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INFLUENCES OF MORAL CHARACTER ON INSIDER DEVIANT BEHAVIOUR IN INFORMATION SECURITY

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2019

ABSTRACT

Insider threats has been a major challenge for organizations. Leaking sensitive information by insiders has become rampant in recent times and presents an important issue for both private and public organizations. Though prior research has indicated that the human is the weakest link in information security and has found that insiders are threats to leaking information, there is paucity of study on the characteristics of the insider that influences information leak behavior. This master's thesis contributes to filling this important gap. Drawing on moral development and deterrence theories, this study examines the influence of an insider's moral character on the insider's ethical awareness on deterrence and views on leaking sensitive information. Results show that out of the four dimensions of moral character, only justice and utilitarianism dimensions directly influence an insider's view on leaking sensitive information. However, only the justice dimension influences the insider's ethical awareness on deterrence. Taken together, the results show that an individual with high ethical views on justice is more likely to heed to deterrence polices; however, such individual is highly likely to leak information when heeding to deterrence policies contradicts his/her ethical views on justice. Also, contrary to the notion that personal interest (i.e., egoism) is a fundamental determinant of an insider's view on leaking information, this study shows that an individual's view of public interest is a stronger determinant of his/her view on leaking information. The several implications for research and practice deduced from the results are discussed. This research contributes generally to research on information systems security and specifically to the importance of moral development theory and deterrence theory in explaining insider information leak behavior.

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INTRODUCTION

Private and government organizations acknowledge the fact that insider threat presents a great challenge to their systems. Seals (2017) suggests that 53% of organizations have experienced an insider attack in the last 12 months. The Insider Threat 2018 report indicates many organizations believe that several factors accounts for insider threats. These factors include, too many users with excessive access privileges, increasing number of devices with access to sensitive data and the increasing complexity of information and attacks. Von Solms (1998) states that Information security mainly aims to secure the continuity of organizations and reduce the damage by controlling the impact of security incidents within the organization. The security concepts of confidentiality, integrity, and availability of information are very critical to both private and public organizations, since information has become an important asset. Confidentiality of information, according to Humphreys et al. (1998), simply means that sensitive information must be protected from unauthorized disclosure or intelligible interception. Examples of information that requires confidentiality includes, medical records, insurance records, research data, and national security data. In organizations where such information requires confidentiality, there can be obligations on individuals to ensure that such information is not leaked or disclosed to unauthorized people.

An important problem in cyber and organizational security is to recognize when an insider intends to defy security policies guiding a corporate or an organizational system (Hunker & Probst, 2011). Hunker and Probst (2011) further

explain that the insider has information and capabilities that an external attacker does not have. This makes an insider capable of causing severe harm and insider leaks a very difficult problem to deal with. The problem of insider leaks can be criminal in nature and for that matter there are several punishments associated with such behavior to serve as deterrence. For example, in the US, the behavior of insider leaks is treasonous or a high crime which in most cases are punishable by jail terms up to 10 years (18 U.S. Code § 798 - Disclosure of classified information). In some other countries, the penalty for leaking information is jail terms or fines. For example, the UK imposes a 2-year imprisonment or a fine as maximum penalty for a crown servant, government contractor or an individual making an unauthorized disclosure confidential or sensitive information (i.e. security or intelligence information, information theft, obtaining or disclosing personal data)[1]. Despite these range of deterrence policies, most individuals take the risk to disclose or leak such sensitive information. Examples of such disclosure in recent times include, Edward Snowden who in 2013, revealed highly classified NSA documents to journalist (Greenwald, MacAskill, & Poitras, 2013); and Chelsea Manning, previously known as Bradley Manning, in 2013 also disclosed highly classified and unclassified but sensitive military and diplomatic documents to WikiLeaks (Simpson & Roshan, 2013); just to name a few. These individuals were employees of highly sensitive organizations and can be referred to as insiders. They were fully aware of the security policies and the deterrence policies associated with leaking confidential information but that was not enough to deter them from such leakages or disclosures.

The Washington times in July 2017, reported that the Department of Justice in the United State of America announced it was going to crackdown on the individual's leaking classified or confidential information (The Washington Times, 2017). Bruce (2004) states that the problem of leaks has become much more serious due to the power of electronic dissemination and search engines, and that the major source of intelligence information for US media and the internet is unau-

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[1] www.cps.gov.uk/legal-guidance, 2009

thorized leaks or disclosures. He further states that unauthorized leaks of classified information have become resistant to corrective measures and it will only take a frontal assault to mitigate such issues.

Hess (1985, p. 2) categorizes some motivations behind leaks as follows:

- Ego leaks which seeks to satisfy a sense of self-importance.
- Goodwill leak which is done to get a future favor.
- Policy leaks which seeks to influence a policy or plan.
- Animus Leaks which is mainly to settle grudges.
- Trial Balloon leak which is to test the response of some proposal under consideration and lastly.
- Whistle -blower leak which is a means of revealing some perceived systemic abuse.

These motivations as outlined by Hess (1985) may not be the only reasons behind leaks and therefore there is a need to investigate the role that factors such as the moral character of individuals working in an organization plays in motivating this phenomenon. As stated by Warkentin and Willison (2009), employees are considered the weakest link in information security. Exploring this weakness by looking at how moral character contributes to leaks or disclosure of confidential information will further enhance our understanding of this problem. Again, what motivates insiders or employees to defy deterrence policies to leak confidential information can be further explored by examining moral character. Cohen, Panter, Turan, Morse and Kim (2014) define moral character as "*as an individual's characteristic patterns of thought, emotion, and behavior associated with moral/ethical and immoral/unethical behavior*" (2014, p. 6). This thesis seeks to investigate and understand what motivates such insider deviant behavior like unauthorized leaks by understanding how moral character plays a factor.

1.1   Research question and Objectives

The main research question is: What is the motivation behind insider leaks of Classified Information?

The research objectives are to answer the following:
- ❖ Does the Moral Character of an individual lead to insider leaks?
- ❖ Is the insiders view on Deterrence affected by Moral Character?

1.2   Structure of Thesis

The remaining sections of this thesis are structured as follows: The second chapter details the literature review of the study by discussing the various concepts, theories and how they have been applied in information systems regarding security; and proposing research hypotheses. The third chapter, research method, explains and justifies the choice of research method and details the data collection and analysis methods used in this research. The fourth chapter, discusses and analyzes the results from the data collection. The fifth chapter discusses the study findings and its implications for both research and practice, and the sixth chapter concludes and summarizes the study.

2 LITERATURE REVIEW

Understanding the human thinking and behavior is a complex issue and as such there may not be a comprehensive solution to behavioral issues. This chapter reviews studies on insiders, deviant behaviors in information systems. Further, it focuses on the motivations behind insider deviant behavior by taking a specific look at leaks. This study will examine the problem of insider leaks from the angle of how the moral character of individuals influences insider leaks. Theories like Deterrence Theory by Beccaria (1963) and Kohlberg's Moral development theory will form the theoretical framework to understand this phenomenon.

2.1 Who is an Insider and what is Insider threat?

Brackney and Anderson (2004) define an insider as any individual with access to, privilege or knowledge of, information systems and services. An insider was further defined by Bishop and Gates (2008) based on two actions, these are: 1) an individual's ability to violate a security policy using legitimate access as well as and 2) the ability to violate access control policies through unauthorized access. By these definitions, it means that an insider through legal and illegal means can disclose or leak sensitive or highly confidential information.

Most research, according to Warkentin & Willison (2009) on security threats in engineering and computer science has been focused on external threats and the design of artefacts to protect the organization. Information Systems research, however, has focused on the human actors within the organization and the threats they pose to organizational security. Research shows that the greatest threat to an organization's information security is the insider (Warkentin & Willison, 2009). The insider is described as a member of an organization who has authorizations to the organizational information technology setup. Furthermore, the insider can harm the confidentiality, integrity and availability of an organizations information systems through intentional or accidental acts (Warkentin &

Willison, 2009). The insider is referred to by Willison & Warkentin (2013) as "employees or others who have (1) access privileges and (2) intimate knowledge of internal organizational processes that may allow them to exploit weaknesses" (2013, p. 2). This description means that an insider has the critical information needed within the organization to cause harm to its processes and this forms an internal threat. According Willison & Warkentin (2013), internal threats to an organizational information security is categorized into human and non-human threats. The human threat is basically made up of malicious and non-malicious intents to violate security policies. Example of malicious intents include, data theft, data manipulation, intellectual property theft, disclosure/leakage of sensitive or classified information etc.

Various technonolgies have been implemented to protect information, but have been targeted usually against outsiders (Colwill, 2009). As a result, these technologies are not usually effective against insiders who have access to information within an organisation. According to Colwill (2009), relying too much on technonlogies without significantly looking at other factors can have a serious effect on dealing with threats from insiders. Therefore, understanding the moral considerations that motivates an insider to violate security policies can influence the ability of organizations to deal with insider threats.

2.1.1 Deviant Behavior

According to Goode (2015), there are four necessary components deeded for deviance to exist. These components includes, " 1). a rule or norm, 2). someone who violates or is thought to violate that norm, 3). an audience, someone who judges the normative violation to be wrong. 4). the likelyhood of a negative reaction, criticism, condemnation, punishment,censure,stigma and disapproval etc." (Goode, 2015, p. 4). The components suggest that deviance is associated with rules or norms, and the violation of these norm or rules and some kind of punishment for such violations. Humphrey and Palmer (2013) give an apt definition of deviant behaviour as a " behaviour which does not conform to norms and rules" (2013, p. 3). This suggests that deviant behaviour is inconsistent

with certain norms or rules within an organization or environment. Robinson & Bennett (1995) suggests employee deviance involves deliberate actions that violates important norms within an organization which compromises the security or safety within the organization. Examples of such deviance includes, theft, fraud, lying, vandalism, unauthorized leaks and aggressive behavior etc.

Goode (2015) definition of deviance highlights how deviance is perceived and defined socially. The definition of deviant behavior by Humphrey and Palmer (2013), and Robinson and Bennett (1995) is widely accepted but in the context of this thesis, these definitions are not far reaching enough. This is because Humphrey and Palmer (2013) and Robinson and Bennett (1995) only highlight the negative consequences deviant behavior while neglecting the positive consequences. Again, deviance or deviant behavior defined by Humphrey and Palmer (2013) and Robinson and Bennett (1995) considers only the physical action and excludes the cognitive aspect. For example, expressing an opinion entails both physical action and cognitive motions. An individual expressing a religious, political or scientific belief that may not be aligned with the laid down social norms may be considered as deviant. Studies related to deviant behavior relating to information security has been approached from how security policies have been violated. Crossler et al, (2013) describes intentional behavior that causes threats to an organization's digital assets as deviant behavior. Examples include, sabotage, espionage and stealing etc. According to Siponen and Vance (2010) violation of IS security polices is a violation of organizational social norms.

Therefore, deviant behavior for this thesis can be defined as "*a voluntary physical or cognitive action that violates the norms, policies and rules of a social group or an organization which can result in either negative or positive consequences*". This definition regards deviant behavior from the perspective of the social group or organization.

2.2 Conceptualization of Leaks

Katz (1976) defines leaks by a government employee as the "*release, outside official public information channels, of previously undisclosed government information*" (p 3). The definition above implies that leaks are unofficial and therefore exposes confidential information through unapproved channels. According to Katz (1976), there are two types of leaks: authorized and unauthorized leaks. Unauthorized leaks involve an employee making public a confidential or classified information to a private or public organization. Unauthorized leaks may be a threat to certain interests of both government and private organizations (Katz, 1976). One of the interests discussed is survival, which makes a strong case for how information can be controlled when defense and security is involved. Information leak which involves defense does a great harm to the provision of security by government. Decision making by both government and private organizations are also put in jeopardy by unauthorized leaks. The survival, security and decision making that are affected by leaks as explained by Katz (1976) are in line with Bruce (2004) assertion that "Press leaks reveal, individually and cumulatively, much about how secret intelligence works. And, by implication, how to defeat it." (2004, p. 298). Thus, insider leaks compromise the survival, security and decision making of both private and government organizations. Information leaks was also defined by Bovens et al. (1995) as" *making confidential information public by office-holders based on anonymity*" (1995, p. 15). This means that anonymity plays a major role when insiders leak information. However, Bovens et al. (1995) differentiate between information leaks and whistleblowing. According to Bovens et al. (1995), information leaks consist of any kind of information whereas, whistleblowing is mainly about revelations of abuse. Furthermore, whistleblowers may share information with the press or internal and external authorities without necessarily indulging in information leaks.

Information leaks can be intentional or unintentional (Crossler et al. 2013; de Jong & Vries, 2007). Whereas intentional information leaks involve a purposeful

action of the insider to disclose confidential information, unintentional information leaks involve actions or behaviors of the insider that unknowingly discloses confidential information. Intentional information leaks, which are also referred to as deviant behavior, may include sabotage and stealing, however, unintentional information leaks may include using simple passwords carelessly clicking on harmful links (Crossler et al. 2013).

Intentional information leaks was also conceptualized by de Jong and Vries (2007, p. 217) as a purposeful violation of confidentiality to further one's interest, exchange information and are usually done in an anonymous manner. Other definitions include that of Pozen (2013, p. 522), explaining information leaks as disclosures that can be both authorized and unauthorized at a higher level. There have been several examples of insiders in both public and private organizations who through their actions fit the various definitions of information leaks. Some notable examples are discussed below.

In 1971, Daniel Ellsberg a former US defense department analyst and antiwar activist stole and leaked highly sensitive information regarding the US involvement in the Vietnam war. The information leaked detailed how the previous administration headed by President L.B. Johnson and some of his staff had misled the US congress and the public about the causes and progress of the Vietnam war. This information was leaked by Ellsberg to the New York Times (Sheehan, 1971). These information leaks according to Sheehan (1971) brought about a debate over the freedom of the press to report classified information and the rights of the public to know about the activities of the government. Following the Pentagon papers leak in 1971 was the famous Watergate scandal in 1972. Olson and Holland (2003) reported that on 17 June 1972, five men were arrested for breaking into the headquarters of the Democratic National Convention at the Watergate Hotel in Washington D.C to install illegal wire taps. The men were linked to the fund-raising group of President Nixon who was seeking re-election but the administration at the time denied their involvement. That same year, two journalists Carl Bernstein and Bob Woodward through leaks from a former FBI agent W.

Mark Felt, exposed the administrations involvement in the crime that was committed. This information leaks eventually brought down the Nixon administration. This case introduced the famous term "Deep Throat".

Waas (2005) reports that in 2003, the identity of a CIA agent, Valerie Plame, was leaked and that ended her career. This information leaks came about because, a former US diplomat Joseph Wilson questioned the reasons given by the Bush administration that lead to the invasion of Iraq in an Op-Ed in the New York Times. In July 2003, the identity of Joseph Wilson's wife, a CIA agent, Valerie Plame, was leaked to a Washington post columnist Robert Novak who published it in the paper and labelled her as an "agency operative".

Arguably, the most famous information leaks in recent times is the information leaks by Edward Snowden. The Guardian newspaper in 2013 started a series of reports on revealed highly classified NSA documents. The documents revealed extensive internet and phone surveillance by US intelligence which The Guardian newspaper had received from Edward Snowden (Greenwald et al., 2013). According to an interview with The Guardian newspaper, Snowden was quoted as saying, *"Much of what I saw in Geneva really disillusioned me about how my government functions and what its impact is in the world. I realized that I was part of something that was doing far more harm than good."* Edward Snowden made this statement as a CIA agent serving in Geneva. The newspaper also quoted Snowden as follows, *"I don't want to live in a society that does these sort of things… I do not want to live in a world where everything I do and say is recorded."*

In 2013, another insider Chelsea Manning formerly known as Bradley Manning leaked 700,000 highly classified and unclassified but sensitive military and diplomatic documents to WikiLeaks (Simpson & Roshan, 2013). According to Simpson & Roshan (2013) a statement read by Manning's attorney stated that Chelsea Manning chose to release the files out of moral concerns.

In 2017 there were at least two notable incidents of information leaks of highly confidential information. According to a report by CNN, a 25-year-old US federal contractor Reality Leigh Winner, with top security clearance was arrested

and charged with leaking classified information to a newspaper outlet. The information was related to an NSA report about Russian military intelligence cyberattack on a US voting software supplier. Winner admitted to intentionally leaking the information but provided no reason for her action (Perez, Scuitto, & Jarrett, 2018).

In a different case of information leaks in 2017, another defense contractor Harold Martin was charged with allegedly stealing highly classified documents from the National Security Agency (NSA). The documents stolen were said to date back from 1996, when Martin was given security clearance till his arrest in 2017. He was working for a company called Booz Allen Hamilton when he was arrested.

In the next section, the Moral development theory by Kohlberg (1976) will be used to understand this phenomenon of information leaks.

2.3   Moral Development

The moral development theory by Kohlberg (1963) was developed based on the expansion of Jean Piaget (1932)'s ideas about intellectual ability. Kohlberg (1963) theorized that the human ability to uniquely make moral judgements is developed during childhood in a predictable manner. Kohlberg believed that in relation to Piaget's stages of intellectual development, there were specific and identifiable stages of moral development. Kohlberg and Hersh (1977, p. 54) defined the three levels of moral development which include: Preconventional, Conventional and Post Conventional levels. At the Preconventional Level, Kohlberg and Hersh (1977) indicate that cultural rules and regulations that classifies what is good or bad, wrong or right is imparted into the child. These rules and regulations are interpreted by the child in terms of punishments, rewards and exchange of favors. Interpretation of such rules and regulations are also done in terms of authorities which includes parents or adults in the social environment who pronounce and act on such rules (1977, p. 54).

This level is divided in two stages (Stages 1 and 2). During stage 1, the punishment and obedience orientation is introduced to the child. At this stage, Kohlberg and Hersh (1977) explains that the use of punishments and rewards determines whether an action taken by a child is good or bad. This points out the fact that actions of the child are dictated by rules and regulations prescribed by the society (1977, p. 54). The act of obeying authority to avoid being punished is an important value on its own. However, it is not determined by the child's own moral directives but is determined by an authority. This means that what is right is interpreted based on what an authority deems to be right and to do right involves obeying authority and avoiding punishment. In other words, the interests of others are not recognized, and individuals behave morally out of fear of being punished for a bad behavior. For example, rules on the use of password must be obeyed by workers in an organization because passwords are not supposed to be shared, as such, any breach will result in agreed upon punishment if the system and sensitive information are compromised.

At Stage 2, the instrumental-relativist orientation begins to take place. At this stage, Kohlberg and Hersh (1977) state that self-interests or actions that benefits and satisfies the child and rarely the interests of others is what is considered the right action (1977, p. 54). This stage indicates that relationships are viewed and built in terms of making deals and exchanges. Fairness, reciprocity, and equal sharing are traits that begin to form but are approached and communicated in realistic and physical way. This stage indicates that the determination of what is right or wrong is not made by a single authority as in stage 1, but there is a realization of seeing different side of issues. This translates to individuals pursuing their own interests and during such pursuits cultivate the habit of making deals and exchange favors with others. This stage also shows that the interests and needs of others are recognized but the individual behaves morally to meet their own needs, thus good behavior becomes a way of manipulating situations to meet one's own needs. For example, a worker in an organization may decide to allow a colleague access to some sensitive information using their password or

system based on a mutual agreement that benefits both. Such mutual agreement could be a reciprocal access when it is needed. *(you owe me deal).*

At the second level which is the Conventional Stage, Kohlberg and Hersh (1977, p. 55), indicate that maintaining what is expected from the family, group or nation is considered as an important attribute to moral development, irrespective of immediate and known consequences (1977, p. 55). This level explains that obedience to personal expectations and social order is considered part of the attitude developed. The ability to be loyal, maintain, support and be recognized as part of a group or persons involved in the group becomes an attitude. This level is divided into two stages. i.e.; Stage 3 and Stage 4.

The "good boy- nice girl" orientation becomes a focus in Stage 3. According to Kohlberg and Hersh (1977), the behavior that pleases others and is approved by them is considered to be good behavior (1977, p. 55). Individuals stick to largely predictable images of what is deemed as accepted or normal behavior. Intention becomes the bases for judging a behavior. Actions that show an individual means well are considered important at this stage (1977, p. 55). An individual at this stage earns approval by being nice. According to Kohlberg (1963) an individual's definition of good and right shifts from behaving or acting to avoid punishments and personal interests to having intentions to help people (1963, p. 9). This shows a shift from obeying authority and pursuing one's own interest to an emphasis on being a good individual and as such must have motives or intentions that are helpful towards other people. For example, an individual in an organization may decide not to allow colleagues to use their system or password just to ensure that he or she looks good in front of their supervisors or to preserve his or her integrity within certain quarters of the organization. In another situation, an individual may allow others to access their systems as a form of help in order to be considered as a good individual or a nice person who is always willing to help.

From seeking approval as an orientation in stage 3, there is a transition to a "Law and order" orientation at Stage 4. At this stage, Kohlberg and Hersh (1977),

states individuals becomes oriented towards obeying authority, rules and regulations and maintaining the laws of one's social environment (1977, p. 55). Fulfilling one's duty, respecting laws and maintaining social order consist of the right behavior. The major emphasis at this stage is obeying laws to maintain the society. Individuals at this stage begin to recognize and show respect for law and order. Good behavior is seen in terms of abiding by the law and the point of view of the larger social system is adopted by individuals. Thus, the established social order is not questioned, but there is the belief that whatever defends the law is good. For example, an individual will decide to follow all the IS security policies in an organization just to ensure that the workplace rules are followed and order at the workplace is maintained, and that he/she will take it as a duty to report any system abuse by other colleagues.

In the Postconventional, Autonomous, or Principled Level, Kohlberg and Hersh (1977) states that at this level, there is a well-defined attempt to define moral values and principles (1977, p. 55). This level is subdivided into stages 5 and 6. Stage 5 comprises of the social-contract legalistic orientation (generally with utilitarian overtones). According to Kohlberg and Hersh (1977), at this stage actions that are considered to be right are defined basically in terms of rights and standards of individuals examined and agreed upon by an entire society (1977, p. 55). Furthermore Kohlberg and Hersh (1977) state that the belief in personal values, opinions, the importance of processes and rules for reaching a consensus becomes a major attribute (1977, p. 55). Further explanation from Kohlberg and Hersh (1977), about stage 5 shows that personal values and opinion forms the basis of what right is aside from what is agreed on both constitutionally and democratically. The result, according to Kohlberg and Hersh (1977), is that there is an emphasis on the looking at what the law prescribes but further emphasizes on the possibility of changing the law in terms of considerations that are reasonable and is beneficial to the whole social environment (1977, p. 55). Furthermore, this stage suggest that an individual recognizes that certain laws are better than others and that sometimes, what is deemed moral may not be legal and what may be legal may not be moral. There is a strong belief that laws must be obeyed to

maintain social order, but laws may be changed through due process. The basic rights and democracy that gives everyone a say is emphasized at this stage by individuals. For example, An Individual may decide to violate the IS security policies by compromising sensitive information because they see certain rules being broken by the organization to the detriment of the values, individual rights and freedoms of others.

In Stage 6, universal ethical principle becomes a central focus. At this stage Kohlberg and Hersh (1977) indicate that conscience and ethical principles that are chosen and acted on by individuals defines what is right. These ethical principles are usually rational, universal and consistent with actions taken by such individuals (1977, p. 55). According to Kohlberg (1963), during stages 5 and 6, individuals become aware that there can be a conflict between norms (1963, p. 10), and there is an attempt to make decisions rationally between conflicting norms. According to Kohlberg (1963) choices are made in terms of certain moral principles instead of moral rules (1963, p. 10). Examples of such moral principles suggested by Kohlberg (1963) include the Golden rule which is an ethical principle of *do to others as you would have them do to you" (Matthew 7:12 and Luke 6:31),* the utilitarian principle which suggest an action that benefits the greater masses rather than a few. *etc.* This stage suggests that there is a belief in universal ethical principle as the underlying basis for moral judgements. Furthermore, there is a suggestion that ethical principles form the behavior of individuals when the law violate those principles and individuals' conscience determines morality. The universal principles of justice, reciprocity and equality of human rights, and respect for the dignity of humans as individuals forms the core of this stage. For Example, an individual may decide to follow his or her moral ethical principles to violate IS security policies in an organization such as release or leak sensitive data if it's going to bring some relief to innocent people or uphold justice, dignity and equality.

2.4 Moral Character

Moral Character development has been viewed from various perspectives such as the social learning perspectives and trait theory perspectives etc. Musser and Leone (1992) suggest that through socialization, children become more aware and learn to function well as members of the society they find themselves (1992, p. 141). The process of socialization as described by Musser and Leone (1992) includes the learning of values and standards of the society including behaviors that are considered appropriate for various social settings. From the studies of Musser and Leone (1992), cultures and families differ from each other therefore the content of what is learned may also vary but the main goal is for the children to internalize a set of rules and values that is accepted by the social group the child grows within (1992, p. 141). Furthermore, Musser and Leone (1992) explains that in acquiring these internalized rules and values, there is a shift of control of moral actions to the child from their environment (i.e. parents). Moral character in the view of Musser and Leone (1992) involves the development of the ability and motivation to control an individual's action. This is considered as an essential condition of morality (1992, p. 141). Many social thinkers agree character is made up of dispositions, trait, habits and tendencies which are basic elements that defines the identity of individuals (Musser & Leone, 1992, p. 151). The character of an individual is believed to be linked to their behavior in a predictive way, where an individual's chosen goals can be influenced including the actions taken by the individual to achieve such goals (Musser & Leone, 1992). Another form of consensus that has been built according to Musser and Leone (1992) is that character becomes continuous and consistent in social behavior (1992, p. 151). This means that dispositions, traits, habits and tendencies which form the elements of character are quite stable and lasting qualities of an individual. Musser and Leone (1992) elaborate that such qualities are fundamentally associated with actions that are taken and therefore must be exhibited in fairly lasting and steady manner (1992, p. 151). The social learning perspective stresses

on three different types of internalization which are, *behavioral, emotional and judgmental* parts of moral action. The behavioral part of internalization basically focuses on conformity that is intrinsically motivated or in other words resistance to temptation. According to Kohlberg (1964), the conception of such intrinsically motivated conformity is implied in the basic understanding of moral character (1964, p. 358) and this formed the basis of early research on morality. Kohlberg (1964) states that reserachers (Hartshorne & May, 1928-1930.) defined moral character as " *a set of culturally defined virtues such as honesty, which were measured by observing a child's ability to ressist temptation to break a rule when it seemed unlikely he/she could be detected and punished"* (1964, p. 384). Kohlberg (1964) continues that the second type of internalization focuses on the *emotion of guilt*, which consists of self punishment, showing remorse and fear after breaking cultural rules and standards (1964, p. 384). This simply means a child behaves morally just to avoid guilt. The last part of internanlization according to the social learning theory mentioned by Kohlberg (1964) is the ability to make judgements in terms of standards and being able to justify maintaining that standard to oneself and others. Kohlberg (1964) states that the judgemental side of moral development has formed the basis for research and theories inspired by work done by Piaget (1932).

Social learning theorist have posited that at the early stages of an individual's life, their character is formed from internalizing certain values and standards through socialization. These values and standard are transmitted to individuals through the social environment such as parents. Musser and Leone (1992) state that these values and standards may differ due to cultural and family differences. According to Kohlberg (1964) the social learning theories internalization of these values and standard are grouped into behavoirial, emotional and judgments. The behavorial internalization simply shows that individuals conforms or resist the temptation to break a rule or standard. This internalization seems to fall within stage 1 of Kohlberg moral development theory where individuals behaves morally to avoid punishment. This seem to suggest that an individuals moral character is shaped at the early stages by the social surrounding such as

parents,but the at the stage 2 of Kohlberg moral development theory, there is the suggestion that individuals persue certain perosnal interest where they come to the realization that right or wrong behaviour is not based on the views of one authoriy or social surroundings such as parents as suggested by Musser and Leone (1992). This suggest that even though an individual's moral character is shaped at early stages it evolves with time and is not stable. For example, behaving or resisting the temptation to break a rule or violate security polices even though learnt at early stages may evolve when individuals pursue their own personal interest. Therefore, the consideration of right or wrong behavior varies among individuals.

The emotional internalization as described in the social learning theory suggest that individuals behave morally to avoid guilt. This seems to fall within the stage 3 and 4 of Kohlberg moral development theory, where *"being nice"* is deemed acceptable. Individuals maintaintaining law and order to avoid the resultant guilt within a social environment is important. This translates to individuals acting in a way that suggest they are caring and obey the laws of the society and act according to what the law dictates. This also suggests a duty orientation. Again, an internalization of such kind of values or standards by individuals may not be stable and may change with time. Individuals may choose wether to act according to such internalization or may act in situations that may be beneficial to him/her. The judgemental part of internalization according to the social learning theory, suggest the actions of individuals are based on standards and their ablitiy to translate and justify that standard to themselves and people around them . This seem to fall within the stage 5 and 6 of Kohlberg moral development theory, where individuals may act out of some moral principles. These moral principles may include the rights of individuals, democracy, obeying laws and contracts as well as behaviours that may serve for the greater good everyone. As already stated , these internalization may not be stable and may evolve with time and situations. Individual actions taken may depend on what the individuals view as morally right within a certain context or situation. As a result the defnition by Musser and Leone (1992) of moral character

as *"a relatively stable feature of an individual that determines the volition and inhibition of moral actions such that moral actions exhibit cross-situational and temporary consistency"* (1992, p. 152) is someway reflective of the unstable nature of moral character.

Cohen et al.(2014) defines moral character as *"as an individual's characteristic patterns of thought, emotion, and behavior associated with moral/ethical and immoral/unethical behavior"* (2014, p. 6). According to Cohen et al. (2014), this definition of moral character is an adaption of Funder and Fast (2010) which defines personality as *"an individual's characteristic patterns of thought, emotion, and behavior, together with the psychological mechanisms — hidden or not — behind those patterns."* (2010, p. 669). Cohen et al. (2014) goes on to say that there is some vagueness about the traits that must be considered character traits. This is because the emphasis in moral psychology has been on how judgements are made by individuals where individuals faces dilemmas that the choice between right and wrong is unclear. Instead, moral psychology must focus on what predicts both harmful and helpful behaviors in the lives of individuals where there is a clear choice between the right and wrong.

Cohen and Morse (2014) also conceptualizes moral character as *"an individual's disposition to think, feel, and behave in an ethical versus unethical manner, or as the subset of individual differences relevant to morality"* (2014, p. 3). This definition by Cohen and Morse (2014) is also based on Funder and Fast (2010, p. 669)as stated earlier. The studies by Cohen and Morse (2014) and Cohen et al.,(2014) is approached from the trait theory perspective and refers to Funder and Fast (2010)'s definition of trait as *"an unobservable psychological construct that encapsulates patterns of thought, emotion, and behavior into a coherent unit"* (2010, p. 3). Cohen and Morse (2014) further explain that how individuals differ from each other can be understood through the conceptual unit described. Furthermore, Cohen and Morse (2014) state that the effect of looking at moral character as a collection of traits is that there is a presumption that individual differences in moral character are stable and lasting but has the capability of changing over time and across situations.

Cohen and Morse (2014) propose a framework for understanding moral character which comprises of the following elements: Motivational, Ability and Identity.

On the Motivational element, Cohen and Morse (2014) explains that it basically involves individuals showing considerations for the needs and wants of others and how their actions affect others. Cohen and Morse (2014) conceptualized the consideration of others as a motivational element of moral character because people are motivated by such considerations to treat others fairly and considerably as it aides in building good relationships and healthy group functioning (2014, p. 7). Further explanation by Cohen and Morse (2014) indicate that without people showing some level of concern for others, an individual will be unwilling to balance their self-interest for the interest of others. Looking at this element from Kohlberg's moral development theory, this element seems to fit the stage 3, where moral development of individuals focuses on caring for others and achieving some in group reciprocity. This element gives more meaning to Kohlberg (1963) stating that individual's definition of good and right shifts from "*a simple clarification of outward acts(stage1) and their related consequences (stage 2) to intentions of "inner attitudes of liking and helping other people*" (p. 9). Examples of this element stated by Cohen and Morse (2014) includes, sincerity, fairness, greed avoidance, and modesty etc. which are elements found in Honesty-Humility.

The second element of Ability suggested by Cohen and Morse (2014) in the framework describes how individual differences are an indication of their abilities to act ethically and abstain from unethical acts. Ability as suggested in the framework by Cohen and Morse (2014) is made up various traits related to the regulation of an individual's behavior. Thus, specifically referencing behaviors that in the short-term may bring positive consequences but detrimental in the long-term for both the individual and others (2014, p. 9). Though at the stage 1 of Kohlberg's theory of moral development, individuals act or behave morally to avoid punishment, it is further influenced at the stages 2 and 4 where it is applied more widely without much emphasis on punishment. At stage 2 individuals regulate their behavior through deal making though it's usually for their own benefit. At stage 4, individuals rather maintain law and order as well as avoiding the resultant guilt within a

social environment. This means an individual may act in a way to bring about positive longterm benefits rather than short term negavite consquences. Examples of such traits cited by Cohen and Morse (2014) includes Conscientiousness, self-control, and consideration of future consequence etc.

The last element, which Cohen and Morse (2014) describe, is identity which refers to "*a disposition toward viewing morality as important and central to one's self-concept*" (2014, p. 10). This element basically describes the individual differences that show the deep concern about individuals being a moral person and viewing themselves in such a manner. According to Cohen and Morse (2014) the differences between how individuals internalize moral identity shows the extent to which morality is crucial to the individuals private sense of self. Highly internalized moral identities in individuals forms the basis of the sense of who they are around a set of moral trait association i.e. individuals want to be caring, kind, honest, hardworking, fair and compasionate etc. An individual with higly internalized moral identity values the consideration of others and self-regulation. This element seem to fall within the stages 5 and 6 of the moral development theory as suggested by Kohlberg. At these stages, individuals exhibit some form of self-accepted moral principles. Individuals identity may be shaped by appealing to an ideal, shared ideas and importance of moral ideals or principles which serves to benefit their social surroundings. Cohen and Morse (2014) however, concede that this framework represents a broad conceptual grouping and that traits related to moral character can be found in more than one of the elements proposed.

The table below shows a relation between the elements and moral stages.

Table 1:Elements of Moral Character

Elements	Features	Moral Stages
Motivational	Considers: 1. Needs and wants of others 2. How actions affect others	stage 3
Ability	1. Ability to act ethically and refrain from acting unethically	Stage1,2and 4

	2. Regulation of an individual's behavior	
Identity	1.Viewing morality as important	Stages 5 and 6
	2. Internalize moral identity	

Musser and Leone (1992) in their definition of moral character suggests that it consist of features that are relatively stable which enables individuals to take moral actions depending their situation. The definitions of Cohen and Morse (2014) and Cohen et al. (2014) also suggest that moral character consists of certain characteristics which involves emotions, thoughts and behavior when faced with taking actions in an ethical vs. unethical situations. Though they are derived from different perspectives, there is some agreement that the moral character of an individual is made up of certain features or characteristics that enables them to act when faced with different situations which borders on morality or ethics.

Moral Character in this thesis is defined as consisting of several layers of moral and ethical beliefs that are developed through socialization from early stages of development and affects the behavior and decisions of individuals.

This thesis takes a position that the layers of moral character are internalized or transferred at an early stage of moral development as suggested by the social learning theory and Kohlberg's moral development theory. They may not be stable and as such may evolve with time and the situation that individuals find themselves. For example, an individual may at the early stage internalize that he/she must adhere to rules and regulations wherever they find themselves. But with time and depending on the situation, they might find the need to shift and change such internalized features and take actions which are contrary. For example, Edward Snowden and Chelsea Manning, were fully aware that the jobs they were involved in required a high level of confidentiality. They may have initially internalized obedience to rules and regulations but with time and the situation they found themselves, took a different action by leaking classified information.

Research by Cohen and Morse (2014) indicate that there is no gold standard instrument for measuring moral character but there has been a multitude of

personality scales and intergrity tests developed and being used to test traits individually. Examples includes, HEXACO-60 Personality Inventor Ashton and Lee (2007), Self-Importance of Moral Identity Scale (Aquino & Reed, 2002), Ethics Position Questionnaire (Forsyth, 1980)etc. However, for this thesis, the Multidimensional ethics scale (MES) developed by Reidenbach and Robin (1990a) would be used to measure for Moral Character.

2.5 Deterrence Theory

Deterrence Theory described by Beccaria (1963) posits that individuals may exercise control of their behavior by accessing the cost of committing a criminal offence to the gains before deciding on the said criminal conduct. This means that an individual would not commit a criminal offense if they know or feel that the punishment for the crime is not worth pursuing such action. Further research on this theory by Gibbs (1975) places focus on the legal penalties and explains that the greater the perceived certainty, severity, and swiftness of the penalties associated to a criminal offence or act, then individuals are more likely to be deterred from such acts. Pratt, Cullen, Blevins, Daigle, and Madensen (2006) on deterrence theory also posits that individuals weigh both the cost of formal and informal punishments in deciding on whether to commit a crime or not.

Hu, Xu, Dinev, and Ling (2011) researched on whether deterrence works in reducing information security policy abuse by employees. The result of the data collected suggested that deterrence had no significant impact on the intentions by individuals to violate security policies. In their view, this somehow contradicts previous research about deterrence in information security and this proposes that deterrence alone cannot be effective in reducing employee information security violations. According to Hu et al. (2011), this confirms Tunnell (1990) study in criminology that most offenders usually think more about the positive consequences and less about negative consequences. The study states that about 60% of the offenders interviewed confirmed that they do not think about the legal implications of their behavior before they commit the crime.

Moral development theory by Kohlberg and Hersh (1977) suggest that at stage 1 of the development process, individuals behave in a moral way out of fear of being punished, Again, an authority basically determines what is right and therefore the right thing for individuals to do is to obey authority and avoid punishment. But there is a shift from this kind of obedience orientation at the stage 2 of moral development where individuals begin to learn that a single authority does not determine what is right or wrong and as therefore see different sides of issues. This translates into individuals advancing their own interest through exchanges and deals. Furthermore, as the individual develops to the higher stages i.e. stage 3, caring for individuals and achieving group reciprocity is developed and this translates to having motives that are well intentioned towards other people. Furthermore, at stage 4, an individual develops an orientation of duty, respecting authority and maintaining social order and the belief that whatever defends the law is good. At Stage 5, individuals begin to realize that at some point what is legal may not be moral and what is moral may not also be legal. Even though there is a strong belief that laws must be obeyed, there is also a belief that laws may be changed through due process and this translates to individuals emphasizing more on basic rights and democracy that allows everyone a say. At stage 6, there is the indication that individuals make moral judgments based on universal ethical principles and this forms the behavior of individuals when the law violates such principles.

According to Musser and Leone (1992), the social learning theory has suggested that character is internalized at the early stages of moral development through the social environment an individual finds themselves and this forms the basis of moral character. But as individuals develop through the stages, these characters traits, habits or disposition may change as they begin to interact with other social environments. This these traits, habits or dispositions may still be part of an individual but not be stable and as such this may alter their actions and moral judgements. An individual may take certain actions depending on the situation they find themselves. The action taken may serve their own personal interest, protect or defend laws, appeal to a personal or societal principle which has

been internalized or become a trait or habit formed from the early stages of moral development. Hu et al. (2011) also argues that an individual is influenced by their moral beliefs, self-control, and the assumed deterrence when making a cost/benefit analysis on violating information security policies.

2.6 Research Model and Hypotheses Development

This subsection briefly discuses the relations between the various concepts and presents the research model and hypotheses.

2.6.1 Moral Character and Insider Leaks

This thesis posits that moral character is consists of several layers of moral and ethical beliefs which are developed from the early stages of moral development through socialization as suggested by the social learning theory and Kohlberg's moral development theory. As described by Musser and Leone (1992), moral character consists of features that are relatively stable which enables individuals to take moral actions depending on their situation. From Kohlberg's moral development theory, individuals internalize different kinds of moral features as they interact with different social environments. This means that these features, traits, habits or dispositions may not be stable and as such may evolve with time and the situation that individuals find themselves. For example, the obedience and avoiding punishment is internalized at an early stage (stage 1) but individuals may choose to act on this kind of internalization based on the situation they find themselves. The same applies to all the stages of moral development as proposed by Kohlberg, individuals may acquire moral and ethical beliefs of respect for rule of law(Stage 6), rights of individuals (Stage 6), helping individuals(Stage 6) as well as pursuing things that benefits them (Stage 2) but with time

and the situation, these individuals may act contrary to such moral and ethical beliefs.

For example, Snowden, Chelsea Manning, and Reality Winner, were employed as government contractors where they knew they would access highly confidential information and confidentiality was a major requirement. They may have through their social environment internalized how to keep confidential information, loyalty, and obedience to authority which occurs when individuals develop morally. When the above-mentioned individuals found themselves in a situation that may have been contrary to such internalized principles, they took actions to leak such information thereby disobeying the law, breaking trust and loyalty between them and their employers.

This thesis therefore takes a position that moral character in line with Kohlberg's moral development consist of dimensions which could influence an insider's view on leaking sensitive information. These dimensions are, Justice (Moral Equity), Utilitarianism, Contractualism, Relativism and Egoism.

The dimension of Justice suggest actions are taken based fairness and equal treatment of people and this aligns with Stage 6 of moral development by Kohlberg. Utilitarianism also suggest that actions are taken based on what individuals believes in the best interest of people and this also falls within stage 5 of moral development. For Contractualism as a dimension, actions are based on obeying authority, rules and regulations that forms part of one's social environment and this falls in stage 4 of moral development. Relativism, on the other hand suggest that actions of individuals must be in conformity to certain ethical rules of one's social environment and is in line with Stage 3 of moral development, The last dimension, Egoism which falls in stage 2 of moral development, suggest individuals actions are based on their own selfish interest etc.

Hence this thesis hypothesizes that:

  H1a- Justice as a dimension of moral character influences positively an insider's view on leaking sensitive information.

 H1b- Utilitarianism as a dimension of moral character influences positively an insider's view on leaking sensitive information.

H1c- Contractualism as a dimension of moral character influences negatively an insider's view on leaking sensitive information.

H1d- Relativism as a dimension of moral character influences positively an insider's view on leaking sensitive information.

H1e- Egoism as a dimension of moral character influences positively an insider's view on leaking sensitive information.

2.6.2   Insider Views on Deterrence and Moral Character

Social learning theory has suggested that character is internalized at the early stages of moral development through the social environment an individual finds themselves and this forms the basis of moral character. While individuals develop, character traits, habits or disposition may change as they begin to interact with other social environments. These traits, habits or dispositions may still be part of an individual but not be stable and as such this may alter their actions and moral judgements. Deterrence theory suggest that individuals would weigh the cost and benefits of committing a crime before they take the action. This suggests that if an individual internalizes, obedience and avoidance of punishment, loyalty, respect for authority, rules and laws, he or she is expected to take these traits into consideration when deciding to commit a crime. But as has been outlined already, these character traits may change with time and the situations or social environment an individual finds themselves and deterrence policies that apply when an action must be taken may not be a hinderance. These internalized traits or habits may differ both culturally and among families. This may determine how individuals weigh the cost and benefits of their actions against crime that is to be committed. Hu et al. (2011), also states that an individual is influenced by their moral or ethical beliefs, self-control, and the assumed deterrence when making a cost/benefit analysis on violating information security policies This thesis therefore hypothesizes that:

H2 –Dimensions of moral character negatively influence the insider's ethical awareness on deterrence when taking an action to leak sensitive information.
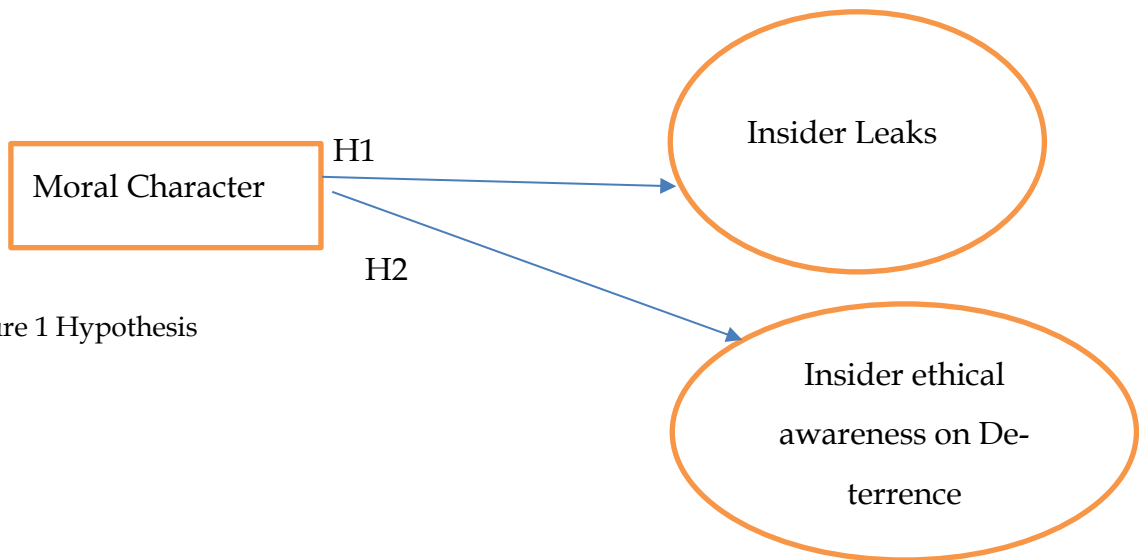
Figure 1 Hypothesis

2.7 Summary of Literature Review

This chapter described the definitions of insiders and insider threats, deviant behavior and how information leaks are conceptualized. This chapter also explains the theories; moral development theory and deterrence theory, that form the basis of this study. Furthermore, the link among insider's moral character and their views on information leaks as well as their ethical awareness on deterrence is also explained. These links are stated in the form of hypotheses and synthesized into a research model that will guide the empirical part of the study.

3   RESEARCH METHODOLOGY

3.1   Research Design

The objective of this thesis was to understand how Moral Character influences insiders within an organization to leak sensitive information. To achieve this, a survey was used as the main research design. Heiman (1998) states that surveys are used to describe the behavior of a narrow or wider population. In other words, surveys can be used in research to understand attitudes, perceptions and behaviors or characteristics of a group (Creswell, 1994).

Fink (2002) explains that the results of the survey based on a sample can be generalized to a larger population, but it is important to use a larger population sample to improve the accuracy of the results and a sample that is unbiased will greatly improve the accuracy of the outcome. Surveys using questionnaires allows the researcher to collect data from a larger population within a short period of time and at a less cost, though the issues with surveys is that some respondent may take a longer time to respond or not even respond at all.

3.2   Quantitative Research.

Quantitative research method was used for data collection and analysis in this thesis. Yilmaz (2013) defines quantitative research as a research that explains a phenomenon according to numerical data analyzed by means of mathematical or statistical methods. Quantitative method is used to test theories by examining relationships among variables. These variables can be measured on instruments and the numbered data analysis using statistical procedures. Using of quantitative methods stresses on measuring of changes in phenomenon, a situation of an issue (Kumar, 2019). According to Creswell (1994), data collection methods that can be used in quantitative research approach includes, surveys and experiments.

The data collection for this thesis was conducted through paper and email attachment surveys which produced numerical data. The use of surveys was a good fit for this thesis because a theory was used to test a human problem which was measured with numbers and analyzed using statistical tools to explain the problem. The major advantage of quantitative method is that it allows researchers to measure the responses of participants to a limited set of questions which helps compare and analyze the data using statistical tools (Yilmaz, 2013).

3.3   Vignette as a Survey Method.

Vignettes are stories that are used to understand and analyze the beliefs, perceptions and behavioral intentions of people. Vignettes are presented in a form of short stories where respondents are asked to analyze and respond to hypothetical situations of the characters involved (Hughes & Huby, 2002).

Vignettes can be administered in the form of images, text or other form dilemmas to which respondents in a research are asked to analyze and respond to Hughes and Huby (2002). The use of vignettes in research has gained popularity in many disciplines over the past 50 years and has been adopted and used in educational research, social research, occupational therapy, psychology and nursing (Bradbury-Jones, Taylor, & Herber, 2014). According to Hughes and Huby (2002), some advantages of using vignettes in research is that, they are less expensive and can be quickly conducted. Also, the use of vignettes in answering quantitative research questions can produce large amount of data from a large participant group. Finch (1987) further adds that the use of hypothetical characters in vignettes helps to distance respondents from the issues and how this may reflect their personal experiences.

Pitfalls associated with the use of vignette as outlined by Hughes and Huby (2002) includes the fact that, the research topic, the characters and stories being used must be relevant to the respondents in the research else there can be problems. Also, the storyline and the characters in vignettes must be believable and must be easy to follow and understand (Finch, 1987). For example, when teachers

are required to respond to vignette on military related subject, they may not understand certain terminologies and follow the stories.

The use of vignette in this study was appropriate because this thesis sought to elicit the moral character of individuals in situations related to information security, especially on the leaking of sensitive information. The vignette was made up hypothetical situations involving individuals considering or taking an action to leaking of sensitive information. Such forms of vignette are described by Atzmuller and Steiner (2010) as *"short, carefully constructed description of a person, object or a situation, representing systematic combination of characters"*. The dilemmas in the vignette were the same for all respondents to answer. The respondents of the vignette which comprised of both workers and students was a good fit in this thesis since it was assumed that workers handle or deal with sensitive information at their workplaces. It was also assumed that students have either dealt with sensitive information while they worked or interned in an organization. The stories were designed in a way that even students without work experience would be able to relate, understand and follow.

3.4 Sampling

The study was mainly distributed to students living in Jyväskylä, students and workers in various sectors in Ghana. The sampling design for this thesis was a combination of convenience and snowball sampling. Acharya, Prakash, Saxena, and Nigam (2013) defined convenience sampling as a sample, chosen by the investigator based on their proximity; i.e., they are at the right place at the right time. This method was chosen because the part of the questionnaires were paper based and part of the target sample were students living in Jyväskylä. The students were near and easier to recruit to voluntarily part take in answering the questionnaires. Whilst the volunteer students filled the questionnaire, they recommended other colleagues prompting the use of snowball sampling. Acharya et al (2013), explained snowball sampling as a procedure where respondents are chosen by probability or non-probability methods and then

other respondents are obtained through information or referals by the initial respondents.

For the email attachment process, the main sampling method was by snowball sampling as the target sample which were students and workers in Ghana were not in close proximity. Some students and workers were chosen, sent the email with attachments explaining the thesis and questionnaire and were asked to refer other respondents who would be willing to answer the questionnaire. There were follow up discussions via email and skype with some workers and students who needed further clarification on the questionnaires and how to answer them. Participation was voluntary and there were no motivational packages such as gift vouchers used to attract respondent.

3.5 Data Collection

The Data collection process started in June 2018 and ended in December 2018. Data were collected through paper and email attachment. One of the reasons for using a paper survey was to meet the respondents in person and explain the objectives of the thesis and the questionnaires in detail for better understanding. Especially for the respondents in Jyväskylä, the paper option was crucial in meeting respondents who found the topic interesting and wanted better understanding to answer the questionnaire. Also, the paper survey offered an opportunity for those respondents with visual impairment who would have some problems viewing and answering on the computer monitors. The survey questionnaire was also attached via email and sent to respondents who were in Ghana and could not be reached in person. The objectives and questionnaire for the thesis were explained in detail to most of the respondents through emails and video calls. This served as a faster way of collecting data from these respondents as they were also a critical target of this thesis.

3.5.1 Population

The sample consisted of students living in Jyväskylä and Ghana pursuing different levels of education and of different age, sex, nationality, political views and experience levels in the field of work. Workers from different fields in Ghana, including Bankers, Pharmacists, IT, Engineering, Human resource etc. also formed a major part of the population sample for this study. Students who participated in this study have had working experience in various positions in different organizations through internships or employment. With such knowledge and experience of structures and processes in organizations, they can be classified as insiders

3.5.2 Background Information of Respondents

Out of about 200 questionnaires distributed, only 70 were received fully answered. The breakdown is as follows:

Table 2 Background Information

Background Information of Respondents Number of Respondents = 70			
Gender Distribution	Female		Male
	35		35
Age Distribution	18-24	25-34	35-44	45-54
	18	40	9	3
Education	Bachelor's Degree	Doctoral Degree	Master's Degree	Professional Degree
	31	4	30	5
Citizenship	Non-Finnish		Finnish
	58		12
Profession	Students		Working Professional
	33		37

3.6 The Survey

The survey consisted of a vignette, the Multidimensional Ethics Scale (MES) which was used to measure moral character. The first page of the vignette collected the background information of respondents such as, Age, Sex, Education, Citizenship, Work Experience, Political Views, Language.

3.6.1 Moral Character

Multidimensional ethics scale (MES) presents a deeper understanding of motivations individuals adopt in making ethical decisions. Moral judgements are presumed to be made by individuals using more than one justification and these justifications are situational and different. The MES is therefore made up of multiple items which helps in identifying the belief systems that individuals use to make decisions (Reidenbach & Robin, 1990b).

The MES originally developed by Reidenbach and Robin (1988), used a 33-item scale to analyze five moral philosophies. These moral philosophies are: 1. Moral Equity (Justice), 2. Contractualism, 3. Utilitarianism, 4. Ethical Relativism, 5. Egoism. The scale was revised into an 8-item measure which measured three of the moral philosophies namely: Moral Equity (Justice), Contractualism and Relativism. Reidenbach and Robin (1990b). The scale was further modified by Cohen et al. (1993, 1995, 1996) into a 12-item which measured all the five moral philosophies.

In order to measure if moral character motivates insiders to leak information, three scenarios were developed that required respondents to analyze an action taken by hypothetical characters to leak sensitive information. The scenarios were set in different working enviroments. The work environments included: Medical Records, Email and Phone records and Software Analyst.

In each scenario, respondents were given the background information which represented the dilemma and an action taken by the hypothetial character. In two of the scenarions (Medical Records, Software Analyst) the hypothethical characters defied their confidentiality agreements and leaked sensitive

information. In the other scenario (Email and Phone records), the character respected the confidentality agreement and did not leak the information. The action taken by the hypothethical characters was consistent with research that had been conducted using the MES and that ensured that all respondents asnwered the same dilemmas. Responents after analysing the scenarios and actions were presented with with three types of responses. They first response was to complete a 13-item measure which represents all the 5 moral philosophies explained in Table 3 below. The items were measured using a 7-point Likert-type scale, with lower responses indicating that the actions were less consistent with the underlying philosophies.

The second type of responses measure the behavioral intentions of respondents. Respondents were asked to indicate the probability of they and their peers taking similar actions described in the scenario. This was measured using a 7-point Likert-type scale where respondents indicated how high or low, they would take similar actions, Higher responses indicated a high likelihood of taking similar actions and vice versa.

The third type of responses was to measure the ethical judgements of the respondents. Respondents were to analyze the actions taken in the scenario and decide of the action was ethical or unethical using the 7-point Likert-type scale with lower responses indicating the action was unethical and higher responses indicating it was ethical. The MES questionnaire is illustrated in Appendix 1. Riemenschneider, Leonard, and Manly (2012), explains that the MES has three dependent variables which are tested individually. These are Ethical Awareness, Individual Intention and Peers Intention. This thesis however tested for Individual Intentions for insider leaks and Ethical Awareness for their views on Deterrence policies. and it is defined in the table below.

Table 3 Dependent Variable

Dependent Variables	Definitions	Measurement
Individual Intention	Refers to the extent to which an individual would perform an act. Cohen et al (2001)	One item measurement i.e. Probability of individual taken action High or Low. Cohen et al (2001) Between 1-7

Ethical Awareness	Refers to the extent an individual feels an action taken is either ethical or unethical. Cohen et al (2001)	One item measurement i.e. Ethical or Unethical (Shawver & Sennetti, 2009) Between 1-7

The Multidimesional Ethics Scale (MES) has been applied to investigate college students ethical judgments and behaviour intetions in dilemas that were ICT related based on the the five (5) philosophies. The ethical dilemas measured issues that were based on Plagiarism, Piracy and Privacy (Jung, 2009). Riemenschneider et al (2012), applied the MES in testing the the behaviour of students when using technology. The study focused on students evaluating behavorial scenarios to test their opinions on questionable academic behaviour. The MES has also been applied and tested in accounting by Cohen et al. (1993, 1995, 1996) etc.

3.6.2   Insider Leaks

3.6.2.1 Insider Leaks for Moral Character (MES)

Moral Character in this study consists of several dimension namely , Justice (Moral Equity), Utilitarianism, Relativism, Contractualism and Egoism. It is assumed the actions of individuals are influenced by these moral philosophies. Furthermore, these dimensions may influence either positively or negatively on insiders' view on leaking sensitive information.

To test for how these dimensions influences insider leaks, the sum of these dimensions across the 3 scenarios would be tested on the dependent variables, i.e. Individual Intentions. This would give an understanding of how moral character influences the action of insiders to leak information .

3.6.3   Deterrence

3.6.3.1 Deterrence for Moral Character (MES)

Deterrence measures are designed to prevent employees from committing acts against an organization that is detrimental to its security and stability. These measures are usually in the form of sanctions such as jail terms, lawsuits, fines,

termination of employment contract etc. Employment contracts usually explain the rules and regulations to employees and the deterrence measures that employees face when they breach the rules and regulations. It is expected that employees would weigh the cost and benefits of these measures before they act in ways that breach their terms of contract.

Respondents were to analyze the scenarios and determine if the deterrence measures were perceived as an important factor to them in taking similar actions. Deterrence measures such as termination of employment, prosecutions, prison terms were suggested in the questionnaire to be considered by respondents. The ethical awareness of insiders was tested to understand insiders' view on how ethical or unethical their actions were to ignore deterrence measures in relation to their intentions to leak information . In this regard, ethical awareness in the scenario were used as proxy measures for deterrence.

The scale item measuring ethical awareness was tested on dimensions of moral character to determine whether insider's ethical views on deterrence was a factor when taking an action to leak sensitive information.

3.7 Statistical Analysis

The statistical analysis method that was used in this thesis is R statistical programming Language. R has a programming environment which uses built in fucntions as well as providing various fuctions that enables statistical methods to be fitted in a straight forward manner. The application also has the ability to assist in creating visual representaions of the statistiucal results with the asistance of graphing functions. Statistical modeling functions found in R include, Linear models, analysis of variance, generalized linear models etc. (Grunsky, 2002).

3.8 Ethical Considerations

The most important ethical issue that this thesis took into consideration mostly concentrated on the informed consent of respondents. All respondents through paper and email were briefed about the purpose and objectives of this thesis and were provided with consent forms to indicate their willingness to participate. They were assured about the confidentiality, anonymity and safety of the information that was provided. Respondents were also assured that the information collected would be used for only academic purposes i.e. this master's thesis and responses would be carefully disposed of after the study.

4 ANALYSIS AND INTERPRETATION

4.1 Introduction

This section of the thesis analyses and discusses the results of this study. The analysis and discussion are based on the results from the questionnaire and deals with quantitative analysis of the data.

To analyze the MES questionnaire, a factor analysis was first conducted to identify the common factors and explain the order and structure among the measured variables (Watkins, 2018). Previous studies using the MES supported a 4-factor model. The MES was initially designed to examine 5 moral philosophies. The study and factor analysis conducted presented mixed results. Further confirmatory factor analysis was conducted, and a 3-factor model was devised (Reidenbach & Robin, 1990a). A 4- factor dimension was later supported by studies conducted by Cruz, Shafter, and Strawser (2000) and Jung (2009).

In this study, an intitial parallel analysis using minimum residual (minres) was conducted to estimate the communality of values before the actual factor analysis was conducted. The number of factors suggested was 3 and showed consistency with the 3-factor model by Reidenbach and Robin (1990a).

 Factor analysis was further conducted using minimum residual (minres) and Oblique rotation method specifically oblimin with the assumption that all the factors were correlated. The analysis suggested factors between 4 and 6 and a 4-factor dimension model was adopted. The 4-factor model was consistent with studies by Cruz et al. (2000) and Jung (2009). The factor loadings of the factor analysis more than 0.31 and not loading on more than one factor was carefully considered and a cut off was established. The results of the factor analysis with the dimensions of moral character are shown in the Figure 2 and Table 5 below.

Figure 2 Scree Plot

Parallel Analysis Scree Plots
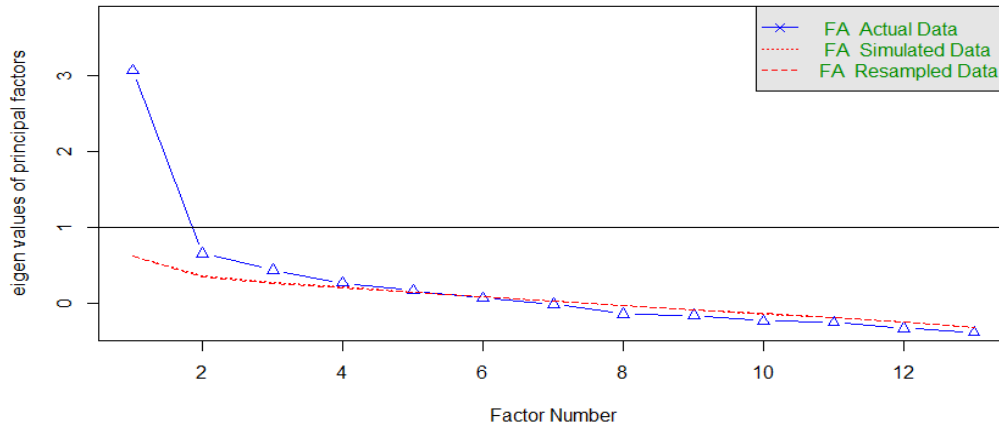
Table 4 Factor Analysis

Factor Analysis							
Factors	**MR1**	**MR2**	**MR3**	**MR4**	**h2**	**u2**	**com**
Just	**0.87**	-0.06	0.01	0.05	0.77	0.23	1.0
Moral	**0.64**	0.12	0.17	-0.01	0.58	0.42	1.2
Compassion	**0.38**	0.30	0.24	-0.05	0.43	0.57	2.7
Culturally Acceptable	0.17	0.01	**0.67**	-0.08	0.55	0.45	1.2
Traditionally Acceptable	-0.01	-0.01	**0.79**	0.07	0.65	0.35	1.0
Personally Satisfying	-0.04	**0.75**	-0.02	0.01	0.55	0.45	1.0
Violates Promise	0.23	**0.35**	-0.16	0.03	0.17	0.83	2.2
Fair	0.31	-0.01	-0.10	**0.60**	0.51	0.49	1.6
Family Acceptable	-0.15	0.08	0.27	**0.56**	0.44	0.56	1.7
Benefits/Harm	0.01	0.27	-0.03	**0.33**	0.23	0.77	1.9
Violates Contract	-0.01	0.01	-0.07	0.23	0.05	0.95	1.2
Self-Promoting	-0.07	0.17	0.18	0.23	0.16	0.84	2.9
Greatest Utility	0.24	0.21	0.09	0.17	0.24	0.76	3.1
Communality (h2) – This is the variance accounted by common factors							
Uniqueness(u2)- Proportion of variance that excludes common factors							
Complexity (com)							
Yong and Pearce (2013)							

This study measured insider leaks in information security and applied a 13-scale item representing all the 5 moral philosophies. In the results above in Table 4, oblimin rotation was performed on the data. Using the rotated factor loadings, interpretation of the factors are as follows:

- Just (0.84), Moral (0.64), and Compassion(0.38) have large positive loadings on factor 1, this factor describes the Justice dimension. This describes how insider views are influenced by their interpretation of justice through their moral principles

- Culturally Acceptable (0.67), and Traditionally Acceptable (0.79), have large positive loadings on factor 3, This describes the Relativism dimension. This factor describes how insiders' view are influenced by their own interpretation of good behavior or right action rather than accepted norms of the society.

- Personally Satisfying (0.75) and Violates Promise (0.35) have large positive loadings on factor 2, This factor describes the Egoism dimension, this factor describes how insiders' view are influenced by pursuing their own personal interest.

- Fair (0.60) and Family Acceptable (0.56) and Benefits/Harm (0.33) have large positive loadings on factor 4. This factor describes Utilitarianism dimension .This factor describes how insiders' view are influenced by their own interpretation of what fair is and what maximizes benefits and minimizes harm for all in the society

- Violate Contracts ,Self-Promoting and Greatest Utility which belonged to Contractualism, Egoism and Utilitarianism dimensions did not load on any of the factors and as such were dropped.

Table 5 Descriptive Analysis

Means, standard deviations, and correlations with confidence intervals						
Variables	M	SD	1	2	3	4
Justice	40.50	9.67				
Relativism	26.83	6.99	.52** [.33, .67]			
Utilitarianism	39.54	8.91	.48* [.27, .64]	.37** [.14,.55]		
Egoism	13.91	4.12	.36** [.13, .55]	.26* [.03, .47]	.51** [.32, .67]	

Adequacy Test: An adequacy test showed that the root means square residuals (RMSR) was 0.03 which is acceptable since the value should be closer to 0.

Reliability Test: A reliability test was conducted using the significant factors in the dataset based on the factor analysis. The Cronbach's α (raw_alpha) for the dimensions were 0.63 for Justice, 0.68 for Relativism, 0.64 for Utilitarianism, 0.75 for Contractualism and 0.70 for Egoism.

Table 6 Raw Alphas for Dimensions

Variables	raw alpha
Justice	0.63
Relativism	0.68
Utilitarianism	0.64
Contractualism	0.75
Egoism	0.70

Correlation: This was also conducted to establish the association among the independent variables (dimensions). A tabular representation of the correlation among the variables shows that all the variables were positively correlated. Table 7 below show the correlations among variable.

Table 7 Correlations Matrix

Correlation Matrix									
Variables	**J**	**F**	**M**	**FA**	**CA**	**TA**	**PS**	**B/H**	**C**
Just (J)									
Fair (F)	0.40								
Moral (M)	0.63	0.34							
Family Acceptable (FA)	0.14	0.40	0.18						
Culturally Acceptable (CA)	0.38	0.16	0.46	0.18					
Traditionally Acceptable(TA)	0.30	0.18	0.38	0.34	0.61				
Personally Satisfying (PS)	0.06	0.13	0.19	0.24	0.16	0.15			
Benefits/Harm (B/H)	0.11	0.29	0.14	0.24	0.13	0.17	0.24		
Compassion (C)	0.45	0.21	0.48	0.22	0.36	0.38	0.30	0.15	

4.2 Hypothesis Testing

4.2.1 Moral Character and Insider Leaks

The Hypotheses was tested to evaluate how the dimensions of moral character in individuals influences an insider's views on to leaking sensitive information (Model 1) and ethical awareness on deterrence (Model 2).

These tests are presented in table 8 below.

Table 8 Regression Analysis

Dimensions	Model 1	Model 2
(Intercept)	0.45	4.31
	(2.82)	(3.29)
Justice	0.17 **	0.15 *
	(0.06)	(0.07)
Relativism	-0.02	0.04
	(0.09)	(0.10)
Utilitarianism	0.17 *	0.03
	(0.08)	(0.09)
Egoism	0.04	0.05
	(0.14)	(0.16)
Age25-34	-0.91	-0.47
	(1.14)	(1.33)
Age35-44	1.58	-0.41
	(1.87)	(2.18)
Age45-54	4.91	1.53
	(2.60)	(3.03)
R^2	0.34	0.15
Adj. R^2	0.26	0.05
Num. obs.	70	70
RMSE	3.92	4.58

*** p < 0.001, ** p < 0.01, * p < 0.05

The analysis shows mixed results. Here, each of the results is discussed and summarized in Table 9 below. First, hypothesis 1a (H1a) was tested to evaluate how the dimension of Justice influences an insider's view on leaking sensitive information. The result shows that Justice significantly and positively influences an insider's view on leaking sensitive information.

Second, hypothesis 1b (H1b) was tested to evaluate how utilitarianism as a dimension of moral character influences an insider's view on leaking sensitive information. The result shows that utilitarianism has a positive and significant influence on an insider's view on leaking sensitive information.

Third, Hypothesis 1c (H1c) which involved contractualism dimension was not supported in the initial factor analysis since the scale items had lower loadings. This is consistent with studies by Cruz et al (2000) and Jung (2009) of the 4-factor model.

Fourth, Hypothesis 1d (H1d) was tested to examine how relativism influences and insider's view on leaking sensitive information. From the analysis, this dimension was not a significant influence on an insider's view on leaking sensitive information.

Fifth, Hypothesis 1e (H1e) was tested to understand how egoism influences insider's view on leaking sensitive information. The analysis indicate that egoism was not a significant influence on an insider's view on leaking sensitive information.

Table 9 Summary of Hypothesis and Findings

Hypothesis	Findings
H1a- Justice as a dimension of moral character influences positively an insider's view on leaking sensitive information	Supported
H1b- Utilitarianism as a dimension of moral character influences positively an insider's view on *leaking sensitive information*	Supported
H1c- Contractualism as a dimension of moral character influences negatively an insider's view on leaking sensitive information	Not Supported
H1d- Relativism as a dimension of moral character influences positively an insider's view on leaking sensitive information	Not Supported

H1e- Egoism as a dimension of moral character influences positively an insider's view on leaking sensitive information	Not Supported

4.2.2 Moral Character and Deterrence

Hypotheses 2 was tested to understand how the moral character dimensions of an insider influences the insider's ethical awareness on deterrence measures in relation to his/her intention to leak information. The result indicates that only the justice dimension had a significant and positive influence on an insider's ethical awareness on deterrence measures with regards to information leak.

Table 10 Hypothesis 2 Findings

Hypothesis	Findings
H2 – Dimensions of moral character negatively influence the insider's ethical awareness on deterrence when taking an action to leak sensitive information	Not Supported

The diagnostics of the Regression analysis were done, and no problems were detected.

4.2.3 Common Variance Method

One of the concerns of cross-sectional studies is the possibility of common variance methods affecting the results. The MES uses a scale of rating responses between 1-7. This can affect the results of the study as some respondents may choose to rate the scale using only lower rating while others may also choose to use the only higher rating. This may create response style biases as they may inflate the estimates and the reliability of the measures. This could further create a factor analysis that may be misleading and thereby rendering the correlation and regression analysis problematic.

5 FINDINGS AND IMPLICATIONS OF STUDY

5.1.1 Moral Character and Insider Leaks

The findings of this thesis make several relevant contributions into factors that motivates insiders to leak information. The results confirm that some dimensions of moral character influences insider's view on leaking sensitive information. The dimensions of moral character as described , show that insider's views are influenced in accordance with the different stages of moral development as described by Kohlberg (1976).

Justice Dimension

Justice dimension of Moral Character falls within the stage 6 of Kohlberg (1976) theory of moral development. At this stage individuals interpret what is right based on their own chosen moral and ethical principles such as, being impartial, respect for all and treating each other equally. The result shows that the respondents viewed the scenarios through their own moral perspectives to make decisions whether to leak information. Hence, an insider's view on leaking information is influenced by the individual's interpretation of justice through his/her own moral principles.

This enforces the notion by Kohlberg (1976), that, morality is an ethical principle people interpret on their own. The result is very significant and gives indication that principles of justice, equality and respect for all people influences insider's decision to leak information. In the case of Edward Snowden for example, he indicated to the Guardian newspaper that he felt disillusioned by certain events he saw when he was stationed in Geneva. This means, he saw that secret surveillance on individuals without their knowledge was unethical and morally wrong and was against the fundamental human rights to privacy. Again, those actions in his view contravened laws that made equality, respect for all as a priority. These moral underpinnings possibly influenced his actions to leak the information to the public.

Utilitarianism Dimension

The Utilitarianism Dimension which falls within the stage 5 of moral development theory by Kohlberg (1976) suggests that right action is interpreted based on individual rights and standards agreed upon by the society. In other words, the actions that individuals take are based on what they deem would bring the greatest good to people. This dimension positively influenced insider's view on leaking sensitive information. This indicates that insiders would leak information based on their opinions of how their decision would bring the greatest good to the people involved as well as the society. Furthermore, in this dimension, actions of individuals to leak sensitive information may be because insider's might consider their acts to maximize benefits while minimizing harm. This suggests the individuals would decide based on their own values and opinions to act in a way that would bring the greatest benefits to all in the society. A typical example of how this dimension influences leaks is the quote from the guardian attributed to Edward Snowden which states "*I don't want to live in a society that does these sort of things… I do not want to live in a world where everything I do and say is recorded.*", This underscores the point that Snowden might have perceived secret surveillance other counter intelligence activities within the CIA as being detrimental to the people affected and the society as a whole. In another quote attributed to Snowden , " *I realized that I was part of something that was doing far more harm than good.*" This suggest he might have perceived that the actions being taken by the CIA and his government brought about more harm than benefits and that he needed to act in a way that will bring about the greatest good by exposing what he in his opinion as wrong doings.

Relativism Dimension

The Stage 3 of Moral development theory by Kohlberg suggests that intentions are the basis for judging behavior. At this stage , good behavior is determined by a universally agreed ethics code by the society and as such individuals are supposed to abide by it . The dimension of Relativism is found within this stage.

This dimension showed a negative influence on insider's view on leaking information and thus was not supported in this study. The result indicates that an

individual would act to leak sensitive information even though it might not be an approved act of behavior within a culture or a society. For example, in the case of the Watergate scandal, FBI agent W. Mark Felt opted to leak information about the governments involvement in order to expose a cover up. As part of law enforcement his job is to investigate crime and expose corruption. In this case where their efforts were being hampered by high people in the government, he felt the need to step out of the ethics and code of his job as an anonymous individual to leak the truth for the public to know. His actions were regarded by some members of the FBI and the society as acting in a good way to protect the country and its constitution. Others also felt he had breached the confidentiality clauses and agreements surrounding his work. By leaking in an anonymous manner, it indicates that not everyone in the community or culture may agree to a prescribed behavior and would act in a way that is contrary to the agreed behavior.

Egoism Dimension

The Egoism Dimension suggests that individuals act in ways that are beneficial to their interests. This dimension falls within the stage 2 of Moral development theory by Kohlberg. Egoism has been stated as a major cause of insider leaks. The result of this study has demonstrated that leaking for personal benefits is not a major factor that influences an insider's view on leaking information. Rather insiders are motivated or influenced by the need to bring some fairness, protect rights and ensure everyone is treated the same. Though, it can be argued that there may be some form of personal benefits in both justice and utilitarian dimensions, it does not have an impact on their intentions to leak information.

5.1.2 Moral Character and Deterrence

A major contribution of this study shows that Justice dimension which falls in stage 6 of the Moral development theory positively and significantly influences insider's ethical awareness on deterrence with regards to leaking of information. However, result from this study shows that individuals with high ethical view on justice are likely to leak information when situations demand so. Taking

the two results together, one can infer that, though insiders with high ethical view on justice may obey rules and regulations on deterrence policies, they may as well ignore such deterrence policies and leak information when heeding to deterrence policies conflicts with their views on justice.

In congruence, the deterrence theory by Beccaria (1963) suggests that individuals may exercise control of their behavior by accessing the cost of committing a criminal offence to the gains before deciding on the said criminal conduct. That suggestion was supported in this study. This does not support part of the study by Hu et al. (2011), that deterrence had no significant impact on the intentions by individuals to violate security policies. It supports the second part of the study that individual intentions are influenced by moral or ethical beliefs, self-control, and the assumed deterrence when an individual makes a cost/benefit analysis on violating information security policies. For example, Edward Snowden, Chelsea Manning and the other insider leaks cited in this study, were fully aware of the consequences their actions would bring yet, they went ahead to leak the information without regards to the deterrence policies.

Consistency of the Multidimensional Ethics Scale

Some of the dimensions of the MES are either supported or unsupported depending on the kind of studies being conducted. Earlier studies had support for only 3 of the dimnesions. In the studies conducted by Cohen et al (1993), and Jung (2009), Egoism dimension was not supported.The studies conducted by Cohen et al (1993), was in the area of accounting whilst Jung (2009) was on ICT ethics. In this study, Contractialism as a dimesions was not supported. This indicates further resreach need to be conducted on the MES to improve the scale.

5.1.3   Implications of the Study

This study investigates how moral character which is made up four dimensions (i.e., justice, utilitarianism, relativism and egoism) influence insider leaks. The findings indicate that only justice and utilitarianism dimensions directly influence an insider's view on leaking information, whereas only the justice dimension influences an insider's ethical awareness on deterrence policies in relation to

the intention to leak information. Interestingly, dimensions such as egoism neither had direct effect on an insider's view on leaking information nor on his/her ethical awareness of deterrence policies. Thus, when faced with a dilemma to leak information, an insider may act in ways which he/she perceives serve public interest rather than personal interest. Contrary to the views expressed in reports on information leaks and in IS research (e.g., Huth, Chadwick, Claycomb, & You, 2013), this study highlights the importance of the individuals view of justice and utilitarianism (public interest) on the insider's view on leaking information.

Researchers and organizations must shift from looking at leaks only from the perspective of being motivated by personal interest. Rather , there should be focus on understanding how moral perceptions and decisions varies amongst individuals and its impacts on organizational security policies.

Employers should focus on accessing the moral motivations of individuals by employing more of these moral dilemmas during job interviews to measure their moral judgments and actions.

The findings of this research also present an avenue for future research.

First of all, researchers can access how moral reasoning also influences the individual's decision to leak information, Secondly, how ethical awareness affects individuals' intentions to leak sensitive information can be examined.

Lastly, how each dimension of moral character as explained in the thesis could be used to further study novel ways of improving security polices in organizations with regards to moral characters and their effects on leaking confidential information.

5.1.4   Limitations of Study

There were several limitations that should be noted for this study and they are listed below.

1. The biggest challenge was getting the targeted number of respondents. Most of the students declined to participate in answering the questionnaire that

was distributed. Some of the reasons were that, the questionnaires were too much, and some found it difficult to understand how to answer it. This resulted in several questionnaires being returned unanswered or answered halfway therefore rendering it unusable.

2. For respondents in the working field especially in the city of Jyväskylä, though they were interested initially in the topic and questionnaire, all the questionnaires were returned unanswered with the biggest reason that they were busy and did not have enough time to answer the questionnaires. This resulted in a low number of working professionals in Jyväskylä taking part.

3. 200 questionnaires distributed both by paper and email and100 were returned. 70 was returned fully answered and 30 was discarded because they were either half-filled with a huge portion of required answers missing or were unanswered. This therefore rendered those questionnaires unusable for the purpose of this thesis

6 CONCLUSION

Little research has been conducted to understand how morality, specifically moral character of an individual influences their ethical awareness on deterrence policies and views on leaking sensitive information. This study examines individuals' view on leaking sensitive information using the multidimensional ethics scale. The findings from this study indicates views on leaking information are highly associated with moral principles. Insiders may act contrary to such principles when it conflicts with heeding to deterrence measures. It is hoped that further research can be conducted to understand how Peer intentions and ethical awareness also influences the problem of leaking sensitive information.

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APPENDIX 1- MES

Please carefully read and complete the questionnaire.

All information collected will be kept strictly confidential.

Gender:

Male	Female

Age range:

Under 18	18–24	25–34	35–44	45–54	55–64	over 65 years

Level of Education

	Professional Degree (Practitioner beyond bachelor's degree) (e.g., MD, M.B.A, Master of Art in Teaching, Master of Education, PhD in Information Systems etc.)
	Master's degree (In Academic Graduate School)
	Bachelor's Degree
	Doctoral Degree (In Academic Graduate School e.g. PhD, or Ed.D.)

Level of Education

	Professional Degree (Practitioner beyond bachelor's degree) (e.g., MD, M.B.A, Master of Art in Teaching, Master of Education, PhD in Information Systems etc.)
	Master's degree (In Academic Graduate School)
	Bachelor's degree
	Doctoral Degree (In Academic Graduate School e.g. PhD, or Ed.D.)

Political Views

	Very Liberal
	Somewhat Liberal
	Neither Liberal or Conservative
	Somewhat Conservative
	Very Conservative
	Other: Please Specify:

1. **Are you a Finnish Citizen?**

Yes	No

2. **Current Profession** ………………………………………………

3. **How long have you been in the profession** …………………………?

4. **Previous Profession**

Yes	No

Please Specify ………………………………………

Questionnaire

I- Johnny is working for a medical laboratory and discovers his sister's fiancé and husband to be medical record has a long list of being diagnosed with STDs and is currently being treated for another which his sister does not know. They intent to get married in a few days' time and Johnny is not happy about it. Johnny's job has a confidentiality agreement which includes prosecution for him and the medical laboratory he works for if patient information is leaked.

Action: Johnny defies the confidentiality agreement and emails his sister the medical records of her fiancé.

1- The action described above is:

Rate between 1 -7, where example 1 = Unjust and 7 is Just (Write down the number in the scale)

1. Just |____|____|____|____|____|____|____| Unjust
2. Unfair |____|____|____|____|____|____|____| Fair
3. Morally right |____|____|____|____|____|____|____| Not morally right
4. Not acceptable to my family |____|____|____|____|____|____|____| Acceptable to my family
5. Culturally acceptable |____|____|____|____|____|____|____| Culturally unacceptable
6. Traditionally unacceptable |____|____|____|____|____|____|____| Traditionally acceptable
7. Not self-promoting for the actor |___|___|___|___|___|___|___| Self-promoting for the actor
8. Personally, satisfying for the actor |___|___|___|___|___|___|___| Not personally satisfying for the actor
9. Produces the greatest utility |____|____|____|____|____|____|____| Produces the least utility
10. Minimizes benefits while |____|____|____|____|____|____|____| Maximizes benefits while
    izes benefits while
    while maximizes harm   minimizes
    harm
11. Does not violate an unwritten |____|____|____|____|____|____|____| Violates   an   unwritten   contract
    contract.
12. Violates an unspoken promise |____|____|____|____|____|____|____| Does not violate an unspoken promise
13. Shows compassion or caring |____|____|____|____|____|____|____| Shows no compassion or caring

Rate between 1-7, 1 = Low and 7 = High (Write down the number in the scale)

The probability that I would Undertake the same action is

High |____|____|____|____|____|____|____| Low

The probability that my peers would undertake the same action is

High |____|____|____|____|____|____|____| Low

The action described above is

Ethical |____|____|____|____|____|____|____| Unethical

II- Emily is the campaign manager for a presidential candidate who is the favorite to win. However, she discovers through emails and phone records and systems security checks initiated by her that some campaign staffers hacked and stole campaign strategies from the leading opposition candidate with the authorization from the Presidential candidate. Emily, however, notices that a well-planned effort to cover up the issue but she has been promised the position of chief of staff when the candidate is elected. Emily is faced with a lawsuit and breach of confidentiality if the information gets out, but she is thinking of sharing the information to avoid being complicit.

Action: Emily decides to respect the confidentiality agreement and not leak the information.

1- The action described above is:
Rate between 1 -7, where example 1 = Unjust and 7 is Just (Write down the number in the scale)

Just |____|____|____|____|____|____|____| Unjust

Unfair |____|____|____|____|____|____|____| Fair

Morally right |____|____|____|____|____|____|____| Not morally right

Not acceptable to my family |____|____|____|____|____|____|____| Acceptable to my family

Culturally acceptable |____|____|____|____|____|____|____| Culturally unacceptable

Traditionally unacceptable |____|____|____|____|____|____|____| Traditionally acceptable

Not self-promoting for the actor |____|____|____|____|____|____|____| Self-promoting for the actor

Personally, satisfying for the actor |____|____|____|____|____|____|____| Not personally satisfying for the actor

Produces the greatest utility |____|____|____|____|____|____|____| Produces the least utility

Minimizes benefits while |____|____|____|____|____|____|____| Maximizes benefits while

while maximizes harm   minimizes harm

Does not violate an unwritten |____|____|____|____|____|____|____| Violates an unwritten contract   contract.

Violates an unspoken promise |____|____|____|____|____|____|____| Does not violate an unspoken promise

Shows compassion or caring |____|____|____|____|____|____|____| Shows no compassion or caring

Rate between 1-7, 1 = Low and 7 = High (Write down the number in the scale)

The probability that I would Undertake the same action is

High |____|____|____|____|____|____|____| Low

The probability that my peers would undertake the same action is

High |____|____|____|____|____|____|____| Low

The action described above is

Ethical |____|____|____|____|____|____|____| Unethical

III- Jake is software analyst for a private military contractor working with the government. He discovers a top-secret surveillance operation been undertaken by the government. This operation affects the privacy of individuals as phone calls and emails of citizens are being recorded and read through. Leaking such information to the public would earn Jake a 10-year jail term due to a confidentiality clause in his contract. Jakes makes unauthorized copies of the surveillance process with intention to share to the public.

Action: Jake leaks the information to a journalist for publication despite the prospects of being jailed.

1- The action described above is:

Rate between 1 -7, where example 1 = Unjust and 7 is Just (Write down the number in the scale)

Just |____|____|____|____|____|____|____| Unjust

Unfair |____|____|____|____|____|____|____| Fair

Morally right |____|____|____|____|____|____|____| Not morally right

Not acceptable to my family |____|____|____|____|____|____|____| Acceptable to my family

Culturally acceptable |____|____|____|____|____|____|____| Culturally unacceptable

Traditionally unacceptable |____|____|____|____|____|____|____| Traditionally acceptable

Not self-promoting for the actor |____|____|____|____|____|____|____| Self-promoting for the actor

Personally, satisfying for the actor |____|____|____|____|____|____|____| Not personally satisfying for the actor

Produces the greatest utility |____|____|____|____|____|____|____| Produces the least utility

Minimizes benefits while |____|____|____|____|____|____|____| Maximizes benefits while

while maximizes harm   minimizes harm

Does not violate an unwritten |____|____|____|____|____|____|____| Violates an unwritten contract   contract.

Violates an unspoken promise |____|____|____|____|____|____|____| Does not violate an unspoken promise

Shows compassion or caring |____|____|____|____|____|____|____| Shows no compassion or caring

Rate between 1 -7, 1 = Low and 7 = High (Write down the number in the scale)

The probability that I would Undertake the same action is

High |____|____|____|____|____|____|____| Low

The probability that my peers would undertake the same action is

High |____|____|____|____|____|____|____| Low

The action described above is

Ethical |____|____|____|____|____|____|____| Unethical