

COMPARING INFORMATION SYSTEMS ETHICS IN THE UNITED
STATES OF AMERICA WITH INFORMATION SYSTEMS
ETHICS IN THE SULTANATE OF OMAN

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree

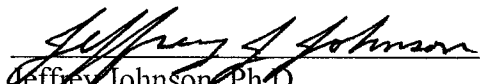
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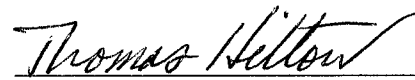
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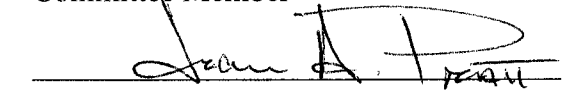
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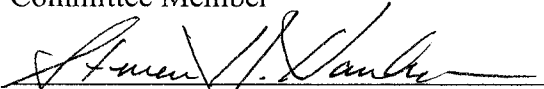
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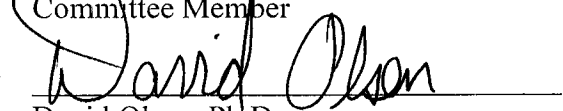

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ABSTRACT

Comparing Information Systems Ethics in the United States
of America with Information Systems Ethics
in the Sultanate of Oman

by

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Ethical decisions related to development and use of information systems (I.S.) are subject to several factors. Research shows that legal codes, corporate policies, and professional codes of conduct are among the main factors that influence individuals' courses of action. However, culture, gender, and age are also believed to have substantial influence on individuals in making ethical decisions.

This study explored similarities and differences between two cultures, the USA and the Sultanate of Oman, in ethics opinions relating to the I.S. field. In this study, the researcher explored similarities and differences between these two cultures' I.S. ethics through surveying American and Omani computer users from the banking industry. All survey respondents were I.S. users, but not all were I.S. majors or professionals.

Respondents completed a survey on personal use of company I.S. resources; use of company I.S. resources for personal, family's, and/or friends' gain; and company

monitoring of employee use of its I.S. resources. In general, while interesting statistical differences were found in the strength of several responses, there was no disagreement as to the ethicality or non-ethicality of the behaviors in question. Although the study is not definitive, the author found this consistency to be encouraging evidence of a common foundation for I.S.-related commerce between the two cultures.

The researcher hopes this effort will be a contribution to the mutual understanding of ways that members of these two cultures decide what is right and what is wrong in the I.S. field.

(141 pages)

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My family was a constant source of love and support. I would like to thank my wife for her continuous encouragement and to my five wonderful children for their love and support. Ali, thank you for your valuable feedback and great suggestions.

Finally, I would like to dedicate this paper to my mother and father, who passed on before witnessing this achievement. O'Allah! Bestow on them Your mercy as they cherished me in childhood.

Husain Mohsin Al-Lawatia

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CHAPTER I

INTRODUCTION

The past two decades have seen a rapid yet unequal spread of computers in businesses throughout the world. Despite this spread, the information systems (I.S.) field is still considered relatively young (Oz, 1992; Pierce & Henry, 2000). One result of I.S. youth is a general dearth of I.S.-related laws and clear-cut codes of conduct to regulate this challenging, fast expanding sphere (Udas, Fuerst, & Paradice, 1996). The progress in the I.S. field is so rapid that it has become very difficult to deal with the ethical issues associated with it. Interestingly, ethical issues in the I.S. field are highly influenced by less obvious factors such as a nation's general legal system and other disciplines including business law, internal organizational policies, culture, social mores, and so forth (Pierce & Henry, 1996).

Research suggests that cultural values and traditions have substantial influence on many I.S. ethical issues (Whitman, Townsend, & Hendrickson, 1999). As a consequence, what is considered "right" I.S. use by one culture may be considered "wrong" by another culture. This cultural factor may often supersede internal policies and codes that multinational corporations have issued to guide their personnel in using information systems consistently, ethically, and legally. Certainly such internal policies are necessary, but they are often perceived as ineffective (Loch, Conger, & Oz, 1998).

In the researcher's opinion, unauthorized copying of software has received plenty of research attention due to its huge negative effect on developers. Other I.S. ethical issues, however, have not received a similar level of attention.

This study aims to explore similarities and differences in I.S. ethics between two different cultures: the American culture and the Omani culture. The author hoped to begin identifying specifics of how these two cultures may differ in deciding what is “right” and what is “wrong” in I.S. ethics. In addition, literature views gender and age as influential factors that effect I.S. ethics. Therefore, in addition to investigating the effects of culture on I.S. ethical issues, this study also explores the effect of gender and age.

Purpose and Objectives of the Study

Through a well-designed survey, this study aimed to discover similarities and differences in ethics between the American culture and the Omani culture as they manifest in the I.S. field. Three areas related to the use of I.S. are investigated: employee use of company I.S. resources (hardware, software, and/or information) for personal use and entertainment; employee use of company I.S. resources for personal, friends’, and/or relatives’ gain; and company use of non-trust systems—either manual or computerized—to monitor its employees. It is important to mention that the objective of this study is not to judge whether respondents from one culture are more ethical or unethical than those from the other culture, but rather to explore the similarities and differences between them as they manifest in the above three areas of I.S. use. Identifying specifics of how these two cultures differ in deciding what is right and what is wrong in I.S. ethics issues under study are thus realized. The researcher believes that this kind of study is crucial in reducing cultural misunderstandings and stereotypes, and improving the ability to do business across cultures.

Research Questions

The following questions and hypotheses have guided the research:

1. How do the American and Omani culture compare in their views regarding I.S. ethical issues?

The following null hypotheses are associated with the above research question.

Null Hypothesis #1. There is no difference among American and Omani respondent views regarding the following three I.S. ethical issues jointly: (a) ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust system—either manual or computerized—to monitor employee use of its resources.

Null Hypothesis #2. There is no difference among American and Omani respondent views of employee use of company I.S. resources for personal matters and entertainment.

Null Hypothesis #3. There is no difference among American and Omani respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Null Hypothesis #4. There is no difference among American and Omani respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

2. How does employee gender relate to views regarding I.S. ethical issues?

The following null hypotheses are associated with the above research question.

Null Hypothesis #5. There is no gender effect on respondent views of the following three I.S. ethical issues jointly: (a) ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust system—either manual or computerized—to monitor employee use of its resources.

Null Hypothesis #6. There is no gender effect on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Null Hypothesis #7. There is no gender effect on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Null Hypothesis #8. There is no gender effect on respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

3. How does employee age relate to views regarding I.S. ethical issues?

The following null hypotheses are associated with the above research question.

Null Hypothesis #9. There is no age effect on respondent views of the following three I.S. ethical issues jointly: (a) ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust system—either manual or computerized—to monitor employee use of its resources.

Null Hypothesis #10. There is no age effect on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Null Hypothesis #11. There is no age effect on the respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Null Hypothesis #12. There is no age effect on respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

4. Do employee culture and gender interaction affect views regarding I.S. ethical issues?

The following null hypotheses are associated with the above research question.

Null Hypothesis #13. There is no effect of culture and gender interaction on respondent views of the following three I.S. ethical issues jointly: (a) ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust system—either manual or computerized—to monitor employee use of its resources.

Null Hypothesis #14. There is no effect of culture and gender interaction on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Null Hypothesis #15. There is no effect of culture and gender interaction on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Null Hypothesis #16. There is no effect of culture and gender interaction on respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

5. Do employee culture and age interactions affect views regarding I.S. ethical issues?

The following null hypotheses are associated with the above research question.

Null Hypothesis #17. There is no effect of culture and age interaction on respondent views of the following three I.S. ethical issues jointly: (a) ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust system—either manual or computerized—to monitor employee use of its resources.

Null Hypothesis #18. There is no effect of culture and age interaction on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Null Hypothesis #19. There is no effect of culture and age interaction on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Null Hypothesis #20. There is no effect of culture and age interaction on respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

6. Do employee gender and age interactions affect views regarding I.S. ethical issues?

The following null hypotheses are associated with the above research question.

Null Hypothesis #21. There is no effect of gender and age interaction on respondent views of the following three I.S. ethical issues jointly: (a) ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust system—either manual or computerized—to monitor employee use of its resources.

Null Hypothesis #22. There is no effect of gender and age interaction on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Null Hypothesis #23. There is no effect of gender and age interaction on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Null Hypothesis #24. There is no effect of gender and age interaction on respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

7. Do employee culture, gender, and age interactions affect views regarding I.S. ethical issues?

The following null hypotheses are associated with the above research question.

Null Hypothesis #25. There is no effect of culture, gender, and age interaction on respondent views of the following three I.S. ethical issues jointly: (a) ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust system—either manual or computerized—to monitor employee use of its resources.

Null Hypothesis #26. There is no effect of culture, gender, and age interaction on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Null Hypothesis #27. There is no effect of culture, gender, and age interaction on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Null Hypothesis #28. There is no effect of culture, gender, and age interaction on respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Significance of the Study

Culture and I.S. Ethical Issues

Computers have become an integral component of almost any business and in almost any discipline. With the proliferation of computers, many ethical situations that are encountered by computer users are not well understood (Gattiker & Kelly, 1999), and hence inappropriate interpretations are made of users' behavior. For example, the

western assumption that profit is the foremost business driver in the eastern culture, the Chinese disregard of U.S. copyright law inflamed a continuing conflict between the two countries for many years. However, research indicates that culture and not profit mainly prompted the Chinese to violate the U.S. copyright law (Townsend, Whitman, Hendrickson, & Fields, 1998).

Culture seems to have significant influence on people's ethical views. Consequently, many stereotypes and negative perceptions are adopted by people from one culture about people from another culture because of conflicting attitudes toward a given ethical issue. For instance, the so-called Asian software copyright infringement has been portrayed as an unethical behavior rather than as a basic cultural difference (Whitman et al., 1999). Whitman et al. introduced another example that shows how different I.S. behaviors result from culture differences. They report that Singapore and Hong Kong, unlike many countries, consider personal use of company property and time unethical even if allowed by the employer.

In the face of such differences, technology has made it increasingly easy to do business worldwide. Therefore, interaction between different cultures has become more frequent. This interaction suggests the importance of identifying and reducing stereotypes and negative perceptions to facilitate the trust required to do business. One way to help build this trust is conducting studies like the one in hand. Such studies help businesspeople to appropriately interpret the behavior of people from other cultures and hence reduce misunderstanding. This study will shed some light on American and Omani perceptions of I.S. ethical issues; it can also help compare American and other

Arabian or Muslim cultures insofar as they are analogous to Omani culture.

Gender, Age, and I.S. Ethical Issues

In a different vein, the ethics literature views gender and age as influential factors that effect I.S. ethics. According to Gattiker and Kelley (1999), several researchers support the notion that gender differences do exist in attitude toward computer ethics issues. For example, Gilligan (1982 as cited in Karande, Rao, & Singhapakdi, 2002) stated that men's moral reasoning processes are different from that of women. With regard to age, Sikula and Costa (1994) stated that as people advance in their age, they mature mentally, emotionally, socially, and morally. Therefore, in the course of exploring the effect of culture on I.S. ethics, this study will seek to isolate the effect of gender and age on I.S. ethics from any culture effect. This study will not explore the effect of gender and age for their own sake. This study will rather explore the interaction of gender and age with culture jointly and independently.

Overview of Research Design

For the purpose of comparing I.S. user ethics in the American and Omani cultures, quantitative data were collected by administering a survey. Computer users in the banking industry from both countries were selected to participate in the study. The motivation for selecting bankers, the description of the two samples, and related matters are discussed in detail in Chapter III.

Approximately 283 surveys were distributed among bankers throughout the western states of the United States and another 250 were distributed among bankers in

Oman. To make the data more representative, surveys were distributed to all interested employees of banks in both countries. Three American and five Omani banks were invited to participate in the study.

Summary

This chapter has given a general overview of this study. It consisted of five sections. The first section contained the problem statement on which this study was based. The second section explained the reasons for conducting this study by describing the purpose and objectives of the study. The third section stated detailed research questions and null hypotheses. The fourth section presented matters in the business discipline that make this study significant. It explained how cultural differences can cause misinterpretation of I.S. ethics per stereotypes and negative perceptions. Finally, the fifth section provided an overview of the research design that followed in the study.

CHAPTER II

LITERATURE REVIEW

In building a framework for comparing I.S. user ethics in the U.S.A. and the Sultanate of Oman, the author reviewed several areas of literature and subsequently proposed a model to describe testable relationships among culture, age, gender, and ethics views.

This chapter is organized into six sections. The first section defines ethics as a general term as well as how it is defined in the United States and in Oman. The second section discusses the relationship between law and ethical behavior. The third section debates the influence of corporate ethical codes on users' behavior. The fourth section describes personal codes of ethics and how culture and other factors influence them. The fourth section thus expresses personal codes of ethics mainly as a function of culture; the influence of gender and age on users' ethical behaviors is also discussed in this section. The fifth section proposes a testable model of the relationship between the variables discussed in the second, third, and fourth sections. Finally, the sixth and last section summarizes this review of literature.

Ethics Defined

Ethics is defined in different and sometimes conflicting ways depending on one's philosophical background (Regan, 1984 as cited in Udas et al., 1996). Therefore, Udas, et al. suggest that a definition of ethics that could be meaningfully applied in the business arena must be flexible. As this study aims to compare in I.S. user ethics

between the American and Omani cultures, it is important to understand the basis from which the people of these two cultures view and define ethics, particularly as it applies to business computing.

Ethics in the U.S.A.

Historically, religion has had a considerable cultural influence on business ethics throughout the world (Wienen, 1999), and the U.S.A. is no exception. However, in the United States today, like other western countries that are considered highly secular (Kruckeberg, 1996), religion has declined in its influence on defining the ethics that could be generally accepted by the various socio-economic sectors of society.

Secular ethics. The definition of ethics in the U.S.A. is now based on secular philosophic views centered in different philosophical schools of thought such as the utilitarian (most popular), teleological, deontological, etc. According to Kimberly and Jonathon (1999), those schools of thought are the foundation of ethical decision-making, and thus they shape personal values and beliefs in the U.S. on which ethics are based. As a result, it is difficult to find in the ethics literature a generally accepted definition of ethics from the western perspective. However, several definitions of ethics from general and business perspectives offered by scholars from different academic and business domains are considered representative.

Hiller (1986) views ethics as an instrument that “attempts to find good reasons for holding certain values or adopting certain principles or duties as a guide to decision making” (p. 6). Price (as quoted in Kimberly & Jonathon, 1999) defined ethics as “an explanation of what ought to be done and why, the study of why we have the particular

belief system that we have, and the analysis of how moral codes relate to what we value” (p. 8). Finally, Cook (1997) espoused “situational ethics,” the belief that rules of ethics may change because in certain cases ordinarily acceptable ethical principles may not apply.

Business ethics. According to Newton and Ford (1994), “‘business ethics is sometimes considered to be an oxymoron.... Business and ethics have often been treated as mutually exclusive. But ethics is an issue of growing concern and importance to businesses...’” (p. xii). Fort (1998) presented ethical business behavior in a pseudo-mathematical form introduced by William Frederick (1995). Fort stated, “In this ‘Philosopher’s Formula,’ ethical business behavior (BE) is a function of Kantian rights (RK), Rawlsian justice (JR), and Jamesian utilitarianism (UJ)” p. 249). So, business ethics has no clear-cut definition in the literature.

U.S. business ethics is also asserted as globally applicable. According to Buller, Kohls, and Anderson (2000), “global business ethics is the application of moral values and principles to complex cross-cultural situations” (p. 53). This recent definition of business ethics seems to be general enough to be accepted by most cultures, including those of the Arab world of which Oman is a part.

For purposes of comparison, then, the following working definition of ethics will be used in this study: “Ethics is the practice of making a principled choice between right and wrong” (Rogerson, 1995, p. 1).

Ethics in Oman

Kruckeberg (1996) stated, “Islam is the state-sanctioned religion in many Middle East countries...” (p. 187). Similarly, Wiene (1999) asserted that “Islam is a driving force behind the cultural development in the Muslim World” (p. 18). This implies that Arab ethics and hence ethics in Oman is influenced significantly by Islam. As a result, the definition of ethics—or “Akhlaq,” the comparable term used by Muslims—cannot be defined in isolation from Islam. Knowing this is important for both defining Omani ethics and distinguishing it from ethics in the U.S.A. According to Siddiqui (1997),

The comparable word for ethics in Islam is Akhlaq, and this is construed as morality. The problem rises when we study akhlaq vis-à-vis ethics. In western vocabulary the terms “ethics” and “morality” have different origins; one derived from the Greek ethos, “ethics,” and the other derived from the Latin mores or “morals.” Both mean habits or customs, but the distinction in European [and U.S.] thought and language has been maintained. One is what is “commonly felt and done” (morals) as opposed to what is “appropriate and rational” (ethics). In Islamic thought, the predominant feature is knowledge of morality (ilm-ul-Akhlaq), i.e. what we could call the “science of ethics.” (p. 2)

The above quote indicates that the term ethics that is used in the west has a comparable albeit not definitely equivalent term in the Islamic world.

In a similar vein, Beekun (1997) attempts to define ethics from an Islamic perspective, how Allah views ethical individuals and what the role of ethics should be in the Muslim’s life. He stated, “Without specifying any situational context, Allah describes people who attain success as those who are inviting to all that is good (Khayr), enjoining what is right (ma’ruf) and forbidding what is wrong (munkar). In Islam, ethics governs all aspects of life” (pp. 1-2).

Relating this perspective to business ethics, Abeng (1997) stated,

Besides its general appreciation for the vocation of business, the Qu'ran often speaks about honesty and justice in trade (See Qur'an 6:152; 17:35; 55:9). The Qur'an also presents Allah as the prototype of good conduct. The Muslims, therefore, are supposed to emulate Him throughout their lives including, of course, their conduct in business. (p. 50)

The above quote suggests that ethics is viewed similarly in all circumstances from the Islamic point of view, and that ethics in business is not essentially different from ethics in other contexts.

Consequently, it is important to understand that the term "ethics" in the Arab world (and thus in Oman) has a significantly different meaning than it does in the U.S.A. Keeping this difference in mind, the factors that affect human ethical behaviors, including those related to I.S., are discussed in the sections that follow. However, as mentioned earlier, for comparison purposes Rogerson's definition of ethics is used in this study.

Law and Ethical Behavior

Laws are a strong deterrent to behaviors legislatively defined to be illegal. Generally, unlawful acts are also viewed as unethical (Hilton, 1989). According to the general theory of deterrence, the effect of laws on illegal behavior depends on the certainty and severity of the punishment (Harrington, 1996). The outcome of law enforcement influences both behavior and decision-making and is usually due more to fear and creation of habits of compliance than to the integrity of the individual (Pierce & Henry, 1996). Law could, therefore, play a superior role in deterring people from

conducting acts that are considered illegal (or unethical) in the I.S. discipline. However, I.S. laws throughout the world are not consistent, and so the certainty and severity of punishment varies from culture to culture. For example, unauthorized copying of software, or so-called “software pirating,” is considered illegal in many countries (including the United States and Oman) yet legal in others (such as China); this is the case with many I.S. issues. The author thus believes that laws cannot be looked to presently for a definition of I.S. ethics. Every single I.S. matter has not been—nor could ever be—legislated. Moreover, the author sees no imminent prospects for reconciling I.S. legislation in all (or even most) of the legal systems of the world to produce a globally accepted body of I.S. law. In addition, it is unlikely that enforcement of I.S. law could be consistent enough to change behavior unless there are also personal/social ethics. Law is only important if you can get caught, ethics are important always. Thus the researcher agrees with Whitman et al. (1999), who found that cultural traits can generate illegal acts despite legislation and therefore must not be ignored.

Corporate and Professional Codes of Conduct

Despite the fact that companies own their resources and therefore have every right to stipulate what is allowed and what is not allowed when those resources are used (Loch et al., 1998), policies and codes are considered necessary to specify such matters with regard to I.S. use. Udas et al. (1996) stated that the solution to the ethical issues that are facing I.S. users within businesses lies in the company codes. However, the

codes will remain ineffective and external to I.S. users and hence insufficient to influence their behavior unless the users themselves internalize those codes (Pierce & Henry, 1996). In other words, unless the I.S. users internalize those codes and convert them inside themselves as ethical and moral codes or “personal codes of conduct,” the company codes will remain ineffective. Research, hence, suggests that although company policies and codes are important and necessary, they are at the same time perceived as ineffective (Loch et al., 1998). According to Harrington (1996), the reason is that it is likely employees will ignore the company code if the codes are in conflict with their personal or sub-group norms, or even if employees are disaffected at work for any reason.

What about monitoring employees for adherence to the codes? Loch et al. (1998) contend that despite the necessity of company codes, “literature argues uniformly that computer-based monitoring is wrong” (p. 2). So monitoring the employees’ adherence to the company codes will not hinder them from fooling the monitoring process and hence violating the company code—it is rather more likely. Creation of affinity between the employees and the company, instead of monitoring, is considered a much superior factor in instilling a kind of effectiveness to the company code (Loch et al.).

The ineffectiveness of company code is also owed to its being abstract and general and therefore lacking real world meaning (Loch et al., 1998). Another factor that is important for company code to produce desired results on I.S. ethical behavior is the business internal environment itself. The effectiveness of the codes is more likely if

several factors are given close attention by the company management. These factors are, assisting the top management of the company in supporting the codes through reinforcing and maintaining an ethical environment (Harrington, 1996; Pierce & Henry, 1996); eliminating or at least reducing the inconsistency between the formal codes and the informal codes (personal codes that are the function of several other factors—mainly the cultural factor) and between the company codes and professional codes; and lastly, involving I.S. professionals while developing formal codes for the company. For the latter, professionals should first write the codes than passed to legal counsels for review, not the reverse (Pierce & Henry).

On the other hand, I.S. ethics is not consistent among businesses and professional organizations, which leads to mixed or conflicting standards (Udas et al., 1996). This conflict, according to Harrington (1996), is merely due to the new “species” of ethical issues that face I.S. users. This conflict between the standards confuses individuals and hence leads toward conflicting behaviors among employees inside the same company.

There is another problem that faces the company codes of conduct. This problem depicted in the disagreement among I.S. users on what is ethical and what is not ethical for some I.S. acts (Harrington, 1996). Professionals in the I.S. field inside the U.S. itself are still facing a dilemma due to the lack of guidance about I.S. acts that have ethical conflicts. This dilemma is further intensified by the absence of a single agreed upon professional code of conduct because professional codes are developed by different I.S. professional organizations (Oz, 1993). ACM, DPMA, and ITAA—the

widely known professional I.S. organizations—have failed to collaborate efforts in developing and formulating one set of rules that are widely accepted inside the U.S. (Oz). If this is the case within the U.S. itself, what about developing a set of I.S. ethics related rules or codes that could gain acceptance globally? It is, however, true that, unlike the U.S., there are some countries where one professional body organizes I.S. ethical issues. For example, in Canada and Britain one single organization that certifies professionals provides specific rules or ethical codes for I.S. professionals and hence enjoys more clout in enforcing those codes inside these countries (Oz). But yet, the conflict between corporate codes and professional codes, as mentioned above, will remain unresolved until the time one of them is legalized and hence obtains superiority over the other.

We can conclude from the above that company codes and professional codes are essential for enforcing ethical behavior inside corporations and among I.S. professionals. These codes can play an important role in reducing I.S. unethical acts. Research has indicated that even though corporate codes are necessary, they are mostly ineffective. Professional codes are also essential for protecting the I.S. sector from unethical acts, especially in countries where there is a single professional organization that is taking the role of drawing lines in defining ethical boundaries; or if different organizations in a country, such as the U.S., collaborate among each other in developing consistence I.S. ethical codes. Despite the above, conflict between professional codes and corporate codes on one hand and between these two codes and the personal code on the other hand will remain strong. Furthermore, developing professional codes that

could be accepted globally is a very difficult (if not an impossible) task. Corporate and professional codes independently or jointly cannot be relied upon for protecting I.S. from becoming a victim of unethical misconduct without considering other factors that also influence human behavior. In the next section, literature on the influence of personal code, which is the function of several and mainly cultural factors, is discussed.

Personal Code of Ethics as a Function of Culture

Guthrie (1997) writes that a personal code of ethics is a framework inside a person for making “ethical decisions and discuss[ing] their values as they relate to society as a whole” (p. 1). Such personal codes are a function of a variety of philosophies, social and cultural norms, and surrounding laws and other codes. Personal codes of ethics can be viewed as influenced by business policies as well as by the broader culture. Stajkovic and Luthans (1997) suggest that national culture has a significant influence in shaping organizational, institutional, and personal factors.

Business Policies and Personal Codes of Ethics

Pierce and Henry (2000) write that employees are influenced by their personal norms, co-worker norms, and organizational norms as a whole when making an ethics decision. Therefore, violation of codes is likely if the violators can escape getting caught (Becker & Fritzsche, 1987). However, although individual ethics decisions are influenced by formal ethics codes (Pierce & Henry, 1996), Lewellyn (1996) found that a person’s personal ethics shaped over time has more impact on such decisions than any other factor. Thorne and Saunders (2002) stated that employees’ ethical reasoning

inside business environment is influenced by cultural background. Therefore, being ethical is not like a switch to be turned off and on; it is an inseparable trait that shapes all aspects of a person's life (Plenert, 1995). In short, then, formal organizational codes of ethics appear to help in guiding behavior, but the personal ethics code is what determines behavior (Pierce & Henry). In other words, it is generally agreed that when managers are faced with a situation where they are supposed to make decisions about matters that have an ethical content, their decisions will be based on moral philosophies or "personal ethical systems" (Karande et al., 2002).

Pierce and Henry (1996) point out that it is therefore important to be sure formal codes do not conflict with the more influential personal codes of I.S. users. As an example, they describe the ideological conflict between western-based concepts of copyright protection and Chinese traditions of intellectual property. In the west, intellectual property can be owned by a single person or organization, whereas in China intellectual property is presumed to be owned collectively by the people. Therefore, they characterize the so-called problem of Asian software copyright infringement less as unethical behavior than as basic cultural difference (Whitman et al., 1999).

Whitman et al. (1999) describe another I.S. controversy that shows the importance of cultural differences. They report that in Singapore and Hong Kong, the personal use of company equipment and time is viewed as unethical whether the company prohibits it or not, whereas in some other countries it is not unethical to use company equipment and time for personal matters unless such use is specifically forbidden by the company.

Personal Code of Ethics and Culture

McDonald (2000) viewed culture as a term that has often proved difficult to define and to further be rationalized for the benefit of research analysis. Westwood and Everett (as cited in Nyaw & Ng, 1994), on the other hand, state that consensus as to what culture means is still absent. According to Randlesome and Myers (1995), “many definitions of culture have appeared in the literature ...” (p. 42). Three interesting and matching definitions of culture seem acceptable for the purpose of this study. The first definition of culture is “the collective programming of the mind which distinguishes the members of one human group from another” (Hofstede, 1980 as quoted in Tsui & Windsor, 2001, p. 144; Sook Moon, & Franke, 2000, p. 53; Singhapakdi, Rawwas, Marta, & Ahmed, 1999, p. 259). The second definition of culture is “a whole way of life of a people, i.e. to their interpersonal relations and their behaviors as well as to their attitudes” (Randlesome & Myers, p. 43). The third and last definition is more comprehensive and defines culture as “a generic term...made up of a host of interrelated elements. These include family, language and communication, religion, government and politics, education, technology, society, and economic structures and activities” (Baligh, 1994, as quoted in Dunning & Bansal, 1997, *The meaning of culture and culture orientations* ¶ 2). Based on above definitions, many cultural factors influence individuals’ behaviors and attitudes. (However, the author observes that some factors may be much more influential in one culture than in another; for example, religion plays a different role in U.S. ethics than in Islamic akhlaq.)

Undoubtedly, this effect of culture would extend to business activity. According to Hiller (1986), cultural issues are the source of several ethical dilemmas in management. For example, “managed care competition has resulted in a healthcare system in which provider choice is restricted” (Kimberly & Jonathon, 1999, p. 8). The influence of culture according to Zinkhan & Milberg (1995) is such that separation of a nation’s culture from its business environment is very difficult. Thus, people’s decisions “about what is right and what is wrong differ widely from one culture to another” (Zinkhan & Milberg, p. 763). Across different national cultures, there is no set of guidelines regarding right ethical behavior and wrong ethical behavior (Buller et al., 2000). This illustrates strong influence of culture on individual’s morality in business/I.S. settings.

Culture vs. Country

“Generalizations about cultures are often difficult to make due to the existence of vast subcultures in [one country]” (Robertson & Fadil, 1999, p.391). It is important to discuss the factors that disallow the use of culture and country interchangeably in order to facilitate generalization and to avoid falling in the dilemma of using culture as a surrogate for nationality without any ground (McDonald, 2000). Especially, this study is intending to compare I.S. ethics between two countries (i.e., United States vs. Oman) based on their cultural differences. Therefore, it is important to avoid using any incorrect methodologies. To do this, it is important to first define the term “nation” as it was done with the term “culture” earlier and then to discuss the subcultures in both countries. A “nation” is defined as “people inhabiting a country under the same

government” (Ronen, as quoted in McDonald, 2000, p. 90). As the terms “nation” and “country” are interchangeable, it is important to mention that the term “country” will henceforth be used exclusively because “country” is clearer than “nation” when translated into Arabic.

The second factor to discuss is the subcultures inside both countries. Rarely can one find a country that has an entirely homogenous culture. Japan, for example, is often regarded as a homogenous culture to the extent that the term “Japanese” is commonly referred to both the country and the culture, but still there are other subcultures in Japan (<http://expert.cc.purdue.edu>, n.d.). Similarly, the United States (according to Lusting & Koester, 1996, as cited in <http://expert.cc.purdue.edu>, n.d.) has a number of different sub-cultures such as European Americans, African Americans, Native Americans, Latinos, and several different Asian cultures. Along the same line, Oman contains people from different origins such as Arabs, Baluchies, Khojas, and Zanzibaries (<http://www.lupinfo.com>, n.d.). Besides Arabic, the official language, people in Oman speak some other languages related to those subcultures (<http://www.lupinfo.com>, n.d.). Furthermore, despite the fact that Omani citizens are Muslims, they are, however, from three different sections of Islam: Abadhi, Sunni, and Shi’a (CIA Factbook, 2002; <http://encarta.msn.com>, n.d.). Thus, the above factors could be easily considered as different subcultures and the population of the country as heterogeneous.

However, even with all the diverse subcultures in any country, researchers still consider the United States as a distinctive culture; similarly, Oman is also considered a part of the Arabian distinctive culture. For example, in his cultural patterns (power

distance, uncertainty avoidance, individualism vs. collectivism, and masculinity vs. femininity), Hofstede (<http://expert.cc.purdue.edu>, n.d.) has ranked countries worldwide as unique cultures under every pattern. That is, the United States is ranked as a distinctive culture by itself and Oman as a part of distinctive Arabian culture. For that reason, the researcher will follow the same guidelines in this study. That is, the research will classify the United States and Oman as two distinctive cultures, each of them representing all subordinate subcultures contained within. Accordingly the terms “Omani culture” and “American culture” will be used to represent the aggregate of all the subcultures contained within those countries.

Despite the above, one area still remains of significant concern. It is the overlapping factors between these two countries or cultures (the United States and Oman). As mentioned by Wienen (1999), Islam and Arabic language have a heavy impact on a Muslim’s cultural structure. Therefore, it likely that American Arabs and Muslims will have significant similarities or overlapping with Omani citizens. This matter received significant attention in this study during the sampling process. The researcher believes that proper arrangements were made to authenticate using the U.S.A. and Oman as two different, distinctive cultures and hence enabled the generalization of the results. This was done by eliminating people in one culture, say American for example, who have significant similarities with the Omani culture and vice versa that would have disturbed the study.

Gender and Age as Additional Factors That Influence I.S. Ethics

Without considering the influence of culture, researchers have identified other factors that influence ethical decisions. Gender and age are viewed as important variables influencing people's ethical decisions (Karande et al., 2002; Singhapakdi, Karande, Rao, & Vitell, 2001). Education level and job ranks (both white and blue collars) have also some influence on ethical decisions. However, they vary from country to country (Singhapakdi et al., 2001) and hence could not be used in comparing people from two different countries. Therefore, only gender and age are discussed in the two subsections that follow. Nevertheless, data pertaining to education level and job ranks will be collected for both samples by including them in the survey along with gender and age. This data will help to analyze the effect of education level and job rank on each culture by itself without making any comparisons between the two countries.

Gender

Regardless of the type of culture, involvement of males in I.S. related misconducts is found to be much higher than that of females (Khazanchi, 1995). Computer criminals, especially those who spread viruses and attack computer systems, were typically found to be males from different countries including the U.S. (Gabrys, 2002). This suggests that gender is a factor that should not be ignored when I.S. related ethical issues are considered. According to Gilligan (1982 as cited in Karande et al., 2002), men's moral reasoning processes are different from that of women, and

therefore, characteristics that influence their attitudes and behavior are hence not mostly similar. Based on these theoretical perspectives, Gilligan (as quoted in Karande et al.) “stated that men are more likely to adhere to the “ethic of Justice” by emphasizing rules and individual rights, whereas women are more likely to adhere to the “ethic of care” by emphasizing relationships and compassion” (p. 779). Along the same lines, business practices that involve moral issues are more likely to be recognized by women than men (Franke et al., 1997 as cited in Karande et al.). Gattiker and Kelley (1999) on the other hand, stated that differences in attitude toward computer ethical issues between genders were supported by several researchers. This was further supported by their own study, which showed women to be more concerned than men about unethical conduct related to computer use. Lastly, in his study that was solely devoted to analyze the effect of gender on I.S. ethics, Khazanchi reported interesting results. In all seven unethical actions related to I.S. that were examined in his survey, “women clearly outperformed men in identifying unethical actions” (p. 744). However, only three actions were found to be statistically significant out of the seven unethical actions of the survey in which women outperformed men.

Age

Again, regardless of the type of the culture, there is a general agreement that age and ethics are related to one another (Gattiker & Kelley, 1999; Kohlberg 1984 as cited in Sikula & Costa, 1994). In addition, Sikula and Costa stated that as people advance in their age, they mature mentally, emotionally, socially, and morally. Therefore, older people are thought to be more conservative and hence act more ethically than younger

people. Many researchers studied this relationship in several fields (including business) and have supported this relationship despite the fact that some of them showed negative results. For example, Sikula and Costa found that younger students were more ethical than their older counterparts in their views about some moral values such as honesty and equality. Nevertheless, many other studies have reported the opposite. A study conducted by Silver and Valentine (2000) indicated a weak influence of age on students' moral decisions in favor of older people. The older group perceived harmful scenarios introduced to them about salespersons as unethical more firmly than did the younger group. Also, Singhapakdi et al. (2001) have reported similar results. They found that irrespective of country, the age and the perception of the importance of ethics of a marketer were positively related. This relationship was further studied by Gattiker and Kelley in the I.S. field. The result of their study revealed that age does influence users' judgments regarding ethical issues related to I.S. use.

Thus, the literature supports the idea that age has pertinent influence on ethics so as older people are thought to be more conservative and hence act more ethically than younger people in various fields including I.S.

A Model Proposed

The proposed conceptual model (Figure 1) is based on the topics discussed above and is also based on the model introduced by Pierce and Henry (1996). Based on the above discussion, ethical judgments in general, including judgments about actions related to I.S. use, are normally the outcome of the personal code of the user. The personal code, however, is a final product of culture as culture is defined above.

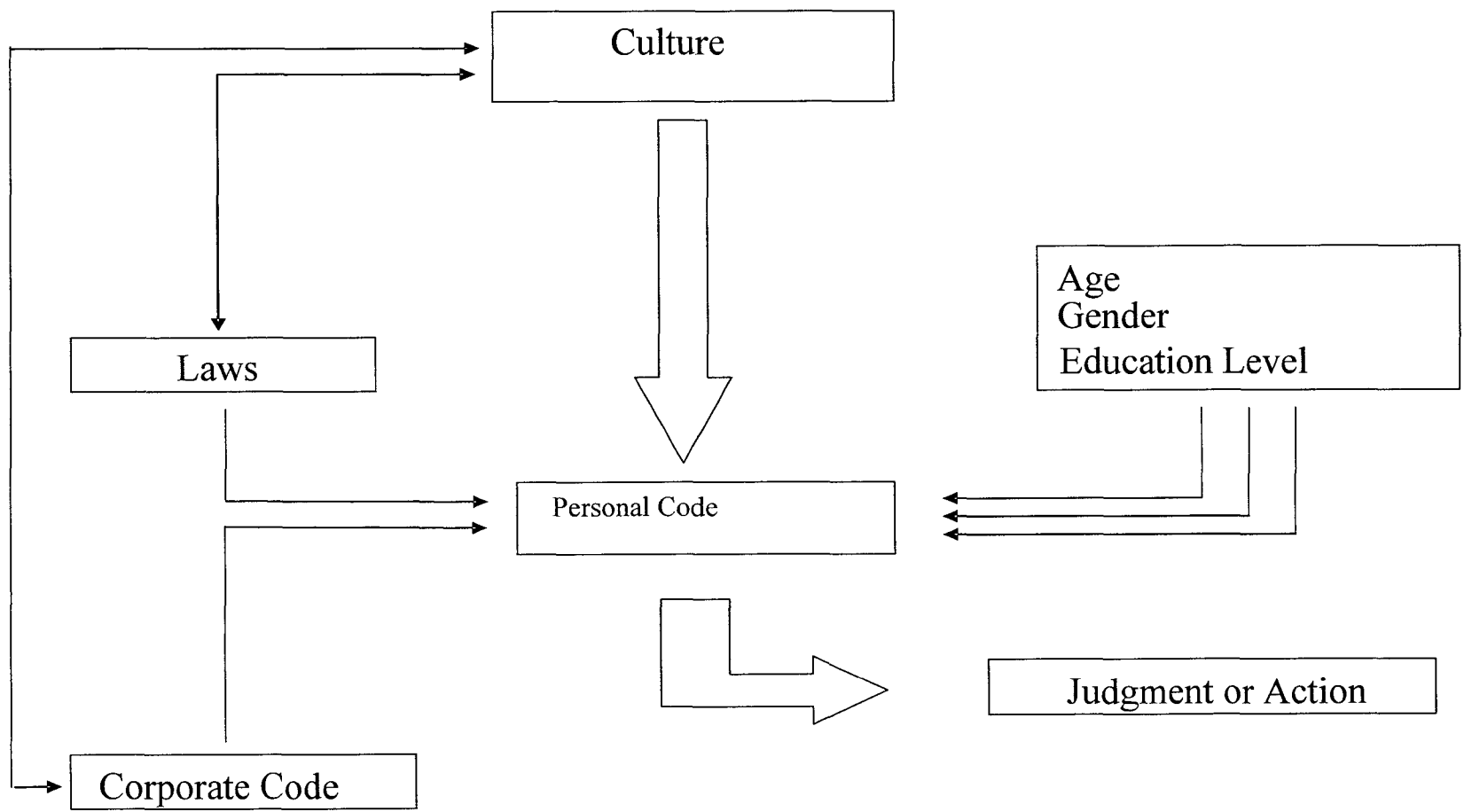


Figure 1. Conceptual model for individual's judgment or action (proposed).

Additional factors such as laws and company and professional codes influence personal codes, but they themselves are affected and should be affected by the culture and at the same time have significant effects on the culture in the long run. Therefore, culture is viewed as the dominant factor that influences the personal code of any user upon which the user's judgment or action is based. In addition, not in isolation from culture, literature viewed gender and age as additional factors that should be accounted for in the ethical decision process of a person. As a result, Figure 1 is a conceptual model that is thus proposed to help in visualizing the underlying theory grounded in the literature review that interprets how different factors work alone and with each other in influencing personal code of individuals upon which they base their judgment or action.

Conclusion of Literature Review

Questions of right and wrong in Information Systems use are hardly isolated from outside influences. As Kimberly and Jonathan (1999) write, "Ethics is humanistic, personal, and dependent on one's conscience" (p. 9). Therefore, laws or organizationally defined policy codes are not enough by themselves to maintain ethical behavior; such relatively public statements must be supported by personal values derived from morals based on experience interpreted through the lens of culture. It must also be understood that religion, although ostensibly minimized in U.S. ethics, plays a major, even preeminent, role in Islamic akhlaq. Wienen (1999) reinforced this point with his finding that the influence of religion is obvious as a cultural influence on management in the Muslim world.

However, the literature also shows that cultural factors other than religion contribute to the development of personal ethics. Individual differences such as gender and age play a major role; personal codes of ethics also develop according to individual experiences with law, employment, profession, and other factors.

In conclusion, the literature supports the view that culture has a dominant influence on personal ethical decisions and contributes significantly to the ethical framework through which any act is judged right or wrong, ethical or unethical. Based on this review, the author hypothesizes significant divergence in ethics opinions between U.S. and Omani computer users.

CHAPTER III

METHODOLOGY

The purpose of this study was to identify specifics of how Americans and Omanis varied in deciding what is “right” and what is “wrong” in information systems (I.S.) ethics issues. In order to accomplish this purpose, this study explored similarities and differences in ethics between the American culture and the Omani culture as they manifested themselves in the field of I.S. This chapter is divided into four sections. The first section is devoted to a description of research design and instrumentation used for conducting the research. The second and third sections describe the sample and data collection procedures, respectively. The chapter ends in illustration of methods that were used in analyzing the data.

Research Design

Quantitative methodology was used in implementing this study. Data were collected from bank employees in the United States and in Oman. Data collection was implemented through paper surveys that were distributed among the respondents of both samples.

Instrumentation

Following a review of the established ethics survey instruments in the area of I.S., the researcher decided to develop an instrument by selecting items from different instruments that specifically addressed the aims for the present study. The researcher

also found it necessary to develop some new items for the instrument for better addressing the aims of this study. However, it was necessary to make sure that these new items are grounded in the literature. Thus, the instrument was based on a series of vignettes illustrating various computer uses. Excluding the unauthorized use of software or so-called “software piracy,” three types of I.S. ethical issues that are likely to face computer users in any business setting were adopted as the backbone of the survey. These areas were employee use of company I.S. resources for personal use and entertainment; employee use of company I.S. resources (hardware, software, and/or information) for personal, friends’, and/or relatives’ gain; and finally, the company use of non-trust systems to monitor its employee use of its I.S. resources. As mentioned above, most questions in the survey were derived from previous studies conducted by other scholars and found in the literature, as it is discussed below.

Personal Use of Company I.S. Resources

Through a scenario, Pierce and Henry (2000) and Townsend et al. (1998) surveyed the ethicality of using company computer time to play games and to type personal documents. Loch et al. (1998), on the other hand, surveyed their respondents about the ethicality of playing games, using company email for personal reasons, and developing personal software.

In order to enrich the research and gain more insight by obtaining the views of I.S. users about the ethicality of other possible personal uses of company I.S. resources and time, reading online newspapers and chatting with family members and/or friends

were added as questions in the survey. Hence, Section 1 (Questions 1 through 12, see Appendix A) surveys the ethicality of personal uses of company I.S. resources.

*Use of Company I.S. Resources for
Non-company Gain*

Through a scenario, Pierce and Henry (2000) and Townsend et al. (1998) surveyed only the ethicality of using information in the company to gain a personal competitive advantage. However, this researcher believes there are a number of possible situations where an employee can take advantage of company I.S. resources to achieve personal gain directly or indirectly by passing that gain to family members, relatives, and/or friends. Thus, adding more scenarios would add valuable depth to this field of knowledge. Some possible situations that were deemed important were added to the survey in the form of questions. So, the second section (Questions 13 through 24, see Appendix A) surveys the ethicality of employee use of company I.S. resources (hardware, software, and/or information) for personal gain or the gain of friends and/or relatives.

Monitoring Employee Computer Use

Under the heading of company rights vs. individual rights to privacy, Loch et al. (1998) surveyed the ethicality of a company monitoring staff use of its I.S. resources. Scenarios involving monitoring phone conversations, e-mail, word processing documents, and software were introduced in the Loch et al. survey. Excluding phone conversations, the survey in the study here reported used questions in the same line. Respondents were surveyed about the ethicality of a company monitoring its employees

through either surprise or informed examinations of their email, word processing documents, and software. This was accomplished by the third section (Questions 25 through 30, see Appendix A).

Other Instrument Matters

Because English is not the native language of the Omani sample, the researcher translated the survey into Arabic. To ensure the accuracy of the translation, the translated version was given to an independent Arabic-speaking scholar for back translation into English. The outcome was then compared with the original English version and found reasonably similar to the original. This process was conducted under the supervision of the committee chairperson.

The researcher asked the respondents to judge each ethical issue in the survey on a 5-point Likert-type scale (after Pierce & Henry, 2000) from usually ethical to usually unethical through an introduction on the first page of the survey. The respondents were instructed that their answers should reflect their personal opinion and to answer all questions.

To ensure respondent anonymity, the surveys were not coded or numbered. Also, the researcher informed the respondents that the data obtained from their responses would only be reported in aggregate form.

Pilot Study

Since the instrument was developed largely by the researcher, a pilot study was carried out to evaluate reliability of the instrument. A convenience sample of 136

American and Arabian I.T. users between undergraduate and graduate students from two universities inside the United States was used the samples for the pilot study. The demographic characteristics of the sample that was used in the pilot study are shown in Table 1.

In addition, two experts in the area of research, ethics, and I.S. reviewed the instrument and determined that its content and face validity were satisfactory. The reliability of the questionnaire was also checked through calculating Chronbach's alpha for each of its three sections.

Results of the pilot study were encouraging. With regard to the Chronbach's alpha test, results generated were Part 1: .86; Part 2: .84; and Part 3: .77. These results suggest that the instrument is acceptably reliable.

Results obtained from the pilot study respondents revealed no overall significant differences between subjects from the Arab world and those from the United States in

Table 1

Pilot Study Respondent Demographics (n=136)

		Arabs		Americans	
		<i>f</i>	%	<i>f</i>	%
Gender	Male	66	97	52	76
	Female	2	3	16	24
	Total	68	100	68	100
Academic level	Undergraduate	40	59	42	62
	Graduate	28	41	26	38
	Total	68	100	68	100
Age	Under 21	22	32	8	12
	21 to 30	31	46	46	68
	31 to 40	15	22	11	16
	Over 40	0	0	3	4
	Total	68	100	68	100

their views regarding I.S. ethical issues. However, when each of the three parts of the survey was independently examined, the first part (which was about employee use of company I.S. resources for personal use and entertainment) was found to contain statistically significant differences. In contrast, the other two parts, which were about the employee use of company I.S. resources (hardware, software, and/or information) for personal gain or the gain of friends and/or relatives; and the company use of non-trust systems—either manual or computerized—to monitor its employee use of its I.S. resources, no statistically significant differences were found. In addition, each item of the survey was independently tested and eight questions showed statistically significant differences. However, no response, whether statistically significant or not, crossed the midpoint of the response scale. This suggested similar opinions of ethical issues between the two cultural groups albeit of occasionally differing strengths.

Another major point that arose from the pilot study was the importance of controlling the effect of nationality by obtaining a sample from one country rather than a sample comprised of different nationalities as was the case with the Arab respondents. These pilot results increased the importance of conducting a full study by using only two countries representing two different cultures (i.e., the United States and the Sultanate of Oman).

Population and Sample

The population of this study was computer users employed in the banking industry from the United States and the Sultanate of Oman. The banking industry was

chosen so as to establish equivalent samples in the two cultures. Respondents in the United States were from four western states (California, Idaho, Nevada, and Utah). Arabs and Muslims were excluded from the U.S. sample to reduce confounding of culture as discussed in the next paragraph.

Every effort was made to make the samples of the two cultures comparable by controlling possible nuisance variables. As Islam and the Arabic language are known to influence Muslim behavior (Wienen, 1999), Arabs and Muslims were excluded from the U.S. sample in order to reduce any unforeseen biases. This was done by adding religion and ethnicity in the demographic information requested in the American version of the survey. Although no Arab or Muslim responses were received, they would have been eliminated. On the other hand, Omani citizens are almost all Muslim and speak Arabic (<http://encarta.msn.com>, n.d.). Thus, only Omani citizens were included in the Omani sample; all non-Muslim and non-Omani residents of Oman were eliminated. This helped homogenize the Omani sample and control nuisance variables. To ensure this, the Omani survey administrator was asked in a letter (Appendix D) to distribute the surveys to Omani citizens only. This matter was further made clear through the introduction on the first page of the Omani version of the survey.

In Oman, 250 bankers from five different banks agreed to participate in the study. These interested bankers responded to a general invitation from an experienced Omani bank officer known by the researcher who volunteered to collect data from Omani bankers.

In the United States, 283 bankers from three different banks agreed to participate in the study. These bankers responded to general invitations from officers in their banks known by the chair of the researcher's doctoral committee. Steps followed in collecting data from both samples are further detailed in the next section.

Data Collection

Omani Data Collection

In April, 2003, a letter in Arabic (Appendix D) along with English and Arabic surveys (Appendices A & B) were emailed to the Omani survey administrator along with an explanation of the nature of the Omani sample sought and the collection procedure that should be followed. As explained above, only Omani citizens were asked to participate in the study.

The survey administrator approached individuals in four other banks. Those individuals invited their fellow bankers to participate in the study. At the same time, the survey administrator did the same thing with the bankers in his own bank. Potential respondents were approached directly through their colleagues and not through the bank management to expedite data collection and to avoid any bias from management. Employees of all five banks were given hard copies of the survey. The survey administrator collected completed surveys from all five banks without any identification of individual surveys. The administrator's efforts yielded a high rate of response. Out of 250 surveys distributed, 176 (70%) were completed and returned. The survey administrator emailed some of the completed surveys as PDF files to the researcher.

The researcher collected the remainder of the completed surveys in person during a visit to Oman. Table 2 shows descriptive statistics from the Omani data.

American Data Collection

In March of 2003, an area manager of a large American bank, known to the doctoral committee chair, showed interest in circulating the survey to employees of the bank in every western state where branches are located. The researcher hand delivered to the area manager a letter (Appendix C) and a copy of the survey. The area manager invited branch managers to participate in the study. Some branch managers in Utah, Idaho, and Oregon agreed to participate, pending receipt and approval of the survey. All but one agreed to circulate the survey to their staff, and 145 surveys were distributed.

In April 2003, a vice president of another large American bank with a presence in several western states was approached, again with the help of the committee chair. The researcher again hand delivered a letter and a copy of the survey. This bank proceeded in the same way as the first bank, and 108 surveys were distributed.

In May 2003, the president of a small bank near the researcher's university circulated 30 surveys to bank staff after receiving the researcher's letter and survey. As shown in Table 2, these three banks distributed a total of 283 surveys to interested participants in the western United States.

With the exception of one bank branch that returned its surveys in person, all surveys were returned in individual post-paid envelopes from May to July 2003.

Table 2

Summary of Survey Response Rate (n=305)

Country	Number of surveys distributed	Number of surveys completed	Response rate (%)
United States:			
Utah	155		
Idaho	100		
California	17		
Nevada	11		
Total United States	283	129	45.6
Total Oman	250	176	70.4
Total U.S and Oman	533	305	57.2

Data Analyses

Upon receipt, the surveys were inspected for completeness and accuracy. A serial number was placed on every survey for data entry and verification. All completed surveys were found to be usable, notwithstanding a few unanswered items. Data from the collected surveys was analyzed via SPSS. Data analysis procedures for each research question in this study are described next.

Although 28 hypotheses from seven research questions were tested, one statistical tool was used for analyzing all data: four 3-way ANOVAs were performed, and testing of every research question with its four null hypotheses relied on these four ANOVAs.

Research Question #1

How do the American and Omani cultures compare in their views regarding the following I.S. ethical issues jointly and separately: (a) the ethicality of employee use of

company I.S. resources for personal matters and entertainment; (b) the ethicality of the employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed through four null hypotheses. To analyze these null hypotheses, four 3-way ANOVAs were performed with culture, gender, age, and their respective cross-variable interactions as the effects of all seven research questions. The dependent variable for each ANOVA was as follows: all three sections of the survey in the first 3-way ANOVA, Section 1 of the survey in the second 3-way ANOVA, Section 2 of the survey in the third 3-way ANOVA, and Section 3 of the survey in the fourth 3-way ANOVA. Furthermore, Independent Samples t-tests were calculated for every item separately to find out if there were any significant differences between the two cultures vis-à-vis each item in the survey. Alpha in the per-item tests was lowered from .05 to .025 to reduce the possibility of committing Type I error due to the number of Independent Samples t-tests performed. An alpha of .05 was used for every 3-way ANOVA.

Research Question #2

How does employee gender relate to views regarding the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the

ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed through four null hypotheses. These null hypotheses were analyzed using the same four 3-way ANOVAs mentioned above in research Question #1. Furthermore, Independent Samples *t*-tests were calculated for every item separately to find out if there were any significant differences between genders vis-à-vis each item in the survey. Again, alpha in the per-item tests was lowered from .05 to .025 to reduce the possibility of committing Type I error due to the number of Independent Samples *t* tests performed.

Research Question #3

How does employee age relate to views regarding the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed through four null hypotheses. These null hypotheses were analyzed using the same four 3-way ANOVAs mentioned above in research Question #1. Furthermore, as age data was gathered in four different age groups, 30 individual one-way ANOVAs were obtained for the 30 items of the survey separately to find out if there were any significant differences between the age groups vis-à-vis each item in the survey. Again, alpha in the per-item ANOVA was lowered from .05 to .025 to reduce the possibility of committing Type I error due to the number

of ANOVAs performed. In addition, descriptive statistics were calculated for each item as well.

Research Question #4

Do employee culture and gender interactions affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed through four null hypotheses. These null hypotheses were analyzed using the same four 3-way ANOVAs mentioned above in research Question #1.

Research Question #5

Do employee culture and age interactions affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed through four null hypotheses. These null hypotheses were analyzed using the same four 3-way ANOVAs mentioned above in research Question #1.

Research Question #6

Do employee gender and age interactions affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed through four null hypotheses. These null hypotheses were analyzed using the same four 3-way ANOVAs mentioned above in research Question #1.

Research Question #7

Do employee culture, gender, and age interactions affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed through four null hypotheses. These null hypotheses were analyzed using the same four 3-way ANOVAs mentioned above in research Question #1.

Table 3 summarizes the above research questions, hypotheses, and statistical tests used for analyzing data.

Summary

The main purpose of this chapter was to explain the methodology employed in conducting this study. It consisted of four sections. The first section was devoted to describing the research design, specifically, the instrumentation and pilot study. The second section described the study's two populations and corresponding samples of computer users in the banking industry from the U.S. and Oman. The third section explained procedures followed in collecting data from three banks in the U.S. and five banks in Oman. The fourth and last section described four 3-way ANOVAs used to analyze the data for seven research questions, each with four hypotheses (a total of 28 hypotheses addressed). Culture, gender, age, and their cross-variable interactions were the seven effects of the ANOVAs. The whole survey as well as each of the three sections comprised the four dependent variables of the ANOVAs.

Table 3

Summary of Research Questions, Hypotheses, and Statistical Tests

Research question/hypothesis	Statistical test	
	ANOVA	<i>t</i> test
Research Question #1: Culture difference		
H ₁ : No culture difference in all three sections	3-way	For per-item test
H ₂ : No culture difference in section 1	3-way	
H ₃ : No culture difference in section 2	3-way	
H ₄ : No culture difference in section 3	3-way	
Research Question #2: Gender effect		
H ₅ : No gender effect in all three sections	3-way	For per-item test
H ₆ : No gender effect in section 1	3-way	
H ₇ : No gender effect in section 2	3-way	
H ₈ : No gender effect in section 3	3-way	
Research Question #3: Age effect		
H ₉ : No age effect in all three sections	3-way / 1-way for per-item	
H ₁₀ : No age effect in section 1	3-way	
H ₁₁ : No age effect in section 2	3-way	
H ₁₂ : No age effect in section 3	3-way	
Research Question #4: Culture and gender interaction effect		
H ₁₃ : No culture and gender interaction effect in all three sections	3-way	
H ₁₄ : No culture and gender interaction effect in section 1	3-way	
H ₁₅ : No culture and gender interaction effect in section 2	3-way	
H ₁₆ : No culture and gender interaction effect in section 3	3-way	
Research Question #5: Culture and age interaction effect		
H ₁₇ : No culture and age interaction effect in all three sections	3-way	
H ₁₈ : No culture and age interaction effect in section 1	3-way	
H ₁₉ : No culture and age interaction effect in section 2	3-way	
H ₂₀ : No culture and age interaction effect in section 3	3-way	

(table continues)

Research question/hypothesis	Statistical Test	
	ANOVA	<i>t</i> test
Research Question #6: Culture and gender interaction effect		
H ₂₁ : No culture and gender interaction effect in all three sections	3-way	
H ₂₂ : No culture and gender interaction effect on respondent in section 1	3-way	
H ₂₃ : No culture and gender interaction effect on respondent in section 2	3-way	
H ₂₄ : No culture and gender interaction effect on respondent in section 3	3-way	
Research Question #7: Culture, gender, and age interaction effect		
H ₂₅ : No culture, gender, and age interaction effect all Three Sections	3-way	
H ₂₆ : No culture, gender, and age interaction effect section 1	3-way	
H ₂₇ : No culture, gender, and age interaction effect section 2	3-way	
H ₂₈ : No culture, gender, and age interaction effect in section 3	3-way	

CHAPTER IV

DATA ANALYSIS AND RESULTS

The purpose of this study was to identify specifics of how Americans and Omanis varied in deciding what is “right” and what is “wrong” in information systems (I.S.) ethics issues. Bankers from both countries were invited to participate in the study by completing a survey. The respondent views about I.S. ethical issues were examined in the context of respondent age, gender, and cultural background.

Bankers’ responses were the dependent variables; the independent variables were culture, age, and gender. Joint effects of the interactions among the three independent variables were also analyzed: culture and age; culture and gender; age and gender; and culture, age, and gender. This resulted in seven relationship tests.

This chapter first presents the demographics of the respondents. Next, the chapter reports results of the statistical analyses grouped by research question and related hypotheses. Discussion and conclusions are presented in the next chapter.

Respondent Demographics

Demographic data were collected in the first page of the survey instrument. Respondent demographics of gender, age, education level, and position are summarized in Tables 4, 5, 6, and 7. As shown, respondents varied greatly in the collected demographics. While female was dominant (58.1%) in the American sample, male was dominant (62.5%) in the Omani sample (see Table 4). This converse division of gender in the two cultures reduced the disparity between genders when samples of both

cultures were combined. Thus, male versus female when viewed as total of both cultures was (53.8%) to (46.2%).

Table 4

Respondent Demographics (Gender)

Variable	Categories of variable	American		Omani		Total	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Gender	Male	54	41.9	110	62.5	164	53.8
	Female	75	58.1	66	37.5	141	46.2
	Total	129	100	176	100	305	100

Note. *N*=305

Similarly, the two cultures showed complementary results in their most common age group as shown in Table 5. In the American sample, the most common age group was 40 to <50 years old (35.7%), whereas it was below 30 years old (48.3%) in the Omani sample. The remaining portion of respondents in the American sample (64.3%) was almost evenly distributed between the remaining three age groups: below 30 years old (21.7%), 30 to <40 years old (20.1%), and >50 years old (22.5%). In contrast, the remaining portion of the respondents in the Omani sample (51.7%) was mainly concentrated on two age groups next to the main age group: 30 to <40 years old (38.6%) and 40 to <50 years old (11.4%). These results suggest that the Omani sample was younger than the American sample. In other words, 86.9% of the Omani respondents were below the age of 40 years versus only 41.8% for the American respondents.

Table 5

Respondent Demographics (Age)

Age group	Categories	American		Omani		Total	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Group #1	Below 30 years old	28	21.7	85	48.3	113	37.1
Group #2	30 to below 40 years old	26	20.1	68	38.6	94	30.8
Group #3	40 to below 50 years old	46	35.7	20	11.4	66	21.6
Group #4	Over 50 years old	29	22.5	3	1.7	32	10.5
	Total	129	100	176	100	305	100

Note. *N*=305

Additionally, data for education level were also captured and are illustrated in Table 6. Interestingly, the most common and highest educational level group for both countries was undergraduate level. Americans versus Omanis in this group represented (39.1%) and (44.5%), respectively. However, overall results suggest that the American sample was more educated than the Omani sample. American respondents' percentages in graduate level (32%) and professional level (5.5%) were considerably higher than the Omani respondents' percentages in the same categories (7.5% and 0.6%, respectively). In other words, data revealed that (62.6%) of American respondents hold undergraduate degree or below versus (91.9%) for the Omani respondents.

Table 6

Respondent Demographics (Educational Level)

Variable	Categories of variable	American		Omani		Total	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Education level	Below high school	1	0.8	16	9.2	17	5.6
	High school	29	22.6	66	38.2	95	31.6
	Undergraduate	50	39.1	77	44.5	127	42.2
	Graduate	41	32.0	13	7.5	54	17.9
	Professional certificate	7	5.5	1	0.6	8	2.7
	Total	128	100	173	100	301	100

Note. *N*=301

Finally, data for respondent position (managerial vs. non-managerial) was also gathered. As demonstrated in Table 7, American sample included more respondents in the managerial category (41.1%) than the Omani sample (20.2%). This situation corresponds with results obtained in the age and educational level categories. The American sample was more educated, older, and more managerial than the Omani sample.

Table 7

Respondent Demographics (Position)

Variable	Categories	American		Omani		Total	
		<i>f</i>	%	<i>F</i>	%	<i>f</i>	%
Position	Managerial	53	41.1	35	20.2	88	29.1
	Non-managerial	76	58.9	138	79.8	214	70.9
	Total	129	100	173	100	302	100.0

Note. *N*=302

Results

A survey developed by the researcher was used to examine differences between I.S. ethics in the American and Omani cultures. More specifically, the areas that the survey was aiming to explore were the effects of respondent culture on ethical views while controlling for gender and age. In addition, the interaction effect of the above three factors was also examined. These issues are addressed below, each under a separate heading supported with a research question and its relevant hypotheses. Nevertheless, before addressing each question and its hypotheses, it is important to first discuss three issues related to all research questions and hypotheses.

Judging Respondent Decisions

As stated in Chapter 1, the objective of this study is not to judge whether respondents of one culture were more ethical or unethical than those of the other, but rather to explore the similarities and differences between them. For purposes of discussion, ratings in Sections 1 and 2 will be termed more ethically conservative as they approach the “unethical” end of the response scale. This same term will be applied in Section 3 as responses approach the “ethical” end of the response scale.

Variables in Analyses

Four different 3-way ANOVAs were used to examine the effects of culture, age, gender, and their interactions on respondents' I.S. ethical opinions. Tables 8 through 11 contain findings about all these variables. All the 3-way ANOVAs used the same independent variables: culture, gender, and age and their respective cross-variable interactions on four different dependent variables. These dependent variables were the whole survey, Section 1 of the survey (ethicality of personal use of company I.S. resources), Section 2 of the survey (ethicality of using company I.S. resources for personal gain or the gain of relatives or friends), and Section 3 of the survey (ethicality of company monitoring employee use of its I.S. resources).

For clarity of presentation, the contents of tables 8 through 11 were further broken into smaller tables relevant to the issue under discussion.

Assumption of Homogeneity of Variance

The total number of respondents in culture group, gender group, and age group were not equal. This indicted threat to the assumption of homogeneity of variance. To

Table 8

Three-way ANOVA for Effect of Culture, Gender, and Age on Banker Responses to All Questions in All Sections of the Survey (n=305)

Source	Sum of Squares	df	Mean Squares	F	Sig. (ρ)	(η_p^2)
Culture	53.93	1	53.93	0.18	.68	.00
Gender	200.62	1	200.62	0.66	.42	.00
Age	1035.37	3	345.12	1.12	.34	.01
Culture * Gender	36.96	1	36.96	0.12	.73	.00
Culture * Age	1311.96	3	437.32	1.43	.24	.02
Gender * Age	483.80	3	161.27	0.53	.66	.01
Culture*Gender*Age	246.93	2	123.46	0.40	.67	.00
Error	88769.16	290	306.10			

Note. For reader convenience, significant p -values are labeled with (*).

Table 9

Three-way ANOVA for Effect of Culture, Gender, and Age on Banker Responses to All Questions in Section 1, Ethicality of Personal Use of Company I.S. Resources (n=305)

Source	Sum of Squares	df	Mean Squares	F	Sig. (ρ)	(η_p^2)
Culture	34.09	1	34.09	0.28	.60	.00
Gender	155.29	1	155.29	1.27	.26	.00
Age	672.47	3	224.16	1.84	.14	.02
Culture * Gender	51.71	1	51.71	0.42	.52	.00
Culture * Age	357.89	3	119.30	0.98	.40	.01
Gender * Age	174.10	3	58.03	0.48	.70	.01
Culture*Gender*Age	125.03	2	62.52	0.51	.60	.00
Error	35433.31	290	122.184			

Note. For reader convenience, significant p -values are labeled with (*).

gauge the threat, the ratio of the large group (Omani sample) over the small group (American sample) (176/129) and male to female (total of both samples) (164/141) was calculated. In both cases it was less than 1.5; according to Stevens (1999), in such cases, the F statistic remains robust for unequal variances, and the magnitude of the

Table 10

Three-way ANOVA for Effect of Culture, Gender, and Age on Banker Responses to All Questions in Section 2, Ethicality of Using Company I.S. Resources for Non-company Gain (n=305)

Source	Sum of Squares	df	Mean Squares	F	Sig. (ρ)	(η_p^2)
Culture	287.55	1	287.55	4.56	.03	.02
Gender	75.19	1	75.19	1.19	.28	.00
Age	613.11	3	204.37	3.24	.02	.03
Culture * Gender	11.37	1	11.37	0.18	.67	.00
Culture * Age	93.05	3	31.02	0.49	.69	.01
Gender * Age	134.22	3	44.74	0.71	.55	.01
Culture*Gender*Age	60.06	2	30.01	0.48	.62	.00
Error	18274.44	290	63.02			

Note. For reader convenience, significant p -values are labeled with (*).

Table 11

Three-way ANOVA for Effect of Culture, Gender, and Age on Banker Responses to All Questions in Section 3, Ethicality of Company Monitoring of Employee Use of Its I.S. Resources (n=305)

Source	Sum of Squares	df	Mean Squares	F	Sig. (ρ)	(η_p^2)
Culture	14.25	1	14.25	0.40	.53	.00
Gender	48.56	1	48.56	1.38	.24	.01
Age	461.21	3	153.74	4.36	.01	.04
Culture * Gender	20.11	1	20.11	0.57	.45	.00
Culture * Age	305.55	3	101.85	2.89	.04	.03
Gender * Age	44.48	3	14.83	0.42	.74	.00
Culture*Gender*Age	15.71	2	7.86	0.22	.80	.00
Error	10217.81	290	35.23			

Note. For reader convenience, significant p -values are labeled with (*).

variance was thus not worrisome. However, a similar calculation comparing age group n 's severely violated the homogeneity assumption as the ratio of large group to small group (113/32) was larger than 1.5. Therefore, Levene's test for equality of variances

was run for all analyses to locate situations where this violation was committed so that remedies could be applied. Furthermore, the Games-Howell method, which accounts for unequal groups, was used in running post hoc procedures to locate different groups whenever analyses for age groups were found to be statistically significant. As a result, it is important to mention that whenever the assumption of equality of variances was violated, the results generated from the analyses were adjusted to account for the violation (Archambault, 2000). Occasions where such violation was committed are summarized in Table 12.

Table 12

Status of Assumption for Equal Variances (Violated Not Violated)

Analyses	<i>F</i>	<i>df</i> ₁	<i>df</i> ₂	Sig. (p)	Assumption for Equal Variance
3-way ANOVA for all sections	1.47	14	290	.12	Not violated
3-way ANOVA for Section 1	2.65	14	290	.00	Violated
3-way ANOVA for Section 2	1.47	14	290	.12	Not violated
3-way ANOVA for Section 3	2.07	14	290	.01	Violated

Research Questions and Hypotheses

Research question #1: Culture difference between Americans and Omanis. How do the American and Omani cultures compare in their views regarding the following I.S. ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed below via Hypotheses 1 through 4. To analyze these hypotheses, four 3-way ANOVAs were performed with dependent variables as follows: all sections of the survey in the first 3-way ANOVA, Section 1 of the survey (ethicality of personal use of company I.S. resources) in the second 3-way ANOVA, Section 2 of the survey (ethicality of using company I.S. resources for personal gain and or the gain of relatives and or friends) in the third 3-way ANOVA, Section 3 of the survey (ethicality of company monitoring of its employee use of its I.S. resources) in the fourth 3-way ANOVA (see Tables 8-11). A .05 level of significance was used in the above ANOVAs. Stevens (1999) states that two commonly used effect size measures are the Eta squared (η^2) ($\text{Eta squared} = \text{SS}_{\text{effect}} / (\text{SS}_{\text{effect}} + \text{SS}_{\text{error}})$) and Omega Squared (ω^2). He further states that the difference between (η^2) and Partial Eta squared (η_p^2) ($\text{Partial Eta squared} = \text{SS}_{\text{effect}} / \text{SS}_{\text{effect}}$) is small for a sample larger than 50. Since the sample size for this study is much larger than 50, SPSS software that generates (η_p^2) for ANOVA were therefore used for measuring the effect size. Table 13 contains results for Hypotheses 1 through 4 and Figure 2 shows the average means of both cultures and their locations on the response scale.

Null Hypothesis #1. There is no difference among American and Omani respondent views regarding the following three I.S. ethical issues jointly: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Table 13

ANOVA Results for Culture (Hypotheses 1 through 4)

Hypothesis	Source	Sig. (p)	(η_p^2)
Hypothesis #1: Culture in All Three Sections	Table 8	.68	.00
Hypothesis #2: Culture in Section 1	Table 9	.60	.00
Hypothesis #3: Culture in Section 2	Table 10	.03*	.02
Hypothesis #4: Culture in Section 3	Table 11	.53	.00

Note. For reader convenience, significant p -values are labeled with (*).

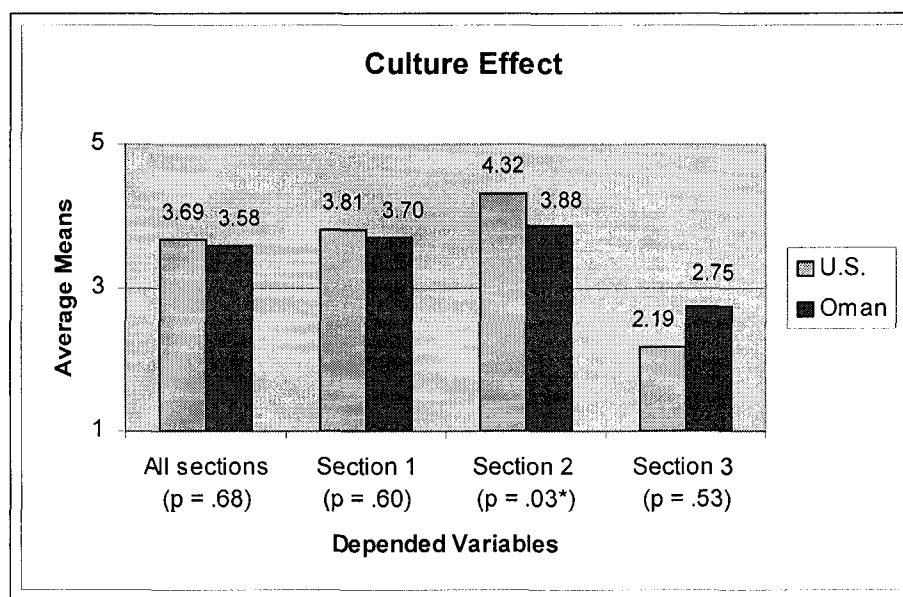


Figure 2. Average means of culture (Hypotheses 1 through 4).

Results shown in Table 13 indicate that we cannot reject the null hypothesis of no difference among American and Omani respondents on the above issues and hence the population mean for the American and Omani cultures is not different since the p -value (.68) is greater than alpha level (.05). Thus, null hypothesis #1 cannot be rejected, and the study's hypothesis on this part of research Question #1 is not supported.

Null Hypothesis #2. There is no difference among American and Omani respondent views of employee use of company I.S. resources for personal matters and entertainment.

As presented in Table 13, the p-value (.60), which is greater than the alpha level (.05), does not support hypothesis #2. Hence, the means of the American and Omani populations are assumed not to be statistically different. Thus, null hypothesis #2 cannot be rejected and the study's hypothesis on this part of research Question #1 is not supported.

Null Hypothesis #3. There is no difference among American and Omani respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Results shown in Table 13 above indicate that we reject the null hypothesis of no difference among American and Omani respondents on the above issue and hence the population mean for the American and Omani cultures is different since the p-value (.03) is smaller than the alpha level (.05). The partial Eta squared was just 0.02, which means that culture by itself accounted for 2% of the overall variance. Thus, null hypothesis #3 is rejected, and the study's hypothesis on this part of research Question #1 is supported.

Null Hypothesis #4. There is no difference among American and Omani respondent views of the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

As presented in Table 13, the p -value (.53), which is greater than the alpha level (.05), does not support hypothesis #4. Hence, the means of the American and Omani populations are assumed not to be statistically different. Thus, null hypothesis #4 cannot be rejected and the study's hypothesis on this part of research Question #1 is not supported.

Culture Effect on Every I.S. Ethical Issue Separately

Only one out of the four null hypotheses of research Question #1 on the effect of culture was supported. As such a situation was unexpected, it was deemed necessary to test every item of the survey separately to find any per-item statistical significance that was hidden when associated with the other items of the group. Therefore, an independent samples t test was calculated for every survey item separately. To reduce the possibility of a Type I error, alpha in these per-item tests was lowered from .05 to .025. In addition, the mean and standard deviation were calculated for every item as well. Table 14 contains these results. Astonishingly, 19 of the 30 items (63.3%) were found to show statistically significant differences between the two cultures, even at an alpha of .025. Figures 3, 4, and 5 contain means of the 19 items that showed differences and their locations on the response scale. An interesting phenomenon was found in these figures. American respondents rated behaviors in all five statistically different questions of Section 1 (Figure 3) and in seven of 10 statistically different questions of Section 2 (Figure 4) more conservatively (as more unethical) than Omani respondents did. This American conservatism continued in Section 3: American respondents rated behaviors in two of four statistically different questions as more

ethical and in one of four statistically different questions as less unethical than their Omani counterparts did (Figure 5). Another phenomenon evident in these Figures was about the level of concern. Differences between the two cultures in 16 of the 19 statistically different questions were on the same side of the response scale. This suggests that differences between American and Omani respondents are mostly of degree and not of kind. That is, most differences were not ethical versus unethical, but rather ethical versus more ethical or unethical versus more unethical. Lastly, American respondents' ratings of I.S behaviors in 18 of the 19 statistically significant questions of the survey were more conservative than the ratings of their Omani counterparts (see Figures 3, 4, & 5).

Research question #2: Relationship between gender and I.S. ethical issues. How does employee gender relate to views regarding the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed below via Hypotheses 5 through 8. As was with research Question #1, four 3-way ANOVAs were performed with the following dependent variables: all sections of the survey in the first 3-way ANOVA. Section 1 of the survey (ethicality of personal use of company I.S. resources) in the second 3-way ANOVA, Section 2 of the survey (ethicality of using company I.S. resources for personal gain and or he gain of relatives and or friends) in the third 3-way ANOVA,

Table 14

Independent t Tests on Responses to Every Question of Survey for Culture Difference Testing

Survey question (ethical issue)	Culture	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i> -2 <i>tailed</i>	<i>M</i> Diff US - O
SECTION 1: EMPLOYEE USES EMPLOYER COMPUTERS FOR...)						
Q1: games <u>during</u> work	U.S	4.52	0.94	3.99	.00*	0.47
	Oman	4.05	1.11			
Q2: games <u>after</u> work	U.S	3.25	1.44	-0.70	.48	-0.11
	Oman	3.36	1.31			
Q3: personal matters <u>during</u> work	U.S	4.27	1.08	3.42	.00*	0.45
	Oman	3.82	1.17			
Q4: personal matters <u>after</u> work	U.S	2.85	1.44	-1.97	.05	-0.32
	Oman	3.18	1.39			
Q5: on-line newspaper/ magazines <u>during</u> work	U.S	4.33	1.06	2.35	.02*	0.30
	Oman	4.03	1.17			
Q6: on-line newspaper/ magazines <u>after</u> work	U.S	2.95	1.39	-1.46	.15	-0.23
	Oman	3.19	1.38			
Q7: Internet chatting <u>during</u> work	U.S	4.45	1.00	0.18	.86	0.02
	Oman	4.43	1.04			
Q8: Internet chatting <u>after</u> work	U.S	3.38	1.47	-2.03	.04	-0.34
	Oman	3.72	1.40			
Q9: using personal email account <u>during</u> work	U.S	4.19	1.10	3.34	.00*	0.46
	Oman	3.72	1.27			
Q10: using personal email account <u>after</u> work	U.S	3.21	1.42	0.44	.66	0.07
	Oman	3.14	1.44			
Q11: developing personal programs <u>during</u> work	U.S	4.60	0.89	3.53	.00*	0.40
	Oman	4.20	1.08			
Q12: developing personal programs <u>after</u> work	U.S	3.78	1.38	1.20	.23	0.19
	Oman	3.59	1.36			
SECTION 2: EMPLOYEE USES EMPLOYER COMPUTERS FOR...)						
Q13: uses employer data for personal gain	U.S	4.77	0.66	3.87	.00*	0.38
	Oman	4.39	1.06			
Q14: uses employer data for the gain of family or friends	U.S	4.74	0.73	3.95	.00*	0.41
	Oman	4.34	1.06			
Q15: installs employer-licensed software on employee's own PC	U.S	4.78	0.66	6.09	.00*	0.63
	Oman	4.16	1.12			
Q16: Installs employer-licensed software on the PC of a friend or relative	U.S	4.91	0.56	4.89	.00*	0.43
	Oman	4.47	0.98			

(table continues)

Survey question (ethical issue)	Culture	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i> -2 <i>tailed</i>	M Diff US - O																																																																																																																																					
Q17: uses employer e-mail system for personal e-mail	U.S	3.74	1.17	1.76	.08	0.26																																																																																																																																					
	Oman	3.48	1.32				Q18: uses but does not install employer licensed Software on employee's own personal PC	U.S	4.47	0.93	8.50	.00*	1.15	Oman	3.32	1.42	Q19: prints personal documents on employer's printer and uses employer's paper	U.S	4.02	1.00	3.92	.00*	0.50	Oman	3.52	1.22	Q20: prints personal documents on employer's printer but uses employee's own paper	U.S	3.29	1.24	4.77	.00*	0.72	Oman	2.57	1.38	Q21: stores personal documents on employer's computer	U.S	3.79	1.10	6.86	.00*	0.97	Oman	2.82	1.31	Q22: logs into and uses employer's computer using a different employee's password	U.S	4.60	0.84	1.37	.17	0.14	Oman	4.46	0.99	Q23: discloses sensitive customer information to an authorized third party without customer permission	U.S	4.05	1.37	-2.75	.01*	-0.39	Oman	4.44	0.99	Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	U.S	4.90	0.51	2.60	.01*	0.18	Oman	4.72	0.72	SECTION 3: EMPLOYER ...)							Q25: monitors employee e-mail <u>without</u> informing employees	U.S	3.02	1.52	-3.72	.00*	-0.64	Oman	3.66	1.43	Q26: monitors employee e-mail <u>after</u> informing employees	U.S	1.73	1.21	-2.05	.04	-0.30	Oman	2.03	1.31	Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75	Oman	3.58	1.34	Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03
Q18: uses but does not install employer licensed Software on employee's own personal PC	U.S	4.47	0.93	8.50	.00*	1.15																																																																																																																																					
	Oman	3.32	1.42				Q19: prints personal documents on employer's printer and uses employer's paper	U.S	4.02	1.00	3.92	.00*	0.50	Oman	3.52	1.22	Q20: prints personal documents on employer's printer but uses employee's own paper	U.S	3.29	1.24	4.77	.00*	0.72	Oman	2.57	1.38	Q21: stores personal documents on employer's computer	U.S	3.79	1.10	6.86	.00*	0.97	Oman	2.82	1.31	Q22: logs into and uses employer's computer using a different employee's password	U.S	4.60	0.84	1.37	.17	0.14	Oman	4.46	0.99	Q23: discloses sensitive customer information to an authorized third party without customer permission	U.S	4.05	1.37	-2.75	.01*	-0.39	Oman	4.44	0.99	Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	U.S	4.90	0.51	2.60	.01*	0.18	Oman	4.72	0.72	SECTION 3: EMPLOYER ...)							Q25: monitors employee e-mail <u>without</u> informing employees	U.S	3.02	1.52	-3.72	.00*	-0.64	Oman	3.66	1.43	Q26: monitors employee e-mail <u>after</u> informing employees	U.S	1.73	1.21	-2.05	.04	-0.30	Oman	2.03	1.31	Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75	Oman	3.58	1.34	Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27						
Q19: prints personal documents on employer's printer and uses employer's paper	U.S	4.02	1.00	3.92	.00*	0.50																																																																																																																																					
	Oman	3.52	1.22				Q20: prints personal documents on employer's printer but uses employee's own paper	U.S	3.29	1.24	4.77	.00*	0.72	Oman	2.57	1.38	Q21: stores personal documents on employer's computer	U.S	3.79	1.10	6.86	.00*	0.97	Oman	2.82	1.31	Q22: logs into and uses employer's computer using a different employee's password	U.S	4.60	0.84	1.37	.17	0.14	Oman	4.46	0.99	Q23: discloses sensitive customer information to an authorized third party without customer permission	U.S	4.05	1.37	-2.75	.01*	-0.39	Oman	4.44	0.99	Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	U.S	4.90	0.51	2.60	.01*	0.18	Oman	4.72	0.72	SECTION 3: EMPLOYER ...)							Q25: monitors employee e-mail <u>without</u> informing employees	U.S	3.02	1.52	-3.72	.00*	-0.64	Oman	3.66	1.43	Q26: monitors employee e-mail <u>after</u> informing employees	U.S	1.73	1.21	-2.05	.04	-0.30	Oman	2.03	1.31	Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75	Oman	3.58	1.34	Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																
Q20: prints personal documents on employer's printer but uses employee's own paper	U.S	3.29	1.24	4.77	.00*	0.72																																																																																																																																					
	Oman	2.57	1.38				Q21: stores personal documents on employer's computer	U.S	3.79	1.10	6.86	.00*	0.97	Oman	2.82	1.31	Q22: logs into and uses employer's computer using a different employee's password	U.S	4.60	0.84	1.37	.17	0.14	Oman	4.46	0.99	Q23: discloses sensitive customer information to an authorized third party without customer permission	U.S	4.05	1.37	-2.75	.01*	-0.39	Oman	4.44	0.99	Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	U.S	4.90	0.51	2.60	.01*	0.18	Oman	4.72	0.72	SECTION 3: EMPLOYER ...)							Q25: monitors employee e-mail <u>without</u> informing employees	U.S	3.02	1.52	-3.72	.00*	-0.64	Oman	3.66	1.43	Q26: monitors employee e-mail <u>after</u> informing employees	U.S	1.73	1.21	-2.05	.04	-0.30	Oman	2.03	1.31	Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75	Oman	3.58	1.34	Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																										
Q21: stores personal documents on employer's computer	U.S	3.79	1.10	6.86	.00*	0.97																																																																																																																																					
	Oman	2.82	1.31				Q22: logs into and uses employer's computer using a different employee's password	U.S	4.60	0.84	1.37	.17	0.14	Oman	4.46	0.99	Q23: discloses sensitive customer information to an authorized third party without customer permission	U.S	4.05	1.37	-2.75	.01*	-0.39	Oman	4.44	0.99	Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	U.S	4.90	0.51	2.60	.01*	0.18	Oman	4.72	0.72	SECTION 3: EMPLOYER ...)							Q25: monitors employee e-mail <u>without</u> informing employees	U.S	3.02	1.52	-3.72	.00*	-0.64	Oman	3.66	1.43	Q26: monitors employee e-mail <u>after</u> informing employees	U.S	1.73	1.21	-2.05	.04	-0.30	Oman	2.03	1.31	Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75	Oman	3.58	1.34	Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																																				
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	Oman	4.46	0.99				Q23: discloses sensitive customer information to an authorized third party without customer permission	U.S	4.05	1.37	-2.75	.01*	-0.39	Oman	4.44	0.99	Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	U.S	4.90	0.51	2.60	.01*	0.18	Oman	4.72	0.72	SECTION 3: EMPLOYER ...)							Q25: monitors employee e-mail <u>without</u> informing employees	U.S	3.02	1.52	-3.72	.00*	-0.64	Oman	3.66	1.43	Q26: monitors employee e-mail <u>after</u> informing employees	U.S	1.73	1.21	-2.05	.04	-0.30	Oman	2.03	1.31	Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75	Oman	3.58	1.34	Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																																														
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	Oman	4.44	0.99				Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	U.S	4.90	0.51	2.60	.01*	0.18	Oman	4.72	0.72	SECTION 3: EMPLOYER ...)							Q25: monitors employee e-mail <u>without</u> informing employees	U.S	3.02	1.52	-3.72	.00*	-0.64	Oman	3.66	1.43	Q26: monitors employee e-mail <u>after</u> informing employees	U.S	1.73	1.21	-2.05	.04	-0.30	Oman	2.03	1.31	Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75	Oman	3.58	1.34	Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																																																								
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Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	U.S	2.83	1.50	-4.59	.00*	-0.75																																																																																																																																					
	Oman	3.58	1.34				Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59	Oman	2.30	1.37	Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																																																																																																							
Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	U.S	1.70	1.17	-4.06	.00*	-.59																																																																																																																																					
	Oman	2.30	1.37				Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65	Oman	2.98	1.51	Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																																																																																																																	
Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	U.S	2.33	1.50	-3.71	.00*	-.65																																																																																																																																					
	Oman	2.98	1.51				Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31	Oman	1.93	1.27																																																																																																																											
Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	U.S	1.63	1.16	-2.16	.03	-.31																																																																																																																																					
	Oman	1.93	1.27																																																																																																																																								

Note. For reader convenience, significant *p*-values are labeled with (*).

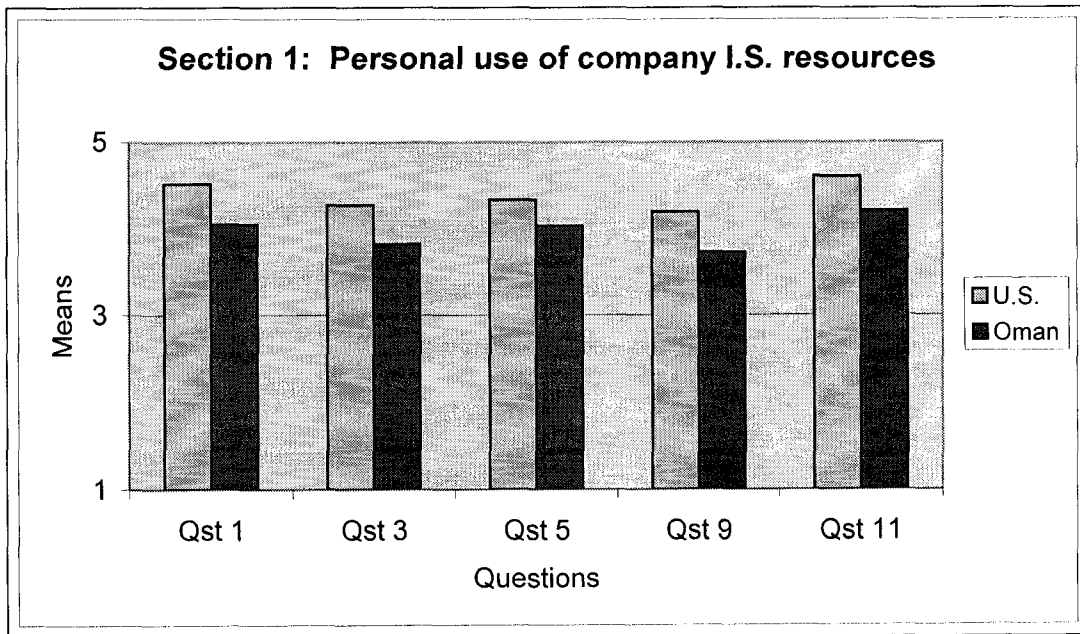


Figure 3. Average means for statistically significant questions in Section 1.

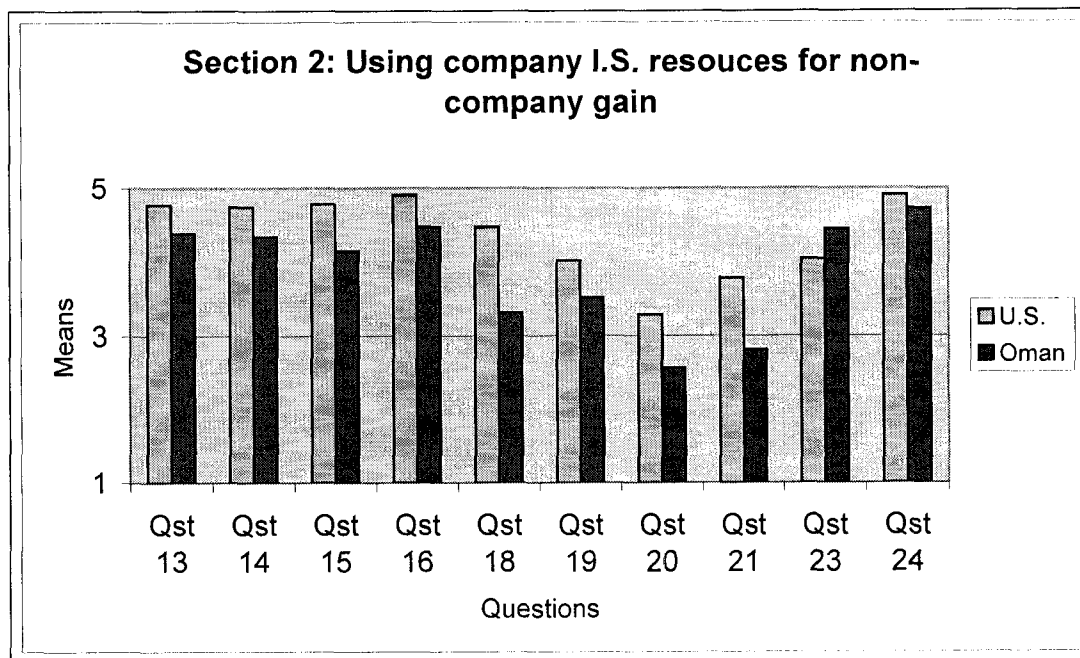


Figure 4. Average means for statistically significant questions in Section 2.

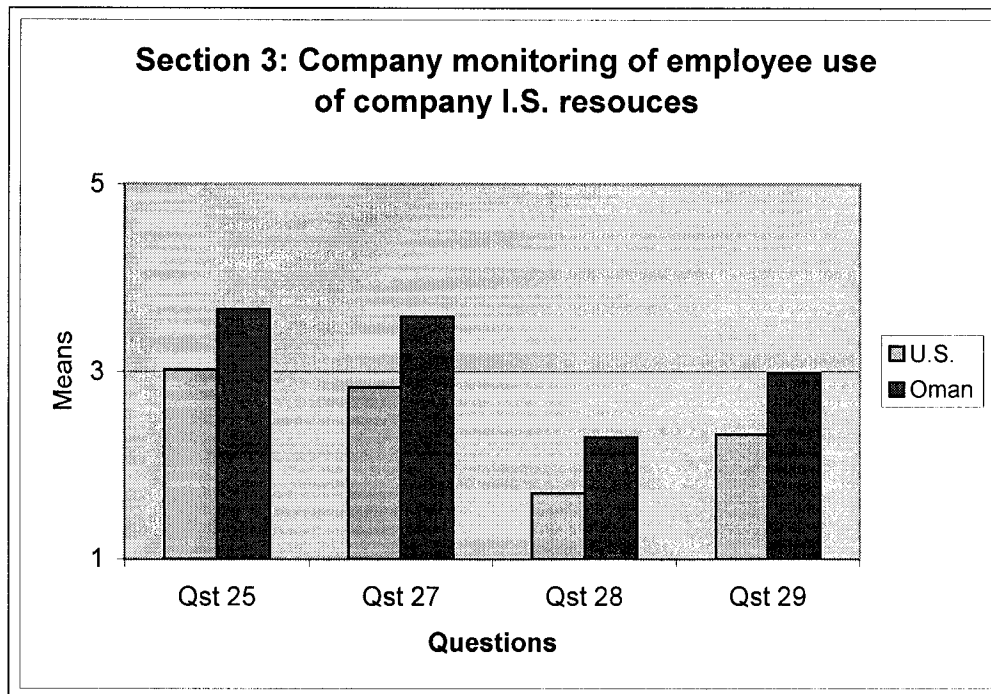


Figure 5. Average means for statistically significant questions in Section 3.

Section 3 of the survey (ethicality of company monitoring of its employee use of its I.S. resources) in the fourth 3-way ANOVA (see Tables 8-11). Table 15 contains the results for hypotheses 5 through 8, and Figure 6 shows the average means of both genders and their locations on the response scale.

Null Hypothesis #5. There is no gender effect on respondent views of the following three I.S. ethical issues jointly: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Table 15

ANOVA Results for Gender (Hypotheses 5 through 8)

Hypothesis	Source	Sig. (p)	(η_p^2)
Hypothesis #5: Gender in All Three Sections	Table 8	.42	.00
Hypothesis #6: Gender in Section 1	Table 9	.26	.00
Hypothesis #7: Gender in Section 2	Table 10	.28	.00
Hypothesis #8: Gender in Section 3	Table 11	.24	.01

Note. For reader convenience, significant p -values are labeled with (*).

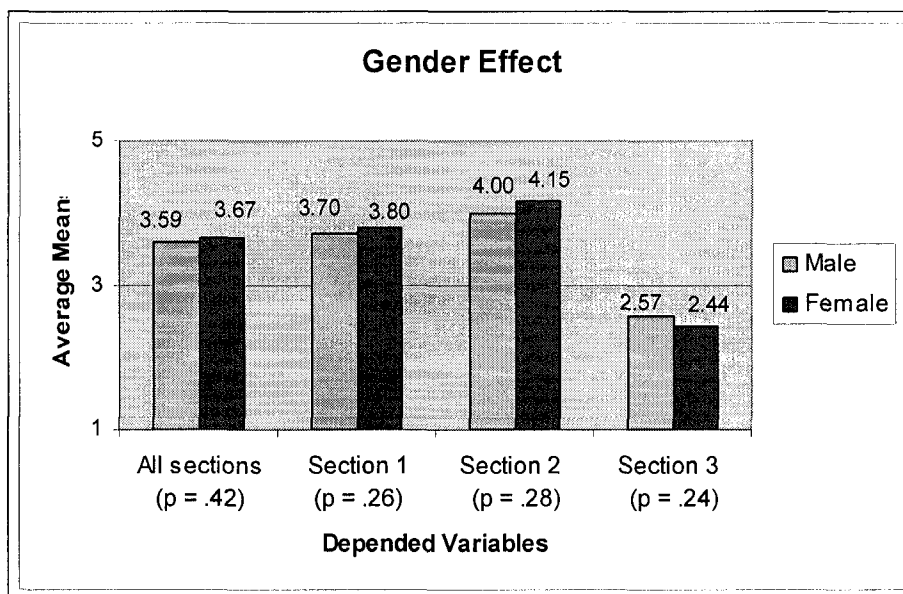


Figure 6. Average means of gender (Hypotheses 5 through 8).

Results shown in Table 15 indicate that we cannot reject the null hypothesis of no gender effect on respondents on the above issues and hence the male and female population means for are not statistically different since the p -value (.42) is greater than alpha level (.05). Thus, null hypothesis #5 cannot be rejected, and the study's hypothesis on this part of research Question #2 is not supported.

Null Hypothesis #6. There is no gender effect on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Results shown in Table 15 indicate that p (.26) is greater than alpha (.05). Thus, null hypothesis #6 cannot be rejected and the study's hypothesis on this part of research Question #2 is not supported.

Null Hypothesis #7. There is no gender effect on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Results shown in Table 15 above indicate that we cannot reject the null hypothesis of no gender effect, and hence the male and female population means are not statistically different since the p -value (.28) is greater than the alpha level (.05). Thus, null hypothesis #7 cannot be rejected, and the study's hypothesis on this part of research Question #2 is not supported.

Null Hypothesis #8. There is no gender effect on respondent views of company use of non-trust systems to monitor employee use of its I.S. resources.

Results shown in Table 15 indicate that p (.24) is greater than alpha (.05). Thus, null hypothesis #8 cannot be rejected and the study's hypothesis on this part of research Question #2 is not supported.

Gender Effect on Every I.S. Ethical Issue Separately

Gender was not found to have a statistically significant effect on respondent views of any dependent variable. Therefore, none of the four null hypotheses of research Question #2 were rejected. As with the analysis of the first set of hypotheses, 30 independent sample t tests were performed to test the effect of gender on every item individually and alpha level was reduced to .025 to reduce the chances of a Type I error. As shown in Table 16, only Question #18 was found statistically significant.

Research question #3: Relationship between age and I.S. ethical issues. How does employee age relate to views regarding the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Research Question #3 was addressed below via hypotheses 9 through 12. To analyze these hypotheses, four 3-way ANOVAs were conducted with the dependent variable as follows: all sections of the survey in the first 3-way ANOVA, Section 1 of the survey (ethicality of personal use of company I.S. resources) in the second 3-way ANOVA, Section 2 of the survey (ethicality of using company I.S. resources for personal gain and/or the gain of relatives and/or friends) in the third 3-way ANOVA, Section 3 of the survey (ethicality of company monitoring of its employee use of its I.S. resources) in the fourth 3-way ANOVA (see Tables 8-11). Table 17 illustrates results for hypotheses 9 through 12 and Figure 7 shows the average means of age groups and their locations on the response scale.

Null Hypothesis #9. There is no age effect on the respondent views of the following three I.S. ethical issues jointly: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Table 16

Independent t Tests on Responses to Every Question of Survey for Gender Difference Testing

Survey Question (ethical issue)	Gender	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i> -2 <i>tailed</i>	M Diff M - F
SECTION 1: EMPLOYEE USES EMPLOYER COMPUTERS FOR...)						
Q1: games during work	Male	4.18	1.09	-1.18	.24	-0.15
	Female	4.33	1.03			
Q2: games after work	Male	3.32	1.35	0.09	.93	0.01
	Female	3.31	1.38			
Q3: personal matters during work	Male	3.93	1.20	-1.42	.16	-0.18
	Female	4.11	1.08			
Q4: personal matters after work	Male	3.05	1.45	0.21	.84	0.03
	Female	3.02	1.40			
Q5: on-line newspaper/ magazines during work	Male	4.07	1.19	-1.51	.13	-0.19
	Female	4.26	1.05			
Q6: on-line newspaper/ magazines after work	Male	3.05	1.40	-0.46	.65	-0.08
	Female	3.13	1.38			
Q7: Internet chatting during work	Male	4.40	1.06	-0.71	.48	-0.08
	Female	4.48	0.98			
Q8: Internet chatting after work	Male	3.55	1.42	0.33	.74	-0.05
	Female	3.60	1.47			
Q9: using personal email account during work	Male	3.80	1.24	-1.76	.08	-0.25
	Female	4.05	1.19			
Q10: using personal email account after work	Male	3.07	1.44	-1.24	.22	-0.21
	Female	3.28	1.42			
Q11: developing personal programs during work	Male	4.34	1.04	-0.47	.64	-0.06
	Female	4.40	1.00			
Q12: developing personal programs after work	Male	3.64	1.35	-0.35	.73	-0.06
	Female	3.70	1.39			
SECTION 2: EMPLOYEE USES EMPLOYER COMPUTERS FOR...)						
Q13: uses employer data for personal gain	Male	4.51	0.98	-0.88	.38	-0.09
	Female	4.60	0.86			
Q14: uses employer data for the gain of family or friends	Male	4.46	1.00	-0.91	.36	-0.10
	Female	4.56	0.91			
Q15: installs employer-licensed software on employee's own PC	Male	4.31	1.04	-2.22	.03	-0.25
	Female	4.56	0.93			
Q16: Installs employer-licensed software on the PC of a friend or relative	Male	4.60	0.88	-1.24	.22	-0.12
	Female	4.72	0.82			
Q17: uses employer e-mail system for personal e-mail	Male	3.47	1.27	-1.83	.07	-0.26
	Female	3.73	1.24			

(table continues)

Survey Question (ethical issue)	Gender	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i> -2 <i>tailed</i>	M Diff M - F
Q18: uses but does not install employer licensed software on employee's own personal PC	Male	3.52	1.41	-4.04	.00*	-0.61
	Female	4.13	1.23			
Q19: prints personal documents on employer's printer and uses employer's paper	Male	3.73	1.17	0.04	.97	0.00
	Female	3.73	1.15			
Q20: prints personal documents on employer's printer but uses employee's own paper	Male	2.92	1.92	0.66	.51	0.10
	Female	2.82	1.35			
Q21: stores personal documents on employer's computer	Male	3.15	1.30	-1.19	.23	-0.18
	Female	3.33	1.32			
Q22: logs into and uses employer's computer using a different employee's password	Male	4.48	0.94	-0.80	.42	-0.09
	Female	4.57	.928			
Q23: discloses sensitive customer information to an authorized third party without customer permission	Male	4.24	1.17	-0.65	.51	-0.09
	Female	4.33	1.19			
Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	Male	4.76	0.67	-0.91	.36	-0.07
	Female	4.83	0.61			
SECTION 3: EMPLOYER ...)						
Q25: monitors employee e-mail <u>without</u> informing employees	Male	3.43	1.54	0.52	.60	0.09
	Female	3.34	1.45			
Q26: monitors employee e-mail <u>after</u> informing employees	Male	2.02	1.38	1.83	.07	0.26
	Female	1.76	1.12			
Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	Male	3.31	1.48	0.62	.54	0.10
	Female	3.21	1.43			
Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	Male	2.14	1.38	1.35	.18	0.20
	Female	1.94	1.24			
Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	Male	2.66	1.54	-0.48	.63	-0.09
	Female	2.75	1.54			
Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	Male	1.86	1.32	0.88	.38	0.12
	Female	1.74	1.12			

Note. For reader convenience, significant *p*-values are labeled with (*).

Table 17

ANOVA Results for Age (Hypotheses 9 through 12)

Hypothesis	Source	Sig. (ρ)	(η_p^2)
Hypothesis #9: Age in All Sections	Table 8	.34	.01
Hypothesis #10: Age in Section 1	Table 9	.14	.02
Hypothesis #11: Age in Section 2	Table 10	.02*	.03
Hypothesis #12: Age in Section 3	Table 11	.01*	.04

Note. For reader convenience, significant p -values are labeled with (*).

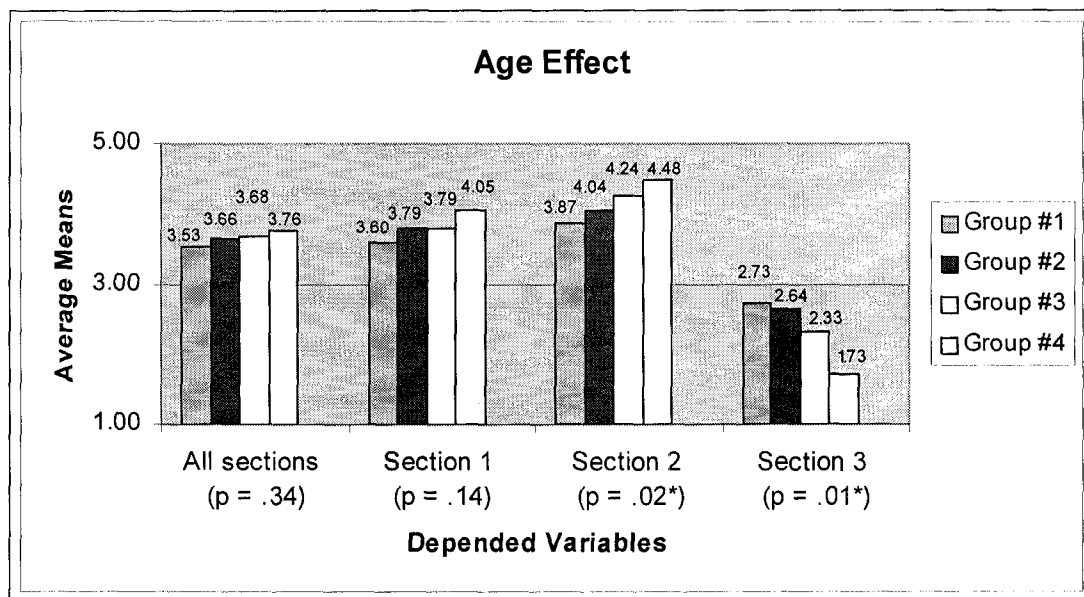


Figure 7. Average means of age (Hypotheses 9 through 12).

To test null hypothesis #9, a 3-way ANOVA was conducted to determine, irrespective of effect of other variables, the effect of age on respondent views to the ethicality of the above three issues jointly. Table 17 contains results for this null hypothesis and shows a p -value of .34 greater than alpha (.05). Thus null hypothesis #9 cannot be rejected, and the study's hypothesis on this part of research Question #3 is not supported.

Null Hypothesis #10. There is no age effect on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Results shown in Table 17 indicate that we cannot reject the null hypothesis of no age effect, and hence the age group population means are not statistically different since the p -value (.14) is greater than alpha level (.05). Thus, null hypothesis #10 cannot be rejected, and the study's hypothesis on this part of research Question #3 is not supported.

Null Hypothesis #11. There is no age effect on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Results shown in Table 17 above indicate that we should reject the null hypothesis of no age effect, and hence the age group population means for are different since p (.02) is smaller than alpha (.05). As a result, regardless of culture, age is found to have a statistically significant effect on respondent views relating to this part of research Question #3. The effect size (η_p^2) was only .03, which means that age by itself accounted for 3% of the overall variance. This effect size is small according to Cohen (1977 as cited by Stevens, 1999). The Games-Howell method was used as a post-hoc procedure for identifying age groups that are different and the magnitude of their difference. Games-Howell was used because, according to Newsom (2003), it is a procedure that does better than other procedures if group variances are unequal as is the case with the age groups in this study. Results of Games-Howell are shown in Table 18, and age groups that were different are 1-3, 1-4, and 2-4.

Results in Table 18 show that respondents in Group 1 (below 30 years old) are

Table 18

*Games-Howell for Effect of Age on Banker Responses to Section 2 of the Survey
(n=305)*

Age group (I)	Age group (J)	M diff (I – J)	Std. Error	p	Lower bound	Upper bound
Group 1 (below 30 years old)	Group 3 (40 to < 50 years old)	-4.48	1.23	.00*	-7.51	-1.44
Group 1 (below 30 years old)	Group 4 (over 50 years old)	-7.38	1.59	.00*	-11.95	-2.80
Group 2 (30 to < 40 years old)	Group 4 (over 50 years old)	-5.38	1.62	.02*	-10.08	-0.67

Note. For reader convenience, significant *p*-values are labeled with (*). Results in this table are based on Section 2 total scores.

significantly different than the respondents in Group 3 (40 to < 50 years old) and Group 4 (over 50 years old)). Also, respondents in Group 2 (30 to < 40 years old) were significantly different than the respondents in Group 4 (over 50 years old). In addition, descriptive results of all groups (Table 19) and their plot (Figure 8) imply that age group means were directly proportional to the groups' ages. In other words, as respondents get older they rate the use of company I.S. resources for personal, family, and/or friends' gain as more unethical.

Null Hypothesis #12. There is no age effect on respondent views of company use of non-trust systems to monitor employee use of its I.S. resources.

Results shown in Table 17 above indicate that we should reject the null hypothesis of no age effect, and hence the population means for the age groups are different since p (.01) is smaller than alpha (.05). Therefore, independent of culture, age was found to have a statistically significant effect on respondent views of company use of non-trust systems to monitor employee use of its I.S. resources. The effect size (η_p^2) was only .04, which means that age by itself accounted for 4% of the overall

Table 19

Mean Responses to Section 2 by Age (n=305)

Group #	Age Group	<i>M</i>	<i>SD</i>	<i>N</i>
Group 1	Below 30 years old	46.43	7.99	113
Group 2	30 to < 40 years old	48.44	8.42	94
Group 3	40 to < 50 years old	50.91	7.41	66
Group 4	Over 50 years old	53.81	8.73	32
Total		48.79	8.40	305

Note. Means and standard deviations are based on Section 2 total scores.

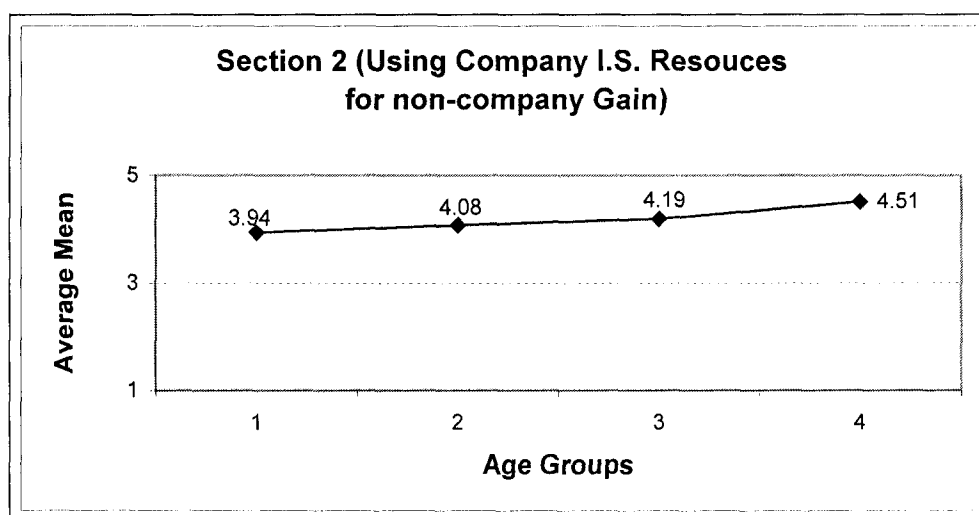


Figure 8. Effect of age on Section 2 responses.

variance. This effect size, according to Cohen (1977 as cited by Stevens, 1999), is small. Games-Howell results are shown in Table 20; age groups 1-3, 1-4, 2-4, and 3-4 differ.

Results in Table 20 show that the mean of Group 4 (over 50 years old) was significantly lower than the means of Group 1 (below 30 years old), Group 2 (30 to < 40 years old), and Group 3 (40 to < 50 years old). Similarly, the mean of Group 3 was significantly lower than the mean of Group 1. In addition, descriptive results of all

Table 20

*Games-Howell for Effect of Age on Banker Responses to Section 3 of the Survey
(n=305)*

Age group (I)	Age group (J)	M diff (I – J)	Std. Error	p	Lower bound	Upper bound
Group 1 (below 30 years old)	Group 3 (40 to < 50 years old)	2.42	0.92	.04*	0.01	4.79
Group 1 (below 30 years old)	Group 4 (over 50 years old)	6.01	1.19	.00*	3.02	9.01
Group 2 (30 to < 40 years old)	Group 4 (over 50 years old)	5.44	1.21	.00*	2.40	8.49
Group 3 (40 to < 50 years old)	Group 4 (over 50 years old)	3.59	1.28	.02*	0.43	6.76

Note. For reader convenience, significant p-values are labeled with (*). Results in this table are based on Section 3 total scores.

groups (Table 21) imply that age has a significant effect on respondent views of this part of Question #3. Furthermore, Figure 9 shows that the mean responses of the above four age groups are inversely proportional to age. Put differently, as respondents get older they become more tolerant to company use of non-trust systems to monitor employee use of its I.S. resources.

Age Effect on Every I.S. Ethical Issue Separately

Two of four null hypotheses for research Question #3 relating to the effect of age on respondent views of I.S. ethical issues were supported. To test the effect of age on each item separately, 30 individual one-way ANOVAs were calculated. To reduce the possibility of a Type I error, alpha in these per-item tests was lowered from .05 to .025. In addition, mean and standard deviation were calculated for every item as well. Table 22 contains these results.

Fourteen of the 30 items (46.7%) were found to show statistically significant differences among age groups, even at an alpha of .025. However, most of the

Table 21

Descriptives for the Age Factor on Banker Responses to the Questions in Section 3 of the Survey (n=305)

Group #	Age Group	<i>M</i>	<i>SD</i>	<i>N</i>
Group 1	Below 30 years old	16.39	6.24	113
Group 2	30 to <40 years old	15.82	6.07	94
Group 3	40 to <50 years old	13.97	5.77	66
Group 4	Over 50 years old	10.38	5.47	32
Total		15.06	6.26	305

Note. Means and standard deviations are based on Section 3 total scores.

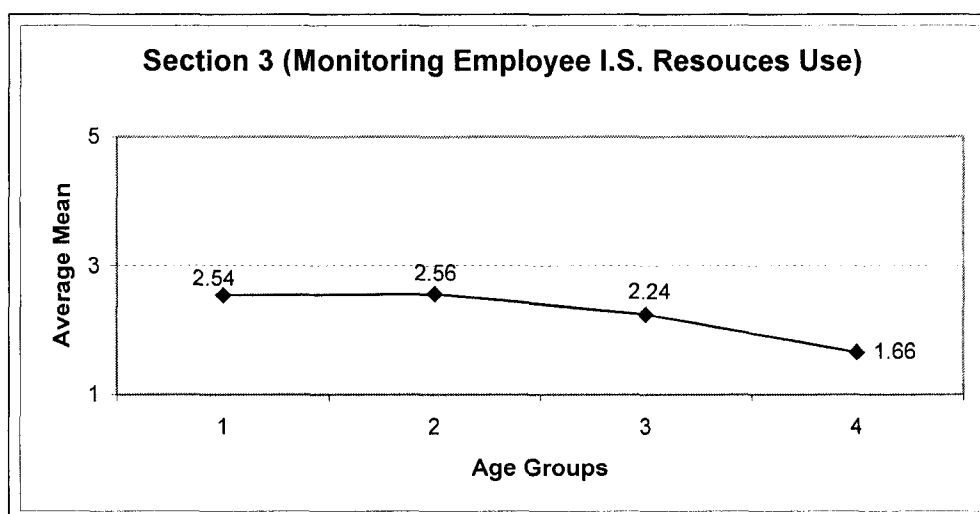


Figure 9. Section 3 responses by age group.

differences were in Section 2 and Section 3 of the survey. In Section 2, 6 of its 12 items (50%) showed statistically significant differences; in Section 3, all of its 6 items (100%) yielded statistically significant differences. This finding explains the statistically significant results for Sections 2 and 3 that were discussed earlier.

Research question #4: Effect of culture and gender interaction on I.S. ethical issues. Do employee culture and gender interaction affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S.

Table 22

ANOVA Results on Responses to Every Question of the Survey for Age Effect Testing

Survey Question (ethical issue)	Age Group	<i>M</i>	<i>SD</i>	<i>F</i>	Sig. (ρ)	(η_p^2)
SECTION 1: EMPLOYEE USES EMPLOYER COMPUTERS FOR...						
Q1: games <u>during</u> work	#1	4.16	1.03	0.61	.61	.01
	#2	4.24	1.01			
	#3	4.35	1.14			
	#4	4.37	1.16			
Q2: games <u>after</u> work	#1	3.29	1.27	1.07	.36	.01
	#2	3.23	1.36			
	#3	3.29	1.48			
	#4	3.72	1.44			
Q3: personal matters <u>during</u> work	#1	3.82	1.10	2.29	.08	.02
	#2	4.10	1.11			
	#3	4.05	1.28			
	#4	4.37	1.10			
Q4: personal matters <u>after</u> work	#1	2.82	1.40	2.00	.12	.02
	#2	3.26	1.38			
	#3	2.98	1.50			
	#4	3.28	1.40			
Q5: on-line newspaper/ magazines <u>during</u> work	#1	4.17	1.10	0.52	.67	.01
	#2	4.06	1.11			
	#3	4.18	1.21			
	#4	4.34	1.12			
Q6: on-line newspaper/ magazines <u>after</u> work	#1	2.98	1.40	.94	.42	.01
	#2	3.13	1.30			
	#3	3.05	1.48			
	#4	3.44	1.44			
Q7: Internet chatting <u>during</u> work	#1	4.43	0.98	0.05	.99	.00
	#2	4.44	1.01			
	#3	4.42	1.12			
	#4	4.50	1.02			
Q8: Internet chatting <u>after</u> work	#1	3.43	1.43	0.72	.54	.01
	#2	3.63	1.43			
	#3	3.62	1.50			
	#4	3.81	1.38			
Q9: using personal email account <u>during</u> work	#1	3.66	1.21	3.83	.01*	.04
	#2	3.95	1.19			
	#3	4.08	1.24			
	#4	4.41	1.10			
Q10: using personal email account <u>after</u> work	#1	2.95	1.41	2.15	.09	.02
	#2	3.20	1.41			
	#3	3.27	1.43			
	#4	3.63	1.48			

(table continued)

Survey Question (ethical issue)	Age Group	<i>M</i>	<i>SD</i>	<i>F</i>	Sig. (ρ)	(η_p^2)
Q11: developing personal programs <u>during</u> work	#1	4.21	1.02	1.94	.12	.02
	#2	4.37	0.95			
	#3	4.50	1.14			
	#4	4.62	0.91			
Q12: developing personal programs <u>after</u> work	#1	3.35	1.32	3.81	.01*	.04
	#2	3.83	1.28			
	#3	3.77	1.52			
	#4	4.09	1.28			
SECTION 2: EMPLOYEE USES EMPLOYER COMPUTERS FOR...)						
Q13: uses employer data for personal gain	#1	4.38	1.06	2.91	.04	.03
	#2	4.54	0.95			
	#3	4.73	0.67			
	#4	4.81	0.74			
Q14: uses employer data for the gain of family or friends	#1	4.34	1.07	4.13	.01*	.04
	#2	4.47	0.99			
	#3	4.74	0.64			
	#4	4.81	0.74			
Q15: installs employer-licensed software on employee's own PC	#1	4.17	1.17	4.96	.00*	.05
	#2	4.45	0.95			
	#3	4.68	0.69			
	#4	4.72	0.81			
Q16: Installs employer-licensed software on the PC of a friend or relative	#1	4.53	0.92	2.05	.11	.02
	#2	4.63	0.89			
	#3	4.85	0.54			
	#4	4.75	0.98			
Q17: uses employer e-mail system for personal e-mail	#1	3.47	1.28	1.40	.25	.01
	#2	3.56	1.19			
	#3	3.65	1.28			
	#4	3.97	1.33			
Q18: uses but does not install employer licensed software on employee's own personal PC	#1	3.53	1.38	7.22	.00*	.07
	#2	3.66	1.41			
	#3	4.09	1.26			
	#4	4.62	0.87			
Q19: prints personal documents on employer's printer and uses employer's paper	#1	3.39	1.21	8.16	.00*	.08
	#2	3.71	1.10			
	#3	4.05	1.04			
	#4	4.31	0.93			
Q20: prints personal documents on employer's printer but uses employee's own paper	#1	2.55	1.39	7.04	.00*	.07
	#2	2.82	1.29			
	#3	3.08	1.38			
	#4	3.72	1.11			
Q21: stores personal documents on employer's computer	#1	3.00	1.34	7.13	.00*	.07
	#2	3.02	1.28			
	#3	3.56	1.22			
	#4	3.97	1.15			

(table continued)

Survey Question (ethical issue)	Age Group	<i>M</i>	<i>SD</i>	<i>F</i>	Sig. (<i>p</i>)	(η_p^2)
Q22: logs into and uses employer's computer using a different employee's password	#1	4.40	1.05	1.42	.24	.01
	#2	4.57	0.87			
	#3	4.55	0.86			
	#4	4.75	0.76			
Q23: discloses sensitive customer information to an <u>authorized</u> third party without customer permission	#1	4.20	1.18	0.83	.48	.01
	#2	4.36	1.14			
	#3	4.18	1.24			
	#4	4.50	1.14			
Q24: discloses sensitive customer information to an <u>un</u> authorized third party without permission	#1	4.69	0.73	1.88	.13	.02
	#2	4.81	0.66			
	#3	4.91	0.34			
	#4	4.87	0.71			
SECTION 3: EMPLOYER ...)						
Q25: monitors employee e-mail <u>without</u> informing employees	#1	3.50	1.51	6.01	.00*	.06
	#2	3.60	1.45			
	#3	3.39	1.40			
	#4	2.35	1.45			
Q26: monitors employee e-mail <u>after</u> informing employees	#1	2.10	1.40	3.77	.01*	.04
	#2	1.99	1.24			
	#3	1.71	1.19			
	#4	1.32	0.79			
Q27: makes surprise checks for personal documents on employer PCs <u>without</u> informing employees of the possibility	#1	3.54	1.48	6.02	.01*	.06
	#2	3.34	1.40			
	#3	3.11	1.35			
	#4	2.35	1.40			
Q28: makes surprise checks for personal documents on employer PCs <u>after</u> informing employees of the possibility	#1	2.29	1.37	6.95	.00*	.07
	#2	2.24	1.38			
	#3	1.65	1.09			
	#4	1.39	0.95			
Q29: makes surprise checks for non-employer software on employer PCs <u>without</u> informing employees of the possibility	#1	2.94	1.58	3.55	.02*	.03
	#2	2.79	1.47			
	#3	2.52	1.52			
	#4	2.00	1.46			
Q30: makes surprise checks for non-employer software on employer PCs <u>after</u> informing employees of the possibility	#1	2.02	1.34	3.77	.01*	.04
	#2	1.86	1.20			
	#3	1.59	1.15			
	#4	1.29	0.86			

Note. For reader convenience, significant *p*-values are labeled with (*).

resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed below via hypotheses 13 through 16. As with research Questions #1, four 3-way ANOVAs were performed with the following dependent variables: all sections of the survey in the first 3-way ANOVA, Section 1 of the survey (ethicality of personal use of company I.S. resources) in the second 3-way ANOVA, Section 2 of the survey (ethicality of using company I.S. resources for personal gain and or the gain of relatives and or friends) in the third 3-way ANOVA, and Section 3 of the survey (ethicality of company monitoring of its employee use of its I.S. resources) in the fourth 3-way ANOVA (see Tables 8-11). Table 23 includes the results for hypotheses 13 through 16.

Null Hypothesis #13. There is no effect of culture and gender interaction on respondent views of the following three I.S. ethical issues jointly: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Table 23

ANOVA Results for Age (Hypotheses 9 through 12)

Hypothesis	Source	Sig. (ρ)	(η_p^2)
Hypothesis #13: Interaction between Culture and Gender in All Three Sections	Table 8	.73	.00
Hypothesis #14: Interaction between Culture and Gender in Section 1	Table 9	.52	.00
Hypothesis #15: Interaction between Culture and Gender in Section 2	Table 10	.67	.00
Hypothesis #16: Interaction between Culture and Gender in Section 3	Table 11	.45	.00

Note. For reader convenience, significant p -values are labeled with (*).

Results shown in Table 23 above indicate that we cannot reject the null hypothesis of no culture and gender interaction since the p -value (.73) is greater than alpha level (.05). Thus, the null hypothesis #13 cannot be rejected, and the study's hypothesis on this part of research Question #4 is not supported.

Null Hypothesis #14. There is no effect of culture and gender interaction on respondent views of employee use of company I.S. resources for personal matters and entertainment.

As presented in Table 23, the p -value of .52 suggests that hypothesis #14 is not supported. Therefore, there is no statistically significant effect of culture and gender interaction on respondent views of the above ethical issue. Thus, null hypothesis #14 cannot be rejected and the study's hypothesis on this part of research Question #4 is not supported.

Null Hypothesis #15. There is no effect of culture and gender interaction on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Results shown in Table 23 above indicate that we cannot reject the null hypothesis of no effect of culture and gender interaction on the above issue since the p -value (.67) is greater than alpha level (.05). Thus, the null hypothesis #15 cannot be rejected, and the study's hypothesis on this part of research Question #4 is not supported.

Null Hypothesis #16. There is no effect of culture and gender interaction on the respondent views of company use of non-trust systems to monitor employee use of its I.S. resources.

As presented in Table 23, the p -value of .45 suggests that hypothesis #16 is not supported. Thus, the null hypothesis of no effect cannot be rejected and the study's hypothesis on this part of research Question #4 is not supported.

Research Question #5: Effect of culture and age interaction on I.S. ethical issues. Do employee culture and age interaction affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed below via Hypotheses 17 through 20. As with research Questions #1, four 3-way ANOVAs were performed with these dependent variables: all sections of the survey in the first 3-way ANOVA, Section 1 of the survey (ethicality of personal use of company I.S. resources) in the second 3-way ANOVA, Section 2 of the survey (ethicality of using company I.S. resources for personal gain or the gain of relatives or friends) in the third 3-way ANOVA, and Section 3 of the survey (ethicality of a company monitoring employee use of its I.S. resources) in the fourth 3-way ANOVA (see Tables 8-11). Table 24 contains results for hypotheses 17 through 20.

Table 24

ANOVA Results for Interaction between Culture and Age (Hypotheses 17 through 20)

Hypothesis	Source	Sig. (ρ)	(η_p^2)
Hypothesis #17: Interaction between Culture and Age in All Three Sections	Table 8	.24	.02
Hypothesis #18: Interaction between Culture and Age in Section 1	Table 9	.40	.01
Hypothesis #19: Interaction between Culture and Age in Section 2	Table 10	.69	.01
Hypothesis #20: Interaction between Culture and Age in Section 3	Table 11	.04*	.03

Note. For reader convenience, significant p -values are labeled with (*).

Null Hypothesis #17. There is no effect of culture and age interaction on respondent views of the following three I.S. ethical issues jointly: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The 3-way ANOVA reported a p -value of .24 for the effect of culture and age interaction on the respondent views on the above ethical issues (see Table 24). Thus, the null hypothesis of no effect cannot be rejected, and the study's hypothesis on this part of research Question #5 is not supported.

Null Hypothesis #18. There is no effect of culture and age interaction on respondent views of employee use of company I.S. resources for personal matters and entertainment.

Results shown in Table 24 indicate that p (.40) is greater than alpha (.05). Thus, Null Hypothesis #18 cannot be rejected and the study's hypothesis on this part of research Question #5 is not supported.

Null Hypothesis #19. There is no effect of culture and age interaction on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

As presented in Table 23, p -value of .69 suggests that the above hypothesis is not supported. Thus, the null hypothesis #19 cannot be rejected, and the study's hypothesis on this part of research Question #5 is not supported.

Null Hypothesis #20. There is no effect of culture and age interaction on respondent views of company use of non-trust systems to monitor employee use of its I.S. resources.

Results shown in Table 24 above indicate that we should reject the null hypothesis of no effect of culture and age interaction on respondent views of the above issue, and hence the population means for culture and age interaction are different since p (.04) is smaller than alpha (.05). As a result, culture and age interaction was found to have a statistically significant effect on respondent views of the above ethical issue. The effect size (η_p^2) was (.03), which means that culture and age interaction by itself accounted for 3% of the overall variance. This effect size is small according to Cohen (1977 as cited by Stevens, 1999). These results are graphically presented in Figure 10, which shows that American and Omani respondents significantly differed in age group 1 only. In other words, American respondents in Group 1 (below 30 years old)

considered company use of non-trust systems to monitor employee use of company I.S. resources to be more ethical than did their Omani counterparts in the same age group.

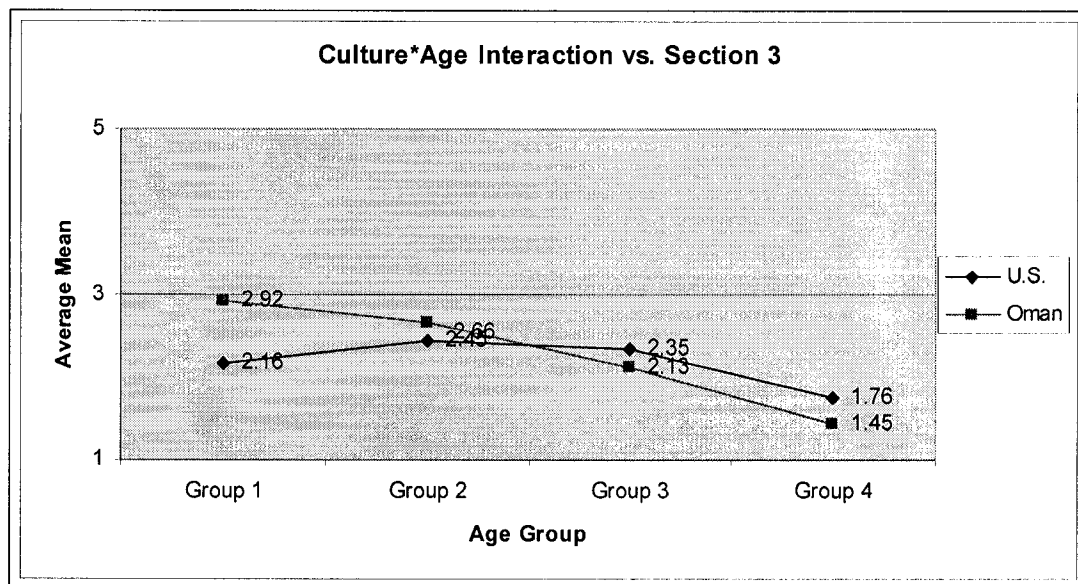


Figure 10. Interaction between Culture and Age in Section 3

Research question #6: Effect gender and age interaction on I.S. ethical issues.

Do employee gender and age interaction affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed below via hypotheses 13 through 16. As with research Questions #1, four 3-way ANOVAs were performed with these dependent variables: all sections of the survey in the first 3-way ANOVA, Section 1 of the survey (ethicality of personal use of company I.S. resources) in the second 3-way ANOVA,

Section 2 of the survey (ethicality of using company I.S. resources for personal gain and or the gain of relatives and or friends) in the third 3-way ANOVA, and Section 3 of the survey (ethicality of company monitoring of employee use of its I.S. resources) in the fourth 3-way ANOVA (see Tables 8-11). Table 25 contains results for hypotheses 21 through 24.

Table 25

ANOVA Results for Interaction between Gender and Age (Hypotheses 21 through 24)

Hypothesis	Source	Sig. (p)	(η_p^2)
Hypothesis #21: Interaction between Gender and Age in All Three Sections	Table 8	.66	.01
Hypothesis #22: Interaction between Gender and Age in Section 1	Table 9	.70	.01
Hypothesis #23: Interaction between Gender and Age in Section 2	Table 10	.55	.01
Hypothesis #24: Interaction between Gender and Age in Section 3	Table 11	.74	.00

Note. For reader convenience, significant p -values are labeled with (*).

Null Hypothesis #21. There is no effect of gender and age interaction on respondent views regarding (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Results shown in Table 25 above indicate that we cannot reject the null hypothesis of no effect of gender and age interaction on the above issues since the p -value (.66) is greater than alpha level (.05). Thus, the null hypothesis #21 cannot be rejected, and the study's hypothesis on this part of research Question #6 is not supported.

Null Hypothesis #22. There is no effect of gender and age interaction on respondent views of employee use of company I.S. resources for personal matters and entertainment.

As presented in Table 25, p -value of .70, indicates that we cannot reject null hypothesis of no effect of gender and age interaction on respondent views of the above ethical issue. Thus, the null hypothesis #22 cannot be rejected, and the study's hypothesis on this part of research Question #6 is not supported.

Null Hypothesis #23. There is no effect of gender and age interaction on respondent views of employee use of company I.S. resources for personal, relatives', and/or friends' gain.

The 3-way ANOVA reported a p -value of .55 for the effect of gender and age interaction on respondent views of the above ethical issue (see Table 25). Thus, the null hypothesis of no effect cannot be rejected, and therefore the study's hypothesis on this part of research Question #6 is not supported.

Hypothesis #24. There is no effect of gender and age interaction on respondent views of company use of non-trust systems to monitor employee use of its I.S. resources.

As presented in Table 25, a p -value of .74 suggests that we cannot reject the null hypothesis of no effect of gender and age interaction on respondent views on the above ethical issue. Thus, the null hypothesis #24 cannot be rejected, and the study's hypothesis on this part of research Question #6 is not supported.

Research question #7: Effect of culture, gender, and age interaction on I.S. ethical issues. Do employee culture, gender, and age interaction affect views of the following ethical issues jointly and separately: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

The above question was addressed below via hypotheses 13 through 16. As with research Questions #1, four 3-way ANOVAs were performed with these dependent variables: all sections of the survey in the first 3-way ANOVA, Section 1 of the survey (ethicality of personal use of company I.S. resources) in the second 3-way ANOVA, Section 2 of the survey (ethicality of using company I.S. resources for personal gain and or the gain of relatives and or friends) in the third 3-way ANOVA, and Section 3 of the survey (ethicality of company monitoring of its employee use of its I.S. resources) in the fourth 3-way ANOVA (see Tables 8-11). Table 26 includes results for hypotheses 25 through 28.

Null Hypothesis #25. There is no effect of culture, gender, and age interaction on respondent views of the following three I.S. ethical issues jointly: (a) the ethicality of employee use of company I.S. resources for personal matters and entertainment; (b) the ethicality of employee use of company I.S. resources for personal, relatives', and/or friends' gain; and (c) the ethicality of company use of non-trust systems to monitor employee use of its I.S. resources.

Table 26

ANOVA Results for Interaction among Culture, Gender, and Age (Hypotheses 25 through 28)

Hypothesis	Source	Sig. (p)	(η_p^2)
Hypothesis #25: Interaction between Culture, Gender, and Age in All Three Sections	Table 8	.67	.00
Hypothesis #26: Interaction between Culture, Gender, and Age in Section 1	Table 9	.60	.00
Hypothesis #27: Interaction between Culture, Gender, and Age in Section 2	Table 10	.62	.00
Hypothesis #28: Interaction between Culture, Gender, and Age in Section 3	Table 11	.80	.00

Note. For reader convenience, significant p -values are labeled with (*).

Results shown in Table 26 above indicate that we cannot reject the null hypothesis of no effect of culture, gender, and age interaction on the above issues since the p -value (.67) is greater than alpha level (.05). Thus, the null hypothesis #25 cannot be rejected, and the study's hypothesis on this part of research Question #7 is not supported.

Null Hypothesis #26. There is no effect of culture, gender, and age interaction on the respondent views of employee use of company I.S. resources for personal matters and entertainment.

The 3-way ANOVA reported a p -value of .60 for the effect of gender and age interaction on respondent views of the above ethical issue (see Table 26). Thus, the null hypothesis of no effect cannot be rejected, and therefore the study's hypothesis on this part of research Question #7 is not supported.

Null Hypothesis #27. There is no effect of culture, gender, and age interaction on respondent views regarding employee use of company I.S. resources for personal, relatives', and/or friends' gain.

Results shown in Table 26 indicate that p (.62) is greater than alpha (.05). Thus, null hypothesis #27 cannot be rejected and the study's hypothesis on this part of research Question #7 is not supported.

Null Hypothesis #28. There is no effect of culture, gender, and age interaction on respondent views regarding company use of non-trust systems to monitor employee use of its I.S. resources.

Results shown in Table 26 above indicate that we cannot reject the null hypothesis of no effect of culture and gender interaction on the above issue since the p -value (.80) is greater than alpha level (.05). Thus, the null hypothesis #28 cannot be rejected, and the study's hypothesis on this part of research Question #7 is not supported.

Summary

The purpose of this chapter was to present demographics of the respondents and to report the results of statistical analyses performed on data collected from American and Omani bankers.

Demographic data was comprised of gender, age, education level, and position. The percentage of males and females across both samples together was 53.8% to 46.2%. The Omani sample was comprised of younger bankers than was the American sample. The American sample was more educated than the Omani sample. Finally, the American sample was comprised of more respondents in managerial positions than was the Omani sample.

As summarized in Table 27 below, research Questions 1 through 7 and their respective 28 hypotheses were tested using four 3-way ANOVAs. Four null hypotheses had statistically significant results. Implications of these results are discussed in the next chapter.

Table 27

Summary of Research Questions, Hypotheses, and their Results

Research Question/Hypothesis	Statistical result
Research Question #1: Culture difference	
H ₁ : No culture difference in all Three Sections	Insignificant
H ₂ : No culture difference in Section 1	Insignificant
H ₃ : No culture difference in Section 2	Significant
H ₄ : No culture difference in Section 3	Insignificant
Research Question #2: Gender effect	
H ₅ : No gender effect on respondent in all Three Sections	Insignificant
H ₆ : No gender effect on respondent in Section 1	Insignificant
H ₇ : No gender effect on respondent in Section 2	Insignificant
H ₈ : No gender effect on respondent in Section 3	Insignificant
Research Question #3: Age effect	
H ₉ : No age effect on respondent in all Three Sections	Insignificant
H ₁₀ : No age effect on respondent in Section 1	Insignificant
H ₁₁ : No age effect on respondent in Section 2	Significant
H ₁₂ : No age effect on respondent in Section 3	Significant
Research Question #4: Culture and gender interaction effect	
H ₁₃ : No culture and gender interaction effect on respondent in all Three Sections	Insignificant
H ₁₄ : No culture and gender interaction effect on respondent in Section 1	Insignificant
H ₁₅ : No culture and gender interaction effect on respondent in Section 2	Insignificant
H ₁₆ : No culture and gender interaction effect on respondent in Section 3	Insignificant
Research Question #5: Culture and age interaction effect	
H ₁₇ : No culture and age interaction effect on respondent in all Three Sections	Insignificant
H ₁₈ : No culture and age interaction effect on respondent in Section 1	Insignificant
H ₁₉ : No culture and age interaction effect on respondent in Section 2	Insignificant
H ₂₀ : No culture and age interaction effect on respondent in Section 3	Significant
Research Question #6: Culture and gender interaction effect	
H ₂₁ : No gender and age interaction effect on respondent in all Three Sections	Insignificant
H ₂₂ : No gender and age interaction effect on respondent in Section 1	Insignificant
H ₂₃ : No gender and age interaction effect on respondent in Section 2	Insignificant
H ₂₄ : No gender and age interaction effect on respondent in Section 3	Insignificant

(table continues)

Research Question/Hypothesis	Statistical result
Research Question #7: Culture, gender, and age interaction effect	
H ₂₅ : No culture, gender, and age interaction effect on respondent in all Three Sections	Insignificant
H ₂₆ : No culture, gender, and age interaction effect on respondent in Section 1	Insignificant
H ₂₇ : No culture, gender, and age interaction effect on respondent in Section 2	Insignificant
H ₂₈ : No culture, gender, and age interaction effect on respondent in Section 3	Insignificant

Note. For reader's convenience, significant results are labeled with (*).

CHAPTER V

DISCUSSION

This study seeks to augment the understanding of I.S. ethics by comparing I.S. ethics opinions in the American and Omani cultures. Surveys were distributed to bankers in the United States and in Oman. The survey questions were summarized into seven research questions, each with four testable hypotheses for a total of 28. Results obtained after applying appropriate statistical analyses are presented in detail in the previous chapter (Chapter IV). Those results are discussed in this chapter in the following manner. First, each of the three independent variables (culture, gender, and age) investigated in this study is discussed in light of the results. Next is discussion of interactions among these three variables. Finally, conclusions, limitations, and recommendations are presented.

Influence of Culture on I.S. Ethics

The results of this study paint an amorphous picture of the effect of culture on respondents' personal ethical decisions. American respondents and Omani respondents evidently do not hold generally opposing views about the ethicality of the I.S. ethical issues treated in the survey; but, at the same time, they do hold differing views on certain issues. While respondents from both cultures viewed employee use of company I.S. resources for personal matters and entertainment as unethical, there were some major significant disagreements between them on a per-item basis.

Personal Use of Company I.S. Resources

Playing games, doing personal work, reading on-line newspapers/magazines, using a personal email account, and developing computer programs for personal use on company computers during working hours were considered unethical by American and Omani respondents. However, American respondents viewed the above I.S. issues more unethical than did their Omani counterparts. These findings are contradictory to those of Whitman et al., (1999), who found eastern cultures to be generally less tolerant of the use of company resources for personal matters than most western cultures.

Using Company I.S. Resources for Non-company Gain

Americans expressed stronger rejection of using company resources for non-company gain than did Omanis. For instance, American respondents viewed using company I.S. resources for personal, relatives', and/or friends' gain as significantly more unethical than did their Omani counterparts. American respondents also showed more conservatism than their Omani counterparts on issues concerning infringing software copyright, although respondents from both cultures viewed such practices as unethical. This finding is consistent with the results of Whitman et al. (1999) who found Americans to be less tolerant of copyright infringement than all other countries studied.

Company Monitoring of Employee Use of Its I.S. Resources

Respondents in both cultures concurred that company monitoring of employee use of its I.S. resources was ethical, but Omani respondents viewed this phenomenon as

less ethical than did their American counterparts. This finding is consistent with Loch et al. (1998) with regard to the American sample, but no studies were found reporting eastern cultures about this issue.

Cross-culture Homogeneity

American and Omani respondents were remarkably similar in their responses as was the case with findings between American and Arab students in the pilot study. Interpreted according to the theoretical model developed in Chapter III, findings of this study indicate a surprising degree of cross-cultural homogeneity in the ethics of the I.S. user populations sampled. However, a question might arise from these findings: Could homogeneity between Americans and Omanis in I.S. ethics be attributed to the effect of laws and corporate codes rather than merely to a similarity between the two cultures? Asking this question is not meant to dismiss findings of this study that indicate a homogeneity between the two cultures but rather to further describe it. The theoretical model (Figure 1) did include mutual influence among laws, corporate codes, and culture and also their independent influence on the personal code. Hence, laws and corporate codes might be affecting ethics views, at least in the I.S. field. Hence, for example, it is possible that the Copyright Act of 1976 in the U.S. (Fishman, 2001) and the copyright law of 1996 in Oman (<http://www.mocioman.gov.om>, nd) may have a homogenizing effect on the ethics views of I.S. users in both cultures. A similar corporate code effect could also exist. For example, Pierce and Henry (1996) found that as awareness of professional codes spreads, homogeneity between personal codes and corporate codes increases. Loch et al. (1998) also suggested corporate policies and codes as a solution to

the issues that face I.S. users. Additionally, Pierce and Henry viewed law enforcement as a strong influence on both behavior and decision-making of individuals albeit due to fear and habituation rather than to integrity. Thus, it may be that laws and corporate codes are helping to reduce differences between the American and Omani cultures in the I.S. field if such a gap existed. As this study did not control or test laws and corporate code effects, responses of American and Omani bank employees are considered homogeneous.

Reasons for American Ethical Conservatism

Another question arising from the findings of this study is why American respondents appeared more ethically conservative than their Omani counterparts on I.S. ethical issues collectively and on most individual issues as well. This researcher believes that American respondents may be more aware of the I.S. ethics and hence more conservative than their Omani counterparts for at least four reasons. (a) Respondents in the American sample were more educated than respondents in the Omani sample. (b) Age has a significant effect on responses, and the Omani sample was comprised of younger bankers than the American sample. (c) American copyright law was revised to protect intellectual property in the copyright Act of 1976 (Fishman, 2001), whereas equivalent laws in Oman were not enacted until 20 years later in 1996 (<http://www.mocioman.gov.om>, nd). (d) Professional organizations that promulgate I.S. ethics have been well established in America for at least 50 years (Oz, 1992); nothing similar was found in the literature about Oman.

Conclusion Regarding Culture Influence on I.S. Ethics

To conclude, there appear to be two main points identified in this study about I.S. ethics in America and Oman. First, there is a remarkable consistency between American and Omani responses: in few cases (10%) did one group consider an act ethical that the other group considered unethical. Second, there were statistically significant disagreements between the two groups on 19 individual questions, suggesting a different level of concern for certain issues among them; again, most of the disagreements were on the same side of the response scale. Although culture presumably remains a primary determinant of ethics, there seems to be only a modest differentiating effect of these two particular cultures on I.S.-related ethics opinions of their members; this suggests that other variables, possibly laws and corporate codes, may have helped narrow any gap between the American and Omani cultures in the I.S. field. This possibility finds some support in the literature, but the findings of this study are not definitive regarding laws and corporate codes because those variables were neither controlled nor measured. If further study substantiates this speculation, the model proposed in this study (Figure 1) would change. As it stands, then, this study confirms homogeneity between the American and Omani bank employees on I.S. ethical issues.

Influence of Gender on I.S. Ethics

Results of this study did not support gender as a variable that influences the personal codes of I.S. users. Gender neither generated any statistically significant

differences between the respondents of the two cultures when examined solely, nor did it generate any statistically significant disagreements in combination with culture and age. Surprisingly, this finding contradicts the literature, which considers gender an influential variable on individual's ethical decisions including the I.S. ethics.

However, on per-item basis, female respondents did consider the practice of borrowing company-licensed software for personal use on a personally owned computer without installing the software statistically significant more unethical than did their male counterparts. This finding is consistent with the literature that views women to be more ethically conservative than men regarding computer use (Gattiker & Kelley, 1999).

The above findings suggest a phenomenon similar (but not identical) to that of the culture factor. That is, laws and corporate codes may be mediating gender's influence on respondents' personal codes.

In conclusion, although gender in this study did not persist as a strong influence of personal codes of I.S. users as the literature suggests, it may still has some influence in this respect. Therefore, although gender could still be included in the model, it should be given less consideration in the proposed model of this study by making necessary changes (see Figure 11) to reflect a less than expected conformity to the literature.

Influence of Age on I.S. Ethics

Findings suggest that age has a statistically significant effect on respondent

views regarding I.S ethical issues. Use of company I.S. resources for personal, relatives' and/or friends' gain was considered considerably more unethical by older respondents than younger ones. This finding is consistent with literature (Gattiker & Kelly, 1999) that age and perception of the importance of ethics of people in the I.S. arena are positively related irrespective of country. Similarly, the issue of company use of non-trust systems to monitor employee use of its I.S. resources is perceived as less unethical by older respondents. In other words, as respondents get older they become more tolerant of company monitoring practices. Again, this is consistent with the literature that older people appear to be more ethically conservative than younger people (Sikula & Costa, 1994).

Privacy Versus Monitoring

One might argue that conservatism is more likely to be closely associated with an individual's right to privacy than with corporate monitoring. Loch et al. (1998) report that although respondents of their study expressed fairly strong sentiment that company monitoring of its resources was unethical, some respondents were firmly supportive to monitoring of software. Their support was based on the fact that it is the company right to protect itself from surprise examinations and heavy fines due to non-licensed software installed by company employees. This researcher believes that monitoring of I.S. use is likely to be less opposed by older employees than by younger ones. This is companion to the belief that older people regard the company's right to ensure that its I.S. resources are not abused as more significant than the employee's right to privacy. This partiality to company rights over personal privacy rights is

supported by the American legal system (Loch et al., 1998). However, acceptance of monitoring by employees is provisioned that it not be done secretly: respondents in all age groups considered unannounced monitoring solidly unethical.

Phenomenon in Age Affect

A phenomenon analogous to the culture effect was also observed with the age. Age-related response differences were of degree, not kind. That is, even statistically significant differences were not about whether a behavior was ethical (or unethical), but rather how ethical (or unethical) it was.

Conclusion on Influence of Age on I.S. Ethics

To conclude the discussion of age, there appears to be a notable relationship between age and I.S. ethics. Older respondents appeared significantly more ethically conservative on almost 47% of the survey items than their younger counterparts. They also appeared more conservative than younger respondents on most of the other issues. Once more, all differences among age groups were degree and not kind. Finally, the theoretical model developed for this study (Figure 1) requires some changes to incorporate these data.

Influence of Cross-Factor Interactions on I.S. Ethics

Results of this study did not show much influence of cross-variable interactions among culture, gender, and age on the personal codes of I.S. users. Only one of 16 possible interactions was statistically significant: interaction between culture and age

with respect to company monitoring employee use of its I.S. resources. Again, these disagreements all remained on the unethical side of the scale and did not cross the mid point of the scale. This finding is in conformity with literature discussed in the section above on age and monitoring in the previous section.

Study Conclusion

Culture has shown a modest differentiating relationship with I.S. ethics when tested in the context of three variables: culture, gender, and age collectively. This relationship appeared a little stronger when tested independent of the other three variables. Almost all statistically significant differences between Americans and Omanis, whether in overall or per-item analysis, rested on same side of the response scale, suggesting less difference (whether statistically significant or not) than predicted by other cross-cultural ethics research. Therefore, it is concluded that American and Omani bank employees are largely homogeneous in their I.S. ethics views; the reasons behind this homogeneity remain largely unknown.

Gender in this study has not shown any particular relationship with I.S. ethics when analyzed collectively. Its effect was evident in only one per-item analysis, suggesting little influence in this respect.

Age in this study has also shown a modest relationship with I.S. ethics collectively and independently. Again, almost all statistically significant effects among age groups rested on the same side of the response scale. These responses are consistent with the literature that older bank employees appear to be more ethically

conservative than their younger counterparts regarding I.S. ethics.

An interesting phenomenon observed in this study was that Americans generally indicated more conservative opinions than Omanis, and older respondents indicated more ethically conservative opinions than did younger respondents. However, in almost all cases, differences did not cross the midpoint of the response scale.

Finally, in light of the above, the theoretical model (Figure 1) developed for this study should be revised. The similar responses of American and Omani bank employees confirm a degree of homogeneous cultural influence on personal codes of I.S. users. As laws and corporate codes were not controlled or tested in this study, a possibly increased effect of these variables can only be anecdotally estimated. Lastly, while the age effect remain the same in the model, the gender effect should be reduced. Figure 11 illustrates these suggested changes compared to Figure 1.

Limitations

There are several limitations that might have affected the results of this research. First, generalizability may be limited to the banking industry because of the samples used in this study. As the banking industry is highly regulated and under continuous scrutiny by government supervisory authorities, banks may have more clear-cut internal policies and guidelines for employees. This situation might not be similar in other business sectors and therefore should be kept in mind when generalizing beyond the banking industry.

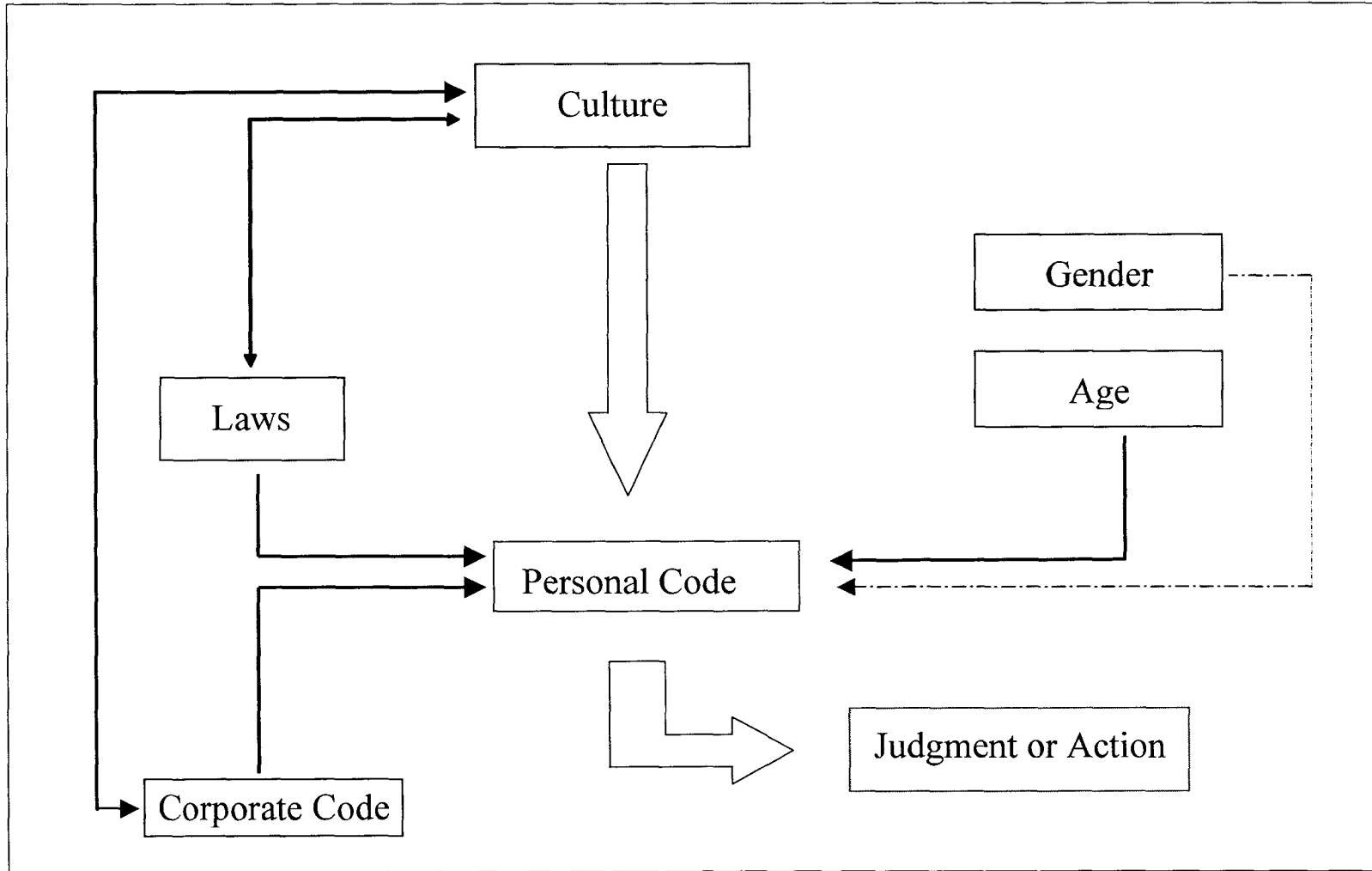


Figure 11. Conceptual model for individual's judgment or action (amended).

Second, the researcher developed the instrument used in this study. Despite the fact that all required steps were taken to make the instrument reliable and valid, future replication would further support its reliability and validity.

Third, although respondents were asked to base their answers to the questions in the survey on their personal views and beliefs, there is still a possibility that their answers were affected by internal policies, corporate codes, local laws, or relationships with fellow employees. Therefore, controlling these factors would be desirable in future studies.

Fourth, American respondents received the surveys through their managers and returned their completed surveys in post-paid envelopes, while Omani respondents received surveys from and returned completed surveys to an independent collector. This difference could have affected the responses themselves.

Finally, respondent demographic information reveals some concern that should be taken as a possible limitation to the study. The American sample had substantially more education and management status than did the Omani sample. Also, the American sample was considerably older than the Omani sample. These demographic differences might have affected the results and therefore should be considered as a possible limitation to the findings of this study.

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APPENDICES

Appendix A
Survey Questionnaire in English

Business Information Ethics Survey

Please do not write your name on the survey

Introduction

This study aims to explore similarities and differences in Information Systems (I.S.) ethics between two different cultures: the USA and the Sultanate of Oman. It is hoped to begin identifying specifics of how these two cultures vary in deciding what is 'right' and what is 'wrong' in I.S. ethics issues. Therefore, we call for your cooperation in this study by participating in this survey. So, please review the instructions carefully and answer the questions sincerely based on your own personal views.

We confirm to you that your responses will be kept strictly confidential and data from your survey will be reported only in a group form.

Personal information

1.Education level: below high school high school undergraduate
 graduate professional certificate (ex: CPA)

2.Sex: Male Female

3.Age: below 30 years 30 to below 40 years
 40 to below 50 years over 50 years

4.Ethnicity: Caucasian American African American
 Hispanic American Native American
 Asian/ Pacific Islander American Middle Eastern American
 other.....

5.Position: managerial non-managerial

6.Religion affiliation

Important Instruction:

Based on your personal opinion, please circle one of the five points found beside each of the 30 statements shown below as follows: (Circle **1** if you believe the action in the statement should be **usually ethical**; **2** if **sometimes ethical**; **3** if **neutral**; **4** if **sometimes unethical** or **5** if **usually unethical**.) Please choose one of the responses for every item and do not leave any item unanswered. These instructions are shown as headings of the columns that you should circle in each section of the survey.

Section one:

 (please read carefully and answer all questions)

Assume that each of the following employee actions does not have any negative affect on worker productivity, nor does it lead to any delays in completing job tasks, and employer has no stated policy on the personal use of company resources including computers.

	5 = usually unethical				
	4 = sometimes unethical				
	3 = neutral				
	2 = sometimes ethical				
	1 = usually ethical				
1. The employee plays games on a company computer <u>during</u> working hours.	1	2	3	4	5
2. The employee plays games on a company computer <u>after</u> working hours.	1	2	3	4	5
3. The employee does personal work on a company computer <u>during</u> working hours.	1	2	3	4	5
4. The employee does personal work on a company computer <u>after</u> working hours.	1	2	3	4	5
5. The employee reads online newspapers/magazines for personal enjoyment on a company computer <u>during</u> working hours.	1	2	3	4	5
6. The employee reads online newspapers/magazines for personal enjoyment on a company computer <u>after</u> working hours.	1	2	3	4	5
7. The employee chats over the Internet with friends or relatives on a company computer <u>during</u> working hours.	1	2	3	4	5
8. The employee chats over the Internet with friends or relatives on a company computer <u>after</u> working hours.	1	2	3	4	5
9. The employee reads, writes, and sends email using personal email account on a company computer <u>during</u> working hours.	1	2	3	4	5
10. The employee reads, writes, and sends email using personal email account on a company computer <u>after</u> working hours.	1	2	3	4	5
11. The employee develops computer programs for personal use on a company computer <u>during</u> working hours.	1	2	3	4	5
12. The employee develops computer programs for personal use on a company computer <u>after</u> working hours.	1	2	3	4	5

Section two:

(please read carefully and answer all questions)

Make no special assumptions for each of the following employee actions:

	5 = usually unethical				
	4 = sometimes unethical				
	3 = neutral				
	2 = sometimes ethical				
	1 = usually ethical				
13. The employee uses information from the company database for personal gain. (For example, the company plans to raise prices of some products, so the employee purchases those products early to make profit.)	1	2	3	4	5
14. The employee uses information obtained from the company database for the gain of family members or friends. (For example, the company plans to raise prices of some products, so the employee tells relatives or friends to purchase those products early to make a profit.)	1	2	3	4	5
15. The employee installs company-licensed software on the employee's own personal computer.	1	2	3	4	5
16. The employee installs company- licensed software on the personally owned computer of a relative or friend.	1	2	3	4	5
17. The employee receives and sends personal messages using the company e-mail system.	1	2	3	4	5
18. The employee borrows company-licensed software for personal use on a personally owned computer but does not install the software.	1	2	3	4	5
19. The employee prints personal documents on a company printer using company paper.	1	2	3	4	5
20. The employee prints personal documents on company printer using personally owned paper.	1	2	3	4	5
21. The employee stores personal documents on a company computer.	1	2	3	4	5
22. The employee logs into and works on a company computer using another employee's password.	1	2	3	4	5
23. Without obtaining permission from the customer or fellow employee, the employee discloses personal information about a customer or fellow employee to an <u>authorized</u> third person	1	2	3	4	5
24. Without obtaining permission from the customer or fellow employee, the employee discloses personal information about a customer or fellow employee to an <u>unauthorized</u> third person.	1	2	3	4	5

Section three:

(please read carefully and answer all questions)

Assume the following actions are taken by company management toward company employees.

	5 = usually unethical				
	4 = sometimes unethical				
	3 = neutral				
	2 = sometimes ethical				
	1 = usually ethical				
25. Without informing employees, company management monitors employees' e-mail to ensure that it is not used for non-business purposes.	1	2	3	4	5
26. After informing employees, company management monitors employees' e-mail to ensure that it is not used for non-business purposes.	1	2	3	4	5
27. Without informing employees of the possibility, company management makes surprise examinations of company-owned PCs used by employees to find personal documents.	1	2	3	4	5
28. After informing employees of the possibility, company management makes surprise examinations of company-owned PCs used by employees to find personal documents.	1	2	3	4	5
29. Without informing employees of the possibility, company management makes surprise examinations of company-owned PCs used by employees to ensure that only software licensed to the company is installed on company computers.	1	2	3	4	5
30. After informing employees of the possibility, company management makes surprise examinations of company-owned PCs used by employees to ensure that only software licensed to the company is installed on company computers.	1	2	3	4	5

Thank you very much for participating in this survey.

Please return to:

Husain Al Lawati
 Utah State Department
 Department of Business Information Systems
 Logan, UT 84322-3515

Appendix B

Survey Questionnaire in Arabic

استبيان حول أخلاقيات نظم المعلومات التجارية

يرجى عدم كتابة اسمك على الاستبيان

المقدمة

تهدف هذه الدراسة الى التعرف على اوجه الشبه والاختلاف في النظرة الى الاخلاقيات والسلوكيات المتعلقة بنظم المعلومات التجارية بين كل من مستخدمي الكمبيوترات في الولايات المتحدة الامريكية وبين مستخدمي الكمبيوترات في سلطنة عمان. ومن المؤمل أن تساعد هذه الدراسة على معرفة الامور التي تختلف فيها هاتان العينتان اللتان تستند شخصيات عناصرهما على ثقافتين مختلفتين (الثقافة الامريكية الغربية) و(الثقافة العمانية الاسلامية) في نظرة كل منهما الى ما هو صحيح وما هو خاطئ في مجال استخدام ادوات تقنية المعلومات. لذلك يرجى من الأخ العماني والاخت العمانية التعاون والمشاركة في هذه الدراسة وذلك بتعبئة هذا الاستبيان. وعليه يرجى منهما قراءة التعليمات بتمعن والاجابة على الاسئلة بجدية واهتمام وطبقا لقناعتها الشخصية.

إننا نؤكد لجميع المشاركين بأن اجاباتهم على اسئلة هذا الاستبيان سوف يتم التعامل معها بغاية السرية. كما أننا نؤكد لهم أنه إذا تقرر نشر البيانات المستخلصة من الاستبيانات فإنه سيتم التعامل معها ضمن مجموعات وليس على اساس فردي.

بيانات شخصية

1. المستوى الدراسي: أقل من الثانوية العامة الثانوية العامة دراسة جامعية
- دراسات عليا مهني
2. الجنس: ذكر انثى
3. العمر: أقل من 30 سنة من 30 الى أقل من 40 سنة
- من 40 الى أقل من 50 سنة 50 سنة او اكبر

تعليمات هامة

بناء على قناعتك الشخصية ، يرجى وضع دائرة على احد الارقام الخمسة المطبوعة امام كل عبارة من العبارات الـ 30 للإستبيان في أقسامه الثلاثة ، وذلك على الوجه التالي: (ضع دائرة على رقم 1 إذا كنت تعتقد ان التصرف الوارد في العبارة اخلاقيا بشكل عام ، او ضع دائرة على رقم 2 إذا كنت تعتقد ان التصرف الوارد في العبارة اخلاقيا احيانا ، او ضع دائرة على رقم 3 إذا كنت تعتقد ان التصرف الوارد في العبارة حياديا ، او ضع دائرة على رقم 4 إذا كنت تعتقد ان التصرف الوارد في العبارة غير اخلاقي احيانا ، او ضع دائرة على رقم 5 إذا كنت تعتقد ان التصرف الوارد في العبارة غير اخلاقي بشكل عام).

لقد تم تلخيص هذه التعليمات على هيئة جدول يظهر في القسم العلوي من كل صفحة من الصفحات التي تحتوي على اسئلة الاستبيان.

- 1 = أخلاقي بشكل عام
 2 = أخلاقي أحيانا
 3 = حيادي
 4 = غير أخلاقي أحيانا
 5 = غير أخلاقي بشكل عام

القسم الأول: (يرجى القراءة بتمعن والاجابة على جميع الاسئلة)

إفترض / افترضني أن كل تصرف من تصرفات الموظف (الـ 12) التالية ، لا تؤثر سلبا على انتاجيته لا تؤدي ايضا إلى أي تأخير في انجاز الاعمال المسندة اليه. كما أن جهة العمل (أي المؤسسة أو الشركة) ليس لديها لائحة محددة تمنع أو تسمح الاستخدامات الشخصية لمواردها بما في ذلك اجهزة الكمبيوتر.

1	يقوم الموظف باللعب على جهاز الكمبيوتر الخاص بالشركة اثناء ساعات العمل	1	2	3	4	5
2	يقوم الموظف باللعب على جهاز الكمبيوتر الخاص بالشركة بعد ساعات العمل	1	2	3	4	5
3	يقوم الموظف بإنجاز أعماله الخاصة على جهاز الكمبيوتر الخاص بالشركة اثناء ساعات العمل	1	2	3	4	5
4	يقوم الموظف بإنجاز أعماله الخاصة على جهاز الكمبيوتر الخاص بالشركة بعد ساعات العمل	1	2	3	4	5
5	اثناء ساعات العمل المحددة يقوم الموظف بقراءة المجلات او الجرائد على الانترنت من أجل المتعة الشخصية مستخدما كمبيوتر الشركة.	1	2	3	4	5
6	بعد ساعات العمل المحددة يقوم الموظف بقراءة المجلات او الجرائد على الانترنت من أجل المتعة الشخصية مستخدما كمبيوتر الشركة	1	2	3	4	5
7	اثناء ساعات العمل المحددة يقوم الموظف بالمحادثة عبر الانترنت مع الاصدقاء او الأقرباء مستخدما كمبيوتر الشركة.	1	2	3	4	5
8	بعد ساعات العمل المحددة يقوم الموظف بالمحادثة عبر الانترنت مع الاصدقاء او الأقرباء مستخدما كمبيوتر الشركة.	1	2	3	4	5
9	اثناء ساعات العمل المحددة يقوم الموظف بقراءة وكتابة وارسال الرسائل الالكترونية (E-mails) عبر بريده الالكتروني الخاص مستخدما كمبيوتر الشركة.	1	2	3	4	5
10	بعد ساعات العمل المحددة يقوم الموظف بقراءة وكتابة وارسال الرسائل الالكترونية (E-mails) عبر بريده الالكتروني الخاص مستخدما كمبيوتر الشركة.	1	2	3	4	5
11	اثناء ساعات العمل المحددة يقوم الموظف بانتاج برامج كمبيوترية للإستعمال الشخصي مستخدما كمبيوتر الشركة.	1	2	3	4	5
12	بعد ساعات العمل المحددة يقوم الموظف بانتاج برامج كمبيوترية للإستعمال الشخصي مستخدما كمبيوتر الشركة.	1	2	3	4	5

- 1 = أخلاقي بشكل عام
 2 = أخلاقي أحيانا
 3 = حيادي
 4 = غير أخلاقي أحيانا
 5 = غير أخلاقي بشكل عام

القسم الثاني: (يرجى القراءة بتمعن والاجابة على جميع الاسئلة)

لا داعي من وضع أية افتراضات حول تصرفات الموظف (الـ 12) التالية:

5	4	3	2	1	يستخدم الموظف المعلومات المخزنة في كمبيوتر الشركة من أجل الكسب الشخصي (مثال : الشركة بصدد رفع اسعار منتجاتها ، فيقوم الموظف بشراء	13
5	4	3	2	1	يستخدم الموظف المعلومات المخزنة في كمبيوتر الشركة من أجل إكساب افراد عائلته او اصدقائه (مثال : الشركة بصدد رفع اسعار منتجاتها ، فيشير الموظف	14
5	4	3	2	1	يقوم الموظف بتحميل البرنامج المرخص للشركة في كمبيوتره الشخصي.	15
5	4	3	2	1	يقوم الموظف بتحميل البرنامج المرخص للشركة في كمبيوتر أحد اقربائه او اصدقائه	16
5	4	3	2	1	يستخدم الموظف البريد الالكتروني الخاص بالشركة في إرسال و استقبال رسائله الالكترونية الشخصية	17
5	4	3	2	1	يستير الموظف برنامجا مرخصا للشركة للإستخدام الخاص في كمبيوتره الشخصي بدون تحميل ذلك البرنامج الى كمبيوتره الشخصي	18
5	4	3	2	1	يطبع الموظف وثائقه الشخصية على طابعة الشركة مستخدما اوراق الشركة.	19
5	4	3	2	1	يطبع الموظف وثائقه الشخصية على طابعة الشركة مستخدما ارواقه الخاصة.	20
5	4	3	2	1	يخزن الموظف وثائقه الشخصية في كمبيوتر الشركة.	21
5	4	3	2	1	يقوم الموظف بالدخول الى كمبيوتر الشركة لإنجاز الأعمال المسندة اليه مستخدما كلمة مرور موظف آخر.	22
5	4	3	2	1	يكشف الموظف الى شخص ثالث مخول/مفوض معلومات شخصية تخص أحد زبائن الشركة او أحد موظفي الشركة بدون اذنهما.	23
5	4	3	2	1	يكشف الموظف الى شخص ثالث غير مخول/مفوض معلومات شخصية تخص أحد زبائن الشركة او أحد موظفي الشركة بدون اذنهما.	24

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القسم الثالث: (يرجى القراءة بتمعن والاجابة على جميع الاسئلة)

افترض أن ادارة الشركة تقوم بالتصرفات (الـ 6) التالية حيال موظفي الشركة:

5	4	3	2	1	دون اشعار الموظفين مسبقا ، تقوم ادارة الشركة بمراقبة الرسائل الالكترونية للموظفين من أجل التأكد من عدم استخدامها لغير الاغراض التجارية للشركة.	25
5	4	3	2	1	بعد اشعار الموظفين مسبقا ، تقوم ادارة الشركة بمراقبة الرسائل الالكترونية للموظفين من أجل التأكد من عدم استخدامها لغير الاغراض التجارية للشركة.	26
5	4	3	2	1	دون اشعار الموظفين مسبقا باحتمال قيامها بذلك ، تقوم ادارة الشركة بفحص فجائي لكمبيوترات الشركة المستخدمة من قبل الموظفين بحثا عن الوثائق الشخصية الخاصة بهم.	27
5	4	3	2	1	بعد اشعار الموظفين مسبقا باحتمال قيامها بذلك ، تقوم ادارة الشركة بفحص فجائي لكمبيوترات الشركة المستخدمة من قبل الموظفين بحثا عن الوثائق الشخصية الخاصة بهم.	28
5	4	3	2	1	دون اشعار الموظفين مسبقا باحتمال قيامها بذلك ، تقوم ادارة الشركة بفحص فجائي لكمبيوترات الشركة المستخدمة من قبل الموظفين للتأكد من أن البرامج المحملة فيها مقتصرة فقط على البرامج المرخصة للشركة.	29
5	4	3	2	1	بعد اشعار الموظفين مسبقا باحتمال قيامها بذلك ، تقوم ادارة الشركة بفحص فجائي لكمبيوترات الشركة المستخدمة من قبل الموظفين للتأكد من أن البرامج المحملة فيها مقتصرة فقط على البرامج المرخصة للشركة.	30

لكم جزيل الشكر والتحية من:

حسين بن محسن اللواتي

طالب في مرحلة الدكتوراه في مجال انظمة المعلومات التجارية

بجامعة Utah State University

مدينة لوجن ، ولاية يوتا ، الولايات المتحدة الأمريكية

Appendix C

Letter to American Banks

January 24, 2004

President/ Vice President/ Area Manager

Name of the Bank

Street Address

City, State Zip Code

Dear President/ Vice President/ Area Manager:

When I asked Dr. Thomas Hilton, my major professor, if he knew someone who works for a bank to help me with my doctoral research, he named you as a helpful person he has known for some time. I was delighted when he later informed me of your willingness to help after talking to you on the phone. As you already know, I am conducting research for my Ph.D. in BIS at Utah State University to help identify how the American and Omani cultures vary in perceptions of 'right' and 'wrong' information systems (I.S.) use. I believe this kind of study is crucial in reducing misunderstandings and stereotypes and improving the ability to do business across cultures.

I seek your cooperation in encouraging employees of all ranks at branches of your bank throughout the western states to complete the attached survey (which will take about 10 minutes). As you might observe, the questions in the survey will not compromise confidential aspects of your business (although I am open to revisions you might require). Also, being a banker myself for more than a decade, I know how busy you must be. Therefore, I readily offer to go to any branch of your bank in Utah to personally distribute the surveys. I am also prepared to talk with anyone you suggest at other branches throughout the West to solicit their support for my study. Further, should you want me to do a presentation about my study before any individuals of your choice inside your bank, I would be delighted to do so. I am also pleased to inform you that this study will be conducted consistent with all applicable federal and state regulations and with the approval of the University's Internal Review Board.

I am from Oman, the other country in this study, and I have been in Utah for about 7 years. My wife and I are both working on doctoral degrees at Utah State University. Four of my five children have gained a wonderful education at various American schools, and I am presently employed as marketing manager for a Utah based small business that has many overseas connections.

With your approval, I will bring a number of surveys for bank employees of all ranks that are interested in participating in the study. I will try to get a more or less equal number of men and woman to participate so opinions of both genders are represented. Postage-paid return envelopes will also be provided so participants can send their completed surveys directly to the BIS department. This will ensure that completed surveys remain anonymous and that participants pay nothing to return them. Finally,

you will see in the attached copy of the survey that respondents are informed of the goals of the study, the confidentiality of their responses, and how their completed surveys will be used.

I am very grateful for your support and for the participation of your bank in my study. Please email me or call me with any questions you may have; my contact information is provided below. Also, feel free to contact my major professor, Dr. Thomas Hilton, at (435) 797 2353 or hilton@cc.usu.edu.

Sincerely,

Husain M. Al Lawatia

Appendix D

Arabic Letter to the Omani Survey Administrator

بسم الله الرحمن الرحيم

حضرة الاخ الكريم / مصطفى علي محمود الموقر

السلام عليكم ورحمة الله وبركاته ، وبعد

تجد مرفقا الاستبيان الذي اريد منك المساعدة على تملئته من قبل المصرفيين العمانيين من كل المستويات الوظيفية. وعليه يرجى مراعاة الامور التالية:

1. يرجى توزيع ما لا يقل عن 200 استبيان على ما لا يقل عن 200 مشارك و مشاركة على ان يقتصر ذلك على العمانيين فقط.
2. يرجى الاتصال بالراغبين في المشاركة بشكل ودي.
3. يرجى مراعاة ان يغطي الاستبيان جميع المستويات الوظيفية والعمرية والتعليمية (راجع الاستبيان - قسم المعلومات الشخصية).
4. يرجى مراعاة ان يغطي الاستبيان الجنسين بشكل شبه متساو قدر الامكان.
5. يرجى ان يغطي الاستبيان مختلف فئات وقبائل الشعب العماني قدر الامكان.
6. يرجى الحاق النسخة الانجليزية بالنسخة العربية إذا كان المشارك لا يتقن العربية بشكل جيد.

من أجل تسهيل تلك الأمور أقترح ان يتم الاستعانة بالاخوة العاملين في البنوك المختلفة لكي يقوموا بالاتصال بزملائهم وزميلاتهم بشكل ودي. و أنا على يقين بأن اتصالاتك ومعرفتك واسعة بالناس وخاصة بالعاملين في البنوك.

ليس من الضروري ان تكون نسبة الاستجابة 100% ، لكنني سأكون ممتنا أن تكون الاستجابة أعلى ما يمكن.

أخيرا ، ارجو لك من الله جزيل الثواب على كل عبء وعناء ستتحملهما من اجلي في هذا المسعى. كما ارجو ان يكون الاتصال مستمرا بيننا. وبمجرد الانتهاء من جمع الاستبيانات المملوءة ، يرجى منك التكرم بارسالها إلي عبر شركة DHL للنقل العالمي على عنواني الموضح ادناه.

ختاما ، اكرر لك شكري العميق على تفضلك بالقبول على مساعدتي في دراستي التي بدونها سوف لن اتمكن من التخرج. واريدك ان تعلم بأن اجازتي الدراسية قد قاربت على الانتهاء وأنا بأمس الحاجة الى ان احصل على الاستبيانات المملوءة في اسرع وقت حتى اتمكن من تحليلها واستخراج النتائج واجراء المقارنات ومن ثم الشروع في كتابة رسالة التخرج.

تقبل مني خالص التحية والامتنان ، كما تقبل تحيات افراد عائلتي وبلغها مع تحياتي الى جميع افراد
عائلتك الكريمة.

والسلام

اخوك المحب:

حسين بن محسن

Husain M. Al Lawati
777E 1200N Apt # B-1
Logan, Utah 84341
U.S.A.
Telephone: (435) 797 6697

VITA

Husain M. AL-Lawati

Contact Information:

Mailing Address: P.O.Box 54, Postal Code: 114, Jibroo, Oman

E-Mail: ABUZHRAA@maktoob.com

Academic Degree:

Ph.D., Philosophy in Education, Utah State University, Logan, UT, completion: 2004
 Major: Business Information Systems and Education (BISE)
 Dissertation Title: *Comparing I.S. Ethics in the United States of America with I.S. Ethics in the Sultanate of Oman*

MBA, Utah State University, Logan, UT, 1998
 Major: Business Administration

B.Sc., Beirut Arab University, 1991
 Major: Accounting

Diploma, Elementary Teachers, Ministry of Education, Sultanate of Oman, 1981

Professional Work Experience:

2000-2003: International Marketing Manager, Marshall Radio Telemetry, Salt Lake City, UT
 Responsibilities and Activities: Developed, expanded, and implemented strategies and techniques for building market demand in the Middle East region; acted as primary point of contact for all of the company's customers; insured quality control, timely delivery of products, and accuracy of accounting and transaction records; prepared appropriate documents from English to Arabic.

1984-1996: Senior Assistant manager, Banking Supervision Department, Central Bank of Oman, Muscat, Oman
 Responsibilities and Activities: Supervised bank examination teams, discussed their findings and reviewed their examination reports; lead discussion with respective bank's management about examiners' findings; supervised Bank-Credit-Statistic-Bureau (BCSB); represented the bank in regional and international meetings and conferences.

1980-1984: Elementary School Teacher and Middle School Assistant Principal, Ministry of Education, Sultanate of Oman.
 Responsibilities and Activities: Taught first to six grade elementary school student in five subject areas (Arabic, math, science, Islamic religion, and social study); consulted with teachers and parents to meet educational needs of the students; followed up students' attendance, solved the school daily problems, and consulted with the principal and the ministry officers about school affairs and performance.

Training, conferences, and seminars:

While working on Ph.D.

2002 Information Resources Management Association (IRMA) International Conference, Seattle, Washington (May 19-22, 2002)

International Teaching Assistant (ITA) Workshop, Utah State University (August 13-24, 2001)

While working for the Central Bank of Oman

Financial Institution Analysis Course, FDIC, Washington D.C., (2 weeks: July and August 1995)

Understanding Capital Market Dynamics Seminar, Citi Bank, Muscat, Oman, (1 week: November 1993)

Understanding Treasury Dynamics Seminar, Citi Bank, Muscat, Oman, (1 week: November 1993)

Seminar on Bank Supervision, IMF & Central Bank of Kuwait, Kuwait, (1 week: September 1993)

While working for Ministry of Education, Oman

Fundamentals about schools' administration, Ministry of Education, Oman, (1982-1983)

Publications:

Al-Lawatia, H. M., & Hilton, T., (2002). Information systems ethics in the USA and in the Arab world. In R. Azari (Ed.), *Current security management & ethical issues of information technology* (pp.222-235). Harshey, PA: Idea Group Inc.

Presentations:

Al-Lawatia, H. M., & Hilton, F. A. (2002, May). *Information systems ethics in the USA and in the Arab world*. Presented at the 2002 Information Resources Management Association International Conference, Seattle, Washington

Skills:

Computer knowledge

Office Applications: Microsoft Office; Operating system: Windows; Database: Access; Multimedia & Web-development: Flash, Firework, DreamWeaver; Programming: Visual Basic

Language

Arabic and English

Awards:

USU Presidential Fellowship Award, 2000-2001; USU Honor Roll, Spring 2000; USU Honor Roll, Fall 2000; The National Dean's List, Year 2000