier (2009) examined the interaction between image motivation, prosocial behavior, and monetary (extrinsic) incentives. They investigated, in particular, the crowding-out effect on the prosocial behavior of image motivation. By definition, the authors considered that one's image depends on the behavior of one person being visible to others. From this visibility, the results showed that the image is indeed an important part of the motivation to behave prosocially. Additionally, extrinsic incentives interact with image motivation, and are less effective in the public than in the private. These results imply that image motivation is affected by monetary incentives, which in turn means that monetary incentives are more likely to be counterproductive to public prosocial activities than in private settings.

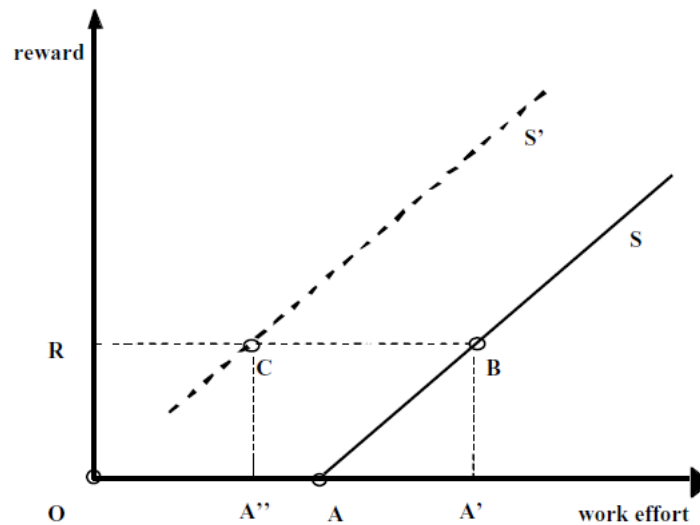
If a person derives intrinsic benefits simply by behaving in an altruistic manner or by living up to her civic duty, paying her for this service reduces her capacity for gaining altruistic feelings from the act. Her intrinsic motivation, then, has a reducing effect on supply (Frey & Oberholzer-Gee, 1997).

Motivation Crowding Theory explains the interaction between human behavior and the effects of economic policy instruments, prosocial and altruistic behavior, civic duty, among others, in the literature as showed previously. Frey (1997) justifies the need to consider externally imposed price interventions and regulations, and consider how they affect intrinsic motivation, to better understand how people behave in the face of choice.

Deci and Ryan (1985) explains that there is a psychological process which underlies this phenomenon: Where individuals perceive an external intervention to be controlling, their intrinsic motivation to perform the task diminishes. Frey (1997) states that in some cases external interventions may crowd out intrinsic motivations if they are perceived as controlling. For Frey and Jegen (2001) monetary rewards are considered especially controlling. And, in other cases, there

is the crowding-in effect if intrinsic motivation is perceived as support (psychology uses the term informative). In this case, self-esteem is stimulated, and individuals feel they are given more freedom to act, thus increasing self-determination (Frey, 1997).

The Figure 1 shows an explanation by Frey and Jegen (2001) regarding the interaction of the crowding-out effect and the price effect graphically. The authors explain that S is the traditional supply curve based on the relative price effect: raising the external reward for work effort from O and R increases work effort from A to A'. The crowding-out effect induces the supply curve to shift towards the left to S'. Thus, raising the reward from O to R leads to point C (instead of B). As the figure illustrates, the crowding-out effect significantly influences the relative price effect and raising the reward from O to R reduces work effort A to A''. Once intrinsic motivation has been crowded out completely, the normal supply curve takes over again, and raising the reward unequivocally increases work effort (movement along S').



Source:

Figure 1 - Net-outcome of the price and crowding-out effects

In the economic approach, Frey and Jegen (2001) point out that it is difficult, if not impossible, to determine the parts of an employee's intrinsic motivation to perform their work, since internal motivation is not directly observable. Although intrinsic motivation may play an important role in different areas of economics and society, it is difficult to influence or control it, especially in comparison to the wide range of extrinsic motivators available.

For economic theory, the motivation or its sources are only manifestations of underlying preferences, for the task itself or for the reward associated with task execution (Frey & Jegen,

2001). In order to derive testable hypotheses, the studies consider that the change in preferences is a change in the perceived nature of the task performed, in the task or in the self-perception of the actor (Frey, 1997).

### 2.1.1 Locus of control

Frey and Jegen (2001) explain that the effects of external interventions on intrinsic motivation are attributed to individuals' perceptions of an external intervention as a reduction to their self-determination, and intrinsic motivation is substituted by extrinsic control. Following Rotter (1966) the authors point out that the locus of control ("LOC") shifts from the inside to outside of the person affected. Individuals who are forced to behave in a specific way by outside intervention feel over-justified if they maintain their intrinsic motivation (Frey & Jegen, 2001).

According to Rotter (1966), the role of a reward is perceived and reacted differently by people. Rotter (1966) explain that one of the determinants of this reaction is the degree to which the individual perceives that the reward stems from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself, and thus occurs independently of his own actions.

Rotter (1966) divides this perception between the internals and externals locus of control. Internal LOC individuals believe themselves to be largely in control of their outcomes or his own relatively permanent characteristics, while the external LOC individuals believe that fate, luck, or chance determines much of what happens to them, or as unpredictable because of the great complexity of the forces surrounding them.

### 2.1.2 Large and small monetary incentives

The definition of what constitutes "small" and "large" incentives is not defined in the literature on the crowding-out effect. However, experimental studies have shown that "small" monetary incentives result in lesser effects than in the absence of monetary incentives. Gneezy and Rustichini (2000) consider 1% as a small reward, whereas Heyman and Ariely (2004) considered 2.5% to be the same. These experiences suggest that a small reward can have a counterproductive effect (Kamenica, 2012).

In Gneezy and Rustichini's (2000) study, high school students had to collect donations for a charity. The 180 students were divided into three groups and each one would go door to door to collect the donation. The first was as a control group, with no monetary reward. For the second group, 1% of the total value was promised. For the third, 10% of the amount collected was promised. The results showed that the group of students who received 1% of the value collected showed less effort than those who were not rewarded. For greater payment, Gneezy and Rustichini (2000) point to a resulting greater effort on part of recipients.

In one of the experiments by Heyman and Ariely (2004), participants were asked to repeatedly drag a computerized ball to a specific location on a screen. One group was not compensated for the task. Others received one of two forms of payment (cash or an equivalent quantity of jellybeans) crossed with two levels of payment, low (10 cents or 5 jujubes) or high (\$4 or half a pound of jellybeans). Cash-strapped conditions (the number of balls dragged across the screen) were greater than when they received \$4 instead of 10 cents, but it was much smaller when they received 10 cents than when they received no reward.

Beretti, Figuieres and Grolleau (2013) conducted a 3 x 2 experiment, with three levels of reward (no reward, small reward [€2] and high reward [€7]) and three levels of recipient of the money (the individual, the 'environmental cause', and a choice between the individual or the 'environmental cause'). The results show that there is a crowding-out effect of a small monetary incentive on participation. When a monetary reward was offered, the share fell by 32.4% compared to the unpaid case. However, when the monetary incentive is sufficiently high, the effect of the price attenuates the crowding-out effect.

## 2.2 WHISTLEBLOWING

Whistleblowing can be defined in various ways. Elliston (1982, p. 3) presents four definitions to define whistleblowing as a phenomenon, the first is "going public with information about the safety of a product", that is, whistleblowing would be to report any question about the safety of the product externally to the organization, without defining the whistleblower as a person or as an institution.

Second, Elliston (1982, p.3) present that "sounding an alarm from within the very organization in which they work, aiming at spotlight neglect or abuses that threaten the public



interest". In this case, the author adds that it would be a person who works in the organization and reports some act that harms or threatens the public interest.

Third, Elliston (1982, p.3) states that "(when) the employee, "without support or authority from his superiors..., independently makes known concerns to individuals outside the organization". This means that it emphasizes the person as an employee and in an unsupported environment so that it solves the situation internally, and thus, uses external reporting to the organization.

Finally, Elliston (1982, p.3) defined whistleblowing as

"an employee or officer of any institution, profit or non-profit, private or public, who believes either that he/she has been ordered to perform some act or he/she has obtained knowledge that the institution is engaged in activities which (a) are believed to cause unnecessary harm to third parties, (b) are in violation of human rights or (c) run counter to the defined purpose of the institution and who inform the public of this fact."

Therefore, whistleblower is an employee or an organization, regardless of the industry that may have caused damage to third parties, that has violated human rights or the purpose of the organization. Elliston (1982) concludes by stating that the whistleblower informs the public and all four definitions refer to the transfer of information as a process.

In this sense, Near and Miceli (1985) describe whistleblowing (also) as a process involving at least four elements: the whistle-blower, the whistleblowing act or complaint, the party to whom the complaint is made, and the organization against which the complaint is lodged. Thus, the authors state that whistleblowing can be defined as "the disclosure by organisation members (former or current) of illegal, immoral or illegitimate practices under the control of their employers, to persons or organisations that may be able to effect action" (Near & Miceli, 1985, p. 4). In contrast with Elliston's (1982) concept, the authors do not define whether whistleblowing is the reporting of internal or external information, but they agree with the concept that it would be an employee to report the act as a process instead a single action.

The definition put forth by Jubb (1999) is not limited to employees, but instead expands it to anyone who has or had access to information, often employees, but can also be suppliers and customers. And that has focused on denouncing irregularity as an element of freedom of expression and the right of individuals to express disagreement,

"a deliberate non-obligatory act of disclosure, which gets onto the public record and is made by a person who has or had privileged access to data or information of an organisation, about non-trivial illegality or other wrongdoing whether actual, suspected or anticipated which implicates and is under the control of that organisation, to an external entity having the potential to rectify the wrongdoing" (Jubb, 1999, p. 83).

In addition to that, Jubb (1999) states that there is a clear or near consensus that whistleblowing is an act of disclosure/reporting, that the action is elective and never a duty, and that its subject is wrongdoing (i.e., illegality or questionable morality).

In relation to the previous concepts, this one agrees with the definitions (common ground) that whistleblowing should be an external report to the organization and, in this way, Andrade (2015) delimits that only the external disclosure is considered whistleblowing.

Also, Jubb (1999) explain that internal disclosures are another source of dispute. Such disclosures are made either to persons within the target organization, to supervisors in accordance with routine procedures, by arrangements prescribed for non-routine situations, or, in some unauthorized manner, perhaps as an appeal to a director or union official.

### 2.2.1 Differences between whistleblowers and informants

In addition to the discussion about whistleblowing concept, there is also the question of translating the term to countries where the native language is not English. Whereas, in English-speaking countries, a differentiation between the informers/informants and the whistleblowing/whistleblowers is a matter of concern.

Specifically, in the United States, the False Claims Act of 1986 uses the term informer, the SOX legislation from 2002, and the Dodd-Frank legislation of 2010 already use the term whistleblower.

Given this, it is important to differentiate terms because there is a negative view of the informant, who can often be involved in the criminal act and be seen as a traitor by the criminal organization. According to Donnelly (1951) an informant “is one who, having participated in an offense, turns against his partners and discloses information to the police”. Often, under a promise of immunity, he bears witness the organization in support of his own judgment. The value of an informant to the police is based on the fact that they are possessed of internal knowledge. This knowledge is often acquired through their own participation in crime or their close affinity with those involved in such activities.

As informants, Ellinston (1982) explains that whistleblowing involves an *accusation*. It is directed to people - not just in the sense of warning those who are in danger, but in the sense of locating responsibility for the danger. The whistleblower need not identify one person who is

responsible, though he may. Rather, he may target a group of individuals who share responsibility, or which includes someone likely to be responsible.

The concepts often fall close to each other and can result in negative connotations from mistranslation, since the informant can be considered a traitor or snitch. Such concern in the translation of the term can be observed in both the Holland and France. In Holland the whistleblower law was passed in 2016 and the Dutch used the translation for “*klokkenluiders*” - ringers or Bell-ringers (Ferreira, 2017).

In France, the law of “*lanceur d'alerte*” (Law 2016-1691 of 2016 art 6) was also promulgated in 2016, where the term was used to avoid the negative connotation of the term “*dénouciateur*” (Ferreira, 2017). The term remembers the time of the occupation by Germany in the second world war “*dénonciation renvoie à Occupation*” (Thüsing & Forst, 2016).

In Brazil, there seems to be no such discussion. In Decree No. 5.687 of January 31, 2006, which was promulgated by the United Nations Convention against Corruption and adopted by the United Nations General Assembly in 2003, the article 33<sup>2</sup> uses the word “*denúncia*” and “*denunciantes*”. Also, there is no specific law on whistleblowing in Brazil or a specific definition by the legislature. There are only bills in progress: (i) PLS 664 of 2011 uses the term “*communicante*”; (ii) PL 3.506 of 2012 uses the term "report" and; PLS 362 of 2015 uses the fear "workers who denounce", however this bill was withdrawn by the author on 04/05/2016.

Law 13,608, adopted on January 10, 2018, uses the term "informant", but as it has not yet been fully enacted, it is not defined who would fit as whistleblower, what the reward amount may be, nor what fraud could be reported, among other considerations. Finally, it is noted that there is no common term in different languages, but there is a concern to avoid negative connotations in the translation of terms.

In general, there are mixed societal views of whistleblowers. Some see them as heroes to society, while others referred to them as rats, informers, snitches, and squealers all terms that have negative connotations associated with them (Peeples, Stokes & Wingfield, 2009). Even in societies ostensibly view them as heroes, such as the US, most whistleblowers suffer retaliation. Patrick (2010) study demonstrates that seventy-four percent of the whistleblowers were fired in US following the surfacing of accusations made.

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<sup>2</sup> [https://www.unodc.org/documents/treaties/UNCAC/Publications/Convention/08-50026\\_E.pdf](https://www.unodc.org/documents/treaties/UNCAC/Publications/Convention/08-50026_E.pdf)

### 2.2.2 Whistleblowing as prosocial behavior

Prosocial behavior can be defined in different forms; in general, prosocial behavior is a behavior which the actor expects will benefit the person or persons to whom it is directed (Brief & Motowidlo, 1986).

Other definitions include the restriction that the voluntary act be practiced without receiving material or social return, which refers to a specific type of prosocial behavior, altruism. Leeds (1963) provided three criteria for defining behavior as altruistic; (i) the act is an end in itself and is not directed towards self-gain; (ii) the act is voluntary; and (iii) the act results in something good.

In order to guide research on social behavior in organizational contexts, Brief and Motowidlo (1986) define as prosocial organizational behavior (a) performed by a member of an organization, (b) directed toward an individual, group, or organization with whom he or she interacts while carrying out his or her organizational role, and (c) performed with the intention of promoting the welfare of the individual, group, or organization toward which it is directed.

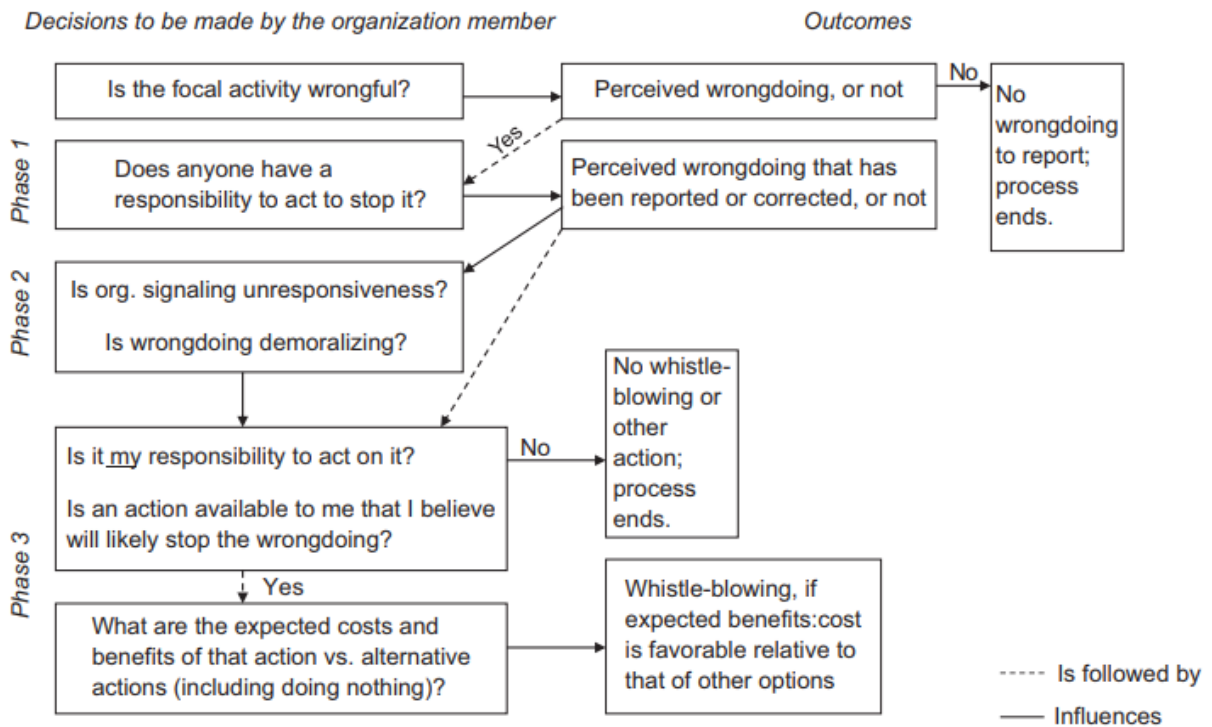
This definition does not restrict material or social return. In this sense, the Staub (1978) concept of prosocial behavior only requires that it benefit others, but unlike altruism, it may claim rewards.

Visualizing prosocial behavior, such as that of Staub (1978), Dozier and Miceli (1985) define whistleblowing as a form of prosocial behavior that may benefit others as it generally benefits parties other than whistleblowers themselves.

Brief and Motowidlo (1986) mention that if the person reports and brings the matter to another individual or agency who is in a position to take corrective action, with the intention of sincerely helping the organization rather than attempting to injure or destroy it, to disagree in this way is also a prosocial act. What may represent compliance with more fundamental organizational values and policies and, consequently, disagreement and denunciation can often be functional for organizational effectiveness, at least in the long term (Brief & Motowidlo, 1986).

Van Dyne, Cummings and Parks (1995) consider that even if some complaints are based on mixed or self-interested motives, the implicit assumption underlying the complaint is that exposure will benefit society or the organization in the long run. Acting to protect the public interest is a typical way to express this (Jubb, 1999).

Miceli, Near, Rehg and Scotter (2012), describe briefly the Prosocial Organization behavior (POB) model in three phases.



Source: Miceli, Near, Rehg & Van Scotter (2012)

Figure 2 - Phases in the POB (prosocial organizational behavior) model of whistle blowing

### 2.2.3 Whistleblowing and locus of control

A personality characteristic that may explain whistleblowing behavior is Rotter's (1966) locus of control (LOC). Thus, internal expectations that these would be efficacious would be more pronounced than would externals. In this model, individuals with an external LOC are less likely to take personal responsibility for the consequences of ethical or unethical behavior and are more likely to rely on external forces. Conversely, an internal LOC is more likely to take responsibility for consequences, and thus to rely on their own internal determination of right and wrong to guide behavior (Chiu & Erdener, 2003).

Miceli and Near (1992) suggest that the locus of control is one of the characteristics that effects whistleblowing decisions. Whistle blowers may be strongly motivated by a belief in their own efficacy in specific situations (Dozier & Miceli, 1985). This is because whistleblowers may be strongly motivated by the degree to which conditions suggest that the situation is potentially under their control. Hence, individuals who have an internal LOC might blow the whistle when their external LOC counterparts would not (Chiu, 2003).

Empirical evidence shown by Chiu and Erdener (2003) demonstrates that the interaction term of peer reporting judgement and locus of control on peer reporting intention was found to be significant. Respondents with an external LOC were not likely to take the responsibility of reporting a peer's wrongdoing, even when they considered peer reporting to be ethical. In comparison, subjects who considered peer reporting to be ethical but had an internal LOC were more likely to report a peer's wrongdoing. Chiu's (2003) statistical analysis largely supports as well, which suggests that an individual's locus of control does moderate the relationship between ethical judgment and whistleblowing.

Thus, these individuals will be more likely to blow the whistle in situations of which they can potentially take control. Moreover, researchers have generally found that individuals with internal locus of control are more likely than externals to engage in prosocial behavior (Spector, 1982). As whistle blowing is a prosocial behavior, internals are therefore considered more likely than externals to engage in whistle-blowing activity (Chiu & Erdener, 2003).

#### 2.2.4 Whistleblowing and principled organizational dissent

Graham (1986) defined Principled Organizational Dissent as the effort by individuals in the organization to protest the status quo because of their objection on ethical grounds, to some practice or policy.

For Van Dyne, Cummings and Park (1995) Graham's concept of Principled Organizational Dissent (POD) overlaps with whistleblowing when the latter involves a matter of conscientious principles. Although, Van Dyne, Cummings and Parks (1995) cited Near and Miceli (1985) to support their claim that when whistleblowing is based on ethical standards or principles it could be labeled Principled Organizational Dissent. Van Dyne, Cummings and Parks (1995) present the criticism that Near and Miceli (1985) do not present examples. The clearest example of a Principled Organizational Dissent might be whistle-blowing by a government official or organizational employee (Penner, Dovidio, Piliavin & Schroeder, 2005).

Van Dyne, Cummings and Park cited the theoretical model of Graham (1986) and outlined three forms of Principled Organizational Dissent: conflict among people or units (individual level), disagreement on how best to achieve organization goals (organization level), and policies or practices that violate legal or ethical principles (super-organizational level). Whistleblowing

focuses on the super-organizational level when an employee reports a violated ethical or legal principle (Van Dyne, Cummings & Parks, 1995).

Schultz et al. (1993) adapted the concepts of Graham (1986) and applied the framework for examining corporate managers' and professionals' propensity to report questionable acts at intra-organization level. The authors support their claim stating that the concept of Graham is consistent with violations of internal control, illegal acts and intentional financial statement errors (irregularities).

The model based on the adapted framework predicts that the likelihood of reporting increases with both the seriousness of the irregularity and the observer's attribution of personal responsibility to report. These two factors (seriousness and responsibility) have a reciprocal relationship insofar as serious issues can generate growing feelings of a responsibility to report (Taylor & Curtis, 2010).

For Graham (1986) the seriousness of the irregularity can be measured in several ways, for example, by the monetary impact, the threat of damage, the negative results and the frequency with which some form of irregularity occurs. Thus, the attribution of personal responsibility, Miceli, Near and Schwenk (1991) survey of internal auditors indicated that participants are less likely to report unethical acts when they do not feel compelled morally or prescriptively to do so. Etzioni (2010) explains that some forms of altruistic behavior occur partially as a result of a sense of duty towards others. While materiality has been investigated in prior whistleblowing research (in the form of seriousness) (Robinson, Robertson & Curtis, 2012).

Figure 3, adapted from Graham (1986) by Schultz et al. (1993), portrays the model of perceptions underlying an individual's decision to report a questionable act. It is noteworthy that Graham's model has a broader view than traditional approaches to accounting; however, it is of increasing relevance (Schultz et al., 1993).

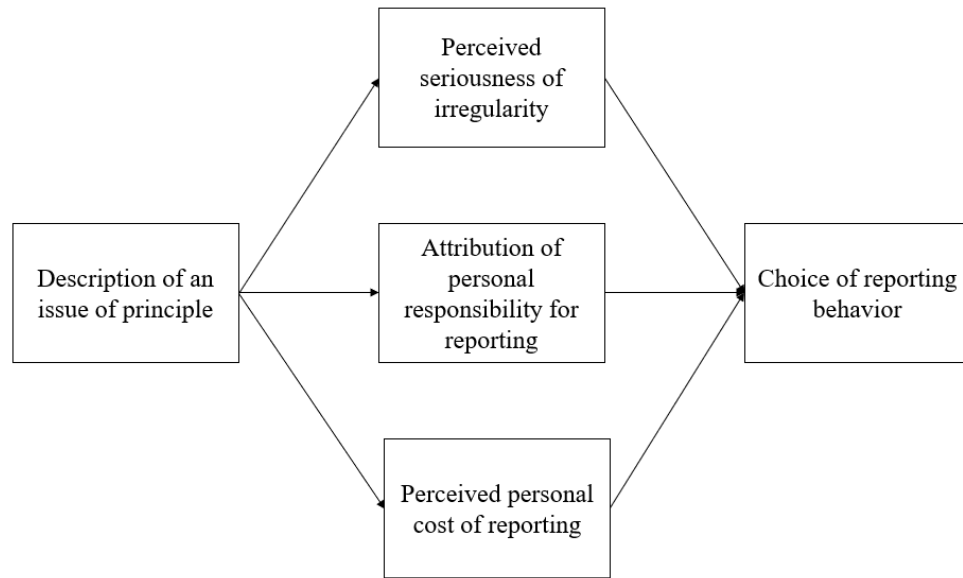


Figure 3 - Reporting questionable acts. Adapted from Graham (1986) by Schultz et al. (1993)

Several other studies have applied the model of Schultz et al. (1993) adapted from Graham (1986). Kaplan and Whitecotton (2001) examined the intentions of the auditors' complaints about the colleague when he discovers that the fellow auditor is considering employment with the client and has not complied with the ethical decision not to accept the job offer.

Curtis (2006) explored the impact of humor on the ethical decision-making processes of individuals, who addressed how mood influences their willingness to report a colleague's unethical actions. The results demonstrated that negative mood was associated with lesser intentions of reporting unethical actions to a superior. The role of affect was explained by the demonstration that two determinants measure the relationship between mood and complaint intentions – specifically, how seriousness and responsibility have a positive impact on reporting intentions, reducing these perceptions by negative mood reduces intention to report. The authors pointed out that the negative impact of personal cost in communicating intentions was significant, although not as a mood mediator.

Robinson, Robertson and Curtis (2012) extend the ethics literature by experimentally investigating how the nature of the wrongdoing and the awareness of those surrounding the whistleblower can influence whistleblowing. The results shown that participants perceived higher responsibility to report the material fraud than the immaterial fraud. Also, that employees consider theft more serious and perceive a greater responsibility for reporting theft (i.e., perceptions of moral



intensity were greater for theft than financial fraud). This greater moral intensity led to an increased likelihood of reporting theft than financial statement fraud.

Dalton and Radtke (2013) examined Machiavellianism mediated by the Graham's (1986) model within the context of whistleblowing. The hypotheses predicted that individuals with a higher level of Machiavellianism would be less likely to report irregularities, in the context of an ethical environment of an organization. The results of the study from a sample of 116 MBA students supported the premise that Machiavellianism is negatively related to the allegation. In addition, the results demonstrated that Machiavellianism has an indirect effect on denunciation through perceived benefits and perceived responsibility. So, these two factors mediate the relationship between Machiavellianism and whistleblowing.

Fajardo and Cardoso (2014) examined the whistleblowing in the Brazilian context, considering the influence of costs and intrinsic benefits, as well as aspects related to the interaction of the individual within the organization, the profession, and the society overall. Through a questionnaire answered by 124 accountants, the results showed that situational aspects (moral intensity and personal costs) positively influence the intention to report.

Brink, Lowe and Victoravich (2017) examine three primary factors that may influence employees' intentions to report securities law violations internally and/or externally. The first factor concerns the type of security law violation (fraudulent financial reporting and insider trading). The findings shown that internal reporting is driven by increased perceptions of responsibility to report a wrongful act, whereas external reporting to the SEC is driven by increased perceptions of seriousness regarding the wrongful act. Their results suggest that a greater perception of seriousness may lead individuals to report externally when the option is available.

### 2.3 QUI TAM LEGISLATION

*Qui tam* legislations are the ones in which a citizen becomes a rapporteur on behalf of the State itself, *qui tam* is an abbreviation of the Latin phrase "*qui tam pro domino rege quam, pro se ipso in hac parte sequitur*". Translated from Latin, it means "who brings the action for the king as well as himself" and refers to the fact that both the relator, who brings the action, and the government, which actually is harmed, share the fruits of any penalty, damages, or settlement from the liable defendant (Brollier, 2006).

The reference that the Latin phrase makes to the king is due to the time of the Romans. Roman criminal law relied on a system of prosecution by private citizens, known as “*delatores*” (Beck, 1999) and who are analogous to modern “*relators*” (Brollier, 2006). The person who pursues such an action receives a portion of any amount recovered on the government's behalf, permitting the private informer to sue for the government on a contingent-fee basis (Beck, 1999).

### 2.3.1 British experience with qui tam legislation

English statutes had historical antecedents in Roman and Anglo-Saxon law. An example of this application is demonstrated in 695 AD when the king of Kent passed a law that prohibited work on Saturday (Beck, 1999). The law also included the following clause, if a free man works during the forbidden time – between sunset on Saturday night and sunset on Sunday night, he will lose his cure, and the man who reports will have half of the fine and the profits resulting from the work (Beck, 1999).

The use of rewards in *qui tam* laws to regulate the performance of public functions became increasingly common in the fourteenth and fifteenth centuries. In 1360, Parliament allowed informants to prosecute jurors who accepted bribes, shortly thereafter, another law authorized informants to prosecute those responsible for obtaining and arranging for the king to carry rewards if they accepted bribes (Beck, 1999).

The decline in law enforcement coincided with the development of modern police departments and the proliferation of prosecutors. Sir John Fielding, a judge who chaired a London police force, believed that the rewards offered to informants had the perverse effect of discouraging public-minded citizens from reporting evidence of crimes (Beck, 1999). As the activities of police and prosecutors continued to expand, the feeling began to rise in Parliament that informants were no longer a necessary component of law enforcement in England.

### 2.3.2 American experience with qui tam legislation

The United States' experience with *qui tam* has been brief in comparison to Britain's medieval *qui tam* antecedents. However, *qui tam* is an increasingly important and prominent feature of the American jurisprudential landscape (Brollier, 2006).

The False Claims Act was enacted in 1863 in response to frauds committed in connection with military purchases. The War and Treasury Departments urgently called for legislation to facilitate the prevention and punishment of fraud in such acquisitions (Beck, 1999). In addition, Congress has acknowledged that detection of fraud against the Federal Treasury was extremely difficult in the absence of informants' assistance (Caminker, 1989).

In the early 1980s, the Department of Defense faced a series of scandals involving overpricing on items purchased from contractors: for example, the Department paid \$435 for a hammer, \$640 for a toilet seat cover, and \$7,622 for a coffee maker (Beck, 1999).

In 1986, the False Claims Act was revised. Since the reformulation of the law, its amendments allowed informants to continue the action, even if the Department of Justice did not do so. The informant is guaranteed costs, expenses and attorneys' fees, as well as 15% to 25% of the proceeds of the litigation when the Department of Justice intervenes and from 25% to 30% if the Department of Justice does not (Caminker, 1989). After the reform, Congress accounted for about 3,000 lawsuits and \$20 billion in recoveries between 2010 and 2014 alone (Engstrom, 2014a).

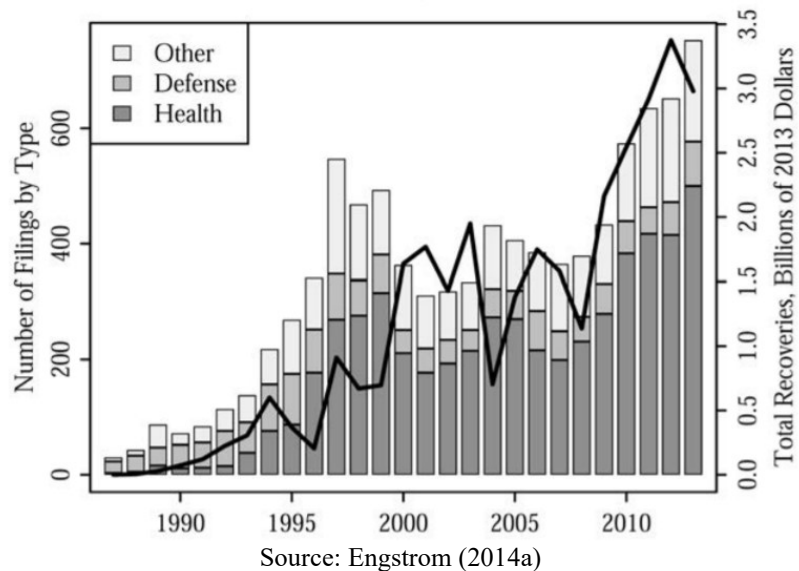


Figure 4 - Volume of cases under Qui Tam from 1986 to 2013

Figure 4 shows the rapid growth in the number of lawsuits since 1986, most of which fall into two sectors: medical care and defense. More than 70% of the funds recovered as part of the legal provisions relate to matters in which the Department of Health and Human Services is the principal, while more than 15% of the funds recovered belong to matters in which the Department

of Defense is the principal (Bowen, Call & Rajgopal, 2010). Dyck, Morse and Zingales (2010) demonstrate that in sectors where the False Claims Act does not allow employees to earn a monetary reward, corporate fraud is revealed by employees in 14% of cases, while that percentage more than doubles, to 41% when the reward exists.

## 2.4 WHISTLEBLOWING LEGISLATION

### 2.4.1 Sarbanes-Oxley Act

In response to the frauds observed in Enron, WorldCom, Tyco and other noteworthy scandals, the United States has expanded the role for whistleblowing monetary reward programs to the context of financial markets. Toward this end, the US Congress passed the Sarbanes-Oxley Act (SOX) in July 2002. The Act mandated a series of reforms to improve corporate accountability, improve financial disclosures and combating corporate and accounting fraud, and created the Public Company Accounting Oversight Board (PCAOB), to oversee the activities of the public accounting profession (SEC, 2018).

The law has a broader scope than the False Claims Act, and it established greater governance responsibilities, criminal sanctions available to federal prosecutors, severe criminal penalties of up to 10 years in prison, and penalties to those who retaliate whistleblowers (Bowen, Call & Rajgopal, 2010; Kerschberg, 2011). The law demonstrates the importance of reporting wrongdoing or unethical behavior (Dworkin, 2006).

Two sections are important for whistleblowing in the law, Section 301 on the role of audit committees in implementing anonymous reporting channels “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”. Most commonly, companies hire an independent company to receive the complaints (Dworkin, 2006).

Also, Section 806 of the SOX Act is known as Whistleblower Provision. It is an important part in preventing retaliation, where, it states that a company cannot “discharge, demote, suspend, threaten, harass, or in any other manner discriminate against an employee in the terms and conditions of employment because of any lawful act done by the employee”. However, Section 806 does not specify how an appropriate internal reporting channel would be (Dworkin, 2006).

Otherwise, a person could provide the information to external party, to a federal or law enforcement agency, or to any member or committee of Congress and bear the right to protection (Dworkin, 2006).

The inadequate protection of whistleblowers due to deficiencies in the enactment of the law resulted in a drop in the rate of employee-originated fraud reporting. The percentage of fraud in the financial statements originally disclosed by whistleblowers declined after approval of the SOX law in 2002, from 20.7% to 15.6% in 2004 (Seifert et al. 2010). As causes, procedural difficulties are pointed out, as well as the deadlines for requesting protection from retaliation. The limitation period for retaliation was only 90 days, and the limitation period begins when the complainant becomes aware of the employer's intention to retaliate, not when the action was actually implemented (Kim, 2009).

One SOX's key purposes was to protect whistleblowers; however, of the 491 employees who filed SOX actions during the first three years of the Act, only 3.6% of those cases were ruled in favor of the employee (Moberly, 2007). Therefore, Pope and Lee (2013) claim that their effectiveness in relation to SOX's provisions to protect against retaliation to whistleblowers was questionable. Additionally, SOX did not include a direct financial reward for whistleblowing, but, rather, a compensation for retaliation.

#### 2.4.2 Dodd-Frank Act

The Dodd-Frank Act was enacted in the United States in 2010, and it proposed monetary rewards for whistleblowers that would provide the SEC with high-quality information that lead to enforcement actions. The purpose of the Dodd-Frank Act is to provide a simplistic model for whistleblowers to report relevant information related to alleged fraud (Pope & Lee, 2013).

The Dodd-Frank rewards program provides external incentives for whistleblowers, granting a whistleblower a 10% to 30% reward for any monetary penalties in excess of one million dollars resulting from a judicial or administrative system initiated by the SEC. Baloria, Marquardt and Wiedman (2013) state that a minimum threshold allows for a more efficient allocation of limited SEC resources, helping to identify potentially more serious breaches of securities laws.

However, unlike the False Claims Act, the SEC retains control of the action, exercises full discretion as to whether to initiate an action, and calculates the amount of the reward within the limit range. Section 23 "commodity whistleblower incentives and protection", determines the

amount of the award based on (i) the amount of information provided by whistleblower for the success of the judicial or administrative action; and (ii) the degree of assistance provided by whistleblower and any legal representative of whistleblower in a lawsuit or administrative action.

In addition, whistleblowers enjoy robust protections against retaliation, including a private right of action in a federal court and guarantee of anonymity if represented by a lawyer and was extended to 180 days (Engstrom, 2014b). Table 1 shows the main differences between the Dodd-Frank Act and the False Claims Act.

Table 1 - Comparison between the False Claims Act and the Dodd-Frank Act

	Dodd-Frank Act (2010)	False Claims Act (1986)
Monetary Compensation	10-30% of sanctions in excess of one million dollars.	15-25% of collections in the case of DoJ intervention; 25-30% of collection should the DoJ not intervene.
Degree of Regulator Discretion over Payout Calculation	Minimum of 10% guaranteed; however, the SEC maintains unappealable discretion over payout as per statutory limitations.	Whistleblower is guaranteed a minimum of 15%; court determines the final payout.
Whether the whistleblower exercises independent regulatory authority, and degree of residual public control over private legal action.	No – the SEC alone determines whether it should pursue legal action.	Yes; however, the DoJ, maintains complete gatekeeper power over private legal proceedings.
Protection against retaliation	Right to private anti-retaliation action; guarantee of anonymity when represented by an attorney.	Right to private anti-retaliation action, though without the guarantee of anonymity.
Eligibility limitations	Yes – excludes government employees and informants who obtained information by way of legal or accounting involvement, or by way of internal compliance investigation; information must be “original”, which is to say, gathered by way of independent knowledge or analysis on part of the whistleblower.	The whistleblower must be the original source of information on which the allegation of fraud is based.

Source: Engstrom (2014b)

### 2.4.3 Legislation in other countries

Whistleblowers play an essential role in exposing several frauds and other wrongdoing that threaten public health and safety (Transparency International, 2013). Therefore, countries are putting protective measures and incentives to whistleblowers in place.

Transparency International introduced in 2013 the best practices for laws to protect whistleblowers and support whistleblowing in the public interest. Protection laws are designed to

protected individuals and disclosures, that is, all employees and workers in the public and private sectors need: (a) accessible and reliable channels to report wrongdoing; (b) robust protection from all forms of retaliation; and (c) mechanisms for disclosures that promote reforms that correct legislative, policy or procedural inadequacies, and prevent future wrongdoing (Transparency International, 2013). Table 2 describes what protection means for: protection from retribution, preservation of confidentiality, anonymity and personal protection.

Table 2 - Best practices for laws to protect whistleblowers

Protection from retribution	Individuals shall be protected from all forms of retaliation, disadvantage or discrimination at the workplace linked to or resulting from whistleblowing. This includes all types of harm, including dismissal, probation and other job sanctions; punitive transfers; harassment; reduced duties or hours; withholding of promotions or training; loss of status and benefits; and threats of such actions
Preservation of confidentiality	The identity of the whistleblower may not be disclosed without the individual's explicit consent
Anonymity	Full protection shall be granted to whistleblowers who have disclosed information anonymously and who subsequently have been identified without their explicit consent
Personal protection	Whistleblowers whose lives or safety are in jeopardy, and their family members, are entitled to receive personal protection measures. Adequate resources should be devoted for such protection

Source: Transparency International (2013).

Currently, several countries provide whistleblower protection (e.g., USA, UK, New Zealand, Japan, Canada, South Korea, Austria, Belgium, Hungary, Ireland, France, Chile, Switzerland and others) (OECD, 2016; Andon et al., 2018). Moreover, other countries are in the process of including protection laws and / or monetary incentives (e.g., Brazil).

Countries that offer monetary incentives to whistleblowers are Australia, Belgium, Canada, Israel, Japan, Korea, Slovak Republic, USA, Hungary, Ghana and Pakistan (Stephan, 2014; OECD, 2016). Countries that do not offer incentives are Austria, Chile, Estonia, France, Germany, Greece,

Hungary, Iceland, Ireland, Italy, Mexico, Netherlands, New Zealand, Norway, Portugal, Slovenia, Switzerland, Turkey and United Kingdom.



### **3 METHODOLOGICAL ISSUES IN WHISTLEBLOWING EXPERIMENTAL RESEARCH**

#### **3.1 INTRODUCTION**

Recent studies have revealed that whistleblowing is one of the most effective mechanism for detecting corporate fraud (Dyck, Morse & Zingales, 2010; ACFE, 2018; Call et al., 2018). In particular, only two studies have reviewed whistleblowing literature in the accounting context (Gao & Brink, 2017; Lee & Xiao, 2018). Gao and Brink (2017) reviewed accounting literature around the five determinants of whistleblowing identified by Near and Miceli (1995). Also, Lee and Xiao (2018) reviewed whistleblowing literature concerning the determinants; their review relates to Gao and Brink (2017) but expands it to consider the US legislative perspectives and the effects of whistleblowing on accounting-related misconduct. Similarly, Dasgupta and Kesharwani (2010) also held a discussion on US legislation.

However, there is no previous study that examined how papers from Accounting and Management addressed the construction of appropriate methodological experiments in whistleblowing. Moreover, on March 2, 2019 Steve Salterio, in his blog, stated that there is a need for studies focusing on issues as methods, methodology, and providing an outlet for replication research.

For my first goal, this dissertation's section aims to provide a critical review of experimental methodologies in whistleblowing research. Based on a sample of articles published in Accounting and Management areas, I demonstrate, especially for novice researchers, the challenges they will face when conducting appropriate experiments in whistleblowing. Despite the importance of reviewing the experimental design from previous studies, the purpose is to show what can be learn from it (e.g., how to improve internal validity). In particular, construct validity is key to testing theory and thus making generalizable inferences. Also, researchers must be aware that they trade off gains in internal validity at the expense of some external validity (Schulz, 1999).

Second, previous research is limited to US monetary reward program. To illuminate this uncharted area, I examined several regulatory whistleblowing programs rather than US whistleblowing policy. Also, I examined several reward designs program, internal or external report, anonymous and non-anonymous external whistleblowing channels that countries provided worldwide.

In this section, I undertake a critical review of the whistleblowing experimental research methodology used in a sample of 49 papers published in 19 accounting and management journals. I draw attention to deficiencies in the authors' application of methodology to experimental research, and I propose remedies which accounting researchers may wish to take into account in their future work.

### 3.2 DATA AND SAMPLE SELECTION

The Journal rankings constructed by the Australian Business Deans Council (ABDC) (2018) has been used for this literature review. I focus the research on the ABDC Journal Quality List because it comprises top overall journals from accounting and management. To ensure that data is drawn from a large enough sample, I collected only from those journals with A\*, A and B designations.

I hand-collected studies between 09/10/18 and 09/26/18 by accessing all articles published in every journal with the word "whistle" at each rank. Then I examine each of the resulting paper reading its abstract. In order to keep the focus on research papers non-research-related articles (e.g., book reviews) were excluded.

I found 67 papers published in Accounting journals and 266 papers published in management journals in the years 1976-2018. These papers are classified by time period and research methods in Table 3. The most popular research methods in Accounting Journals are Experimental, Archival, Literature/General Review, and surveys with 27 (40.3%) papers, 12 (17.9%) papers, 12 (17.9%), and 9 (13.4%) papers, respectively. Only 2 (3.0%) of the published papers during this time period are Conceptual. In contrast, the most popular research methods in Management Journals are Surveys, Literature and General Review, Conceptual, Other, Experimental and Case Study with 89 (33.5%) papers, 65 (24.4%) papers, 46 (17.3%), 25 (9.4%) papers, 22 (8.3%) papers, and 11 (4.1%) papers, respectively. Only 8 (3.0%) of the published papers during this time period are Archival.

Table 3 also reveals some distinct trends over the 43-year period. I observe that during the period 1976-2018 an increase in papers addressing whistleblowing research. The increase in this period by papers published in Accounting Journals was mainly due to the 20 papers from Experimental method. In contrast, a variety of research methods are noted over the 43-year period in Management Journals.

Table 3 - Number of Papers Published Per Year

	Archival	Experimental	Survey	Conceptual	Case Study	Literature /General Review	Other	Total	(%)
<b>Accounting</b>									
1976-1990	0	0	0	0	0	0	0	0	0.0%
1991-2000	0	0	0	0	0	0	0	0	0.0%
2001-2010	2	7	3	1	0	3	0	16	23.9%
2011-2018	10	20	6	1	0	9	5	51	76.1%
Total	12	27	9	2	0	12	5	67	
Total (%)	17.9%	40.3%	13.4%	3.0%	0.0%	17.9%	7.5%		
<b>Management</b>									
1976-1990	0	1	6	9	0	6	0	22	8.3%
1991-2000	1	2	15	10	3	19	2	52	19.5%
2001-2010	1	8	31	11	2	22	9	84	31.6%
2011-2018	6	11	37	16	6	18	14	108	40.6%
Total	8	22	89	46	11	65	25	266	
Total (%)	3.0%	8.3%	33.5%	17.3%	4.1%	24.4%	9.4%		
<b>Grand Total</b>									
	20	49	98	48	11	77	30	333	
(%)	6.0%	14.7%	29.4%	14.4%	3.3%	23.1%	9.0%		

Source: compiled by author.

Overall, whistleblowing research across the time period under analysis is composed of Surveys (29.4%), Literature/General Review (23.1%) and Experimental (14.7%) methods. Of these 333 papers, 27 are experiments published in accounting journals and 22 are experiments published in management journals. The final sample is comprised of 49 articles. This review identifies each study's: task design, experiment design, experiment procedures, dependent variable(s), pilot tests, sample selection (number of participants, the kind of participants (e.g., students, CPAs, independent auditors, etc.), and whether participants were paid). Task design, experiment design and experiment procedures represent the basic building blocks of most experiments (Schulz, 1999).

Table 4 - Number of Papers Published Per Journal

Journal	A r c h i v e	Rank	Year				Total
			1976-1990	1991-2000	2001-2010	2011-2018	
TAR	A	A*			1		1
CAR	A	A*			1	1	2
AOS	A	A*			1	1	2
Auditing	A	A*			2	5	7
BRiA	A	A			1	7	8
International Journal of Auditing	A	A				1	1
Accounting and the Public Interest	A	B				2	2

Advances in Accounting	A	B			1	1	2
Advances in Accounting Behavioral Research	A	B				1	1
Journal of Accounting and Organizational Change	A	B				1	1
Academy of Management Journal	M	A*		1			1
Decision Sciences	M	A*			1		1
Organizational Behavior and Human Decision Processes	M	A*				2	2
International Journal of Human Resource Management	M	A			1		1
Journal of Business Ethics	M	A			5	7	12
Journal of Experimental Social Psychology	M	A				1	1
Journal of Research in Personality	M	A	1				1
Group Processes and Intergroup Relations	M	B			1	1	2
Journal of Applied Social Psychology	M	B		1			1
Total			1	2	15	31	49

Source: compiled by author.

Experimental research on whistleblowing in accounting and management reaches back than three decades beginning with an article by Brabeck (1984). However, this article was published in a Psychology Journal. Four journals from psychology published five articles about whistleblowing. These journals (Organizational Behavior and Human Decision Processes, Journal of Experimental Social Psychology, Journal of Research in Personality, and Journal of Applied Social Psychology) are listed as management journals.

Over these four decades, a variety of journals have published experimental research on whistleblowing. The most popular publication outlet is the Journal of Business Ethics (JBE) with 12 articles followed by Behavioral Research in Accounting (BRiA) with eight. JBE has been publishing whistleblowing articles since 2005 and BRiA since 2010.

### 3.3 RESULTS

Table 5 presents the research design, task and dependent variable details based on a sample of 49 paper that employed experimental methods. Table 5 will be discussed on next topics.

Table 5 – Research design, task and dependent variable

Design	Task		Dependent variable											Total	
	Game	Scenario	Measure									1st (F) and 3 <sup>rd</sup> (T) Person			
			Binary	3- option	Scale Points							F	T		F and T
					4	5	7	8	9	11	0 - 100				
2 x 1		5		1			3		1			4	1		5
2 x 2*	1	24	3		1	2	12		2	3	2	15	7	3	25
2 x 3** or 3 x 2	1	2	1				1				1	2	1		3
2 x 2 x 2		8					5		1	1		5	3		8
2 x 2 x 3		1					1					1			1
2 x 2 x 2 x 2		1									1		1		1
3 x 1		3				2		1				2	1		3
4 x 1	1	1	1				1					2			2
4 x 2		1								1			1		1
6 x 1		1				1								1	1
Not identified	1	5	2			1	3					4	1		6
Total <sup>1</sup>	4	52	7	1	1	6	26	1	4	5	4	35	16	4	56

Source: compiled by author.

Notes: \* Two experiments from the same study

\*\* One is a game and 2x3

<sup>1</sup> Total of 56 experiments is due to some papers employed more than one experiment. Trongmateerut & Sweeney (2013) - 2 experiments design 2x1 and 2x2; Hopman & van Leeuwen (2009) - 2 experiments; Rios & Ingrassia (2016) - experiments design 2x1 and 2 x 2; Bhal & Dadhich (2011) 3 experiments design 3 x 1, 2 x 2 and 2 x 2; and, Trevino & Victor (1992) - 2 experiments design 2 x 2 and 2 x 2.

### 3.3.1 Experimental Design

In the planning of experimental research, one of the first decisions an experimenter must make is how to assign subjects to the various levels of independent variables: experimental design. At a base level, researchers can assign subjects to each level (i.e., between-subjects) or to assign each subject to every level (i.e., within-subjects). Elmes, Kantowitz and Roediger III (2009) explain that the between-subjects (at least two groups) design is conservative, because there is no chance that one treatment will contaminate the other, as each person receives only one treatment.

Table 5 shows that whistleblowing experimental research usually address between-subjects design. Also, Table 5 shows all levels that researchers typically utilize when designing whistleblowing experimental research. The most prolific research design from whistleblowing research found is the 2 × 2 between-subjects design. This design it is one of the most common, compared to a 1 × 2. The 2 × 2 design is twice as expensive as the 1 × 2, because research will have four conditions to assign to participants. Typically, studies published in accounting journals

employ a single experiment by paper. In contrast, five articles from management employ more than one experiment by paper. By keeping things simple and less expensive, researchers can potentially isolate effects and, by extension, have more powerful statistical analyses.

### 3.3.2 Task Procedures

The most pressing concern facing the author in designing the experimental task because the internal validity concerns. Schulz (1999) point that the major advantage of experiments lies in the researcher's ability to ensure high internal validity, which can be defined in terms of how well researchers can rule out rival explanations for their results. However, there is a trade-off between internal and external validity. To overcome this issue, experiments in survey research have been employed because the experiment's internal validity is increased by the survey's external validity (Steiner, Atzmüller & Su, 2016).

#### 3.3.2.1 Vignettes

The use of vignettes or hypothetical scenarios is common in research investigating respondents' whistleblowing intentions. According to Steiner, Atzmüller and Su (2016, p.52) a vignette experiment "consists of a collection of vignettes, that is, a set of systematically varied descriptions of subjects, objects, or situations in order to elicit respondents' beliefs, attitudes, or intended behaviors with respect to the presented vignettes". Some advantages are realistic context and less abstract; guarantees a high internal validity; vignettes are very flexible, in terms of formats and purposes (Steiner, Atzmüller & Su, 2016).

Mostly experiments do this in a single round, as a onetime decision. Table 5 shows 52 experimental designs that employed a single-period vignettes while, the other four employed multiple periods. As shown at Table 5, whistleblowing experimental research is largely characterized by vignette-based studies with one-time decision.

#### 3.3.2.2 Fraud type on Vignettes

The review of whistleblowing literature shows that studies has focused on two types of fraud: misappropriation of assets and fraudulent financial reporting. The most common fraud type addressed by this review was fraudulent financial reporting (19 papers). Some studies compared

fraud types: fraudulent financial reporting, misappropriation of assets, insider trading, and theft. Those papers aimed to investigate if the nature of the fraud could influence individuals' likelihood of blowing the whistle and the literature shows mixed evidence (Kaplan, Pany, Samuels & Zhang, 2009a; Kaplan, Pope & Samuels, 2010; Kaplan, Pope & Samuels, 2011; Robinson, Robertson & Curtis, 2012; Kaplan, Pope & Samuels, 2015; Brink, Lowe & Victoravich, 2017). Table 6 presents the findings from those papers.

Table 6 – Fraud Type

Article	Fraud Type	Findings
Kaplan, Pope and Samuels (2010)	Misappropriation of assets vs fraudulent financial reporting	No difference on whistleblowing intention
Kaplan, Pope and Samuels (2011)	Misappropriation of assets vs fraudulent financial reporting	
Kaplan, Pany, Samuels and Zhang (2009a)	Misappropriation of assets vs fraudulent financial reporting	More substantial for the misappropriation of assets act compared with the fraudulent financial reporting act.
Robinson, Robertson and Curtis (2012)	Fraudulent financial reporting vs theft	Employees are less likely to report financial statement fraud than theft
Kaplan, Pope and Samuels (2015)	Misappropriation of assets vs fraudulent financial reporting.	Greater when the fraud involves misappropriation of assets rather than fraudulent financial reporting
Brink, Lowe and Victoravich (2017)	Fraudulent financial reporting vs insider trading	Participants perceived a greater responsibility to report insider trading than fraudulent financial reporting

Source: compiled by author.

As shown in Table 6 fraudulent financial reporting is perceived as less serious when compared to misappropriation of assets or insider trading. Kaplan, Pope and Samuels (2011) findings shows a nonsignificant difference between the misappropriation of assets from involved employees taking company assets (often cash or inventory items) to enrich themselves directly versus fraudulent financial reporting. The misappropriation of assets case describes, based on key pieces of evidence, what appears to be a scheme by the Purchasing Manager to direct payments to himself. Yet, Kaplan, Pope and Samuels (2010) described the use of shell companies to engage in a false billing scheme. In contrast, Kaplan, Pany, Samuels & Zhang (2009a) and Kaplan, Pope and Samuels (2015) found a significant difference related to fraud type. Kaplan, Pany, Samuels & Zhang (2009a) described a false billing scheme by creating a shell company (for information on shell companies. And, Kaplan, Pope and Samuels (2015) described a scheme by a purchasing manager to direct a significant amount of money from the company to himself.

Furthermore, Robinson, Robertson and Curtis (2012), Kaplan, Pope & Samuels (2015) and Brink, Lowe & Victoravich (2017) provide some explanations about why fraud type affect whistleblowing intention. Robinson, Robertson and Curtis (2012) found that employees consider theft more serious and perceive a greater responsibility for reporting theft (i.e., perceptions of moral intensity were greater for theft than financial fraud). This greater moral intensity led to an increased likelihood of reporting theft than financial statement fraud. An important question is why participants perceived greater moral intensity for theft than fraud. One explanation is that financial statement fraud may be myopically viewed as a victimless crime since the full effects might not be felt for some time, although the losses suffered by employees, investors, and creditors of Enron and other companies that commit fraud would seem to dispel that explanation. It is also possible that financial statement fraud was less likely to be reported than theft because of a general tendency to distrust accounting information, including financial statement numbers resulting from opaque accounting methods.

Per Kaplan, Pope & Samuels (2015), with regard to the type of fraudulent act, these results indicate that reporting intentions were significantly higher when the manager apparently engaged in misappropriation of assets rather than fraudulent financial reporting. These results are consistent with Robinson, Robertson and Curtis' (2012) study contention that observers are likely to make stronger person attributions under misappropriation of assets and, consequently, increase their reporting intentions for this type of fraud.

Brink, Lowe & Victoravich (2017) explain that fraudulent financial reporting may be beneficial in the short term to the firm, its shareholders, and to employees. In contrast, insider trading is the use of private information for personal gain at the cost of the company and its shareholders.

### 3.3.3 Operationalization of Dependent Variable

#### 3.3.3.1 Dependent variable (measurement issue)

Rating scales and potential effects of scale design choices on findings are demonstrate by Eutsler and Lang (2015) in accounting research. Their findings show that there is a large variation of scales designs, and that the number of scale points in accounting research varies from 3 to 101 points.



Similar to research in the accounting field, most of whistleblowing experimental research employed rating scales (47 papers). This is important because different scales tell us different things, and the kinds of conclusions we can draw depend, in part, on the scale that we employ. For example, most of whistleblowing research is measured on an ordinal scale, it would be improper to say that a person with a whistleblowing intention score of 6 on the scale perceives twice as much to come forward and blow the whistle as someone with a whistleblowing intention score of 3.

Results from Eutsler and Lang (2015) suggest that scale labels and scale points impact the statistical characteristics of response data and emphasize the importance of labeling all scale points. Their results also suggest that variance may be maximized when the scale length is set at seven-points. Following this, Table 5 shows that most whistleblowing experimental papers employed seven-point scale (26), followed by 5-point (6 articles) and 11-point scales (5 articles).

Importantly, Eutsler & Lang (2015) posits that if researchers adopt more consistent scale design choices, comparability would increase, and this would perhaps improve the quality of research using rating scales.

### 3.3.3.2 Dependent variable (social desirability issue)

When researchers make use of vignettes and research questions involving moral or ethical issues, Accounting, Business and Ethical investigations should consider social desirability bias. Social desirability bias “reflects the tendency on behalf of the subjects to deny socially undesirable traits and to claim socially desirable ones, and the tendency to say things which place the speaker in a favourable light” (Nederhof, 1985). Also, social desirability bias is the tendency of individuals to underestimate (overestimate) the likelihood they would perform an undesirable (desirable) action (Chung & Monroe, 2003).

Therefore, methodologically speaking, these two problems may weaken the study’s validity and reliability. Thus, render its results invalid (Nederhof, 1985; Chung & Monroe, 2003; Ahmad, Ismail, Azmi & Zakaria, 2014). However, there are alternatives to overcome this problem:

- a. Proxy subjects - Instead of the ‘target person’, someone who knows him or her well is questioned about the behavior of the target person (Nederhof, 1985).
- b. A second method which offers the subjects (some) anonymity is self-administration of the questionnaire by the subject. However, in general, there is less social desirability

bias in mail surveys than in either personal or telephone interviews (Nederhof, 1985). These steps could involve providing an assurance of confidentiality in research materials and requesting that respondents not identify themselves in the research materials (Chung & Monroe, 2003).

- c. A third method is The Crowne-Marlow (1960) scale, which could also be used to determine the extent of the effect of SD bias on the variables of interest (Chung & Monroe, 2003) and this scale is the most popular scale, both in psychological and sociological studies ((Nederhof, 1985).

Whistleblowing experimental researches could prevent or reduce this issue by constructing a vignette where individual can answer as a third person. Or, studies have computed social desirability bias by subtracting the third-person measure from the first-person.

### 3.3.4 Subject Selection (Participants – kind, quantity and payment)

Several studies have used students to examine reporting intentions for questionable act. When obtaining data from students, Elmes, Kantowitz and Roediger III (2009) caution that experimenters need to be careful about generalizing results to other subject populations. The issue of external validity is a common argument made against using student subjects. Park and Keil (2009) posit that in this context, external validity is seen as a function of theory, not a function of method.

Lowe, Pope and Samuels (2015) and Rose, Brink and Norman (2018) argue that if the students have substantial work experience and many have directly or indirectly seen or confronted questionable acts, they believe that those students represent a reasonable group of participants for this study. Also, whistleblowing and the decision-making task does not require highly specialized domain knowledge.

Table 7 shows sample selection divided by quantity and median, and compensation forms.

Table 7 – Participants and compensation

Sample Selection	Participants		Payment						Total
	Qty	Median	Yes	No	Not mention	Course Credit	Pair of movie tickets	Cash-equivalent	
Students	411	102.75	4	0					4
Undergrad students	2233	203	4	5	1	1			11
Grad Students	1811	100.61	1	7	11				19

Mturk	385	128.33	3						3
Professionals	2614	163.37		10	4		1	1	16
Total	7454	139.612	12	22	16	1	1	1	53

Source: compiled by author.

Table 7 shows that 34 studies have uses students, four studies only stated “students”. Other studies (11) have used undergraduate students and 19 have used graduate students. Three studies have used Amazon Mechanical Turk participants and 16 studies have used professionals (e.g. auditors, managers, and accountants).

Contrasting with experiments in economics, non-payment for such students is common in whistleblowing experimental research: no incentive was provided for participation in 22 papers, and 16 have not mentioned any type of compensation. Elmes, Kantowitz and Roediger III (2009) posit that if participants in the experiment are not used as a learning experience, the experimenter should pay subjects.

### 3.3.5 Additional Aspects

Table 8 presents additional common aspects from whistleblowing experimental research, in terms of reporting channel, incentives and protection.

Table 8 – Reporting channel, reward incentive, visibility of RC and retaliation

Author	Reporting channel (RC)	Reward	Visibility of RC	Retaliation	
				Possible	Explicit
Zhang (2008)	not mentioned	yes	anonymous	no	-
Chen, Nichol & Zhou (2017)	internal	yes	non-anonymous	not mentioned	-
Schatzberg, Sevcik, Shapiro, Thorne & Wallace (2005)	not mentioned	yes	not mentioned	not mentioned	-
Seifert, Sweeney, Joireman & Thornton (2010)	Internal	no	non-anonymous	yes	no
Stikeleather (2016)	Internal	yes	not mentioned	yes	no
Zhang, Pany & Reckers (2013)	internal versus external	no	anonymous	no	-
Brink, Lowe & Victoravich (2013)	Internal	Yes (but not provided explicit dollar amounts)	anonymous third-party hotline service	yes	no
Berger, Perreault & Wainberg (2017)	external	Yes	anonymous	no	no
Boo, Ng & Shankar (2016)	internal	yes	anonymous	protection	-
Kaplan, Pope & Samuels (2011)	internal vs external to auditor	no	non anonymous	yes	no

Kaplan, Pany, Samuels & Zhang (2009)	anonymous reporting channel's procedural safeguards (strong or weak)	no	anonymous vs weak protection	protection	-
Kaplan & Whitecotton (2001)	non anonymous	no	anonymous	yes	no
Taylor & Curtis (2013)	internal	no	protection vs anonymity	yes	no
Wainberg & Perreault (2015)	internal	no	protection	yes	yes
Seifert, Stammerjohan & Martin (2013)	internal	no	not mentioned	yes	no
Young (2017)	internal	no	non-anonymous	yes	yes
Guthrie, Norman & Rose (2012)	not applicable	no	anonymous or non-anonymous	yes	no
Kaplan, Pope & Samuels (2010)	internal	no	non-anonymous	yes	no
Robertson, Stefaniak & Curtis (2011)	internal and external	no	anonymous and non-anonymous	yes	no
Kaplan, Pope & Samuels (2015)	internal	no	non-anonymous	yes	yes
Wilson, McNellis & Latham (2018)	external	no	not mentioned	no	-
Brink, Eller & Green (2018)	internal and external	yes, but no absolute value	not mentioned	no	-
Brink, Lowe & Victoravich (2017)	internal and external	yes	anonymous	yes	no
Reckers-Sauciuc & Lowe (2010)	internal	no	not mentioned	yes	yes
Kaplan, Pany, Samuels & Zhang (2012)	internal	no	anonymous vs. non-anonymous	yes	yes
Brink, Eller & Gan (2015)	external	no	anonymous	no	-
Erkmen, Özsözgün Çalışkan & Esen (2014)	not mentioned	no	non-anonymous	no	-
Trevino & Victor (1992)	not mentioned	no	not mentioned	no	-
	not mentioned	no	not mentioned	no	-
Park & Keil (2009)	not mentioned	not mention	not mentioned	no	-
Mayer, Nurmohamed, Treviño, Shapiro & Schminke (2013)	internal	yes	non-anonymous	yes	no
Hildreth, Gino & Bazerman (2016)	not mentioned	no	not mentioned	no	-
Ayers & Kaplan (2005)	internal	no	dependent variable	yes	no
Decker & Calo (2007)	internal	no	not mentioned	not mentioned	-
Kaplan, Pany, Samuels & Zhang (2009)	The internal auditing department or Anonymous reporting hotline	no	anonymous and non-anonymous	no	-
Liyanarachchi & Newdick (2009)	not mentioned	no	not mentioned	yes	yes

Taylor & Curtis (2010)	internal	no	not mentioned	no	-
Bhal & Dadhich (2011)	internal	no	non-anonymous	no	-
	internal	no	non-anonymous	no	-
	internal	no	non-anonymous	no	-
Robinson, Robertson & Curtis (2012)	internal	no	anonymous	no	-
Trongmateerut & Sweeney (2013)	internal	no	non-anonymous	no	-
Gao, Greenberg & Wong-On-Wing (2015)	internal and external	no	anonymous vs non-anonymous	yes	no
Lowe, Pope & Samuels (2015)	internal	no	anonymous vs. non-anonymous	no	-
Rose, Brink & Norman (2018)	external	small and large	anonymous	protection	-
Andon, Free, Jidin, Monroe & Turner (2018)	external	yes	anonymous	no	-
Waytz, Dungan & Young (2013)	1. A total stranger you've never met. 2. An acquaintance you see occasionally. 3. A close friend you've known for years. 4. A family member you're very close to.	no	not mentioned	no	-
Kirrane, O'Shea, Buckley, Grazi & Prout (2017)	internal	no	non-anonymous	yes	no
Brabeck (1984)	not mentioned	no	non-anonymous	no	-
Rios & Ingraffia (2016)	external	no	non-anonymous	not mentioned	-
Hopman & van Leeuwen (2009)	not mentioned	no	not mentioned	not mentioned	-
	not mentioned	no	not mentioned	not mentioned	-
Miceli, Dozier & Near (1991)	not mentioned	no	non-anonymous	yes	yes

Source: compiled by author.

### 3.3.5.1 Whistleblowing reporting channel

Whistleblowing channels could be internally or externally to the organization. An internal reporting mechanism means a report within an organization. Table 8 shows that twenty-four studies dealt only with an internal reporting channel.

An internal reporting channel can take several forms, some papers were more explicit than others. A whistleblower could blow the whistle to any of the following: the supervisor's supervisor (Pope & Samuels, 2010; Kaplan, Pope & Samuels, 2015; Kaplan, Pany, Samuels & Zhang, 2012); an internal auditor (Kaplan, Pope & Samuels, 2010; Lowe, Pope & Samuels, 2015); an appropriate person within the Corporation (Seifert, Sweeney, Joireman & Thornton, 2010); the company's hotline (Brink, Lowe & Victoravich, 2013; Boo, Ng & Shankar, 2016; Taylor & Curtis, 2013; Wainberg & Perreault, 2015; Robinson, Robertson & Curtis, 2012); others in the company (Seifert, Stammerjohan & Martin, 2013), to the Corporate Board of Directors and the Independent Audit Committee (Reckers-Sauciuc & Lowe, 2010); the company's telephone hotline (Ayers & Kaplan, 2005; Lowe, Pope & Samuels, 2015); the supervisor (Bhal & Dadhich, 2011), or to management or another appropriate person (Mayer, Nurmohamed, Treviño, Shapiro & Schminke, 2013).

In contrast with internal reporting, studies have been addressing in a more explicit form to an external reporting option. An external reporting channel can take any of the several forms: to an external auditor (Kaplan, Pope & Samuels, 2011; Wilson, McNellis & Latham, 2018); to an independent third-party (Zhang, Pany & Reckers, 2013; Brink, Eller & Gan, 2015; Gao, Greenberg & Wong-On-Wing, 2015), or to the PCAOB Ethics Hotline (Robertson, Stefaniak & Curtis, 2011). Yet, an external reporting channel could provide monetary rewards should the case be communicated through the SEC portal (Berger, Perreault & Wainberg, 2017; Brink, Lowe & Victoravich, 2017; Andon et al., 2018; Brink, Eller & Green, 2018; Rose, Brink & Norman, 2018).

### 3.3.5.2 Retaliation

Retaliation or threats of retaliation against whistleblowers are of central importance in explaining whistleblowers' decision to report (Mesmer-Magnus & Viswesvaran, 2005; Kaplan, Pope & Samuels, 2011; Mayer et al., 2013; Taylor & Curtis, 2013; Wainberg & Perreault, 2015). Retaliation can take several forms, including harassment, loss of job or promotion, and/or financial forms of retaliation (Wainberg & Perreault, 2015). Additionally, it may manifest in the form of coercion to silence the whistleblower (Mesmer-Magnus & Viswesvaran, 2005) or from either supervisors who prefer to bury bad news or coworkers who see reporting as a lack of loyalty to the group, especially if a member of the group is engaged in the unethical conduct (Mayer et al., 2013).

Table 8 shows that 25 articles consider retaliation as a potential effect, while another 28 studies did not include retaliation in the experimental design. In only seven of those 25, retaliation

was considered as an explicit variable, while fifteen omitted it from manipulations, and only three provided protection statements to the whistleblowers. Fifteen papers omitted this possible effect as a variable; however, these do include a discussion about retaliation and ultimately capture the effect by considering the personal cost in reporting.

Prior experimental research has manipulated the threat of retaliation using vignettes that describe a threat of retaliation (Seifert & Stammerjohan 2008; Liyanarachchi & Newdick 2009). Some researchers question the effectiveness of vignettes to convey a reality that triggers an emotional reaction in participants (Parkinson & Manstead 1993; Collett & Childs 2011). The threat of retaliation is an emotional experience that triggers an emotional response. As such, the participant's natural perception of the threat of retaliation faced should provide a stronger connection between the perceived threat of retaliation measures and attitude measures (Young, 2017). Kaplan, Pope & Samuels (2011) posit that emotional factors, such as fear of retaliation, might play a diminished role in an experimental setting compared to an actual incident. Thus, future papers may attempt to improve this issue.

### 3.3.5.3 Monetary Rewards

Financial rewards for whistleblowing can provide whistleblowers with additional protection from the costs associated with coming forward. This is view as a cost/benefit decision because whistleblowers often encounter adverse consequences as a result of reporting (Rose, Brink & Norman, 2018). Offering individuals financial incentives by a regulator to report externally has been found to have a significant influence on whistleblowing intentions (Berger, Perreault & Wainberg, 2017; Andon et al., 2018; Brink, Eller & Green, 2018; Rose, Brink & Norman, 2018).

Table 8 shows that most studies (41) have not tested or included monetary rewards in their experiments; however, 12 studies offered monetary rewards. Brink, Lowe & Victoravich (2013) offered an option with monetary reward however not provided explicit dollar amounts. Also, Andon, Free, Jidin, Monroe & Turner (2018) and Brink, Eller & Green (2018) offered an option with monetary reward however not an absolute value. I highlight that these rewards incentives are limited to the reward environment designed by the SEC from the Dodd-Frank Act. Thus, other rewards systems could be tested. Reward programs were introduced in developed countries other than the US: Australia, Belgium, Canada, Israel, Japan, Korea, Slovak Republic, USA, Hungary, Ghana and Pakistan (Stephan, 2014; OECD, 2016).

### 3.3.6 Attention and Manipulation checks

Participant attentiveness is a concern for many researchers, especially for those using Amazon's Mechanical Turk (MTurk) platform (Hauser & Schwarz, 2016). Attention checks are necessary, especially as web-based experiments are run in online platforms. For example, the Mturk participant could answer a 15-minutes survey experiment in two minutes, assumedly by not paying sufficient attention. In contrast, the procedure could take too long: a user could simply open up a new browser window and stop paying attention to the experiment at hand, or a user could walk away from the computer in the middle of an experiment or be distracted by her cell phone, thus yielding poor-quality data.

Buchheit, Doxey, Pollard & Stinson (2017) findings show that for the MTurk papers published in premier accounting journals from 2010 to 2016, nearly two-thirds disclose the rate of pay for complete responses. The remaining portion also includes details regarding partial payments (e.g., in the case of early exits due to screening questions) or payment rejections (e.g., for failed attention checks) However, Hauser and Schwarz (2016) found that MTurk workers outperform student participants with respect to experimental attention checks. This could be because some studies highlight that payment is associated with attention checks rejections. In contrast, lab experiments usually don't focus on that because participants are physically present during data collection procedures.

## 3.4 WHISTLEBLOWING LEGISLATIONS

Whistleblowers play an essential role in exposing several frauds and other wrongdoing that threaten public health and safety (Transparency International, 2013). Therefore, countries are putting in place protective measures and incentives to whistleblowers.

In 2013, Transparency International introduced the best practices for laws to protect whistleblowers and support whistleblowing in the public interest. Protection laws are designed to safeguard individuals and disclosures – that is, all employees and workers in the public and private sectors need: (a) accessible and reliable channels to report wrongdoing; (b) robust protection from all forms of retaliation; and (c) mechanisms for disclosures that promote reforms that correct legislative, policy or procedural inadequacies, and prevent future wrongdoing (Transparency



International, 2013). Table 9 elaborates on how these manifest: protection from retribution, preservation of confidentiality, anonymity and personal protection.

Table 9 - Best practices for laws to protect whistleblowers

Protection from retribution	Individuals shall be protected from all forms of retaliation, disadvantage or discrimination at the workplace linked to or resulting from whistleblowing. This includes all types of harm, including dismissal, probation and other job sanctions; punitive transfers; harassment; reduced duties or hours; withholding of promotions or training; loss of status and benefits; and threats of such actions
Preservation of confidentiality	The identity of the whistleblower may not be disclosed without the individual's explicit consent
Anonymity	Full protection shall be granted to whistleblowers who have disclosed information anonymously and who subsequently have been identified without their explicit consent
Personal protection	Whistleblowers whose lives or safety are in jeopardy, and their family members, are entitled to receive personal protection measures. Adequate resources should be devoted for such protection

Source: Transparency International (2013).

Currently, several developed countries provide whistleblower protection (e.g. USA, UK, New Zealand, Japan, Canada, South Korea, Austria, Belgium, Hungary, Ireland, France, Chile and Switzerland) (OECD, 2016; Andon et al., 2018). And other countries are in the process of including protection laws and / or monetary incentives (e.g Brazil). In South Korea there are two laws governing the protection of reporting persons and workplace whistleblowers: The Anti-Corruption Act of 2002, which covers whistleblowing in the public sector, and the 2011 Act on the Protection of Public Interest Whistleblowers (UNODC, 2015).

### 3.4.1 Monetary Rewards

A whistleblower reward is a financial incentive used by the government to encourage citizens to speak up and expose fraud and corruption. However, regulators are providing a range of payoff designs to encourage whistleblowing, and their structure varies significantly. These rewards are often in the form of a percentage of the monetary damages that are recovered by the government from the wrongdoers; in some cases, there is an inclusion of a cap on the amount. These reward programs aim to increase the quantity of reports on cases of corruption, fraud, misconduct and other illegal activities. Transparency International considers that the

appropriateness of a financial rewards system very much depends on the national context (Terracol, 2018).

Table 10 – Whistleblowing financial rewards by country

Country	Law	Reward System	Limit	Over
US	Dodd-Frank Act (SEC)	10 to 30% of any monetary recovery	No	US \$1,000,000
	False Claim Act	15 to 25% recovery where DOJ intervenes; 25 to 30% where the DOJ refuses to participate		
Canada	Ontario Securities Commission (OSC)	5% to 15% of the recovered funds	No	CAD \$5,000,000
South Korea	The Protection of Public Interest Whistleblowers Act	4% to 20% of recovered funds	No	KRW 3 billion (about USD 3 million)
Ghana	The Ghanaian Whistleblower Act	Either 10% of the money recovered or an amount that the Attorney General in consultation with the Inspection-General of Police awards.	No	-
Hungary	Hungarian Competition Act	1% of the fine imposed by the Competition Council	HUF 50,000,000 (approximately US\$180,000)	-
Pakistan	Competition Commission of Pakistan (CCP)	Payments range from Rs 200,000 to 500,000 (USD \$1,900 to \$4,700)	-	-
	The Federal Board of Revenue	For PKR \$500,000 (approximately USD \$4,769) or less of tax evaded, the whistleblower may receive 20% of the tax and for over PKR \$1,000,000 (approximately USD \$9,538), the whistleblower may receive up to 5% of recovered funds	-	-
Brazil	Law Project 664 (discontinued in 2018)	based on 10% value to be recovered	No	-
	Law Project 3506 (in process since 2012)	A maximum of 1% (one percent) of the compensation for the damage caused	No	-
	Law Project 362 (discontinued in 2016)	Payment of 15% to 50% of the amount of the fine to the official who committed the unlawful act	No	-
	Law Project (in process since 2011)	10% of any monetary recovery	Shall not exceed 100 (one hundred) minimum wages (currently approximately USD \$ 27,000)	-

Sources: <https://knowledgehub.transparency.org/assets/uploads/helpdesk/Whistleblower-Reward-Programmes-2018.pdf>; Stephan (2014); Terracol (2018)

<http://www.acrc.go.kr/en/board.do?command=searchDetail&method=searchList&menuId=02031607>

Countries that do not offer monetary incentives are Austria, Brazil, Chile, Estonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Mexico, Netherlands, New Zealand, Norway, Portugal, Slovenia, Switzerland, Turkey and United Kingdom.

The British government believes that citizens will report wrongdoing even without a financial incentive. They rejected the necessity of whistleblower relator rewards in 2014. One of the conclusions was that providing financial incentives to whistleblowers will not encourage whistleblowing or significantly increase integrity and transparency in financial markets. Italy and France recently enacted whistleblowing laws and did not introduce monetary rewards. Also, the US law has been strongly criticized by the French media and labor unions in France (Worth, 2013).

### 3.5 CONCLUDING REMARKS

This dissertation's chapter sets out to address how to do properly whistleblowing experimental research from an Accounting and Management perspectives. Especially, I examined some considerations necessary in whistleblowing task design, experimental design and experimental procedures. Also, I expanded the knowledge about other monetary rewards incentives rather than US regulatory environment which has been focused by prior literature.

First, I observed that during the period 1976-2018 an increase in papers addressing whistleblowing research. The increase in this period by papers published in Accounting Journals was mainly due to the 20 papers from Experimental method. In contrast, a variety of research methods are noted over the 43-year period in Management Journals.

Here, I highlight some of the key findings. First, journals classified as accounting area are more concentrate in experimental research and Management journals are more diverse in terms of methods. In addition, whistleblowing experimental research is largely characterized by vignette-based studies. Realistic vignettes increase the construct validity; however, it might restrict the external validity. Also, this method limits the capacity to analyze the economic consequences of participant decisions. I suggest experimental economics design to contribute to methodological diversity in the study of whistleblowing.

Second, regarding the experiment design, several experiments could be expensive depending on the design and quantity of manipulations; however, most whistleblowing

experiments in Accounting and Management did not pay participants. Importantly, most studies used students as subjects and did not incentivize with money or gifts, which is in noteworthy contrast with experimental research in the field of economics.

Third, regarding to task procedures, the fraud type in the vignettes is concentrated in misappropriation of assets and fraudulent financial reporting. I suggest that studies could use other types of fraud – fraud, corruption, money laundering, conflicts of interest (e.g. purchasing schemes and sales schemes), bribery (e.g. invoice kickbacks and bid rigging) and economic extortion, and provide more details about the fraud in the task.

Fourth, there is a mix between studies that control for Social Desirability Bias (SDB). To increase comparability, authors could operationalize the dependent variable in a first and third-person questions.

Finally, countries are providing different payoff designs to encourage whistleblowing and such incentive matrix vary significantly, providing an opportunity for research on those different payoff structures.

## 4 EFFECTIVENESS OF MONETARY REWARDS AND REPORTING CHANNEL

### 4.1 HYPOTHESIS DEVELOPMENT

#### 4.1.1 The Impact of Monetary Rewards

As a reinforcement mechanism, several whistleblowing policies are designed to offer monetary rewards. Differently the US, several countries are providing rewards between 1% and 20% of the recovery funds instead of the 10% and 30% awarded in the US. Research has produced evidence suggesting that monetary rewards increase individuals' intentions to blow the whistle (Dyck, Morse & Zingales, 2010; Pope & Lee, 2013; Berger, Perreault & Wainberg, 2017; Andon et al., 2018; Rose, Brink & Norman, 2018). However, there is limited evidence regarding differences in rewards sizes and several countries are offering different monetary reward programs to whistleblowers, in terms of the percentage.

Dyck, Morse and Zingales (2010) posit that monetary incentives for fraud revelation appear to play a role regardless of the severity of the fraud. The authors examined all documented cases of fraud in large U.S. companies between 1996 and 2004. Their findings show that in health care (an industry in which suits are more likely to provide a financial reward for whistleblowers because of governments' procurements account for a significant percentage of revenues), 41% of fraud cases are brought to light by employees. In contrast, only 14% of instances were detected by employees in all other industries.

Pope and Lee's (2013) findings indicate that a financial bounty has the potential to increase participants' inclinations to report questionable acts. Berger, Perreault and Wainberg (2017), Andon et al. (2018) and Rose, Brink and Norman (2018) report similar findings and show that a financial incentive results in a higher intention to blow the whistle. Also, there is a significant main effect where the likelihood of whistleblowing is greater when reward size is larger. Furthermore, Dyck, Morse and Zingales (2010) conclude that a strong monetary incentive to blow the whistle does motivate people with information to come forward.

Importantly, this stream of research is limited to the US reward program setting. In addition, some prior research only provides a vague statement about a reward. For example, Brink, Lowe & Victoravich's (2013) and Brink, Eller and Green (2018) studies indicated a substantial cash reward,

and Brink, Lowe and Victoravich's (2017, p.29) study stated "the provision entitles employees to a substantial cash reward".

Also, Andon et al. (2018) provided a reward between 10% to 30% without specifying an explicit amount. Consequently, there is limited evidence about the impact of reward levels on whistleblowing intention. Brink, Lowe and Victoravich (2013) suggest that future research could provide specific rewards to whistleblowers as specific monetary payoffs. Furthermore, Rose, Brink and Norman (2018) provide some evidence about differences in the likelihood of whistleblowing when there are specific amounts (i.e., larger reward relative to a smaller reward). Yet, there is limited evidence currently available on it.

To fill this gap, my intention is to manipulate the external incentive structure and to provide more evidence about specific reward levels. From a rational economic perspective, standard price-effects indicate that larger payments more effectively motivate desired performance (Frey & Jegen, 2001). I predict that a larger reward increases whistleblowing intention, as so-called crowding-in effect. When a higher monetary incentive produces a higher performance (Gneezy & Rustichini, 2000), I argue that stronger reward programs (i.e., higher payments) are more effective in stimulating whistleblowing than weak reward programs (i.e., smaller payments).

Hypothesis 1: Individuals will be more likely to blow the whistle when monetary rewards are larger than when they are small or absent.

#### 4.1.2 The Impact of Reporting Channel

A major concern of whistleblowers is the possibility of retaliation. However, most of the studies only consider retaliation on an internal reporting channel because they consider the US regulatory environment that provides an external and anonymous reporting channel. In contrast, Italy and France do not have anonymous external reporting under currently prevailing whistleblowing laws. Also, I am not aware of any literature comparing anonymous and non-anonymous reporting for external whistleblowing. Consequently, the effects of retaliation on external reporting remain unknown.

Patrick (2010) findings demonstrated that most whistleblowers suffer retaliation even when whistleblowing protections exist by law. The study was based on a random sample of 95 lawsuits

from 380 cases<sup>3</sup> in the LexisNexis database collected between 1994 and 2009. Despite the fact that all the US states have laws to protect whistleblowers from retaliation, according to Patrick (2010) is difficult to receive protection under many of the state laws. The author explains that the laws are very specific on how whistleblowers must report, and failure to comply with any aspect will result in a loss of protection. In addition, the widespread occurrence of retaliation or threats of retaliation makes fear significant, undermining the decision to report (Reckers-Sauciuc & Lowe, 2010). Importantly, as Patrick (2010) demonstrated, it also occurs when individuals blow the whistle externally.

Several experimental whistleblowing studies show that retaliation or threats of retaliation are positively associated with perceived personal costs to reporting (Schultz et al., 1993; Curtis, 2006; Taylor & Curtis, 2010; Fajardo & Cardoso, 2014; Brink, Eller & Gan, 2015). In other words, the increase in personal costs should decrease the likelihood of whistleblowing (Kaplan, Pany, Samuels & Zhang, 2012). Perceived personal costs refer to the perceived harm or discomfort that could result from reporting wrongdoing (Dalton & Radtke, 2013). Yet, empirical findings show that under this face-to-face reporting, perceived personal costs will be higher compared to when reporting is anonymous (Ayers & Kaplan, 2005) and when social confrontation occurs, the anonymous channel is a preferred reporting option (Kaplan, Pope & Samuels, 2010). Kaplan, Pany, Samuels & Zhang (2009b) findings indicate that a perceived personal cost is lower for the anonymous reporting channel relative to the internal auditing department (non-anonymous reporting channel).

However, several studies consider retaliation only through an internal reporting channel (Reckers-Sauciuc & Lowe, 2010; Robertson, Stefaniak & Curtis, 2011; Kaplan, Pany, Samuels & Zhang, 2012; Seifert, Stammerjohan & Martin, 2013; Kaplan, Pope & Samuels, 2015; Young, 2017). In contrast, external reporting channels should be perceived to be more reliable in protecting the anonymity of individuals who discloses fraudulent behavior (Gao, Greenberg & Wong-On-Wing, 2015). This in turn should reduce an individual's perception of the personal cost of whistleblowing, including that associated with the risk of retaliation (Gao, Greenberg & Wong-On-Wing, 2015).

Notwithstanding, not every country provides anonymous whistleblowing reporting channel. For example, Italy and France recently enacted whistleblowing laws and did not introduce

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<sup>3</sup> Cases involving whistleblowers who sued their employers for alleged retaliation.

anonymous reports. In Italy, the law (per No. 179/2017) requires only that companies ensure the confidentiality of whistleblower's identity. Also, if a public agency or private company allows anonymous reporting or if it investigates a report without notifying the accused person, this could be considered unlawful in court (Worth, 2013). In France, France's Data Protection Authority (CNIL) rejected corporate whistleblower policies that would have permitted anonymous complaints (Worth, 2013). At the present, France has a more detailed regulatory structure regarding whistleblowers: the Sapin II Act (in conjunction with decree n°2017-564, dated 19 April 2017) provides for general whistleblowing regulation albeit without providing the guarantee of anonymity. In addition, corresponding US law has been strongly criticized by the French media and labor unions in France (Worth, 2013).

Based on that, I expect that the perceived costs of reporting could be somewhat minimized by the fact that the reporting channel is anonymous rather than non-anonymous. One mechanism to protect would-be whistleblowers from retaliation is offering an option to report anonymously, which is believed to eliminate or reduce the threat of retaliation (Young, 2017). I posit that an external anonymous reporting channel could mitigate the risks of coming forward. Consequently, the likelihood of whistleblowing will differ when there is an anonymous reporting channel option compared to when there is not.

Hypothesis 2: Individuals will be more likely to blow the whistle when a reporting channel is anonymous than when is not.

#### 4.1.3 Monetary Rewards and Reporting channel

Some countries guarantee anonymity for whistleblowers (i.e., Australia, Austria, Germany, Greece, Hungary, Japan, Mexico, Netherlands, New Zealand, Portugal, Slovak Republic, Slovenia, Switzerland, Turkey, the United Kingdom and the United States). However, other countries do not guarantee anonymity (i.e., Belgium, Canada, Chile, Estonia, France, Iceland, Ireland, Israel, Italy, Korea and Norway) (OECD, 2016).

Brink, Lowe and Victoravich (2017) suggest that a variety of situational characteristics may directly or indirectly impact the decision to report. However, they did not provide explanations about which situational characteristics. In this sense, Brink, Lowe & Victoravich (2013) posit that the reporting channel and incentive structure could influence participants' perceptions of the



potential for retaliation, and such perceptions could influence reporting intentions. Rose, Brink and Norman (2018) demonstrate that there is evidence about differences between reward sizes, a planned contrast tested by them indicates that the likelihood of whistleblowing did not differ significantly between reward conditions for the unrestricted stock compensation treatment. This suggests that situational characteristics could interact with the monetary rewards and affect the results. Also, Kaplan, Pany, Samuels & Zhang (2009b) results indicate that the effect of relative changes in personal costs influence anonymous reporting intentions. This finding supports that the availability of an anonymous reporting channel increases whistleblowing. Additionally, individuals who view money as a source of power may be especially fearful of retaliation in the form of demotion or job loss (Brink, Lowe & Victoravich, 2017).

These arguments indicate that situational characteristics as rewards and whistleblowing reporting channel could have some dependency. Therefore, I predict that when a reporting channel is not anonymous, the individual will be exposed to the possible threats of retaliation and will perceive the possibility of being retaliated against, and, by extension increase the perception cost. The condition that offers high monetary reward will have no significant influence on whistleblower's decision whether there is an anonymous reporting channel or not, but when the reward is small or absent the whistleblower will be less likely to report than if the reporting channel was non-anonymous. The decision to report on a non-anonymous reporting channel and with the possibility of exposure will frame the individual decision based on costs/benefits rather than the moral decision to report, which is consistent with the Motivational Crowding Theory. When the reporting channel is not anonymous, the size of monetary reward must be large enough to compensate the cost of reporting.

Hypothesis 3: Monetary rewards and reporting channels interact to influence whistleblowing intentions such that when monetary rewards are present, anonymity increases whistleblowing intentions, whereas when monetary rewards are small or absent, non-anonymity decreases whistleblowing intentions.

#### 4.1.4 Perceived Responsibility, Perceived Seriousness and the Personal Cost

Building on the model proposed by Graham (1986), the literature shows that the perceived seriousness, the perceived responsibility, and the personal cost are associated with whistleblowing behavior.

Schultz et al. (1993), Curtis (2006), Taylor and Curtis (2010), Robinson, Robertson and Curtis (2012), Dalton and Radtke (2013), Fajardo and Cardoso (2014), Brink, Eller and Gan (2015) and Brink, Lowe and Victoravich (2017) tested this theoretical model and the results confirmed that their perception of fraud and the responsibility to report positively impact the whistleblower's intent, and the perceived personal cost negatively impact this intent.

Brink, Lowe and Victoravich (2017) find that a greater level of perceived seriousness leads to increased intentions to report externally to the SEC. Also, Andon et al. (2018) demonstrate that perceptions of the seriousness of the wrongdoing are significantly and positively associated with accountants' intentions to blow the whistle to a relevant external authority. In addition, Rose, Brink and Norman (2018) posit that whistleblowers perceived the potential fraud to be morally wrong, harmful to shareholders, and felt some level of personal responsibility to report the fraud.

The literature shows that these three factors influence whistleblowing intentions, two factors (i.e., perceived seriousness and perceived responsibility) have a reciprocal on whistleblowing intentions (Taylor & Curtis, 2010), and the perceived personal cost can undermine the intention to blow the whistle (Schultz et al., 1993; Curtis, 2006; Taylor & Curtis, 2010). Therefore, I predict that these three factors will be associated with whistleblowing intentions.

Hypothesis 4a: Perceived seriousness and perceived responsibility are significant associated to the likelihood of whistleblowing.

Hypothesis 4b: Perceived of personal costs is significant associated to the likelihood of whistleblowing.

#### 4.1.5 Locus of control

Frey and Jegen (2001) state that the effects of monetary rewards on intrinsic motivation have been attributed to two psychological processes. One of particular interest to this study is

impaired self-determination: when individuals perceive an external intervention as reducing their self-determination, intrinsic motivation is substituted by extrinsic control. In other words, the Locus of Control (LOC) shifts from inside to outside. Spector's (1982) review studies of LOCs in organizational contexts and the results showed that externals may also be more compliant to authority, which suggests that they would be less likely to blow the whistle. In addition, LOC influences the likelihood of an individual's acting on cognitions of what is right or wrong (Trevino, 1986). Also, it has been directly related to moral behavior, such as whistleblowing (Dozier & Miceli, 1985).

Miceli and Near (1992) suggest that the LOC is one of the characteristics that can explain whistleblowing. Notwithstanding, empirical evidence shows mixed results. Miceli, Dozier & Near (1991) found no significant main effect for locus of control. In contrast, Chiu (2003) and Chiu and Erdener (2003) examined the effects in Chinese societies and found significant differences between internal and external LOC. Chiu's (2003) study ascertains how Chinese managers and professionals decide to blow the whistle in terms of their LOC and subjective judgment regarding the intention of whistleblowing. Their results indicated that LOC was negatively related to whistleblowing intention, which suggests that subjects with an internal LOC tend to feel more comfortable in blowing the whistle. Also, the LOC moderates the relationship between ethical judgment and whistleblowing intention. Chiu and Erdener (2003) found that the interaction terms of peer reporting judgement and LOC contributed significantly to the explained variance in peer reporting intention for Shanghai and Hong Kong samples. This indicates that LOC significantly moderates the relationship between peer reporting judgement and peer reporting intention. This means that individuals with an external LOC were not likely to take the responsibility of reporting wrongdoing, even when they considered reporting as ethical.

Based on that, I predict that there is a difference between internals and externals. In this sense, LOC moderates the relationship between whistleblower's intention and monetary rewards, as well as that between whistleblower's intention and reporting channel. This is important to consider because any society is made of people characterized by several levels of LOC.

Hypothesis 5a: LOC moderates the relationship between monetary rewards and the likelihood of whistleblowing.

Hypothesis 5b: LOC moderates the relationship between reporting channel and the likelihood of whistleblowing.

## 4.2 RESEARCH METHOD

I employ a  $3 \times 2$  between-subjects experimental design crossing monetary rewards and reporting channel. As shown in Table 11, I manipulate the monetary reward at two levels (20% reward vs. 1% reward) and reporting channel (anonymous vs. non-anonymous). Additionally, I include a control condition in which there is no reward.

Table 11 – Research Design

	Anonymous	Non-Anonymous
Large Reward (20%)	1	2
Small Reward (1%)	3	4
No reward (control)	5	6

Subjects were randomly assigned to one of the six treatment conditions. An excerpt from the experiment instrument describing the scenario, as well as the wording of the specific manipulations, dependent measures and demographic information, are included in Appendix A.

### 4.2.1 Task

The experimental materials included Institutional Review Board<sup>4</sup> notification and the research case. The experiment begins with a hypothetical scenario adapted from Andon et al. (2018) where I added a third-person decision to control for social desirability bias (SDB). I also kept the same fraud size and sanction size as Andon et al. (2018). However, I excluded the “there are no explicit protections under current law against an employer retaliating against an individual presenting an allegation of illegal behavior either internally to their employer or externally to the relevant government authority”, because all those countries that provide monetary rewards also

<sup>4</sup> The use of human participants was approved by the appropriate university’s institutional review board, and all participants voluntarily consented to participate.

offer whistleblowing protections against retaliation. In addition, I excluded the anonymous channel because it is a manipulated variable in this study.

The hypothetical scenario put before study participants is as follows: *“Pat is a certified public accountant (CPA) employed as a senior accountant within the accounting department of AgFoods Inc., a public company in the business of grain marketing and exporting. One evening, while working late on a set of files to meet a reporting deadline, Pat discovered information indicating that the financial controller of AgFoods had made a series of accounting entries recognizing fictitious revenue totaling \$50,000,000. After being unable to find any supporting documentation, Pat raised the matter with the financial controller who was dismissive of Pat’s concerns. It is clear to Pat that these entries have caused AgFoods to materially misrepresent its reported earnings. Based on recent cases, Pat expects that the Federal Regulatory Agency (FRA) would impose sanctions in the form of a fine of approximately \$5,000,000 if the company is investigated and found guilty of fraudulent financial reporting.”*

#### 4.2.2 Dependent variable

The dependent variable was gauged on a seven-point scale. This measure of reporting intentions is similar to previous research (Trevino & Victor, 1992; Kaplan & Whitecotton, 2001; Kaplan, Pope & Samuels, 2010; Seifert, Sweeney, Joireman & Thornton, 2010; Kaplan, Pope & Samuels, 2011; Brink, Lowe & Victoravich, 2013; Kaplan, Pope & Samuels, 2015; Young, 2017).

#### 4.2.3 Independent variables

Given the substantial financial incentives offered by Dodd-Frank and, *au contraire*, other countries’ offers of smaller amounts, the monetary rewards were structured in three levels.

Table 12 – Monetary rewards

<b>Reward</b>	<b>Statement</b>
20% reward	Under current law, the Federal Regulatory Agency (FRA) offers a monetary reward for individuals who voluntarily provide original information to an outside authority to assist in the discovery of frauds. The 20% reward would result in Pat receiving a payment of \$1,000,000.
1% reward	Under current law, the Federal Regulatory Agency (FRA) offers a monetary reward for individuals who voluntarily provide original information to an outside authority to assist in the discovery of frauds. The 1% reward would result in Pat receiving a payment of \$50,000.
No reward	Under current law, there are no monetary rewards given to individuals who voluntarily provide original information to the Federal Regulatory Agency (FRA) that result in monetary sanctions against the offending company.

The reporting channel was manipulated in two ways.

Table 13 – Reporting Channel

<b>Anonymous</b>	<b>Non-anonymous</b>
A whistleblower may submit the information to the Federal Regulatory Agency (FRA) anonymously via an attorney. In other words, the whistleblower is not required to provide his or her name in the whistleblowing submission. The FRA must keep an anonymous whistleblower's identity confidential.	A whistleblower must submit the information to the Federal Regulatory Agency (FRA) non-anonymously. In other words, the whistleblower is required to provide his or her name in the whistleblowing submission. The FRA must keep whistleblower's identity confidential.

The following are the variables that were measured.

Table 14 – Moderators and main effects

<b>Effects</b>	<b>Variable</b>	<b>Measurement</b>	<b>Theoretical foundation</b>
Main effect	Perceived seriousness of irregularity	Seven-point scale	Miceli & Near (1985), Graham (1986), Schultz et al. (1993), Kaplan & Whitecotton (2001), Curtis (2006), Dalton & Radtke (2013) and Fajardo & Cardoso (2014)
Main effect	Attribution of personal responsibility for reporting	Seven-point scale	
Main effect	Perceived personal cost of reporting	Seven-point scale	
Moderation effect	Locus of Control	29-item forced-choice format (excluding six filter questions)	Rotter (1966), Chiu (2003) and Premeaux & Bedeian (2003)
Supplemental Analysis	Fairness	Seven-point scale	Berger, Perreault & Wainberg (2017)

#### 4.2.4 Demographic Information

The following criteria was used to capture participant demographic information: Age, Gender, Marital status, Ethnic Origin, Education level, Household income, Employment status, Work experience, and Experience with previous questionable or wrongful behavior.

#### 4.2.5 Participants

The participants used in the data collection were recruited via Amazon's Mechanical Turk (MTurk) system. Previous whistleblowing research filtered by location (limited to the USA), lifetime Human Intelligence Tasks (HITs) approved (required to be greater than or equal to 1000) and HIT approval rate (greater than or equal to 95% for all requester HITs) (Wilson, McNellis & Latham, 2018). Each subject received \$2.00 USD for their participation in the study, resulting in an average hourly rate of \$8.

#### 4.2.6 Attention and Manipulation checks

Following participant review of the key details in each case, an attention check was applied. Subjects were asked about the size of the fraud and the company's name. Participant attentiveness is a concern for many researchers using MTurk workers; however, Hauser and Schwarz (2016) found that MTurkers were more attentive to the instructions than college students.

As a manipulation check, at the end of the experiment, participants were asked if they had ever heard of Crowding-out effect. Participants responded the question with either "Yes, I could explain it," "Sounds familiar but I couldn't explain it," or "No." To encourage participants to be completely honest, I emphasized that compensation (\$2.00) is not contingent on responses as recommended by Bentley (2018). Yet, following Brink, Lowe and Victoravich (2013) participants were asked to indicate whether only the FRA or both the FRA and the company offered a cash reward.

#### 4.2.7 Response rate

The experiment response pattern is shown in Table 15. Invitations were sent out by Mturk and operationalized in the Qualtrics respondent database.

Table 15 - Experiment response pattern

		Total
	Completed responses	319
(-)	Less IP duplicates	19
(=)	Completed unique responses	300
	Completion rate	94.04%
(-)	Less failed attention checks	27
	Fraud size	22
	Company's name	5
(-)	Less failed manipulation checks	38
	Conditions 1 and 2	22
	Conditions 3	16
(=)	Total usable responses	235
	Response rate	78.33%

In order to control for multiple participants answering from the same IP address I selected the prevent ballot box stuffing checkbox on Qualtrics. This option helps keep respondents from taking the experiment multiple times by placing a cookie on their browser when they submit a

response. However, respondents could simply clear their cookies and overcome this control. Because of this, duplicate IPs were excluded, and I opted to keep only the first response.

Therefore, a total of 319 subjects answered the experiment. However, 27 were eliminated because they failed to pass the attention checks. Within the 273 completions, however, 38 respondents failed the manipulation check question, leaving a total of 235 usable responses, a 78.33% response rate. Finally, my statistical analysis is based on a final set of 235 participants. These failure rates are lower than other studies using electronic survey methods (Andon et al. 2018) and similar to the failure rate reported by Wilson, McNellis and Latham (2018), which used Mturk.

#### 4.2.8 Statistical technique

I employ two tests, Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA) to test the hypotheses with the whistleblowing reporting intention serving as the dependent variable. The independent variables are presence of an anonymous channel and monetary rewards. Sequential, LOC variable and covariates were added as independent variables. ANOVA, ANCOVA, graphs and mean comparisons between groups are presented separately for each of group.

Assumptions test were performed for normality and homogeneity of variance. For robustness, bootstrapping was performed. To test for homogeneity, I performed Levene's test. Also, I disclosed effect size – partial eta-squared ( $\eta_p^2$ ) is interpreted similar to  $R^2$  in regression, proportion of variance explained by the factor (Cohen, 2013).

As post hoc tests I employed Fisher's LSD and Tukey's HSD. Fisher's LSD test should be used when the omnibus ANOVA rejects. Thus, Fisher's LSD should only be used to perform post hoc comparisons of three groups; in fact, it is the most powerful test for this case (Cohen, 2013). Tukey used the studentized range ( $q$ ) distribution. The studentized range distribution controls for Type I error by using information from the largest and smallest means observed. Tukey's HSD can be used for  $J > 3$ . But because it is based on the min and max, it is conservative. It reduces Type I error, but also has less power. However, requires equal  $n$  per group.

### 4.3 RESULTS



### 4.3.1 Descriptive Statistics

Data on demographic factors including age, gender, marital status, ethnic origin, education level, household income, employment status and work experience were collected. In addition to these categorical questions, one additional question was posed concerning whether as part of the respondent's experience they had ever discovered a person engaging in questionable or wrongful behavior. Table 16 highlights that sample respondents were on average 35.23 years old with a standard deviation of 10.40. Mean levels of work experience were approximately 162 months with a standard deviation of 258.79. While a majority of the sample respondents were male (54.47%).

Table 16 - Demographic categorical descriptive statistics of the participants

	n = 235	
<b>Age (years)</b>		
Mean	35.23	
Standard Deviation	10.40	
<b>Gender</b>		
Female	106	45.11%
Male	128	54.47%
Prefer not to answer	1	0.43%
<b>Marital status</b>		
Single	129	54.89%
Married / Stable Union	92	39.15%
Separated / divorced	13	5.53%
Widowed	1	0.43%
Other	0	0.00%
Did not answer	0	0.00%
<b>Ethnic Origin</b>		
Native American or American Indian	-	0.00%
Asian	11	4.68%
Black or African American	26	11.06%
Hispanic/Latino	14	5.96%
White	180	76.60%
Other	4	1.70%
Did not answer	0	0.00%
<b>Education level</b>		
Incomplete primary (1st to 8th)	-	0.00%
Complete elementary (1st to 8th)	-	0.00%
High school incomplete	2	0.85%
High school graduate	43	18.30%
Incomplete higher education	48	20.43%
University Graduation	120	51.06%
Postgraduate	21	8.94%
Did not answer	1	0.43%
<b>Household income</b>		
Less than \$25,000	39	16.60%
\$25,000 to \$34,999	39	16.60%
\$35,000 to \$49,999	41	17.45%
\$50,000 to \$74,999	69	29.36%

\$75,000 to \$99,999	20	8.51%
\$100,000 to \$149,999	18	7.66%
\$150,000 to \$199,999	7	2.98%
\$200,000 or more	2	0.85%
Did not answer	-	0.00%
<b>Employment status</b>		
Employed	196	83.40%
Unemployed	28	11.91%
Did not answer	11	4.68%
<b>Work Experience (months)</b>		
Mean	162.33	
Standard Deviation	258.79	
<b>Have you ever discovered a person in authority engaging in questionable or wrongful behavior?</b>		
Yes	102	43.40%
No	133	56.60%
Did not answer	-	0.00%

A majority of my respondents are white which represents 76.60%. Finally, a total of 102 (43.40 %) of the sample respondents indicated that they had ever discovered a person in authority engaging in questionable or wrongful behavior, this is similar to Kaplan and Whitecotton (2001), Kaplan et al. (2012), Robertson, Stefaniak and Curtis (2011) and Kaplan, Pope and Samuels (2015). This result suggests that questionable acts by employees occur and present a certain frequency in companies.

Table 17 presents the descriptive statistics of participants' assessments of the likelihood that an employee in Pat's situation would report the fraud through external Non-anonymous or Anonymous reporting channel interacting with Reward incentives.

Table 17 - Descriptive Statistics of the likelihood of blowing the whistle: Mean (Standard Deviation)

Reward × Reporting	Non-anonymously	Anonymously	Overall
Large Reward	6.025	6.268	6.148
	(1.291)	(1.049)	(1.174)
	n = 40	n = 41	n = 81
Small Reward	5.485	5.900	5.712
	(1.856)	(1.277)	(1.568)
	n = 33	n = 40	n = 73
No Reward	4.051	5.190	4.642
	(1.849)	(1.581)	(1.798)
	n = 39	n = 42	n = 81
Overall	5.179	5.780	5.494
	(1.866)	(1.388)	(1.657)
	n = 112	n = 123	n = 235

Recall that my reward incentive and reporting channel variables were manipulated. There is a mean increase between *Non-anonymously* and *Anonymously* conditions in all manipulated *Reward* incentives. However, only there is a significant difference ( $p = 0.009$ ) between

*Anonymously* ( $\mu = 4.051$ ,  $\sigma = 1.849$ ) and *Non-Anonymously* ( $\mu = 5.190$ ,  $\sigma = 1.581$ ) when a reward is absent.

Table 18 presents the descriptive statistics of participants' assessments of the likelihood that an employee in Pat's situation would report the fraud through external non-anonymous or anonymous reporting channel and internal and external LOC.

Table 18 - Descriptive Statistics of the likelihood of blowing the whistle: Mean (Standard Deviation)

LOC × Reporting'	Anonymously	Non-anonymously	Overall
Internal	5.519 (1.551) n = 54	5.355 (1.812) n = 62	5.431 (1.690) n = 116
External	5.986 (1.219) n = 69	4.960 (1.927) n = 50	5.555 (1.630) n = 119
Overall	5.780 (1.388) n = 123	5.179 (1.866) n = 112	5.494 (1.657) n = 235

The mean and standard deviation for external LOC when there is an anonymous reporting channel were 5.986 and 1.219, respectively. And, there is a decrease when the reporting channel is *Non-anonymous* ( $\mu = 4.960$ ,  $\sigma = 1.927$ ) compared to *Anonymous* ( $\mu = 5.986$ ,  $\sigma = 1.219$ ). Also, there is a significant difference between *Anonymously* and *Non-Anonymously* ( $p = 0.004$ ). While for participants with internal LOC there is a nonsignificant difference between *Anonymously* and *Non-anonymously* ( $\mu = 5.519$ ,  $\mu = 5.355$ ,  $p = 0.3002$ ).

Table 19 presents the descriptive statistics of participants' assessments of the likelihood that an employee in Pat's situation would report the fraud. Here, I show an interaction between internal and external LOC and Reward.

Table 19 - Descriptive Statistics of the likelihood of blowing the whistle: Mean (Standard Deviation)

LOC × Reward	No Reward	Small Reward	Large Reward	Overall
Internal	4.717 (1.846) n = 46	5.750 (1.500) n = 36	6.059 (1.301) n = 34	5.431 (1.690) n = 116
External	4.543 (1.755) n = 35	5.676 (1.651) n = 37	6.213 (1.082) n = 47	5.555 (1.630) n = 119
Overall	4.642 (1.798) n = 81	5.712 (1.568) n = 73	6.148 (1.174) n = 81	5.494 (1.657) n = 235

Table 19 shows that Internals' LOC ( $\mu = 4.717$ ,  $\sigma = 1.846$ ) present a higher mean when there is not a monetary reward than Externals' LOC ( $\mu = 4.543$ ,  $\sigma = 1.755$ ). In contrast, there is a

swift, only, when a large monetary reward is offered. Then External's are more likely to blow the whistle in a presence of a large monetary incentive.

#### 4.3.2 Results of ANOVA

First, a  $3 \times 2$  ANOVA was conducted in steps<sup>5</sup> using *Reporting*, *Reward*, and the interaction term as the independent variables. Table 20 shows a significant main effect for *Reward*,  $F(2, 229) = 21.991$ ,  $p = 0.000$ , and *Reporting*,  $F(1, 229) = 9.318$ ,  $p = 0.003$ . However, there is a nonsignificant interaction effect between *Reward*  $\times$  *Reporting*,  $F(2, 229) = 2.016$ ,  $p = 0.136$ .

Table 20 – ANOVA

Source	Type III sum of squares	df	Mean square	F	Sig.
<i>Reward</i>	98.959	2	49.480	21.991***	0.000
<i>Reporting</i>	20.964	1	20.964	9.318***	0.003
<i>Reward * Reporting</i>	9.071	2	4.536	2.016	0.136
Error	515.240	229	2.250		
Total	7735.000	235			

Notes: ANOVA require that the groups to compare have equal variances, Levene's test ( $p = 0.000$ ) is used in connection to ANOVA where more than two groups must be compared and show that its not equal across groups. However, if one sample variance is no more than twice as large as the other, you can safely assume HOV in the population. (Cohen, 2013).

\*, \*\*, \*\*\* indicates statistical significance at levels of 0.10, 0.05 and 0.01, respectively.

$R^2 = .198$ , Adjusted  $R^2 = .181$

The second step, an ANOVA was conducted adding Locus of Control (LOC) and two interaction terms (*LOC*  $\times$  *Reward*, *LOC*  $\times$  *Reporting*) as the independent variables. Table 21 presents the ANOVA results of this model.

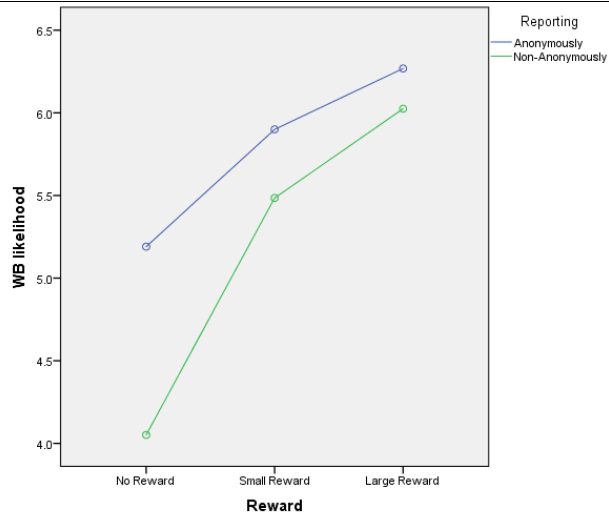
Table 21 - ANOVA

Panel A: ANOVA Results					
Source	Type III sum of squares	df	Mean square	F	Sig.
<i>LOC</i>	0.815	1	0.815	0.367	0.545
<i>Reward</i>	97.781	2	48.891	22.004***	0.000
<i>Reporting</i>	21.402	1	21.402	9.632***	0.002
<i>Reward*Reporting</i>	12.329	2	6.165	2.775*	0.065
<i>LOC*Reward</i>	2.124	2	1.062	0.478	0.621
<i>LOC*Reporting</i>	13.077	1	13.077	5.886**	0.016
Error	499.916	225	2.222		
Total	7735.000	235			

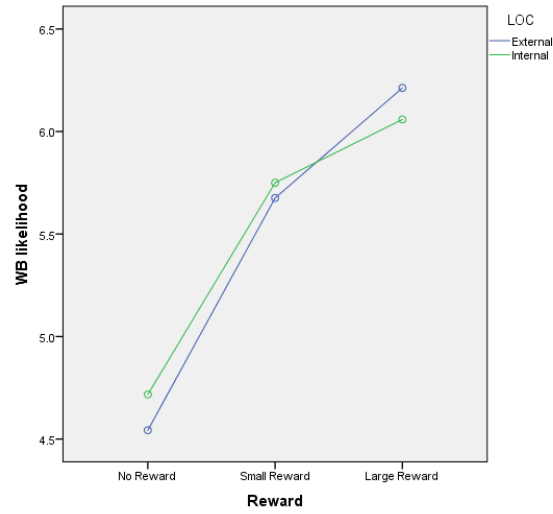
  

Panel B: Interaction between Reward and Reporting					
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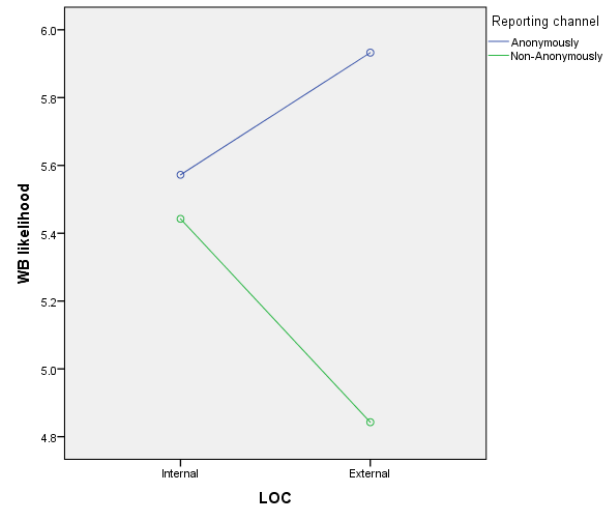
<sup>5</sup> All steps are presented at Appendix C.



Panel C: Interaction between LOC and Reward



Panel D: Interaction between LOC and Reporting



Notes: ANOVA require that the groups to compare have equal variances, Levene's test for equality of variances was found to be violated for the present analysis,  $F(11, 223) = 2.523, p = 0.005$ . However, if one sample variance is no more than twice as large as the other, you can safely assume HOV in the population. (Cohen, 2013).

\*, \*\*, \*\*\* indicates statistical significance at levels of 0.10, 0.05 and 0.01, respectively.

$R^2 = .222$ , Adjusted  $R^2 = .191$

Panel A of Table 21 shown a significant main effect for *Reward*,  $F(2, 225) = 22.004, p = 0.000, \eta_p^2 = 0.164$ , according to Cohen (2013) a large effect. A significant main effect for *Reporting*,  $F(1, 225) = 9.632, p = 0.002, \eta_p^2 = 0.041$ , however a nonsignificant main effect for *LOC*,  $F(1, 225) = 0.367, p = 0.545, \eta_p^2 = 0.002$ . In contrast to prior ANOVA described on Table 20, at this time there was a significant interaction effect between *Reward* and *Reporting*  $F(2, 225) = 2.775, p = 0.065, \eta_p^2 = 0.024$ , according to Cohen (2013) a small effect. Also, there was a significant interaction effect between *LOC* and *Reporting*,  $F(1, 225) = 5.886, p = 0.016, \eta_p^2 = 0.025$ , according to Cohen (2013) a large effect.

#### 4.3.3 Results of the Covariates – ANCOVA

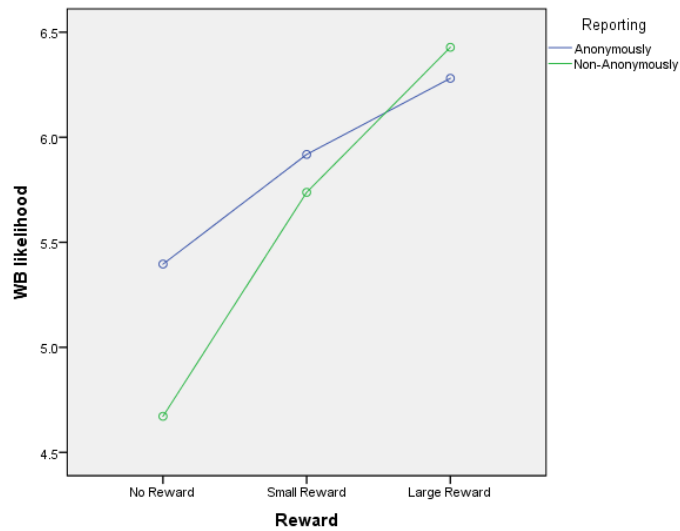
The ANCOVA results are reported in Panel A of Table 22, as well as interaction graphs between *Reward*  $\times$  *Reporting*, (Panel B), *LOC*  $\times$  *Reward* (Panel C) and *LOC*  $\times$  *Reporting* (Panel D). Using ANCOVA, I added covariates as *Age*, *Experience*, *Duration*, *Seriousness*, *Responsibility* and *Costs*. Also, I control for *Gender*, *Marital*, *Ethnic*, *Education*, *Income* and *Discovered*. Differently from previous ANOVA, the ANCOVA shows distinct results for *Reporting* and *Reward*  $\times$  *Reporting*.

Table 22 - ANCOVA

Panel A: ANCOVA results					
Source	Type III sum of squares	df	Mean square	F	Sig.
<i>Age</i>	2.951	1	2.951	1.585	0.210
<i>Gender</i>	2.048	2	1.024	0.550	0.578
<i>Marital</i>	0.155	3	0.052	0.028	0.994
<i>Ethnic</i>	10.285	4	2.571	1.381	0.242
<i>Education</i>	5.210	5	1.042	0.560	0.731
<i>Income</i>	5.228	7	0.747	0.401	0.901
<i>Employment</i>	1.607	2	0.804	0.432	0.650
<i>Experience</i>	0.195	1	0.195	0.105	0.746
<i>Duration</i>	0.778	1	0.778	0.418	0.519
<i>Discovered</i>	2.520	1	2.520	1.353	0.246
<i>LOC</i>	3.967	1	3.967	2.131	0.146
<i>Seriousness</i>	17.199	1	17.199	9.238***	0.003
<i>Responsibility</i>	36.121	1	36.121	19.401***	0.000

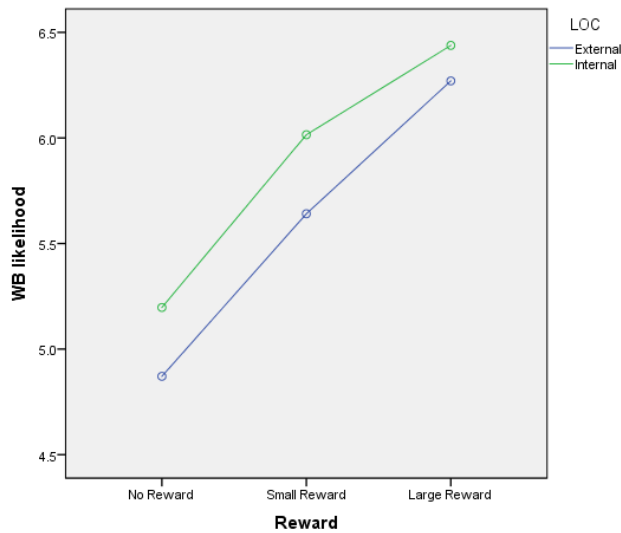
<i>Costs</i>	8.845	1	8.845	4.751**	0.030
<i>Reward</i>	52.981	2	26.491	14.229***	0.000
<i>Reporting</i>	2.980	1	2.980	1.600	0.207
<i>Reward * Reporting</i>	6.776	2	3.388	1.820	0.165
<i>LOC * Reward</i>	0.380	2	0.190	0.102	0.903
<i>LOC * Reporting</i>	12.754	1	12.754	6.851***	0.010
Error	359.318	193	1.862		
Total	7637.000	233			

Panel B: Interaction between Reward and Reporting



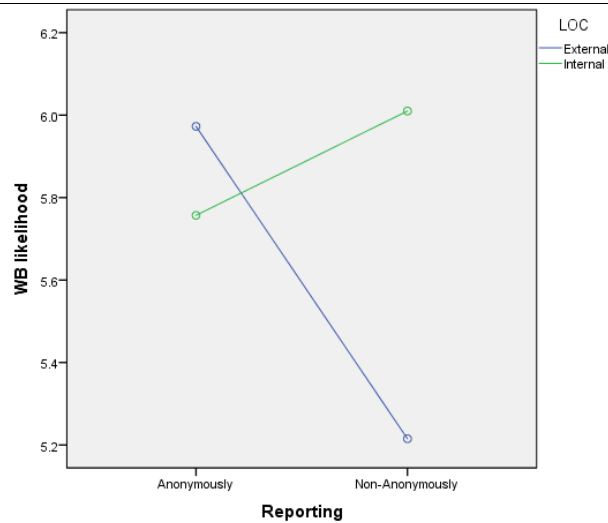
Covariates appearing in the model are evaluated at the following values: Seriousness = 6.49, Responsibility = 5.82, Costs = 4.68, Duration = 509.87, Experience = 162.33, Age = 35.18

Panel C: Interaction between LOC and Reward



Covariates appearing in the model are evaluated at the following values: Seriousness = 6.49, Responsibility = 5.82, Costs = 4.68, Duration = 509.87, Experience = 162.33, Age = 35.18

Panel D: Interaction between LOC and Reporting



Covariates appearing in the model are evaluated at the following values: Seriousness = 6.49, Responsibility = 5.82, Costs = 4.68, Duration = 509.87, Experience = 162.33, Age = 35.18

Duration – is a control variable about the time spend (in seconds) to complete the experiment.

Discovered – is a control variable that assumes 1 if the participant ever discovered a person in authority engaging in questionable or wrongful behavior and 0 if do not.

Tests the null hypothesis that the error variance of the dependent variable is equal across groups. Levene's test  $F(223, 9) = 1.156, p = 0.442$

Appendix C shows bootstrap significance and confidence intervals for robustness.

\*, \*\*, \*\*\* indicates statistical significance at levels of 0.10, 0.05 and 0.01, respectively.

$R^2 = .437$  (Adjusted  $R^2 = .323$ )

Panel A of Table 22 displays ANCOVA results where the dependent variable is whistleblowing likelihood to report externally. Thus, the main between-subject independent variables are *Reward* (No reward, Small Reward and Large Reward) and *Reporting* (Anonymous versus Non-Anonymous). The covariates are Graham's model (Seriousness, Responsibility and Costs) and control variables. Table 22 shows a significant main effect for *Reward*,  $F(2, 193) = 14.229, p = 0.000, \eta_p^2 = 0.129$ , however there is a nonsignificant main effect for *Reporting*,  $F(1, 193) = 1.600, p = 0.207, \eta_p^2 = 0.008$ .

Recall that Hypothesis 1 predicts that individuals will assess a higher likelihood to blow the whistle when the monetary rewards are larger than when are small or absent. I performed Post hoc analyses using Tukey's HSD to find differences between conditions. Tests of the simple effects of *Reporting* within each of the *Reward* conditions indicate that participants have a higher likelihood of blowing the whistle. When external report is *Non-Anonymously* there is a significant different between *No Reward* versus *Small Reward* ( $\mu = 4.051, \mu = 5.485, p = 0.001$ , respectively). Also, a significant different between *No Reward* versus *Large Reward* ( $\mu = 4.051, \mu = 6.025, p = 0.000$ , respectively). When external report is *Anonymously* there is a significant difference between



*No Reward* versus *Large Reward* ( $\mu = 5.190$ ,  $\mu = 6.268$ ,  $p = 0.015$ , respectively). In contrast, when reporting channel is *Anonymously* there is a nonsignificant difference between *Small Reward* and *Large Reward* ( $\mu = 5.900$ ,  $\mu = 6.268$ ,  $p = 0.879$ , respectively). Similarly, when external report is *Non-anonymously* there is a nonsignificant difference between *Small Reward* and *Large Reward* ( $\mu = 5.485$ ,  $\mu = 6.025$ ,  $p = 0.644$ , respectively).

Recall that Hypothesis 2 addresses that individuals will assess a higher likelihood to blow the whistle when a reporting channel is anonymous than when is not. There was a nonsignificant main effect for *Reporting*,  $F(1, 193) = 1.600$ ,  $p = 0.207$ . Nevertheless, post hoc analyses using Tukey's HSD indicate that participants have a lower likelihood of blowing the whistle *Non-anonymously* compared to *Anonymously* when reward is absent ( $\mu = 4.051$ ,  $\mu = 5.190$ ,  $p = 0.009$ , respectively).

Hypothesis 3 hypothesis predicts that monetary rewards and reporting channels interact to influence whistleblowing intentions. However, there is a nonsignificant interaction effect between *Reward*  $\times$  *Reporting*,  $F(2, 193) = 1.820$ ,  $p = 0.165$ ,  $\eta_p^2 = 0.019$ .

Hypothesis 4a predicts the effect of participant's perception of the seriousness and perceived responsibility of the wrongdoing on their likelihood intention to report a wrongdoing externally. Also, Hypothesis 4b considers the effect of participant's perception of personal costs associated with their intention to report a wrongdoing externally. The ANCOVA results reported in Table 21 show a significant main effect for the three covariates: *Seriousness*  $F(1, 193) = 9.238$ ,  $p = 0.003$ ,  $\eta_p^2 = 0.046$ ; *Responsibility*,  $F(1, 193) = 19.401$ ,  $p = 0.000$ ,  $\eta_p^2 = 0.091$ ; and, *Costs*,  $F(1, 193) = 4.751$ ,  $p = 0.030$ ,  $\eta_p^2 = 0.024$ . These findings provide support for H4a and H4b. Also, these findings corroborate with previous literature (Schultz et al., 1993; Curtis, 2006; Taylor & Curtis, 2010).

Recall that Hypothesis 5a (Hypothesis 5b) addresses the interaction effect between *LOC* and *Rewards (Reporting)* on the likelihood of whistleblowing. First, Panel A of Table 22 shows a nonsignificant interaction effect between *LOC* and *Reward* on the likelihood of whistleblowing,  $F(2, 193) = 0.102$ ,  $p = 0.903$ ,  $\eta_p^2 = 0.001$ . These findings do not provide support for H5a. Second, Table 21 shows a significant interaction effect between *LOC* and *Reporting* on the likelihood of whistleblowing,  $F(1, 193) = 0.102$ ,  $p = 0.903$ ,  $\eta_p^2 = 0.034$ , according to Cohen (2013) a small effect. The interaction between *LOC* and *Reporting* is illustrated in Panel D of Table 22. In other

words, these findings show the role of LOC moderating the effect between reporting channel and the likelihood of whistleblowing.

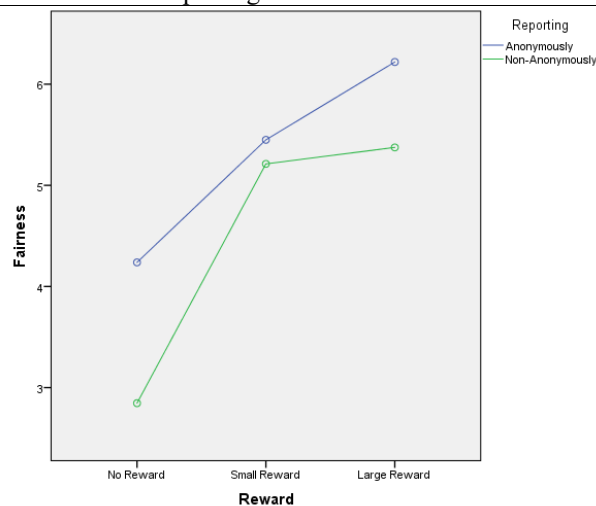
#### 4.3.4 Supplemental Analysis

Table 23 presents the descriptive statistics of participants' assessments of the fairness. I measured participants' perception by asking "Please assess the fairness of the FRA's whistleblowing reward program" and using a seven-point Likert scale with endpoints labeled it. Prior whistleblowing research suggests that individuals' willingness to blow the whistle depends on their perceptions regarding fairness (Berger, Perreault & Wainberg, 2017).

Table 23 – Fairness of FRA's whistleblowing reward program

Panel E: Descriptive Statistics of the likelihood of Fairness: Mean (Standard Deviation)			
Reward × Reporting	Non-Anonymously	Anonymously	Overall
Large Reward	5.375 (1.427) n = 40	6.220 (1.013) n = 41	5.802 (1.298) n = 81
Small Reward	5.212 (1.576) n = 33	5.450 (1.319) n = 40	5.342 (1.436) n = 73
No Reward	2.846 (1.694) n = 39	4.238 (1.985) n = 42	3.568 (1.968) n = 81
Overall	4.446 (1.949) n = 112	5.293 (1.702) n = 123	4.889 (1.869) n = 235

Panel F: interaction between Reward and Reporting



Significant differences between conditions *Non-Anonymously – No Reward* versus *Small Reward* ( $\mu = 2.846$ ,  $\mu = 5.212$ ,  $p = 0.000$ , respectively) and *Non-Anonymously – No Reward* versus *Large Reward* ( $\mu = 2.846$ ,  $\mu = 5.375$ ,  $p = 0.000$ , respectively).

Panel E of Table 23 shows that individuals at *No Reward* condition evaluated the *Anonymous* condition to be significantly fairer than those in the *Non-Anonymously* condition ( $\mu = 4.238$ ,  $\mu = 2.846$ ,  $p = 0.000$ , respectively). Also, individuals at the *Non-anonymously* and *No reward* ( $\mu = 2.846$ ,  $\sigma = 1.694$ ) evaluated this as the least fair condition between all of them ( $p = 0.000$ ).

#### 4.4 CONCLUSIONS

The link between monetary reward and work effort is a classic topic in economics. Recently, there is a growing of studies experimenting monetary rewards for whistleblowers, however, only a few studies have addressed this issue. This dissertation's chapter provides additional evidence on monetary rewards and reporting channel on individuals' intention to blow the whistle against fraud. The research question is: What is the effect of monetary rewards and the whistleblowing reporting channels on whistleblower intentions? Data from  $n = 235$  Mturk on-line individuals participated in this experiment.

First, I investigate the effects of Reward and Reporting Channel on the likelihood of whistleblowing. I found a significant main effect for monetary reward and a nonsignificant main effect for reporting channel. Also, there was a nonsignificant interaction between Reward and Reporting when I controlled for demographic information. My results suggest that monetary rewards play a major role in the likelihood of whistleblowing whether there is an anonymous channel or non-anonymous channel. These findings contribute with emerging whistleblowing literature on the links between monetary rewards and reporting intentions (Dyck, Morse & Zingales, 2010; Pope & Lee, 2013; Berger, Perreault & Wainberg, 2017; Andon et. al., 2018; Rose, Brink & Norman, 2018).

Second, my results corroborate Schultz's et al. (1993) model that adapted the concepts of Graham (1986) for perceived seriousness, perceived responsibility and the perceived personal cost.

Third, I examine individuals LOC, which include intrinsic motivation to measure the likelihood of blowing the whistle. I draw some conclusions from the interaction. My results indicate that LOC and Reporting interact, such that the likelihood of blowing the whistle for individuals with external LOC were significantly lower when the reporting channel is non-anonymous compared to an anonymous reporting channel. This indicates that the LOC has a significant influence on whistleblowers' willingness to report and that reporting channel differs depending on

individuals' intrinsic motivation. In contrast, there was a nonsignificant effect between anonymous and non-anonymous reporting channel when the whistleblower has an internal LOC. I also noted that controlling for *Age, Experience, Duration, Gender, Marital, Ethnic, Education, Income* and *Discovered* does not influence my results. Most critically, my interaction is robust to controlling for all these demographic variables. Additionally, my results show that rewards can overcome this issue and motivate both internals and externals LOC. My results show that reporting intentions for internals and externals LOC did not significantly differ, neither when at the presence of rewards nor when reward is absent.

Overall, in my experimental setting, my findings suggest that reports intention depend on reward and when a monetary reward is absent, intrinsic motivation plays a major role. Specifically, I suggest whistleblowing polices take into consideration not only reporting channel, but also the whistleblower's intrinsic motivation, when determining whether to implement an anonymous or non-anonymous reporting channel. In addition, individuals at a *no reward and non-anonymous reporting channel* condition considered the least fair whistleblowing policy.

#### 4.4.1 Limitations

This study has potential limitations. First, limitations due to sample and selection arises because only individuals currently registered with Amazon Mechanical Turk (Mturk) and located in the US participated in this experiment. Perhaps this sample does not reflect the general population, and differences between an MTurk sample and a sample collected using students (as prior literature) might limit generalizing the results. Even though, Mturk participants are more heterogeneous than a college sample (Buhrmester, Kwang & Gosling, 2011). Moreover, limiting by the location of the United States does not mean that all participants were US citizens. Thus, the results might not be generalized to another population outside the United States. Although my results show no differences between ethnicities, differences may arise when using participants from different countries.

Second, my experiment does not explicitly require participants to consider the potential costs of whistleblowing, but only a captured the perception of personal costs on a non-anonymous reporting channel. An explicit form of retaliation against the whistleblower could affect my results. Furthermore, a non-fraud scenario was not offered, only fraud scenarios where there was a fraud, so it was not controlled by possible fraud or false whistleblowing report.

Finally, my study does not assess the likelihood that the participants themselves would choose to report fraud, but rather asked them to consider how a third person would consider the situation. While this approach was made to mitigate the social desirability bias, this is a limitation of this method.

## 5 CROWDING-OUT EFFECT

### 5.1 HYPOTHESIS DEVELOPMENT

#### 5.1.1 The impact of fraud size

Intrinsic motivation theory suggests that people will come forward and blow the whistle, regardless of any monetary reward. An intrinsic motivation can be defined as an activity that has a motivation of its own, independent of any reward (Deci, 1971). Previous literature shows that the likelihood of reporting a wrongdoing increases with the perceived seriousness of the wrongdoing (Schultz et al., 1993; Kaplan & Whitecotton, 2001; Curtis 2006; Robinson, Robertson & Curtis, 2012; Fajardo & Cardoso, 2014; Brink, Lowe & Victoravich, 2017). These findings suggest that the perceived seriousness of wrongdoing is a predictor of an individual's intrinsic motivation to blow the whistle (Andon et. al., 2018). Also, external reporting to the SEC or an external authority is driven by increased perceptions of seriousness (Brink, Lowe & Victoravich, 2017; Andon et al. 2018) and whistleblowing intentions are higher when the reporting channel is administered externally than when it is administered internally (Gao, Greenberg & Wong-On-Wing, 2015). At an individual level, a person who views money as a source of power may be less likely to report internally but may consider reporting externally (Brink, Lowe & Victoravich, 2017).

Prior research has measured the perceived seriousness by providing a scale to participants (Schultz et al., 1993; Kaplan & Whitecotton, 2001; Curtis 2006; Fajardo & Cardoso, 2014; Brink, Lowe & Victoravich, 2017). Moreover, Robinson, Robertson and Curtis (2012) investigated the relationship between seriousness and reporting intentions by comparing material (6.0% of total corporate expenses) and immaterial (0.5% of total corporate expenses) scenarios within the same type of fraud. However, these scenarios did not expose participants to any absolute value of fraud size or interact with different reward systems. Also, Andon et al. (2018) measured the perceived seriousness of the wrongdoing rather than manipulating it. For these reasons, I intend to manipulate fraud size at two levels: large (\$100,000,000) and small (\$1,000,000).

#### 5.1.2 Crowding-out effect

The literature suggests that intrinsic motivation can be predict by the seriousness of the fraud (Schultz et al., 1993; Kaplan & Whitecotton, 2001; Curtis 2006; Robinson, Robertson &

Curtis, 2012; Fajardo & Cardoso, 2014; Brink, Lowe & Victoravich, 2017) and extrinsic motivation is predicted by monetary incentives (i.e., a reward) (Dyck, Morse & Zingales, 2010; Pope & Lee, 2013; Berger, Perreault & Wainberg, 2017; Andon et. al., 2018; Rose, Brink & Norman, 2018).

Several whistleblowing policies are designed to offer monetary rewards, expecting a crowding-in effect on whistleblowers' intentions to come forward. However, prior literature on whistleblowing provides mixed evidence on the impact of these incentives on potential whistleblowers. While some findings support a very basic assumption in economic theory (e.g., performance is positively associated with incentives) (Gneezy & Rustichini, 2000), others show the opposite in certain whistleblowing contexts (Brink, Lowe & Victoravich, 2013; Berger, Perreault & Wainberg, 2017; Brink, Lowe & Victoravich, 2017; Rose, Brink & Norman, 2018).

Brink, Lowe and Victoravich (2013) posit that reporting internally is viewed as moral action and giving incentives for internal whistleblowing should reinforce (i.e. crowd-in) compliance programs, consequently increasing internal reports and decreasing external reports. They found that when evidence of a fraud is strong employees are more likely to receive an external reward, compared to internally when evidence is weak and there is an internal incentive. They explain that this result is consistent with the unintended consequence of offering extrinsic incentives, as intrinsic incentives can be crowded out as a result.

Brink, Lowe and Victoravich (2017) show that individuals' attitudes toward money explains reporting intentions, however, their study did not find any evidence that monetary attitude leads to increased reporting to the SEC. While Rose, Brink and Norman (2018) found differences in whistleblowing intentions when they offered small and large rewards (\$175,000 and \$2,000,000, respectively). This notwithstanding, their research did not make comparisons to a no-reward option as a test for crowding-out effects.

Berger, Perreault and Wainberg (2017) show that when financial incentives are available, but the size of the fraud does not meet the minimum threshold to qualify for an incentive, potential whistleblowers will both (1) assess a lower likelihood that fraud will be reported than had the whistleblower program mentioned no financial incentives at all, and (2) assess a higher likelihood that reporting will be strategically delayed in order to allow the fraud to grow in size.

Andon et al. (2018) found that when the perceived seriousness is lower, the presence of a financial incentive results in a higher intention to report externally than when no financial incentive

is present. Following this, I predict that when the perceived seriousness is lower, the presence of a limited monetary reward will result in a higher intention of whistleblowing. However, some reward programs are designed to give a percentage of the sanction imposed by the enforcement agency limited until a certain amount. My prediction is in opposition to the findings of Andon et al. (2018): as fraud increases (and perceived seriousness increases as well), the presence of a limited monetary rewards will result in a lower whistleblower intention than when no monetary reward is present. Therefore, the larger the fraud, the smaller the reward, since the reward is hold constant. I expect that this configuration will not promote additional whistleblowing in fact, I expect that on a no reward scenario the likelihood of individuals will blow the whistle externally will be greater than when rewards are limited, and fraud is larger. For example, for in the case of countries that provide monetary rewards with a limited amount, the consequence will be a less effective reward program. I also argue that an inclusion of a cap to the reward programs are less effective in stimulating whistleblowing than when reward programs are present but only when fraud is severe.

Hypothesis 1: There is a significant interaction effect between Reward and Fraud.

Hypothesis 1a: The likelihood of whistleblowing will be lower when fraud is larger and there is a limited monetary reward compared to when fraud is small.

Hypothesis 1b: The likelihood of whistleblowing will be lower when fraud is larger and there is a limited monetary reward compared to when no monetary reward is present.

Hypotheses 1, 1a and 1b draws upon motivational crowding theory, which suggests that when whistleblowing policies mention the possibility of monetary incentives, but rewards are too small, individuals will reframe the reporting decision as an economic choice rather than an ethical decision. So, intrinsic motivations to report to the whistleblowing will be “crowded out” by extrinsic monetary incentives. Thus, because it is conditioned by size of the fraud which will influence the perception of the fraud and interact with monetary rewards. Gneezy and Rustichini (2000) explain that a certain amount of monetary compensation may be perceived as too small when compared with the other relevant factors, even if it is not too small in itself. According to Brink, Lowe and Victoravich (2013) and Berger, Perreault and Wainberg (2017) the amount of the monetary reward is a function of the size of the fraud.



## 5.2 RESEARCH METHOD

I conducted an experiment with a  $2 \times 2$  between-subjects experimental design. In this way, there is no chance that one treatment will contaminate the other, since each person receives only one treatment (Kantowitz, Roediger III & Elmes, 2014). The design fully crossed the presence of monetary reward (capped reward or no reward) and the severity of the fraud (small vs large)<sup>6</sup>. Both psychology and economics studies use manipulation without rewards as control groups (Deci; Koestner & Ryan, 1999; Beretti, Figuieres & Grolleau, 2013). Table 24 outlines the design of our experiment.

Table 24 – Research Design

	Fraud Size - \$1,000,000	Fraud Size - \$100,000,000
Reward 10% limited to \$50,000	1	2
No reward (control)	3	4

Subjects were told that this was an experimental study about reporting intentions on corporate wrongdoings and their answers would remain anonymous. They were reminded that their participation was voluntary, and there was an incentive for participation (\$2.00).

Subjects were randomly assigned to one of the four treatment conditions. Kantowitz, Roediger III and Elmes (2014) explain that randomization means that each person participating in an experiment has an equal chance of being assigned to any particular group.

After reading the scenario, subjects responded in a seven-point scale “I believe that Pat is likely to report the fraud to the FRA”. After reading the vignette and responding to the question concerning the perceived likelihood of whistleblowing, subjects will be required to indicate a number from 1 to 7 indicating the seriousness of the fraud, the responsibility for reporting, and the personal cost to report. Subsequently, they provided demographic information. An excerpt from the experiment instrument describing the scenario, as well as the wording of the specific manipulations, dependent measures and demographic information, are included in Appendix B.

<sup>6</sup> Seriousness operationalized in terms of size of the fraud – Graham (1986) explain that the seriousness of the irregularity can be measured in several ways, for example, by the monetary impact. The perception of the severity of the fraud will be captured by Schultz et al. (1993) model. Schultz et al. (1993) did not test the severity of monetary impact fraud in their scenarios.

### 5.2.1 Task

The experimental materials included Institutional Review Board<sup>7</sup> notification and the research case. Participants received an experimental instrument adapted from Andon et. al. (2018). Consistent with the vast majority of prior ethics-related research, I added a third-person decision to minimize self-report bias or social desirability bias (SDB). The third person is Pat, a certified public accountant (CPA) employed as a senior accountant within the accounting department of AgFoods Inc., a public company in the business of grain marketing and exporting. Also, I excluded the sanction provided by Andon et. al. (2018) because, here, I am interested on the interaction between fraud size and monetary rewards.

Vignettes and third-person responses are widely used in accounting and business ethics research because they allow researchers to approximate decision-making situations within the context – consistent with many prior whistleblowing studies (Trevino & Victor, 1992; Decker & Calo, 2007; Liyanarachchi, G., & Newdick, C. (2009); Seifert, Sweeney, Joireman & Thornton, 2010; Kaplan, Pope & Samuels, 2011; Seifert, Stammerjohan & Martin, 2013; Gao, Greenberg & Wong-On-Wing, 2015; Lowe, Pope & Samuels, 2015; Wainberg & Perreault, 2015; Boo, Ng & Shankar, 2016; Berger, Perreault & Wainberg, 2017).

The example of a fraud in the vignettes involve the recording of materially false revenues (revenue and fictitious transactions) committed by a CFO of AgFoods. Brink, Eller & Green (2018) find that the likelihood of financial statement fraud being reported through an external channel relative to an internal channel is greater when the wrongdoer is the CFO than when the wrongdoer is the Senior Accounting Manager. In other words, they explain that wrongdoing on part of a CFO leads to a greater likelihood of reporting directly to the SEC. Thus, previous research used fraudulent financial statements on the vignettes (Seifert, Sweeney, Joireman & Thornton, 2010; Seifert, Stammerjohan & Martin, 2013; Zhang, Pany & Reckers, 2013; Boo, Ng & Shankar, 2016; Andon et al., 2018).

Also, financial reporting irregularities has long been a problem in accounting theory and practice. Frequently, those involved revenue recognition, as in the noteworthy examples of General Electric, Nortel Networks, Enron, Qwest Communications, and WorldCom. Revenue-related

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<sup>7</sup> The use of human participants was approved by the appropriate university's institutional review board, and all participants voluntarily consented to participate.

restatements are the single most frequent type of misstatement (37%) between 1995 and 1999, and almost half (78 of 159) of the revenue restatements involved permanent adjustments, which usually eliminated previously recorded revenue (Palmrose & Scholz, 2004). Still, between 2004 and 2017, the most frequent restatement error (17.4%), pertained to the interpretation of the revenue recognition principle (Choudhary, Merkley & Schipper, 2017).

As noted by Kaplan et al. (2015), though financial fraud reporting does not usually involve a direct transfer of monies to perpetrators, the individuals typically receive indirect benefits through bonuses and other positive performance-based outcomes (see Wilson, McNellis & Latham, 2018).

### 5.2.2 Experiment control in the task for anonymous channel

Participants responded via an anonymous channel. Reiss (2005) suggests that to demonstrate undermining effects, therefore, only in studies with no possibility of arousal of negative affect. This was not mentioned in previous whistleblowing research, however previous studies did not interact monetary reward to test for crowding-out effects (see Brabeck, 1984; Zhuang, Thomas & Miller, 2005; Chiu & Erdener, 2003; Decker & Calo, 2007; Hopman & van Leeuwen, 2009; Taylor & Curtis, 2010; Seifert, Stammerjohan & Martin, 2013; Waytz, Dungan & Young, 2013; Chen & Lai, 2014; Erkmen, Özsözgün Çalışkan & Esen, 2014; Young, 2016; Kirrane, O'shea, Buckley, Grazi & Prout, 2017; Wilson, McNellis & Latham, 2018).

It is intended to minimize the effect of cost perception; however, it is believed that it has a positive relation with the perceived seriousness of fraud. If it is not anonymous the effect may be coming (most) from perceived cost of retaliation or image motivation (see Ariely, 2009).

### 5.2.3 Dependent variable

The dependent measures focus on the intentions to report externally. Participants responded on a seven-point scale, this report measure of reporting intentions is consistent with prior literature (Trevino & Victor, 1992; Kaplan & Whitecotton, 2001; Kaplan, Pope & Samuels, 2010; Seifert, Sweeney, Joireman & Thornton, 2010; Kaplan, Pope & Samuels, 2011; Brink, Lowe & Victoravich, 2013; Kaplan, Pope & Samuels, 2015; Young, 2017).

Also, Eutsler and Lang (2015) tested different measures of scales (e.g. from five to 11 points) in accounting research and their results showed that variance may be maximized when the

scale length is set at seven points. The authors explain that a fully labeled seven-point scale may provide the greatest benefits to researchers, labeling all points of the scale significantly increases variance, regarding scale points, variance is maximized at seven points.

#### 5.2.4 Independent variables

After presenting the scenario to the participants, they will be exposed to the manipulated treatment, that is, information on whether a monetary incentive was (or is not) available to report the financial report fraud given two fraud scenarios (small and large). Dixon, Lik, Green and Myerson (2013) found out that real and hypothetical money produced the same outcomes. Table 25 describes how the Fraud Size variable was manipulated.

Table 25 – Fraud Size

Scenario 1 – Small fraud size \$1,000,000	Scenario 2 – Large fraud size \$100,000,000
One evening, while working late on a set of files to meet a reporting deadline, Pat discovered information indicating that the Chief Financial Officer (CFO) of AgFoods has made a series of accounting entries recognizing fictitious revenue totaling \$1,000,000. After being unable to find any supporting documentation, Pat raised the matter with the financial controller who was dismissive of your concerns. It is clear to Pat that these entries have caused AgFoods to misrepresent its reported earnings.	One evening, while working late on a set of files to meet a reporting deadline, Pat discovered information indicating that the Chief Financial Officer (CFO) of AgFoods has made a series of accounting entries recognizing fictitious revenue totaling \$100,000,000. After being unable to find any supporting documentation, Pat raised the matter with the financial controller who was dismissive of your concerns. It is clear to Pat that these entries have caused AgFoods to materially misrepresent its reported earnings.

Table 26 describes how the capped monetary reward variable was manipulated.

Table 26 – Monetary Reward

Reward	Statement
10% limited to \$50,000	Under current law, Securities and Exchange Commission (SEC) offers a monetary reward for individuals who voluntarily provide original information to an outside authority to assist in the discovery of frauds. The amount of the monetary reward will be 10% on the value of the discovery fraud with a limit of \$50,000. A whistleblower may submit the information to the SEC anonymously. However, prior to the payment of an award the whistleblower must disclose his or her identity to the SEC. The SEC must keep this information confidential, except to other regulatory authorities.
No reward	Under current law, there are no monetary rewards to individuals who voluntarily provide original information to Securities and Exchange Commission (SEC) and result in monetary sanctions against the offending company. A whistleblower may submit the information to the SEC anonymously.

Recall that I predict that the inclusion of a cap to the reward will generate less whistleblowing when the reward become small compared to fraud increasing. In this sense, a \$50,000 reward related to \$1 million fraud will be perceived as 5%; however, a \$50,000 reward

related to a \$100 million fraud will be perceived as 0.0005%, even though both choices have identical payoffs, because when there is an interaction between fraud size and reward size I expect less effort (i.e., whistleblowing intentions).

### 5.2.5 Control Variables

The following are the variables that will be measured. The LOC is a characteristic of the individual that is measured with the unidimensional Internal–External Locus of Control (I–E) Scale (Rotter, 1966).

Table 27 – Control Variables

<b>Control Variables</b>	<b>Level</b>	<b>Measurement</b>	<b>Theoretical foundation</b>
Perceived seriousness of irregularity	Situational	Seven-point scale	Near & Miceli (1985), Graham (1986), Schultz et al. (1993), Kaplan & Whitecotton (2001), Curtis (2006), Dalton & Radtke (2013) and Fajardo & Cardoso (2014)
Attribution of personal responsibility for reporting	Situational	Seven-point scale	
Perceived personal cost of reporting	Situational	Seven-point scale	
Locus of Control	Individual	29-item forced-choice format (excluding six filter questions)	Rotter (1966), Chiu (2003) and Premeaux & Bedeian (2003)

The following criteria was used to capture (and control) participant demographic information: Age, Gender, Marital status, Ethnic Origin, Education level, Household income, Employment status, Work experience, and Experience with previous questionable or wrongful behavior.

### 5.2.6 Participants

The experiment is web-based and distributed to participants through Amazon's Mechanical Turk (MTurk) filtered by location – limited to the US. Previous research on whistleblowing has used this type of online platform (Mok & De Cremer, 2016; Rios & Ingrassia, 2016; Wilson, McNellis & Latham, 2018) or others online platforms as Survey Monkey (Caillier, 2013; Caillier, 2015). As described in Buhrmester, Kwang and Gosling (2011), MTurk participants are at least as diverse and more representative of non-college populations than those of typical Internet and traditional samples. The authors emphasize that the quality of data provided by MTurk met or exceeded the psychometric standards associated with published research. Also, there are three key advantages of Mturk: (1) subject pool access (participants can be recruited rapidly), (2) subject

pool diversity and (3) low cost (Buhrmester, Kwang & Gosling, 2011; Horton, Rand & Zeckhauser, 2011).

Particularly for this study, since each subject received \$2.00, previous research has shown that workers are willing to complete simple tasks for virtually no compensation, again suggesting that workers are not driven primarily by financial incentives and this analysis suggest that Mturk participants are internally motivated (Buhrmester, Kwang & Gosling, 2011).

Recently, Simmons, Nelson, and Simonsohn (2013) have stated that the recommendation of 20 participants per cell made in their own 2011 study is far too low for most studies and recommend sample sizes of 50 per cell or more. Bentley (2018) argues that these larger sample sizes will not only reduce the risk of false positive results, but also increase experimental power. From this, having 50 participants per cell is a reasonable benchmark that allows sufficient statistical power while simultaneously reducing the effect of researcher degrees of freedom.

#### 5.2.7 Attention and Manipulation checks

Inattentive participants are a major concern for web-based experiments. As an attention check, to test for inattentive participants, participants were asked the size of the fraud and the company's name. At the end of the experiment, as a manipulation check, participants were asked if they have ever heard of Crowding-out Effect. Participants will respond the question with either "Yes, I could explain it," "Sounds familiar but I couldn't explain it," or "No.". Yet, to ensure successful manipulation of the whistleblowing incentive, participants were asked to indicate whether only the FRA or both the FRA and the company offered a monetary reward (same as in Brink, Lowe, & Victoravich, 2013).

#### 5.2.8 Response rate

The experiment response pattern is shown in Table 28. Invitations were sent out by Mturk and operationalized in the Qualtrics respondent database.

Table 28 - Experiment response pattern

		Total
	Completed responses	203
(-)	Less IP duplicates	5
(=)	Completed unique responses	198
	Completion rate	97.54%
(-)	Less failed attention checks	31

	Fraud size	29
	Company's name	2
(-)	Less failed manipulation checks	15
	Condition - Small Fraud	7
	Condition – Large Fraud	8
(=)	Total usable responses	152
	Response rate	76.77%

As indicated at Table 27 previously, 29 participants incorrectly answered the attention check (Fraud Size) and were dropped from the statistical analysis. Important, my results are significant different from all participants were analyzed. To assess the effectiveness of my manipulation of Reward condition, I asked participants to “Indicate whether only the FRA or both the FRA and the company offered a monetary reward.” A total of 152 participants (76.77%) answered the question correctly. This failure rate is consistent with prior studies using MTurk (Wilson, McNellis & Latham, 2018). Finally, my statistical analysis is based on a final set of 152 participants, and each subject received \$2.00 for their participation in the study, resulting in an average hourly rate of \$8.

### 5.2.9 Statistical technique

First, I employed a two-way ANOVA and planned contrast. Then, I employed an ANCOVA with controls. Research in psychology and statistics has suggested conducting power analyses based on economically significant effect sizes from prior research (Bentley, 2018).

Assumptions test were performed, normality and homogeneity of variance. For robustness, bootstrap technic was performed. For the homogeneity test I performed Levene’s test. Effect size – partial eta-squared ( $\eta_p^2$ ) is interpreted similar to  $R^2$  in regression: proportion of variance explained by the factor (Cohen, 2013). As post hoc tests I employed Fisher’s LSD and Tukey’s HSD – more conservative than Fisher’s LSD. Post hoc tests allow to explore where group differences might lie, while controlling for familywise error rate.

Finally, a linear contrast was performed (results in Appendix D). It is a difference score involving group means with a simple  $t$  test that places that difference score in the numerator.

## 5.3 RESULTS

### 5.3.1 Descriptive Statistics

Descriptive statistics regarding to categorical demographic questions are displayed in Table 29. Recall that demographic factors included are age, gender, marital status, ethnic origin, education level, household income, employment status and work experience. In addition to these categorical questions, one additional question was posed concerning whether as part of the respondent's experience they had ever discovered a person engaging in questionable or wrongful behavior.

Table 29 - Demographic categorical descriptive statistics of the participants

	n = 152	
<b>Age</b>		
Mean	35.07	
Standard Deviation	10.53	
<b>Gender</b>		
Female	56	36.84%
Male	95	62.50%
Prefer not to answer	1	0.66%
<b>Marital status</b>		
Single	79	51.97%
Married / Stable Union	65	42.76%
Separated / divorced	6	3.95%
Widowed	1	0.66%
Other	1	0.66%
Did not answer	0	0.00%
<b>Ethnic Origin</b>		
Native American or American Indian	2	1.32%
Asian	8	5.26%
Black or African American	7	4.61%
Hispanic/Latino	17	11.18%
White	116	76.32%
Other	2	1.32%
Did not answer	0	0.00%
<b>Education level</b>		
Incomplete primary (1st to 8th)	0	0.00%
Complete elementary (1st to 8th)	0	0.00%
High school incomplete	3	1.97%
High school graduate	30	19.74%
Incomplete higher education	40	26.32%
University Graduation	67	44.08%
Postgraduate	11	7.24%
Did not answer	1	0.66%
<b>Household income</b>		
Less than \$25,000	28	18.42%
\$25,000 to \$34,999	27	17.76%
\$35,000 to \$49,999	36	23.68%



\$50,000 to \$74,999	31	20.39%
\$75,000 to \$99,999	11	7.24%
\$100,000 to \$149,999	12	7.89%
\$150,000 to \$199,999	3	1.97%
\$200,000 or more	4	2.63%
Did not answer	0	0.00%
<b>Employment status</b>		
Employed	123	80.92%
Unemployed	23	15.13%
Did not answer	6	3.95%
<b>Work Experience (in months)</b>		
Mean	173.88	
Standard Deviation	271.30	
<b>Have you ever discovered a person in authority engaging in questionable or wrongful behavior?</b>		
Yes	56	36.84%
No	96	63.16%
Did not answer	0	0.00%

Table 29 highlights that sample respondents were on average 35.07 years old with a standard deviation of 10.53. This mean age is similar to that of prior studies (Brink, Lowe & Victoravich, 2013; Zhang, Pany & Reckers, 2013), and the mean professional work experience was approximately 174 months with a standard deviation of 271.30. Almost two-thirds (62.5%) of the participants were male, and single (51.97%). Seventy-six percent of the participants indicated that they are white, and 44.08% indicated that they held an undergraduate degree. Sixty-three percent of the participants indicated that they had an experience in the workplace where they discovered a person of greater authority engaging in a questionable act.

Table 30 presents the descriptive statistics of participants' assessments of the likelihood that an employee in Pat's situation would report the fraud through external anonymous reporting channel. Recall that my reward incentive and fraud size variables were manipulated.

Table 30 - Descriptive Statistics of the likelihood of blowing the whistle: Mean (Standard Deviation)

Reward × Fraud	Small Fraud	n	Large Fraud	n	Overall	n
Capped Reward	4.81 (1.815)	31	5.54 (1.485)	41	5.222 (1.663)	72
No Reward	5.00 (1.539)	39	5.10 (1.530)	41	5.050 (1.525)	80
Overall	4.914 (1.657)	70	5.317 (1.514)	82	5.132 (1.589)	152

As shown in Table 30, respondent's reporting intention is higher for the *No Reward* condition ( $\mu = 5.00$ ,  $\sigma = 1.539$ ) than for the *Cap Reward* ( $\mu = 4.81$ ,  $\sigma = 1.815$ ) when Fraud is small. In contrast, for the *Large Fraud* condition, respondent's reporting intention are higher for the *Cap Reward* ( $\mu = 5.54$ ,  $\sigma = 1.485$ ) than for *No Reward* condition ( $\mu = 5.10$ ,  $\sigma = 1.530$ ).

### 5.3.2 Results of ANOVA

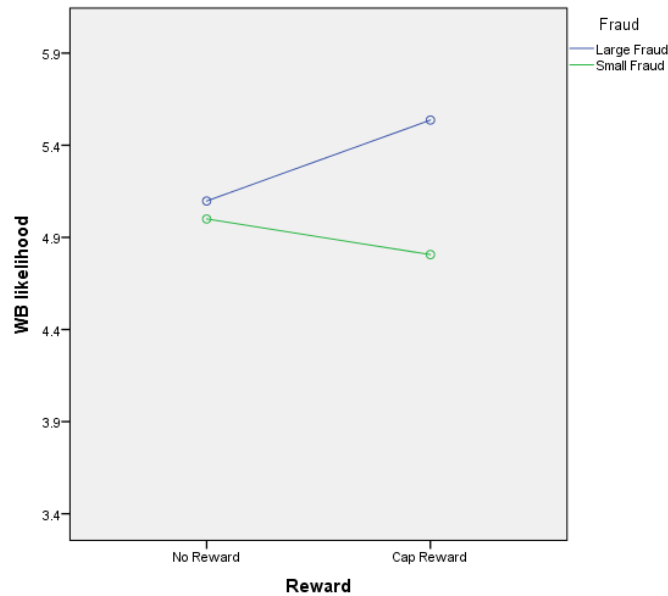
I employ an ANOVA to test my hypothesis with the reporting intention for each treatment condition, *Fraud*, *Reward*, and the interaction term ( $Fraud \times Reward$ ) as the independent variables.

Table 31 - ANOVA of Cap Reward and Fraud Size

Panel A: ANOVA results					
Source	Type III sum of squares	df	Mean square	F	Sig.
<i>Fraud</i>	6.1	1	6.127	2.446	0.121
<i>Reward</i>	0.8	1	0.847	0.337	0.562
<i>Fraud*Reward</i>	3.8	1	3.751	1.498	0.223
<i>Error</i>	370.6	148	2.504		

Panel B: interaction between Fraud and Reward					
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Notes: Levene's test  $F(3, 148) = 1.474, p = 0.224$ .

I employed bootstrap technique, bootstrap results are listed in Appendix D.

$R^2 = .028$ , Adjusted  $R^2 = .008$

As shown in Panel A of Table 31, ANOVA displays a nonsignificant main effect for *Fraud*  $F(1, 148) = 2.446, p = 0.121$ , and *Reward*,  $F(1, 148) = 0.337, p = 0.562$ , nevertheless a nonsignificant interaction effect between *Reward* and *Fraud*,  $F(1, 148) = 1.498, p = 0.223$  was found.

### 5.3.3 Results of the Covariates – ANCOVA

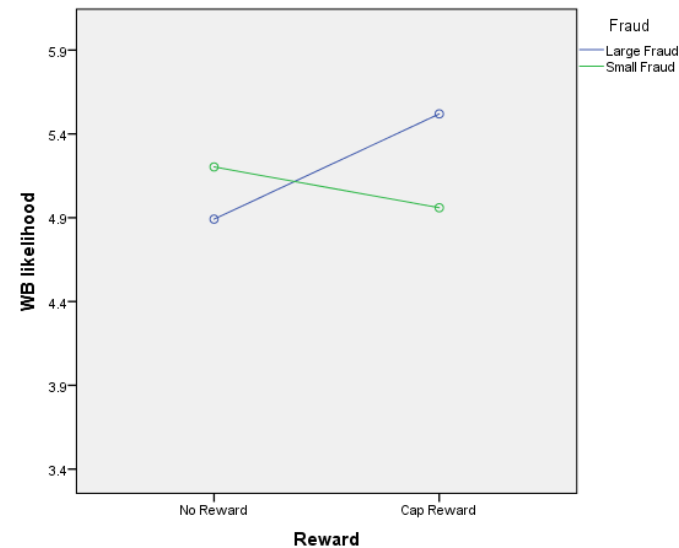
Panel A of Table 32 displays ANCOVA results where the dependent variable is whistleblowing likelihood to report anonymously and externally. Thus, the main between-subject

independent variables are *Reward* (No Reward or Cap Reward) and *Fraud* (Small versus Large). The covariates include in this model are *Age*, *Gender*, *Experience*, *Duration*, *Discovered*, *Costs* and *Moral*.

Table 32 – ANCOVA results

Panel A: ANCOVA results					
Source	Type III sum of squares	df	Mean square	F	Sig.
<i>Age</i>	0.170	1	0.170	0.085	0.771
<i>Gender</i>	4.853	2	2.427	1.210	0.301
<i>Experience</i>	0.933	1	0.933	0.465	0.496
<i>Duration</i>	2.831	1	2.831	1.412	0.237
<i>Discovered</i>	0.406	1	0.406	0.202	0.653
<i>LOC</i>	1.018	1	1.018	0.508	0.477
<i>Costs</i>	26.218	1	26.218	13.075***	0.000
<i>Moral</i>	36.707	1	36.707	18.305***	0.000
<i>Fraud</i>	1.052	1	1.052	0.525	0.470
<i>Reward</i>	0.167	1	0.167	0.083	0.773
<i>Fraud * Reward</i>	6.296	1	6.296	3.140*	0.079
<i>Error</i>	276.721	138	2.005		

Panel B: interaction between Fraud and Reward



Covariates appearing in the model are evaluated at the following values: Age = 35.07, Experience = 174.56, Duration = 492.99, Moral = -.0059, Costs = 4.90

Notes: Tests the null hypothesis that the error variance of the dependent variable is equal across groups. Levene's test  $F(32, 118) = 0.868, p = 0.669$ .

Duration – is a control variable about the time spend (in seconds) to complete the experiment.

Discovered – is a control variable that assumes 1 if the participant ever discovered a person in authority engaging in questionable or wrongful behavior and 0 if do not.

Moral is a factor between perceived seriousness and perceived responsibility, because it has a reciprocal on whistleblowing intentions (Taylor & Curtis, 2010).

I conducted several steps for ANCOVA tests adding covariates and controls. Panel A shows the model that fits better. Also, I performed contrast coding. Results for ANCOVA and planned contrast are at Appendix D.

\*, \*\*, \*\*\* indicates statistical significance at levels of 0.10, 0.05 and 0.01, respectively.

$R^2 = .273$ , Adjusted  $R^2 = .209$

Following the inclusion of covariates, ANCOVA results indicate a significant main effect for *Costs*, *Moral* and a significant interaction effect between *Reward* and *Fraud*. Panel A of Table 32 shows a significant main effect for *Costs*,  $F(1, 138) = 13.075, p = 0.000, \eta_p^2 = 0.087$ , and *Moral*,  $F(1, 138) = 18.305, p = 0.000, \eta_p^2 = 0.117$ .

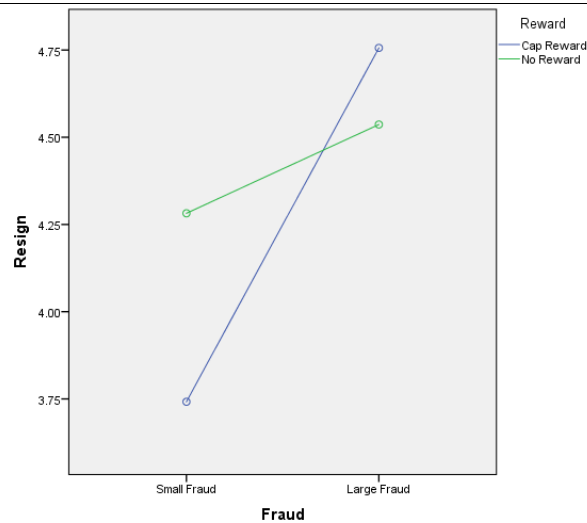
Recall that Hypothesis 1 predicts an interaction effect between *Reward* and *Fraud*. Panel A of Table 32 shows a significant interaction effect between *Reward* and *Fraud*,  $F(1, 138) = 3.140, p = 0.079, \eta_p^2 = 0.022$ , according to Cohen (2013) a small effect.

Also, I performed a post hoc analysis using Fisher's LSD. Tests of the simple effect of *Fraud* within each of the *Reward* conditions indicate that participants have a higher likelihood of blowing the whistle ( $p = 0.054$ ) when fraud is large ( $\mu = 5.54, \sigma = 1.485$ ) than when fraud is small ( $\mu = 4.81, \sigma = 1.815$ ). Also, when fraud is small, the likelihood of whistleblowing is higher for the *No reward* condition ( $\mu = 5.00, \sigma = 1.539$ ) than for the *Cap Reward* condition ( $\mu = 4.81, \sigma = 1.815$ ). In other words, for a small fraud, a capped reward does not encourage whistleblowers compared to when a reward is absent. This suggest that whistleblowers reframe their reporting decision as an economic choice rather than ethical or moral decision when monetary reward is offered. Panel B of Table 32 shows a decrease when a capped reward is present, and this is consistent with Motivational Crowding Theory.

### 5.3.4 Supplemental Analysis

Participants were also asked about resigning, "I believe that Pat is likely to resign and look for another job after discovering the fraud." Responses were measured using a seven-point scale. Table 33 shows the descriptive statistics of the likelihood of resigning after discovering the fraud. Table 33 - Descriptive Statistics of the likelihood of resigning: Mean (Standard Deviation)

Panel A: Resign descriptive statistics			
	No Reward	Capped Reward	Overall
Large Fraud	4.537 (1.551) n = 41	4.756 (1.881) n = 41	4.646 (1.717) n = 82
Small Fraud	4.282 (1.877) n = 39	3.742 (1.673) n = 31	4.043 (1.797) n = 70
Overall	4.413 (1.711) n = 72	4.319 (1.852) n = 80	4.368 (1.774) n = 152
Panel B: interaction between Fraud Size and Reward			



Panel A of Table 33 shows that there is a significant difference ( $p = 0.076$ ) between Small Fraud ( $\mu = 3.742$ ,  $\sigma = 1.673$ ) and Large Fraud ( $\mu = 4.756$ ,  $\sigma = 1.881$ ) when a capped reward is offered, even in both situation in which participants were given an anonymous reporting channel. This finding suggests that employees perhaps felt forced to resign following on blowing the whistle.

## 5.4 CONCLUSIONS

This dissertation's chapter was motivated by concerns that the inclusion of a limit to a monetary reward could potentially decrease the likelihood of whistleblowing and as a result, diminish the effectiveness of whistleblowing policies. The research question was: Does the inclusion of a limit on monetary reward potentially decrease the likelihood of whistleblowing? Data from  $n = 152$  Mturk on-line individuals participated in this experiment.

I found that the capped reward interacts with the size of the fraud. In contrast to my predictions, capped rewards decrease the likelihood of blowing the whistle when fraud is small, but not when fraud is large. The lack of an increase in whistleblowing reporting intentions following the addition of the cap on reward is consistent with Motivational Crowding Theory. This may be the result of the inclusion of a capped monetary reward forcing individuals to reframe their moral or ethical choice to one that is driven by economic preferences. Rather than increasing a

motivation for reporting, the monetary incentive replaces or crowds out the intrinsic motivation and decreases whistleblowing intentions.

Regarding to whistleblowing policies, these experimental results suggest that for a small fraud, the inclusion of a cap on rewards does not encourage more people to come forward and blow the whistle. Specifically, the US offers large potential monetary rewards to encourage whistleblowers to report corporate fraud, however other countries are modifying monetary rewards programs in a way that may decrease the effectiveness of whistleblowing, adding a limit to the monetary incentive.

These results indicate that the impact of the monetary reward on the intention to blow the whistle is moderated by the size of the fraud. The findings are timely in light of the fact that several countries are implementing new whistleblowing policies, and there are several among them opting to place a limit on rewards. This is viewed as a cost/benefit decision and this study addressed a situation in which participants were given an anonymous reporting channel, in which there was no possibility of retaliation that could decrease reporting intentions. Finally, there was a nonsignificant main effect for LOC and no significant interaction between LOC and Reward or Fraud which make my results robust. In other words, this crowding-out effect decreases both internals and externals LOC reporting intentions.

#### 5.4.1 Limitations

The findings of this study have to be seen in light of some limitations. First, the interaction between reward and fraud (i.e. H1) is nonsignificant in the ANOVA analysis, and it was significant at a 10% significance level under ANCOVA analysis, with *Age*, *Gender*, *Experience*, *Duration*, *LOC*, *Costs* and *Moral* variables. While these results differ from the main analysis, I believe that my approach in the ANOVA analysis provides poor results by not controlling for covariates. Ultimately, though, the study strongly suggest that controls are important factors to understand whistleblowing phenomenon.

Furthermore, the study was conducted in an online platform, only individuals currently registered with Amazon Mechanical Turk (Mturk) and located in the US participated in this experiment. These are the constraints on generalizability. This online data collection results in less control over the experimental setting in comparison with a lab experimental setting. Additionally,

my experimental design addresses a situation in which participants were given an anonymous reporting channel and the effects of a non-anonymous reporting channel could result in a different outcome. Furthermore, limiting by participant location of the United States might not be generalized to another population outside the US.

Finally, my study did not assess the likelihood that the participants themselves would choose to report fraud, but rather asked them to consider how a third person would consider the situation. While this approach was made to mitigate the social desirability bias, this is a limitation of this method.

## 6 CONCLUSIONS

Whistleblowing is “the disclosure by organization members (former or current) of illegal, immoral, or illegitimate practices under the control of their employers, to persons or organizations that may be able to effect action” (Near & Miceli, 1985, p. 4). Several countries are currently providing monetary rewards as a reinforcement mechanism for whistleblowers. Though whistleblowers typically have both internal and external reporting channels available to report wrongdoing, I focused on external reporting: namely, to a regulatory agency that provided incentives and protections.

Motivational Crowding Theory posits that there is an interaction between intrinsic motivation and extrinsic incentives (e.g. monetary rewards). I employed this theory to explain the effects of monetary rewards and protections on whistleblower’s intention based on different reward programs than that offered by the US SEC. Hence, it is unclear how effective these whistleblowing reward programs are on a global level.

My first experiment showed that a monetary reward can encourage both internals and externals LOC as reward increases, independent of an anonymous or non-anonymous reporting channel. In addition, I found a significant difference between whistleblowers with internal and external LOC when any monetary incentive is offered, and reporting channel is non-anonymous. This means that individuals with an external LOC were not likely to take the responsibility of reporting fraud when they are exposed to reveal their identity. Indeed, it is the most interesting result for this experiment, because any society is made of heterogeneous people, characterized by a wide spectrum of internal and external LOC.

My second experiment showed an unintended consequence when a whistleblowing policy includes a ceiling to the monetary reward. According to Motivation Crowding Theory, a crowd-out effect could happen when a monetary reward is offered in connection with ethical or moral choice. Considering this, I showed that when there was a cap on rewards and fraud was small, whistleblowers were less inclined to report fraud than when no reward was offered. In other words, in this scenario monetary rewards do not increase the likelihood of whistleblowing. In contrast, when fraud increased and there was a capped reward, the likelihood of whistleblowing increased as well. This indicates that the crowding-out effect took place only under the circumstances of smaller-scale fraud.



Finally, this dissertation has some valuable results that can be used by legislators and regulators toward implementing whistleblowing policies. Although whistleblowing can be a tool to both prevent and combat fraud and wrongdoing, it is essential that countries design effective whistleblowing policies to encourage whistleblowers, lest they mistakenly achieve the contrary.

## REFERENCES

ABDC (2018), ABDC Journal Ratings List, Australian Business Deans Council, Sydney, available at: <<https://abdc.edu.au/research/abdc-journal-list/>>.

ACFE. (2016). Report to The Nations: Global Study On Occupational Fraud And Abuse. Available at: <<https://www.acfe.com/rtn2016/docs/2016-report-to-the-nations.pdf>>.

ACFE. (2018). Report to The Nations: Global Study On Occupational Fraud And Abuse. Available at: <<https://www.acfe.com/report-to-the-nations/2018/>>.

Ahmad, S. A., Ismail, I. S., Azmi, N. A., & Zakaria, N. B. (2014). Methodological issues in whistle-blowing intentions research: Addressing the social desirability bias and order effect bias. *Procedia-Social and Behavioral Sciences*, 145, 204-210.

Andon, P., Free, C., Jidin, R., Monroe, G. S., & Turner, M. J. (2018). The impact of financial incentives and perceptions of seriousness on whistleblowing intention. *Journal of Business Ethics*, 151(1), 165-178.

Andrade, J. A. (2015). Reconceptualising whistleblowing in a complex world. *Journal of Business Ethics*, 128(2), 321-335.

Ariely, D. (2009). Predictably irrational, revised and expanded edition. HarperCollings Publishers, London.

Ariely, D., Bracha, A., & Meier, S. (2009). Doing good or doing well? Image motivation and monetary incentives in behaving prosocially. *American Economic Review*, 99(1), 544-55.

Ayers, S., & Kaplan, S. E. (2005). Wrongdoing by consultants: An examination of employees' reporting intentions. *Journal of Business Ethics*, 57, 121-137.

Baloria, V. P., Marquardt, C. A., & Wiedman, C. I. (2017). A Lobbying Approach to Evaluating the Whistleblower Provisions of the Dodd-Frank Reform Act of 2010. *Contemporary Accounting Research*, 34(3), 1305-1339.

Beck, J. R. (1999). The False Claims Act and the English Eradication of Qui Tam Legislation. *NCL Rev.*, 78, 539.

Beretti, A., Figuieres, C., & Grolleau, G. (2013). Using Money to Motivate Both 'Saints' and 'Sinners': a Field Experiment on Motivational Crowding-Out. *Kyklos*, 66(1), 63-77.

Berger, L., Perreault, S., & Wainberg, J. (2017). Hijacking the moral imperative: How financial incentives can discourage whistleblower reporting. *Auditing: A Journal of Practice & Theory*, 36(3), 1-14.

- Bhal, K. T., & Dadhich, A. (2011). Impact of ethical leadership and leader–member exchange on whistle blowing: The moderating impact of the moral intensity of the issue. *Journal of business ethics*, 103(3), 485.
- Boo, E. F., Ng, T. B. P., & Shankar, P. G. (2016). Effects of incentive scheme and working relationship on whistle-blowing in an audit setting. *Auditing: A Journal of Practice & Theory*, 35(4), 23-38.
- Bowen, R. M., Call, A. C., & Rajgopal, S. (2010). Whistle-blowing: Target firm characteristics and economic consequences. *The Accounting Review*, 85(4), 1239-1271.
- Brabeck, M. (1984). Ethical characteristics of whistle blowers. *Journal of Research in Personality*, 18(1), 41-53.
- Brasil. Constituição (2018). Lei nº 13.608, de 10 de janeiro de 2018. Dispõe sobre o serviço telefônico de recebimento de denúncias e sobre recompensa por informações que auxiliem nas investigações policiais, Brasília.
- Brewer, G. A., & Selden, S. C. (1998). Whistle blowers in the federal civil service: New evidence of the public service ethic. *Journal of public administration research and theory*, 8(3), 413-440.
- Brief, A. P., & Motowidlo, S. J. (1986). Prosocial organizational behaviors. *Academy of management Review*, 11(4), 710-725.
- Brink, A., Eller, C. K., & Gan, H. (2015). Reporting fraud: An examination of the bystander effect and evidence strength. *Advances in Accounting Behavioral Research*. 18, 125-154.
- Brink, A. G., Eller, C. K., & Green, K. Y. (2018). The Effects of Corporate Social Responsibility and Wrongdoer Rank on Whistleblowing. *Accounting and the Public Interest*, 18(1), 104-128.
- Brink, A. G., Lowe, D. J., & Victoravich, L. M. (2013). The effect of evidence strength and internal rewards on intentions to report fraud in the Dodd-Frank regulatory environment. *Auditing: A Journal of Practice & Theory*, 32(3), 87-104.
- Brink, A. G., Lowe, D. J., & Victoravich, L. M. (2017). The public company whistleblowing environment: Perceptions of a wrongful act and monetary attitude. *Accounting and the Public Interest*, 17(1), 1-30.
- Brollier, J. T. (2006). Mutiny of the Bounty: A Moderate Change in the Incentive Structure of Qui Tam Actions Brought Under the False Claims Act. *Ohio St. LJ*, 67, 693.
- Buchheit, S., Doxey, M. M., Pollard, T., & Stinson, S. R. (2017). A technical guide to using Amazon's Mechanical Turk in behavioral accounting research. *Behavioral Research in Accounting*, 30(1), 111-122.
- Buhrmester, M., & Kwang, T. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*. 6(1) 3-5.

- Caillier, J. G. (2013). Do employees feel comfortable blowing the whistle when their supervisors practice transformational leadership? *International Journal of Public Administration*, 36(14), 1020-1028.
- Caillier, J. G. (2015). Transformational leadership and whistle-blowing attitudes: Is this relationship mediated by organizational commitment and public service motivation? *The American Review of Public Administration*, 45(4), 458-475.
- Call, A. C., Martin, G. S., Sharp, N. Y., & Wilde, J. H. (2018). Whistleblowers and outcomes of financial misrepresentation enforcement actions. *Journal of Accounting Research*, 56(1), 123-171.
- Caminker, E. (1989). The constitutionality of qui tam actions. *Yale LJ*, 99, 341.
- Chen, C. P., & Lai, C. T. (2014). To blow or not to blow the whistle: The effects of potential harm, social pressure and organisational commitment on whistleblowing intention and behaviour. *Business Ethics: A European Review*, 23(3), 327-342.
- Chen, C. X., Nichol, J. E., & Zhou, F. H. (2017). The effect of incentive framing and descriptive norms on internal whistleblowing. *Contemporary Accounting Research*, 34(4), 1757-1778.
- Chiu, R. K. (2003). Ethical judgment and whistleblowing intention: Examining the moderating role of locus of control. *Journal of Business Ethics*, 43(1-2), 65-74.
- Chiu, R., & Erdener, C. (2003). The ethics of peer reporting in Chinese societies: Evidence from Hong Kong and Shanghai. *International Journal of Human Resource Management*, 14(2), 335-353.
- Choudhary, P., Merkley, K. J., & Schipper, K. (2017). Qualitative characteristics of financial reporting errors deemed immaterial by managers. Available at SSRN. <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2830676](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2830676)>
- Chung, J., & Monroe, G. S. (2003). Exploring social desirability bias. *Journal of Business Ethics*, 44(4), 291-302.
- Cohen, B. H. (2013). *Explaining Psychological Statistics* (4th Ed.). New York: Wiley.
- Curtis, M. B. (2006). Are audit-related ethical decisions dependent upon mood? *Journal of Business Ethics*, 68(2), 191-209.
- Dalton, D., & Radtke, R. R. (2013). The joint effects of Machiavellianism and ethical environment on whistle-blowing. *Journal of Business Ethics*, 117(1), 153-172.
- Dasgupta, S., & Kesharwani, A. (2010). Whistleblowing: A survey of literature. *IUP Journal of Corporate Governance*, 9(4), 57-70.
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of personality and Social Psychology*, 18(1), 105.

- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological bulletin*, 125(6), 627.
- Deci, E., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.
- Decker, W. H., & Calo, T. J. (2007). Observers' impressions of unethical persons and whistleblowers. *Journal of Business Ethics*, 76(3), 309-318.
- Dixon, M. R., Lik, N. M. K., Green, L., & Myerson, J. (2013). Delay discounting of hypothetical and real money: The effect of holding reinforcement rate constant. *Journal of applied behavior analysis*, 46(2), 512-517.
- Dodd-Frank Wall Street Reform and Consumer Protection Act, 12 U.S.C § 5301 (2010).
- Donnelly, R. C. (1951). Judicial Control of Informants, Spies, Stool Pigeons, and Agent Provocateurs. *The Yale Law Journal*, 60(7), 1091-1131.
- Dozier, J. B., & Miceli, M. P. (1985). Potential predictors of whistle-blowing: A prosocial behavior perspective. *Academy of Management Review*, 10(4), 823-836.
- Dunbar, A. E., & Weber, D. P. (2013). What influences accounting research? A citations-based analysis. *Issues in Accounting Education*, 29(1), 1-60.
- Dworkin, T. M. (2006). SOX and Whistleblowing. *Mich. L. Rev.*, 105, 1757.
- Dyck, A., Morse, A., & Zingales, L. (2010). Who blows the whistle on corporate fraud? *The Journal of Finance*, 65(6), 2213-2253.
- Elliston, F. A. (1982). Anonymity and whistleblowing. *Journal of Business Ethics*, 1(3), 167-177.
- Elmes, D. G., Kantowitz, B. H., & Roediger III, H. L. (2011). *Research methods in psychology*. Cengage Learning.
- Engstrom, D. F. (2014a). Private Enforcement's Pathways: Lessons from Qui Tam Litigation. *Colum. L. Rev.*, 114, 1913.
- Engstrom, D. F. (2014b). Whither whistleblowing? Bounty regimes, regulatory context, and the challenge of optimal design. *Theoretical Inquiries in Law*, 15(2), 605-634.
- Erkmen, T., Özsözgün Çalışkan, A., & Esen, E. (2014). An empirical research about whistleblowing behavior in accounting context. *Journal of Accounting & Organizational Change*, 10(2), 229-243.
- Etzioni, A. (2010). *Moral dimension: Toward a new economics*. Simon and Schuster.

- Eutsler, J., & Lang, B. (2015). Rating scales in accounting research: The impact of scale points and labels. *Behavioral Research in Accounting*, 27(2), 35-51.
- Fajardo, B. D. A. G., & Cardoso, R. L. (2014). A Ocasão Faz A Denúncia?: uma Abordagem Multinível para os Contabilistas Brasileiros. *Brazilian Business Review*, 11(5), 25.
- Ferreira, P. M. (2017). Whistleblowing: o reporte protegido nos artigos 116.º-AA e 116.º-AB do RGICSF. Available at: <<https://docplayer.com.br/39808287-Whistleblowing-o-reporte-protegido-nos-artigos-116-o-aa-e-116-o-ab-do-rgicsf-patricia-marques-ferreira.html>>.
- Frey, B. S. (1997). *Not just for the money* (Vol. 748). Cheltenham: Edward Elgar.
- Frey, B. S., & Jegen, R. (2001). Motivation crowding theory. *Journal of Economic Surveys*, 15(5), 589-611.
- Frey, B. S., & Oberholzer-Gee, F. (1997). The cost of price incentives: An empirical analysis of motivation crowding-out. *The American Economic Review*, 87(4), 746-755.
- Gao, J., Greenberg, R., & Wong-On-Wing, B. (2015). Whistleblowing intentions of lower-level employees: The effect of reporting channel, bystanders, and wrongdoer power status. *Journal of Business Ethics*, 126(1), 85-99.
- Gao, L., & Brink, A. G. (2017). Whistleblowing studies in accounting research: A review of experimental studies on the determinants of whistleblowing. *Journal of Accounting Literature*, 38, 1-13.
- Gneezy, U., & Rustichini, A. (2000). Pay enough or don't pay at all. *The Quarterly Journal of Economics*, 115(3), 791-810.
- Graham, J. W. (1986). Principled organizational dissent: A theoretical essay. *Research in Organizational Behavior*.
- Guthrie, C. P., Norman, C. S., & Rose, J. M. (2012). Chief audit executives' evaluations of whistle-blowing allegations. *Behavioral Research in Accounting*, 24(2), 87-99.
- Hauser, D. J., & Schwarz, N. (2016). Attentive Turkers: MTurk participants perform better on online attention checks than do subject pool participants. *Behavior Research Methods*, 48(1), 400-407.
- Heyman, J., & Ariely, D. (2004). Effort for payment: A tale of two markets. *Psychological Science*, 15(11), 787-793.
- Hildreth, J. A. D., Gino, F., & Bazerman, M. (2016). Blind loyalty? When group loyalty makes us see evil or engage in it. *Organizational Behavior and Human Decision Processes*, 132, 16-36.

- Hogarth, R. M. (1982). Discussion of an assessment of laboratory experiments in accounting. *Journal of Accounting Research*, 108-116.
- Hopman, P., & van Leeuwen, E. (2009). Who do we inform? The role of status and target in intergroup whistle-blowing. *Group Processes & Intergroup Relations*, 12(5), 605-618.
- Horton, J. J., Rand, D. G., & Zeckhauser, R. J. (2011). The online laboratory: Conducting experiments in a real labor market. *Experimental economics*, 14(3), 399-425.
- Jubb, P. B. (1999). Whistleblowing: A restrictive definition and interpretation. *Journal of Business Ethics*, 21(1), 77-94.
- Kamenica, E. (2012). Behavioral economics and psychology of incentives. *Annu. Rev. Econ.*, 4(1), 427-452.
- Kantowitz, B. H., Roediger III, H. L., Elmes, D. G. (2014). *Experimental Psychology*. 9. ed. Belmont, Ca: Cengage Learning.
- Kaplan, S. E., & Whitecotton, S. M. (2001). An examination of auditors' reporting intentions when another auditor is offered client employment. *Auditing: A Journal of Practice & Theory*, 20(1), 45-63.
- Kaplan, S. E., Pany, K., Samuels, J. A., & Zhang, J. (2009a). An examination of the effects of procedural safeguards on intentions to anonymously report fraud. *Auditing: A Journal of Practice & Theory*, 28(2), 273-288.
- Kaplan, S. E., Pany, K., Samuels, J., & Zhang, J. (2012). An examination of anonymous and non-anonymous fraud reporting channels. *Advances in accounting*, 28(1), 88-95.
- Kaplan, S. E., Pope, K. R., & Samuels, J. A. (2010). The effect of social confrontation on individuals' intentions to internally report fraud. *Behavioral Research in Accounting*, 22(2), 51-67.
- Kaplan, S. E., Pope, K. R., & Samuels, J. A. (2011). An examination of the effect of inquiry and auditor type on reporting intentions for fraud. *Auditing: A Journal of Practice & Theory*, 30(4), 29-49.
- Kaplan, S. E., Pope, K. R., & Samuels, J. A. (2015). An examination of the effects of managerial procedural safeguards, managerial likeability, and type of fraudulent act on intentions to report fraud to a manager. *Behavioral Research in Accounting*, 27(2), 77-94.
- Kaplan, S., Pany, K., Samuels, J., & Zhang, J. (2009b). An examination of the association between gender and reporting intentions for fraudulent financial reporting. *Journal of Business Ethics*, 87(1), 15-30.

- Kerschberg, B (2011). The Dodd-Frank Act's Robust Whistleblowing Incentives. *Forbes*. 2011. Available at: <<https://www.forbes.com/sites/benkerschberg/2011/04/14/the-dodd-frank-acts-robust-whistleblowing-incentives/#540e12ee20f6>>. Access: Aug 14, 2018.
- Kim, J. (2009). Confessions of a whistleblower: The need to reform the whistleblower provision of the Sarbanes-Oxley act. *J. Marshall L. Rev.*, 43, 241.
- Kirrane, M., O'shea, D., Buckley, F., Grazi, A., & Prout, J. (2017). Investigating the role of discrete emotions in silence versus speaking up. *Journal of Occupational and Organizational Psychology*, 90(3), 354-378.
- Kocieniewski, David. (2012). *Whistle-Blower Awarded \$104 Million by I.R.S.* NYTimes. Available at: <<https://www.nytimes.com/2012/09/12/business/whistle-blower-awarded-104-million-by-irs.html>>.
- Lee, G., & Xiao, X. (2018). Whistleblowing on accounting-related misconduct: A synthesis of the literature. *Journal of Accounting Literature*, 41, 22.
- Leeds, R. (1963). Altruism and the norm of giving. *Merrill-Palmer Quarterly of Behavior and Development*, 9(3), 229-240.
- Liyanarachchi, G., & Newdick, C. (2009). The impact of moral reasoning and retaliation on whistle-blowing: New Zealand evidence. *Journal of Business Ethics*, 89(1), 37-57.
- Lowe, D. J., Pope, K. R., & Samuels, J. A. (2015). An examination of financial sub-certification and timing of fraud discovery on employee whistleblowing reporting intentions. *Journal of Business Ethics*, 131(4), 757-772.
- Mayer, D. M., Nurmohamed, S., Treviño, L. K., Shapiro, D. L., & Schminke, M. (2013). Encouraging employees to report unethical conduct internally: It takes a village. *Organizational Behavior and Human Decision Processes*, 121(1), 89-103.
- Miceli, M. P., & Near, J. P. (1992). *Blowing the whistle: The organizational and legal implications for companies and employees*. Lexington Books.
- Miceli, M. P., Dozier, J. B., & Near, J. P. (1991). Blowing the Whistle on Data Fudging: A Controlled Field Experiment. *Journal of Applied Social Psychology*, 21(4), 271-295.
- Miceli, M. P., Near, J. P., & Schwenk, C. R. (1991). Who blows the whistle and why?. *Ilr Review*, 45(1), 113-130.
- Miceli, M. P., Near, J. P., Rehg, M. T., & Van Scotter, J. R. (2012). Predicting employee reactions to perceived organizational wrongdoing: Demoralization, justice, proactive personality, and whistle-blowing. *Human relations*, 65(8), 923-954.
- Moberly, R. E. (2007). Unfulfilled expectations: An empirical analysis of why Sarbanes-Oxley whistleblowers rarely win. *Wm. & Mary L. Rev.*, 49, 65.



- Mok, A., & De Cremer, D. (2016). The bonding effect of money in the workplace: Priming money weakens the negative relationship between ostracism and prosocial behaviour. *European Journal of Work and Organizational Psychology*, 25(2), 272-286.
- Near, J. P., & Miceli, M. P. (1985). Organizational dissidence: The case of whistle blowing. *Journal of business ethics*, 4(1), 1-16.
- Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European journal of social psychology*, 15(3), 263-280.
- OCDE. (2011). *Whistleblower Protection*. Available at: <<http://www.oecd.org/gov/ethics/whistleblower-protection.htm>>.
- OCDE. (2016). *Committing to Effective Whistleblower Protection*, OCDE Publishing, Paris. Available at: <<https://www.oecd.org/corporate/committing-to-effective-whistleblower-protection-9789264252639-en.htm>>.
- OECD. (2017). *The Detection of Foreign Bribery, Chapter 2. The Role of Whistleblowers and Whistleblower Protection*, Available at: <[www.oecd.org/corruption/the-detection-of-foreign-bribery.htm](http://www.oecd.org/corruption/the-detection-of-foreign-bribery.htm)>.
- Palmrose, Z. V., & Scholz, S. (2004). The circumstances and legal consequences of non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research*, 21(1), 139-180.
- Park, C., & Keil, M. (2009). Organizational silence and whistle-blowing on IT projects: An integrated model. *Decision Sciences*, 40(4), 901-918.
- Patrick, A. P. (2010). Be Prepared Before You Blow the Whistle: Protection Under State Whistle-blowing Laws. *Fraud Magazine*. Sep/Oct. Available at: <<https://www.fraud-magazine.com/article.aspx?id=4294968656>>.
- Peebles, D. K., Stokes, P., & Wingfield, S. S. (2009). When the whistle is blown: Legal defenses and practical guidelines for managing reports of organizational misconduct. *Business & Society*, 48(4), 467-488.
- Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annu. Rev. Psychol.*, 56, 365-392.
- Pope, K. R., & Lee, C. C. (2013). Could the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 be helpful in reforming corporate America? An investigation on financial bounties and whistle-blowing behaviors in the private sector. *Journal of business ethics*, 112(4), 597-607.
- Premeaux, S. F., & Bedeian, A. G. (2003). Breaking the silence: The moderating effects of self-monitoring in predicting speaking up in the workplace. *Journal of management studies*, 40(6), 1537-1562.

- Reckers-Sauciuc, A. K., & Lowe, D. J. (2010). The influence of dispositional affect on whistleblowing. *Advances in Accounting*, 26(2), 259-269.
- Reiss, S. (2005). Extrinsic and intrinsic motivation at 30: Unresolved scientific issues. *The Behavior Analyst*, 28(1), 1-14.
- Rios, K., & Ingraffia, Z. A. (2016). Judging the actions of “whistle-blowers” versus “leakers”: Labels influence perceptions of dissenters who expose group misconduct. *Group Processes & Intergroup Relations*, 19(5), 553-569.
- Robertson, J. C., Stefaniak, C. M., & Curtis, M. B. (2011). Does wrongdoer reputation matter? Impact of auditor-wrongdoer performance and likeability reputations on fellow auditors' intention to take action and choice of reporting outlet. *Behavioral Research in Accounting*, 23(2), 207-234.
- Robinson, S. N., Robertson, J. C., & Curtis, M. B. (2012). The effects of contextual and wrongdoing attributes on organizational employees' whistleblowing intentions following fraud. *Journal of Business Ethics*, 106(2), 213-227.
- Rose, J. M., Brink, A. G., & Norman, C. S. (2018). The effects of compensation structures and monetary rewards on managers' decisions to blow the whistle. *Journal of Business Ethics*, 150(3), 853-862.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological monographs: General and applied*, 80(1), 1.
- Schatzberg, J. W., Sevcik, G. R., Shapiro, B. P., Thorne, L., & Wallace, R. O. (2005). A reexamination of behavior in experimental audit markets: The effects of moral reasoning and economic incentives on auditor reporting and fees. *Contemporary Accounting Research*, 22(1), 229-264.
- Schultz, J. J., Johnson, D. A., Morris, D., & Dyrnes, S. (1993). An investigation of the reporting of questionable acts in an international setting. *Journal of Accounting Research*, 75-103.
- Schulz, A. K. D. (1999). Experimental research method in a management accounting context. *Accounting & Finance*, 39(1), 29-51.
- SEC. (Securities and Exchange Commission). (2010). *Assessment of the SEC's Bounty Program: Report No. 474*. Available at: <<https://www.sec.gov/files/474.pdf>>.
- SEC. (Securities and Exchange Commission). (2017). *Whistleblower Program: Annual Report*. Available at: <<https://www.sec.gov/files/sec-2017-annual-report-whistleblower-program.pdf>>.
- Seifert, D. L., Stammerjohan, W. W., & Martin, R. B. (2013). Trust, organizational justice, and whistleblowing: A research note. *Behavioral Research in Accounting*, 26(1), 157-168.

- Seifert, D. L., Sweeney, J. T., Joireman, J., & Thornton, J. M. (2010). The influence of organizational justice on accountant whistleblowing. *Accounting, Organizations and Society*, 35(7), 707-717.
- Spector, P.E. (1982) 'Behaviour in Organisations as a Function of Employee's Locus of Control', *Psychological Bulletin*, 91(3): 482-97.
- Staub, E. (1978). *Positive social behavior and morality*, Volume 1: Social and personal influences. Elsevier.
- Steiner, P. M., Atzmüller, C., & Su, D. (2016). Designing valid and reliable vignette experiments for survey research: A case study on the fair gender income gap. *Journal of Methods and Measurement in the Social Sciences*, 7(2), 52-94.
- Stephan, A. (2014). Is the Korean Innovation of Individual Informant Rewards a Viable Cartel Detection Tool? Available at SSRN <<https://ssrn.com/abstract=2405933>> or <<http://dx.doi.org/10.2139/ssrn.2405933>>.
- Stikeleather, B. R. (2016). When do employers benefit from offering workers a financial reward for reporting internal misconduct? *Accounting, Organizations and Society*, 52, 1-14.
- Taylor, E. Z., & Curtis, M. B. (2010). An examination of the layers of workplace influences in ethical judgments: Whistleblowing likelihood and perseverance in public accounting. *Journal of Business Ethics*, 93(1), 21-37.
- Taylor, E. Z., & Curtis, M. B. (2013). Whistleblowing in audit firms: Organizational response and power distance. *Behavioral Research in Accounting*, 25(2), 21-43.
- Terracol, M. (2018). *A Best Practice guide for whistleblowing legislation*. Transparency International. Available at: <[https://www.transparency.org/whatwedo/publication/best\\_practice\\_guide\\_for\\_whistleblowing\\_legislation](https://www.transparency.org/whatwedo/publication/best_practice_guide_for_whistleblowing_legislation)>.
- Thüsing, G., & Forst, G. (2016). *Whistleblowing - A Comparative Study*. Springer.
- Titmuss, R. M. (1970). Developing social policy in conditions of rapid change: the role of social welfare.
- Trevino, L. K. (1986). Ethical decision making in organizations: A person-situation interactionist model. *The Academy of Management Review*, 11(3), 601-617.
- Trevino, L. K., & Victor, B. (1992). Peer reporting of unethical behavior: A social context perspective. *Academy of Management journal*, 35(1), 38-64.
- Trongmateerut, P., & Sweeney, J. T. (2013). The influence of subjective norms on whistleblowing: A cross-cultural investigation. *Journal of Business Ethics*, 112(3), 437-451.

UNODC (United Nations Office on Drugs and Crime). (2015). *Resource Guide on Good Practices in the Protection of Reporting Persons*. New York. Available at: <http://www.oecd.org/corruption/ethics/whistleblower-protection.htm>.

Van Dyne, L., Cummings L.L. & Parks, M. J. (1995). Extra-role Behaviors: In Pursuit of Construct and Definitional Clarity. *Research in organizational behavior*, 17, 215-285.

Wainberg, J., & Perreault, S. (2015). Whistleblowing in audit firms: Do explicit protections from retaliation activate implicit threats of reprisal? *Behavioral Research in Accounting*, 28(1), 83-93.

Waytz, A., Dungan, J., & Young, L. (2013). The whistleblower's dilemma and the fairness–loyalty tradeoff. *Journal of Experimental Social Psychology*, 49(6), 1027-1033.

Wilson, A. B., McNellis, C., & Latham, C. K. (2018). Audit firm tenure, auditor familiarity, and trust: Effect on auditee whistleblowing reporting intentions. *International Journal of Auditing*, 22(2), 113-130.

Worth, M. (2013). *Whistleblowing in Europe legal protections for whistleblowers in the EU*. Transparency International. Available at: [https://www.transparency.org/whatwedo/publication/whistleblowing\\_in\\_europe\\_legal\\_protections\\_for\\_whistleblowers\\_in\\_the\\_eu](https://www.transparency.org/whatwedo/publication/whistleblowing_in_europe_legal_protections_for_whistleblowers_in_the_eu)

Young, R. (2016). An empirical examination of psychological climate and internal disclosure policy compliance. *Advances in Accounting Behavioral Research*, 19, 127-154).

Young, R. F. (2017). Blowing the whistle: Individual persuasion under perceived threat of retaliation. *Behavioral Research in Accounting*, 29(2), 97-111.

Zhang, Y. (2008). The effects of perceived fairness and communication on honesty and collusion in a multi-agent setting. *The Accounting Review*, 83(4), 1125-1146.

Zhang, J., Pany, K., & Reckers, P. M. (2013). Under which conditions are whistleblowing “best practices” best?. *Auditing: A Journal of Practice & Theory*, 32(3), 171-181.

Zhuang, J., Thomas, S., & Miller, D. L. (2005). Examining culture’s effect on whistle-blowing and peer reporting. *Business & Society*, 44(4), 462-486.

## Appendix A

First Part - Inform Consent Doc

Second Part - Experiment

Please review the informed consent document before proceeding with this experiment.

Step 1 - Participants will read the hypothetical scenario.

Pat is a certified public accountant (CPA) employed as a senior accountant within the accounting department of AgFoods Inc., a public company in the business of grain marketing and exporting. One evening, while working late on a set of files to meet a reporting deadline, Pat discovered information indicating that the financial controller of AgFoods had made a series of accounting entries recognizing fictitious revenue totaling \$50,000,000. After being unable to find any supporting documentation, Pat raised the matter with the financial controller who was dismissive of Pat's concerns. It is clear to Pat that these entries have caused AgFoods to materially misrepresent its reported earnings. Based on recent cases, Pat expects that the Federal Regulatory Agency (FRA) would impose sanctions in the form of a fine of approximately \$5,000,000 if the company is investigated and found guilty of fraudulent financial reporting.

Step 2 – Attention Check

What is the size of the fraud?

\$200,000,000

\$50,000,000

What is the company's name?

AgFoods.

ReGoods.

Step 3 - Participants will be randomly assigned to one of the three reward manipulation.

20% reward

Under current law, the Federal Regulatory Agency (FRA) offers a monetary reward for individuals who voluntarily provide original information to an outside authority to assist in the discovery of frauds. The 20% reward would result in Pat receiving a payment of \$1,000,000.

1% reward

Under current law, the Federal Regulatory Agency (FRA) offers a monetary reward for individuals who voluntarily provide original information to an outside authority to assist in the discovery of frauds. The 1% reward would result in Pat receiving a payment of \$50,000.

No Reward

Under current law, there are no monetary rewards given to individuals who voluntarily provide original information to the Federal Regulatory Agency (FRA) that result in monetary sanctions against the offending company.

Step 4 - Participants will be randomly assigned to one of the two reporting channels.

#### Anonymous

A whistleblower may submit the information to the Federal Regulatory Agency (FRA) anonymously via an attorney. In other words, the whistleblower is not required to provide his or her name in the whistleblowing submission. The FRA must keep an anonymous whistleblower's identity confidential.

#### Non-anonymous

A whistleblower must submit the information to the Federal Regulatory Agency (FRA) non-anonymously. In other words, the whistleblower is required to provide his or her name in the whistleblowing submission. The FRA must keep whistleblower's identity confidential.

Step 5 – After the participants read the scenarios and the manipulations, they will be asked to answer the question below.

#### Dependent Variable

**Whistleblowing measure:** I believe that Pat is likely to report the fraud to the FRA.

1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Somewhat Agree	Strongly Agree

Step 6 - They will have to answer the questions below.

Supplemental Analysis - Measured Independent Variables (mediators)

Please assess the seriousness of this fraud.

1	2	3	4	5	6	7
Very Low	Somewhat Low	Slightly Low	Neutral	Slightly High	Somewhat High	Very High

Please assess the personal responsibility Pat has for reporting this fraud to the FRA.

1                      2                      3                      4                      5                      6                      7  
 Very                  Somewhat          Slightly          Neutral          Slightly          Somewhat          Very  
 Low                      Low                      Low                                           High                      High                      High

Please assess the personal costs to Pat for reporting this fraud to the FRA.

1                      2                      3                      4                      5                      6                      7  
 Very                  Somewhat          Slightly          Neutral          Slightly          Somewhat          Very  
 Low                      Low                      Low                                           High                      High                      High

Please assess the fairness of the FRA's whistleblowing reward program.

1                      2                      3                      4                      5                      6                      7  
 Very                  Somewhat          Slightly          Neutral          Slightly          Somewhat          Very  
 Low                      Low                      Low                                           High                      High                      High

I believe that Pat is likely to resign and look for another job after discovering this fraud.

1                      2                      3                      4                      5                      6                      7  
 Strongly          Somewhat          Slightly          Neither Agree or          Slightly          Somewhat          Strongly  
 Disagree          Disagree          Disagree          Disagree          Agree          Agree          Agree

For each numbered pair of statements below, please select the statement ('a' or 'b') with which you most agree. Please answer these items carefully, but do not spend too much time on any one item. Be sure to find an answer for every choice. In some instances, you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices.

		Item	
1	a	Children get into trouble because their parents punish them too much.	Filter
	b	The trouble with most children nowadays is that their parents are too easy with them.	
2	a	Many of the unhappy things in people's lives are partly due to bad luck.	
	b	People's misfortunes result from the mistakes they make.	
3	a	One of the major reasons why we have wars is because people don't take enough interest in politics.	
	b	There will always be wars, no matter how hard people try to prevent them.	
4	a	In the long run people get the respect they deserve in this world.	

	b	Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.	
5	a	The idea that teachers are unfair to students is non-sense.	
	b	Most students don't realize the extent to which their grades are influenced by accidental happenings.	
6	a	Without the right breaks one cannot be an effective leader.	
	b	Capable people who fail to become leaders have not taken advantage of their opportunities.	
7	a	No matter how hard you try some people just don't like you.	
	b	People who can't get others to like them don't understand how to get along with others.	
8	a	Heredity plays the major role in determining one's personality.	Filter
	b	It is one's experiences in life which determine what they're like.	
9	a	I have often found that what is going to happen will happen.	
	b	Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.	
10	a	In the case of the well-prepared student there is rarely if ever such a thing as an unfair test.	
	b	Many times exam questions tend to be so unrelated to course work that studying is really useless.	
11	a	Becoming a success is a matter of hard work, luck has little or nothing to do with it.	
	b	Getting a good job depends mainly on being in the right place at the right time.	
12	a	The average citizen can have an influence in government decisions.	
	b	This world is run by the few people in power, and there is not much the little guy can do about it.	
13	a	When I make plans, I am almost certain that I can make them work.	
	b	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.	
14	a	There are certain people who are just no good.	Filter
	b	There is some good in everybody.	
15	a	In my case getting what I want has little or nothing to do with luck.	
	b	Many times we might just as well decide what to do by flipping a coin.	
16	a	Who gets to be the boss often depends on who was lucky enough to be in the right place first.	
	b	Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it.	
17	a	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.	
	b	By taking an active part in political and social affairs the people can control world events.	
18	a	Most people don't realize the extent to which their lives are controlled by accidental happenings.	
	b	There really is no such thing as "luck."	
19	a	One should always be willing to admit mistakes.	Filter



	b	It is usually best to cover up one's mistakes.	
20	a	It is hard to know whether or not a person really likes you.	
	b	How many friends you have depends upon how nice a person you are.	
21	a	In the long run the bad things that happen to us are balanced by the good ones.	
	b	Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.	
22	a	With enough effort we can wipe out political corruption.	
	b	It is difficult for people to have much control over the things politicians do in office	
23	a	Sometimes I can't understand how teachers arrive at the grades they give.	
	b	There is a direct connection between how hard I study and the grades I get.	
24	a	A good leader expects people to decide for themselves what they should do.	Filter
	b	A good leader makes it clear to everybody what their jobs are.	
25	a	Many times I feel that I have little influence over the things that happen to me.	
	b	It is impossible for me to believe that chance or luck plays an important role in my life	
26	a	People are lonely because they don't try to be friendly	
	b	There's not much use in trying too hard to please people, if they like you, they like you.	
27	a	There is too much emphasis on athletics in high school.	Filter
	b	Team sports are an excellent way to build character	
28	a	What happens to me is my own doing.	
	b	Sometimes I feel that I don't have enough control over the direction my life is taking.	
29	a	Most of the time I can't understand why politicians behave the way they do.	
	b	In the long run the people are responsible for bad government on a national as well as on a local level.	

#### Step 7 - Demographic Information (Control variables)

How old are you? (Please enter a number)

Gender

- ( ) Male  
 ( ) Female  
 ( ) Prefer not to answer

Marital status:

- ( ) Single  
 ( ) Married / Stable Union  
 ( ) Separated / divorced  
 ( ) Widowed  
 ( ) Other

Ethnic Origin

- Native American or American Indian
- Asian
- Black or African American
- Hispanic/Latino
- White
- Other

Education level

- Incomplete primary (1st to 8th)
- Complete elementary (1st to 8th)
- High school incomplete
- High school graduate
- Incomplete higher education
- Education University Graduation
- Postgraduate

What was your total household income before taxes during the past 12 months?

- Less than \$25,000.
- \$25,000 to \$34,999.
- \$35,000 to \$49,999.
- \$50,000 to \$74,999.
- \$75,000 to \$99,999.
- \$100,000 to \$149,999.
- \$150,000 to \$199,999.
- \$200,000 or more.

Employment status.

- Employed.
- Unemployed.

Work experience.

In months.

Have you ever discovered a person in authority engaging in questionable or wrongful behavior?

- Yes.
- No.

Step 7 - Manipulation Check

Indicate whether only the FRA or both the FRA and the company offered a monetary reward.

- only the FRA offered a monetary reward.
- both the FRA and the company offered a monetary reward.
- Neither the FRA nor the company offer a monetary reward.

Have you ever heard of Crowding-out effect?

- Yes, I could explain it.
- Sounds familiar but I couldn't explain it.
- No.

## Appendix B

First Part - Inform Consent Doc

Second Part - Experiment

Please review the informed consent document before proceeding with this experiment.

Step 1 - Participants will be randomly assigned to one of the two fraud sizes.

Scenario 1 – Fraud size \$1,000,000

Pat is a certified public accountant (CPA) employed as a senior accountant within the accounting department of AgFoods Inc., a public company in the business of grain marketing and exporting.

AgFoods Inc. is a mid-size company with an average annual revenue of \$ 200,000,000.

One evening, while working late on a set of files to meet a reporting deadline, Pat discovered information indicating that the Chief Financial Officer (CFO) of AgFoods has made a series of accounting entries recognizing fictitious revenue totaling \$1,000,000. After being unable to find any supporting documentation, Pat raised the matter with the Chief Financial Officer (CFO) who was dismissive of Pat's concerns. It is clear to Pat that these entries have caused AgFoods to misrepresent its reported earnings.

Scenario 2 – Fraud size \$100,000,000

Pat is a certified public accountant (CPA) employed as a senior accountant within the accounting department of AgFoods Inc., a public company in the business of grain marketing and exporting.

AgFoods Inc. is a mid-size company with an average annual revenue of \$ 200,000,000.

One evening, while working late on a set of files to meet a reporting deadline, Pat discovered information indicating that the Chief Financial Officer (CFO) of AgFoods has made a series of accounting entries recognizing fictitious revenue totaling \$100,000,000. After being unable to find any supporting documentation, Pat raised the matter with the Chief Financial Officer (CFO) who was dismissive of Pat's concerns. It is clear to Pat that these entries have caused AgFoods to materially misrepresent its reported earnings.

Step 2– Attention Check

What is the size of the fraud?

- \$100,000,000.
- \$ 50,000,000.
- \$ 1,000,000.

What is the company's name?

- AgFoods.

( ) ReGoods.

Step 3 - Participants will be randomly assigned to one of the two reward manipulation conditions.

10% limited to \$ 50,000

Under current law, the Federal Regulatory Agency (FRA) offers a monetary reward for individuals who voluntarily provide original information to an outside authority to assist in the discovery of frauds. The amount of the monetary reward will be 10% of the value of the discovery of the fraud with a limit of \$ 50,000. A whistleblower may submit the information to the FRA anonymously. However, prior to the payment of an award, the whistleblower must disclose his or her identity to the FRA. The FRA must keep this information confidential, except to disclose it as necessary to other regulatory authorities.

No Reward

Under current law, there are no monetary rewards given to individuals who voluntarily provide original information to the Federal Regulatory Agency (FRA) that in result monetary sanctions against the offending company. A whistleblower may submit information to the FRA anonymously.

Step 4 – After the participants read the scenarios and the manipulations, they will be asked to answer the question below.

### Dependent Variable

**Whistleblowing measure:** I believe that Pat is likely to report the fraud to the FRA.

1	2	3	4	5	6	7
Strongly Disagree	Somewhat Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Somewhat Agree	Strongly Agree

Step 5 - They will be asked to answer the questions below.

Supplemental Analysis - Measured Independent Variables (mediators)

Please assess the seriousness of this fraud.

1	2	3	4	5	6	7
Very Low	Somewhat Low	Slightly Low	Neutral	Slightly High	Somewhat High	Very High

Please assess Pa's personal responsibility for reporting the fraud to the FRA.

1                      2                      3                      4                      5                      6                      7  
 Very                  Somewhat          Slightly          Neutral          Slightly          Somewhat          Very  
 Low                    Low                    Low                  High                  High                  High

Please assess Pat's personal costs for reporting the fraud to the FRA.

1                      2                      3                      4                      5                      6                      7  
 Very                  Somewhat          Slightly          Neutral          Slightly          Somewhat          Very  
 Low                    Low                    Low                  High                  High                  High

Please assess how fair the FRA's whistleblower program is.

1                      2                      3                      4                      5                      6                      7  
 Very                  Somewhat          Slightly          Neutral          Slightly          Somewhat          Very  
 Low                    Low                    Low                  High                  High                  High

I believe that Pat is likely to resign and look for another job after discovering the fraud.

1                      2                      3                      4                      5                      6                      7  
 Strongly          Somewhat          Slightly          Neither Agree or          Slightly          Somewhat          Strongly  
 Disagree          Disagree          Disagree          Disagree          Agree          Agree          Agree

For each numbered pair of statements below, please select the statement ('a' or 'b') with which you most agree. Please answer these items carefully, but do not spend too much time on any one item. Be sure to find an answer for every choice. In some instances, you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices.

		Item	
1	a	Children get into trouble because their parents punish them too much.	Filter
	b	The trouble with most children nowadays is that their parents are too easy with them.	
2	a	Many of the unhappy things in people's lives are partly due to bad luck.	
	b	People's misfortunes result from the mistakes they make.	
3	a	One of the major reasons why we have wars is because people don't take enough interest in politics.	
	b	There will always be wars, no matter how hard people try to prevent them.	
4	a	In the long run people get the respect they deserve in this world.	

	b	Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.	
5	a	The idea that teachers are unfair to students is non-sense.	
	b	Most students don't realize the extent to which their grades are influenced by accidental happenings.	
6	a	Without the right breaks one cannot be an effective leader.	
	b	Capable people who fail to become leaders have not taken advantage of their opportunities.	
7	a	No matter how hard you try some people just don't like you.	
	b	People who can't get others to like them don't understand how to get along with others.	
8	a	Heredity plays the major role in determining one's personality.	Filter
	b	It is one's experiences in life which determine what they're like.	
9	a	I have often found that what is going to happen will happen.	
	b	Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.	
10	a	In the case of the well-prepared student there is rarely if ever such a thing as an unfair test.	
	b	Many times exam questions tend to be so unrelated to course work that studying is really useless.	
11	a	Becoming a success is a matter of hard work, luck has little or nothing to do with it.	
	b	Getting a good job depends mainly on being in the right place at the right time.	
12	a	The average citizen can have an influence in government decisions.	
	b	This world is run by the few people in power, and there is not much the little guy can do about it.	
13	a	When I make plans, I am almost certain that I can make them work.	
	b	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.	
14	a	There are certain people who are just no good.	Filter
	b	There is some good in everybody.	
15	a	In my case getting what I want has little or nothing to do with luck.	
	b	Many times we might just as well decide what to do by flipping a coin.	
16	a	Who gets to be the boss often depends on who was lucky enough to be in the right place first.	
	b	Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it.	
17	a	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.	
	b	By taking an active part in political and social affairs the people can control world events.	
18	a	Most people don't realize the extent to which their lives are controlled by accidental happenings.	
	b	There really is no such thing as "luck."	
19	a	One should always be willing to admit mistakes.	Filter

	b	It is usually best to cover up one's mistakes.	
20	a	It is hard to know whether or not a person really likes you.	
	b	How many friends you have depends upon how nice a person you are.	
21	a	In the long run the bad things that happen to us are balanced by the good ones.	
	b	Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.	
22	a	With enough effort we can wipe out political corruption.	
	b	It is difficult for people to have much control over the things politicians do in office.	
23	a	Sometimes I can't understand how teachers arrive at the grades they give.	
	b	There is a direct connection between how hard I study and the grades I get.	
24	a	A good leader expects people to decide for themselves what they should do.	Filter
	b	A good leader makes it clear to everybody what their jobs are.	
25	a	Many times I feel that I have little influence over the things that happen to me.	
	b	It is impossible for me to believe that chance or luck plays an important role in my life	
26	a	People are lonely because they don't try to be friendly	
	b	There's not much use in trying too hard to please people, if they like you, they like you.	
27	a	There is too much emphasis on athletics in high school.	Filter
	b	Team sports are an excellent way to build character.	
28	a	What happens to me is my own doing.	
	b	Sometimes I feel that I don't have enough control over the direction my life is taking.	
29	a	Most of the time I can't understand why politicians behave the way they do.	
	b	In the long run the people are responsible for bad government on a national as well as on a local level.	

#### Step 6 - Demographic Information (Control variables)

How old are you? (Please enter a number)

Gender

- ( ) Male  
 ( ) Female  
 ( ) Prefer not to answer

Marital status:

- ( ) Single  
 ( ) Married / Stable Union  
 ( ) Separated / divorced  
 ( ) Widowed  
 ( ) Other

Ethnic Origin



- Native American or American Indian
- Asian
- Black or African American
- Hispanic/Latino
- White
- Other

Education level

- Incomplete primary (1st to 8th)
- Complete elementary (1st to 8th)
- High school incomplete
- High school graduate
- Incomplete higher education
- Education University Graduation
- Postgraduate

What was your total household income before taxes during the past 12 months?

- Less than \$25,000.
- \$25,000 to \$34,999.
- \$35,000 to \$49,999.
- \$50,000 to \$74,999.
- \$75,000 to \$99,999.
- \$100,000 to \$149,999.
- \$150,000 to \$199,999.
- \$200,000 or more.

Employment status.

- Employed.
- Unemployed.

Work experience.

In months.

Have you ever discovered a person in authority engaging in questionable or wrongful behavior?

- Yes.
- No.

Step 7 - Manipulation Check

Indicate whether only the FRA or both the FRA and the company offered a monetary reward.

- only the FRA offered a monetary reward.
- both the FRA and the company offered a monetary reward.
- Neither the FRA nor the company offer a monetary reward.

Have you ever heard of Crowding-out effect?

- Yes, I could explain it.
- Sounds familiar but I couldn't explain it.
- No.

## Appendix C

First, a  $3 \times 2$  ANOVA was conducted in steps using reporting channel, reward, and the interaction term as the independent variables. Then, I conducted several steps for ANCOVA tests adding covariates and controls. These analyses provide further evidence on the experiment performed at Chapter 4.

Table 34 – ANCOVA results

	Df	Sum Sq	Mean Sq	F value	p
Seriousness	1	46.50	46.52	25.226	1.03E-06
Costs	1	35.90	35.89	19.464	1.59E-05
Responsibility	1	79.40	79.38	43.047	3.60E-10
Reporting	1	5.70	5.68	3.082	8.05E-02
Reward	2	49.90	24.95	13.530	2.82E-06
Reporting*Reward	2	8.60	4.30	2.329	9.97E-02
Residuals	226	416.8	1.84		

Then, I performed ANCOVA tests adding the covariates Age, Gender and Experience.

Table 35 – ANCOVA and Age, Gender and Experience

	Df	Sum Sq	Mean Sq	F value	p
Seriousness	1	45	44.98	24.631	1.39E-06
Costs	1	36.2	36.15	19.797	1.37E-05
Responsibility	1	83.7	83.68	45.824	1.16E-10
Age	1	9.7	9.68	5.299	2.23E-02
Gender	2	1.2	0.6	0.328	7.21E-01
Experience	1	1.2	1.2	0.655	4.19E-01
Reporting	1	3.9	3.93	2.149	1.44E-01
Reward	2	48.9	24.43	13.377	3.29E-06
Reporting*Reward	2	6.7	3.37	1.843	1.61E-01
Residuals	220	401.8	1.83		

Then, I performed ANCOVA tests adding a single variable to substitute Seriousness and Responsibility. Moral was created as a factor between Seriousness and Responsibility. According to Taylor and Curtis (2010) these two factors (i.e., perceived seriousness and perceived responsibility) have a reciprocal on whistleblowing intentions.

Table 36 – ANCOVA, covariates and Moral

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Moral	1	115.7	115.65	63.061	1.01E-13
Costs	1	32.3	32.26	17.589	3.97E-05
Age	1	8.8	8.84	4.822	0.0291
Gender	2	2	0.99	0.542	0.5822
Experience	1	1.7	1.67	0.911	0.341
Reporting	1	2.3	2.32	1.267	0.2616

Reward	2	63	31.49	17.17	1.17E-07
Reporting*Reward	2	7.1	3.57	1.946	0.1454
Residuals	221	405.3	1.83		

Then, I performed ANCOVA tests adding all covariates and control variables.

Table 37 – ANCOVA with all controls

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Seriousness	1	48.3	48.31	25.427	1.08E-06
Costs	1	30	29.99	15.786	0.000101
Responsibility	1	76.8	76.83	40.444	1.51E-09
Age	1	9.3	9.32	4.908	0.027945
Gender	2	2	0.99	0.523	0.593695
Experience	1	1.4	1.41	0.742	0.390181
Marital	3	3.5	1.16	0.611	0.608507
Ethnic	4	7.2	1.79	0.943	0.440375
Education	4	4	1	0.526	0.716506
Income	7	6.3	0.9	0.472	0.853737
Employment	1	0	0.01	0.004	0.950949
Discovered	1	5.6	5.62	2.957	0.087186
Duration	1	0.1	0.14	0.076	0.783141
Reporting	1	2.5	2.54	1.335	0.249372
Reward	2	51	25.48	13.41	3.61E-06
Reporting*Reward	2	7.9	3.97	2.092	0.126301
Residuals	187	355.3	1.9		

Using ANCOVA, again, I substituted Seriousness and Responsibility for Moral.

Table 38 – ANCOVA with all controls and Moral.

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Moral	1	115.6	115.63	60.851	4.13E-13
Costs	1	26.1	26.05	13.71	0.00028
Age	1	8.6	8.6	4.526	0.03469
Gender	2	3.3	1.66	0.871	0.42005
Experience	1	1.9	1.88	0.989	0.32116
Marital	3	4.1	1.35	0.711	0.54665
Ethnic	4	7.6	1.9	1	0.4091
Education	4	2.8	0.7	0.367	0.83166
Income	7	6.1	0.87	0.457	0.86418
Employment	1	0	0.03	0.015	0.90271
Discovered	1	5.4	5.38	2.83	0.09415
Duration	1	0.1	0.08	0.041	0.84009
Reporting	1	1.6	1.59	0.835	0.3621
Reward	2	63.2	31.62	16.641	2.22E-07
Reporting*Reward	2	7.7	3.84	2.023	0.13517
Residuals	188	357.2	1.9		

Additional analysis was conducted to test for LOC interactions with Reward and Reporting.

Table 39 – ANOVA, ANCOVA and LOC

Panel A: ANOVA						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
LOC	1	0.9	0.9	0.404	0.52578	
Reporting	1	20.5	20.52	9.236	0.00265	**
Reward	2	97.6	48.81	21.969	1.93E-09	***
Reporting:Reward	2	9	4.5	2.026	0.13421	
LOC:Reporting	1	12.7	12.66	5.696	0.01783	*
LOC:Reward	2	2.1	1.06	0.478	0.62069	
Residuals	225	499.9	2.22			
Panel B: ANCOVA						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
LOC	1	0.9	0.9	0.494	0.483	
Seriousness	1	45.6	45.63	25.114	1.10E-06	***
Costs	1	36.2	36.2	19.925	1.28E-05	***
Responsibility	1	79.2	79.17	43.578	2.96E-10	***
Reporting	1	5.6	5.59	3.076	0.0808	.
Reward	2	50.8	25.42	13.992	1.89E-06	***
Reporting:Reward	2	8.5	4.27	2.35	0.0978	.
LOC:Reporting	1	11.9	11.9	6.55	0.0112	*
LOC:Reward	2	0.7	0.33	0.182	0.8338	
Residuals	222	403.3	1.82			
Panel C: ANCOVA and controls						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
LOC	1	1.3	1.33	0.744	0.38947	
Seriousness	1	43.7	43.71	24.445	1.53E-06	***
Costs	1	36.6	36.63	20.485	9.92E-06	***
Responsibility	1	83.5	83.47	46.681	8.38E-11	***
Age	1	9.4	9.36	5.237	0.02307	*
Gender	2	1.2	0.6	0.336	7.15E-01	
Experience	1	1.2	1.2	0.67	0.4138	
Reporting	1	4	4.02	2.247	0.13535	
Reporting:Reward	4	57.2	14.29	7.994	4.99E-06	***
LOC:Reporting	1	13.1	13.15	7.354	0.00723	**
LOC:Reward	2	0.7	0.35	0.198	0.82012	
Residuals	216	386.2	1.79			

Also, for experiment at Chapter 4, I performed a Bootstrap ANOVA model. Bootstrap was conducted to calculate the sample mean of the original sample based on 1000 bootstrap samples.

Table 40 - Bootstrap

Descriptive Statistics							
Dependent Variable:							
Reward			Statistic	Bootstrap <sup>a</sup>			
				Bias	Std. Error	BCa 95% Confidence Interval	
						Lower	Upper
High Reward	Anonymously	Mean	6.268	0.00	0.16	5.903	6.586
		Std. Deviation	1.049	-0.033	0.173	0.724	1.291
		N	41	0	6	31	51
	Non-Anonymously	Mean	6.03	-0.01	0.21	5.586	6.385
		Std. Deviation	1.291	-0.035	0.233	0.835	1.647
		N	40	0	6	30	51
	Total	Mean	6.148	0.00	0.13	5.866	6.389
		Std. Deviation	1.174	-0.017	0.152	0.894	1.419
		N	81	0	7	68	95
Low Reward	Anonymously	Mean	5.900	-0.01	0.21	5.500	6.254
		Std. Deviation	1.277	-0.018	0.186	0.913	1.571
		N	40	0	6	30	49
	Non-Anonymously	Mean	5.485	0.01	0.32	4.800	6.091
		Std. Deviation	1.856	-0.048	0.258	1.356	2.213
		N	33	0	5	24	43
	Total	Mean	5.712	0.00	0.18	5.333	6.048
		Std. Deviation	1.568	-0.017	0.173	1.240	1.845
		N	73	0	7	60	86
No Reward	Anonymously	Mean	5.190	-0.01	0.24	4.704	5.636
		Std. Deviation	1.581	-0.024	0.198	1.181	1.881
		N	42	0	6	32	52
	Non-Anonymously	Mean	4.051	0.00	0.29	3.488	4.636
		Std. Deviation	1.849	-0.027	0.135	1.601	2.030
		N	39	0	6	29	50
	Total	Mean	4.64	-0.01	0.20	4.253	5.012
		Std. Deviation	1.798	-0.011	0.106	1.589	1.974
		N	81	0	7	69	94
Total	Anonymously	Mean	5.780	-0.01	0.12	5.565	6.000
		Std. Deviation	1.388	-0.005	0.118	1.152	1.595

	N	123	0	8	109	136
Non- Anonymously	Mean	5.179	0.00	0.18	4.808	5.521
	Std. Deviation	1.866	-0.012	0.102	1.661	2.030
	N	112	0	8	98	127
Total	Mean	5.494	0.00	0.11	5.272	5.685
	Std. Deviation	1.657	-0.003	0.082	1.494	1.806
	N	235	0	0		

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

## Appendix D

First, a  $2 \times 2$  ANOVA was conducted in steps using reporting channel, reward, and the interaction term as the independent variables. Then, I conducted several steps for ANCOVA tests adding covariates and controls. These analyses provide further evidence on the experiment performed at Chapter 5.

Table 41 – ANCOVA models

Panel A: ANCOVA						
Sources of Variation	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
LOC	1	0.75	0.75	0.387	0.534668	
Seriousness	1	33.05	33.05	16.972	6.37E-05	***
Costs	1	27.1	27.1	13.917	0.000274	***
Responsibility	1	33.35	33.35	17.13	5.92E-05	***
Fraud	1	1.4	1.4	0.72	0.397528	
Reward	1	0.14	0.14	0.07	0.792264	
Fraud:Reward	1	5.19	5.19	2.665	0.104747	
Residuals	144	280.39	1.95			
Panel B: ANCOVA and controls						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
LOC	1	0.65	0.65	0.33	0.566874	
Seriousness	1	32.6	32.6	16.598	7.73E-05	***
Costs	1	27.83	27.83	14.173	0.000245	***
Responsibility	1	32.84	32.84	16.723	7.29E-05	***
Age	1	0.18	0.18	0.089	0.765505	
Gender	2	3.91	1.96	0.996	0.37215	
Experience	1	1.52	1.52	0.773	0.380695	
Fraud	1	2.33	2.33	1.185	0.278312	
Reward	1	0.25	0.25	0.125	0.72394	
Fraud*Reward	1	5.53	5.53	2.817	0.095491	.
Residuals	139	272.98	1.96			

Also, for experiment at Chapter 5, I performed a Bootstrap. Bootstrap was conducted to calculate the sample mean of the original sample based on 1000 bootstrap samples.



Table 42 - Bootstrap

Fraud * Reward									
Dependent Variable: WB									
Fraud	Reward	Mean	Std. Error	95% Confidence Interval		Bootstrap for Mean <sup>a</sup>			
				Lower Bound	Upper Bound	Bias	Std. Error	BCa 95% Confidence Interval	
								Lower	Upper
Large Fraud	Cap Reward	5.537	.247	5.048	6.025	.006	.237	5.000	6.000
	No Reward	5.098	.247	4.609	5.586	-.001	.238	4.623	5.571
Small Fraud	Cap Reward	4.806	.284	4.245	5.368	.001	.320	4.181	5.467
	No Reward	5.000	.253	4.499	5.501	-.013	.238	4.547	5.439

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Additionally, I also use contrast coding to specifically test H1a and H2b. Table 43 shows contrast coding for Large Fraud and Reward versus all others.

Table 43 - Planned Contrast for Large Fraud and Reward versus all others

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
WB	Assume equal variances	1	1.71	.869	1.962	148	.052*
	Does not assume equal variances	1	1.71	.841	2.027	78.202	.046**

Notes: I use contrast weights of  $-1$ ,  $-1$ ,  $3$  and  $-1$  applied to the *Small Fraud and Cap Reward*, *Small Fraud and No Reward*, *Large Fraud and Reward*, and *Large Fraud and No Reward* conditions, respectively.

\*, \*\*, \*\*\* indicates statistical significance at levels of 0.10, 0.05 and 0.01, respectively.

Recall that Hypothesis 1a predicts that the likelihood of whistleblowing will be lower when fraud is larger and there is a limited monetary reward compared to when fraud is small. Planned contrasts revealed a significant difference between a Cap Reward and Large Fraud compared to all other conditions,  $t(148) = 1.962$ ,  $p = 0.052$ .

Recall that Hypothesis H1b predicts that the likelihood of whistleblowing will be lower when fraud is larger and there is a limited monetary reward compared to when no monetary reward is present. I use contrast weights of  $-.5$ ,  $-.5$ ,  $1$  and  $0$  applied to the *Small Fraud and Cap Reward*,

*Small Fraud and No Reward, Large Fraud and Reward, and Large Fraud and No Reward* conditions, respectively.




Table 44 – Contrast tests

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
WB	Assume equal variances	1	.63	.312	2.030	148	.044
	Does not assume equal variances	1	.63	.309	2.049	89.559	.043

\*, \*\*, \*\*\* indicates statistical significance at levels of 0.10, 0.05 and 0.01, respectively.

Recall that Hypothesis 1b predicts that the likelihood of whistleblowing will be lower when fraud is larger and there is a limited monetary reward compared to when fraud is small. Planned contrasts revealed a significant difference between a Cap Reward and Large Fraud compared to *Small Fraud and Cap Reward, Small Fraud and No Reward* conditions,  $t(148) = , p = 0.044$ . Also, shows that there is a nonsignificant difference between *Small Fraud and Cap Reward, Small Fraud and No Reward* conditions, since they were coded as  $-.5, -.5$ .

## Appendix E

 <p style="text-align: center;">OFFICE of RESEARCH and GRADUATE STUDIES <b>Utah State University</b> INSTITUTIONAL REVIEW BOARD</p>		<p>Institutional Review Board</p> <p>Exemption #2 and #3 Certificate of Exemption</p>
<p><b>From:</b> Melanie Domenech Rodriguez, IRB Chair  Nicole Vouvalis, IRB Director </p> <p><b>To:</b> <b>Christopher Skousen</b></p> <p><b>Date:</b> <b>May 31, 2019</b></p> <p><b>Protocol #:</b> <b>10328</b></p> <p><b>Title:</b> <b>The counterproductivity of monetary rewards: How financial incentives crowding-out whistleblower's intention</b></p>		
<p>The Institutional Review Board has determined that the above-referenced study is exempt from review under federal guidelines 45 CFR Part 46.104(d) category #2 and #3:</p> <p><i>Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met: (i) The information obtained is recorded in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subject; (ii) Any disclosure of the responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation, or (iii) the information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and the IRB conducts a limited IRB review to make required determinations.</i></p> <p><i>Research involving benign behavioral interventions (short in duration, harmless, painless, not physically invasive, not likely to have a significant adverse lasting impact on the participant, and not likely to be offensive or embarrassing to participants) in conjunction with the collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording, prospectively agreed to by the participant, and at least one of the following criteria is met: (i) The information obtained is recorded in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subject; (ii) Any disclosure of the responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation, or (iii) the information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and the IRB conducts a limited IRB review to make required determinations.</i></p> <p>This exemption is valid for five years from the date of this correspondence, after which the study will be closed. If the research will extend beyond five years, it is your responsibility as the Principal Investigator to notify the IRB before the study's expiration date and submit a new application to continue the research. Research activities that continue beyond the expiration date without new certification of exempt status will be in violation of those federal guidelines which permit the exempt status.</p> <p>As part of the IRB's quality assurance procedures, this research may be randomly selected for audit during the five-year period of exemption. If so, you will receive a request for completion of an Audit Report form during the month of the anniversary date of this certification.</p>		
<p>435.797.1821   1450 Old Main Hill   Logan, UT 84322   MAIN 155   <a href="mailto:irb@usu.edu">irb@usu.edu</a>   FWA#00003308</p>		



## Institutional Review Board



### Exemption #2 and #3 Certificate of Exemption

In all cases, it is your responsibility to notify the IRB prior to making any changes to the study by submitting an Amendment request. This will document whether or not the study still meets the requirements for exempt status under federal regulations.

Upon receipt of this memo, you may begin your research. If you have questions, please call the IRB office at (435) 797-1821 or email to [irb@usu.edu](mailto:irb@usu.edu).

The IRB wishes you success with your research.

## Appendix F

 <p style="text-align: center;">OFFICE of RESEARCH and GRADUATE STUDIES <b>UtahStateUniversity</b> INSTITUTIONAL REVIEW BOARD</p> 	<p>Page 1 of 2 Protocol #10328 IRB Approval Date: June 4, 2019 Consent Document Expires: June 3, 2022</p>
<p>v.9 Letter of Information</p>	
<p><b>Reporting Intentions on Corporate Wrongsdoings</b></p>	
<p><b>Introduction</b></p> <p>You are invited to participate in a research study conducted by Christopher Skousen and Lucas Martin Dias Maragno, in School of Accountancy at Utah State University. The purpose of this research is to investigate individual and situational factors and their impact on reporting intentions on corporate wrongdoings. Your participation is entirely voluntary. There will be approximately 500 total participants in this research.</p>	
<p><b>Funding</b></p> <p>This study has been funded in part by the USU School of Accountancy.</p>	
<p><b>Procedures</b></p> <p>If you agree to participate, you will be presented a vignette describing AgFoods Inc. The instrument then describes the responsibilities of AgFoods Inc. employee, Pat. The usefulness and outcome of the study will depend upon the honesty and care with which you answer the questions. Please read the instructions for each section carefully.</p>	
<p><b>Time</b></p> <p>Your total participation in this project is expected to be approximately 15 minutes.</p>	
<p><b>Inclusion Criteria</b></p> <p>To participate in the study, participants must:</p> <ul style="list-style-type: none"> <li>• Be 18 years or older</li> <li>• Reside in the United States of America.</li> <li>• Have an MTurk accuracy HIT approval of 95 percent or higher</li> <li>• Have an MTurk productivity of having completed at least 500 HITs.</li> </ul>	
<p><b>Risks</b></p> <p>This is a minimal risk research study. That means that the risks of participating are no more likely or serious than those you encounter in everyday activities. The foreseeable risks or discomforts include emotional distress/discomfort. In order to minimize those risks and discomforts, the researchers will collect and maintain data in a manner to assure confidentiality.</p>	
<p><b>Benefits</b></p> <p>Although you will not directly benefit from this study, it has been designed to learn more about reporting intentions on corporate wrongdoings. Also, benefits to society include a better understanding of human motivation.</p>	
<p><b>Confidentiality</b></p> <p>The researchers will make every effort to ensure that the information you provide as part of this study remains confidential. Your identity will not be revealed in any publications, presentations, or reports resulting from this research study. We will collect your information through Qualtrics and Mturk. Online activities always carry a risk of a data breach, but we will use systems and processes that minimize breach opportunities. MTurk worker IDs will</p>	
<p>Jon M. Huntsman School of Business   (435) 797-2429   3540 Old Main Hill   Logan, UT 84322</p>	



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v.9

not be shared with anyone outside of the research team, will be removed from the data set, and will not be linked to survey/study responses. This information will be securely stored in a locked drawer in a restricted-access office.

### **Voluntary Participation & Withdrawal**

Your participation in this research is completely voluntary. If you agree to participate now and change your mind later, you may withdraw at any time by closing the tab or skipping to: End of experiment.

### **Compensation**

MTurk worker IDs will only be collected for the purposes of distributing compensation and will not be associated with survey responses. For your participation in this research study, you will receive two dollars.

### **IRB Review**

The Institutional Review Board (IRB) for the protection of human research participants at Utah State University has reviewed and approved this study. If you have questions about the research study itself, please contact the Principal Investigator at [chris.skousen@usu.edu](mailto:chris.skousen@usu.edu). If you have questions about your rights or would simply like to speak with someone *other* than the research team about questions or concerns, please contact the IRB Director at (435) 797-0567 or [irb@usu.edu](mailto:irb@usu.edu).

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Christopher Skousen  
 Principal Investigator  
 (435) 797-2429; [chris.skousen@usu.edu](mailto:chris.skousen@usu.edu)

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Lucas Martins Dias Maragno  
 Investigator  
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### **Informed Consent**

By clicking below, you agree to participate in this study. You indicate that you understand the risks and benefits of participation, and that you know what you will be asked to do. You also agree that you have asked any questions you might have, and are clear on how to stop your participation in the study if you choose to do so.