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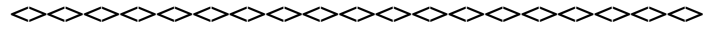
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Editorial Note

The fall 2010 issue of the *Journal of International Business Disciplines* is presented to academicians and professionals around the globe with the hope of further development of our collaborative efforts for a brighter future for all citizens of the world.

This issue has been prepared through a rigorous process in two stages. Stage I: all papers that were submitted to the 2010 IABD conference were blind reviewed, and high quality papers were recommended for publication in the 2010 Business Research Yearbook. Stage II: approximately ten percent of those articles were selected, and the respective authors were contacted and asked to resubmit their papers for a second round of reviews for possible publication in the *JIBD*. These manuscripts went through a rigorous review process by a team of outstanding editorial board members and external reviewers. In the end, four articles were recommended by the editorial board for publication in the November 2010 issue of *JIBD*.

I would like to express my appreciation to the President of Frostburg State University, Jonathan Gibralter; Board of Directors of the International Academy of Business Disciplines; my distinguished colleagues who served on *JIBD* Editorial Board; and the external reviewers, for making this publication possible.

My special thanks to Margaret Goralski, editor; Louis Falk, web coordinator; Reza Eftekharzadeh, IABD VP for Administration and Finance for their outstanding contribution towards completion of this task.

The Editorial Board members and I hope that you enjoy reading this issue, and assure you of our commitment to continuously publishing high quality scholarly papers in the future issues of *JIBD*.

Ahmad Tootoonchi, Chief Editor
Journal of International Business Disciplines

ETHICAL STANDARDS AND ACCOUNTING PRACTICES:
STILL AN AREA FOR CONCERN

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ABSTRACT

Ethical standards are a major area of concern for organizations when preparing and communicating financial statements. Reflective of this, management, directors and employees must exhibit and maintain ethical standards which should include honesty, integrity, fairness and responsibility. Companies are satisfied with meeting certain types of ethical standards, but the overall philosophy of business still remains, i.e. individuals within an organization must exceed expectations and maximize the returns to its shareholders. Sometimes employees may sacrifice the integrity of a company and compromise duties that exist between the company and society.

INTRODUCTION

During the past decade there have been numerous accounting scandals that have caused corporate collapses which have shaken the financial arena and created huge losses for investors, the present financial crisis of the latter part of 2008 revealed the greatest challenge yet. The majority of these collapses were caused directly by the unethical behavior of CEOs, directors, officers, and employees who misrepresented the financial condition of the corporation by providing misleading financial information. Notable scandals include but are not limited to the following.

1. Bank of Credit and Commerce International (BCCI), a major international bank with 30,000 employees and operations in 78 countries. It was the seventh largest private bank until 1991 when it was closed.

   Allegations: More than $13 billion funds are unaccounted.

2. Adelphia Communications Corporation was the fifth largest cable company in the United States before filing for bankruptcy in 2002 as a result of internal corruption.

Allegations: CEO, convicted of fraud and conspiracy for looting the company of more than $100 million, hiding more than $2 billion in debt the family incurred, and lying to the public about Adelphia's operations and financial condition.

3. Enron Corporation, one of the world's leading electricity, natural gas, pulp and paper and communications companies which employed 22,000 people. America's Most Innovative Company lost its fame in 2001 with its accounting fraud.
   Allegations: The debts of the company were hidden and profits were inflated by more than $1 billion.

4. WorldCom was the United States' second largest long distance telephone company. After 19 years of establishment, in 2002, the company's accounting scandal was exposed.

   Allegations: Underreporting interconnection expenses by capitalizing on the balance sheet and $3.8 billion cash is overstated as capital expenses rather than operating expenses.

5. Tyco international was a global manufacturing company with 118,000 employees.

   Allegations: CEO Dennis Kozlowski and former CFO Mark H. Swartz were accused of the theft of $600 million from the company in 2002.

6. Waste Management Inc. a waste management and environmental services company with 50,000 employees and a network of 413 collection operations.

   Allegations: Earnings were inflated by $1.7 billion by increasing the depreciation time length for their property and equipment in 2002.

7. Health South Corporation, healthcare services, with 22,000 employees and 100 Inpatient Rehabilitation Hospitals.

   Allegations: Overstated and/or falsified accounts by as much as 4700 percent and $1.4 billion inflation to meet the expectations of investors.

8. AIG, a major American Insurance Corporation with 116,000 employees.

   Allegations: The company maintained lucrative payoff agreements, soliciting rigged bids for insurance contracts and inflated financial position by $2.7 billion in 2005.

9. Madoff Investment, one of the top market makers, sixth largest, on Wall Street in 2008.

   Allegation: A Ponzi scheme resulting in conviction, with estimated fraud to be $64.8 billion, based on the amounts in the accounts of Madoff's 4,800 clients as of November 30, 2008.

10. The emerging scandal focusing on Lehman Brothers and Allen Stanford.

Allegations: Lehman Brothers - hid more than $50 billion in loans by classifying them as sales. Execs and auditor, Ernst & Young, allegedly manipulated the firm's balance sheets using an accounting trick called "Repo 105." Allen Stanford – misleading investors, sale of estimated $8 billion in certificates of deposits.

(Aguilera & Vadera, 2008; Akhigbe, Kudla, & Madura, 2005; Association of Certified Fraud Examiners, 2008; Bartkus & Glassman, 2008; Cagle & Baucus, 2006; Business Roundtable—Institute for Corporate Ethics, 2009; Chandra, 2003; Eccles, Newquist, & Schatz, 2007; Ernst & Young, 2008; Ethics Resource Center, 2009; Grant & Visconti, 2006; Haddad & Foust, 2002; Heminway, 2007; Kaplan & Kiron, 2007; Mathisen & Foley, 2007; Palmer, 2008; Rahman, Burckel, & Mustafa, 2009; Putnam & Nicotera, 2010; Scandal Scorecard, 2003; Scharff, 2005; Taub, 2002; Toffler & Reingold, 2003)

As a result of these scandals, investors who once relied on the accuracy of financial statements produced by these corporations are no longer able to trust these corporations. Additionally, the public no longer has confidence or trust in the integrity of corporate financial statements, which are the bulwarks of business and financial reporting controls. In order to rebuild trust, corporations must design and implement ethical policies, procedures and guidelines to assist in ethical decision making when preparing and communicating corporate financial statements (Hoover, 2008; International Association of Business Communication Research Foundation, 2006).

PURPOSE AND SCOPE

The purpose of this study was to evaluate the knowledge and beliefs of both accounting and non-accounting professionals regarding ethics to assist in determining who should assume responsibility for the accuracy of a corporation's financial statements.

METHODOLOGY AND PROCEDURES

A questionnaire comprised of 14 questions, four of which were background questions, was distributed to 100 participants. The sample was representative of various backgrounds, both economically and culturally. The respondents were asked several questions regarding ethics and the financial reporting process (see Figures 1-5).

LITERATURE REVIEW

Ethical values provide the foundation on which civilized society exists. Ethics should be the foundation for all accounting functions within a company. Thus, the power of good ethics running through the veins of companies should mitigate unfair practices from occurring. This rings true in so many reports that are presented on a daily basis in the media (Business Roundtable—Institute for Corporate Ethics, 2009; Cagle & Baucus, 2006; Ethics Resource Center, 2009; Heminway, 2007; Smith & Smith, 2003; Verschoor, 2006; Xifra, 2009).

How many times have we heard of a company being "shut down" because of unethical practice? Greenawalt (2001) believes ethics in accounting is of utmost importance to accounting

professionals and those that rely on their services. This importance in the profession of accounting is implementing an abundance of change within the industry. Subsequently, this new era of ethical standing within the accounting profession has bloomed into the idea that if the accountants are not coached and groomed on the right ethical behaviors there may not be responsible parties managing the numbers. This reasoning is evidenced in today's volatile financial environment; no other single issue is of greater concern to accountants in industry and public accounting than ethics. If the public cannot place confidence in accountants and business people in general, then survival of the U.S. economic system and the world economy may be placed in jeopardy (Ernst & Young, 2008; Ethics Resource Center, 2009; Grant & Visconti, 2006; Heminway, 2007; Holder-Webb & Cohen, 2007; Scandal Scorecard, 2003; Smith & Bain, 1990; Xifra, 2009).

When it comes to the ethical sovereignty of a company the accounting department will usually see the effects before anyone else. This is why so much focus has been placed on the accounting profession. The governing bodies of the accounting profession have spent many hours in the past few years developing ways to monitor ethical behavior. This focus has been put in place to protect multiple stakeholders: business, professionals, and clients (Association of Certified Fraud Examiners, 2008).

The effect of this focus is the creation of the Professional Ethics Executive Committee (PEEC) by the American Institute of Certified Public Accountants (AICPA). Ethical standards are enforced by this committee. According to the AICPA, this committee is in place to interpret and enforce the AICPA's Code of Professional Conduct. The Professional Ethics Executive Committee also gathers and discusses standard-setting activities, case investigation and other enforcement matters. These governing bodies renew confidence in the profession because ethics is now a consistent part of the review process (AICPA, 2002).

Accordingly, the AICPA has taken ethical review a step further. The AICPA's new requirement is that members joining after the year 2000 must have completed 150 semester hours of education at an accredited institution. Ethics in the accounting curriculum should include a triad of ethics instruction comprised of an ethics philosophy course, ethical coursework in the accounting curriculum, and a capstone ethics and professionalism course (AICPA, 2002; Association of Certified Fraud Examiners, 2008; Bean & Bernardi, 2007). This emphasis on ethical accounting environments, which focus the new breed of Certified Public Accountants, provides rationale for curriculum modifications with respect to graduates understanding the importance of upholding their ethical standing. These educational requirements are relied upon to reinforce the justification for having an untarnished ethical reputation.

Understandably, the implementation of ethics driven courses causes discussions about the role of accounting educators in teaching ethics (Cagle & Baucus, 2006; Ethics Resource Center, 2009; Gaa & Thorne, 2004). These discussions are leading to improved teaching methods and measurable learner outcomes that can be used to continue modifying the curriculum. The educators posit and support ethical behavior as the key to a long career in this industry.

Mirroring this behavior, more accountants are realizing that the accounting world will be held liable for the unethical behavior of clients and employers. According to Orin (2008), the

Sarbanes-Oxley Act (SOX) of 2002 mandated the publication of corporate codes of ethics. This mandate was issued because legislators wanted companies to really evaluate their companies from an ethical stand-point and commit to their claims. Requiring ethics codes to be written and published mandate companies' to understand the role of ethics, thus, holding companies accountable for upholding claims and expectations.

The Sarbanes-Oxley Act was enacted because of the scandals of the late 1990's and early 2000's. This act has forced companies to create stronger internal audit functions to conform to the laws that have been developed (Massimo, 2008). Can ethical behavior be legislated? Will the Sarbanes-Oxley Act finally put an end to corporate greed and financial scandals? Many supporters believed that the legislation was a huge step toward restoring public confidence. A main reason being that the legislation introduced and established the Public Company Oversight Board (PCOB); a private sector, non-profit organization. The PCOB has many government functions such as: responsibility for overseeing, regulating, inspecting, and disciplining accounting firms in their roles as auditors of public companies. The purpose of the board is to protect the interests of investors and further the public interest in the preparation of informative, fair, and independent audit reports (AICPA, 2002).

For example, the internal audit function serves as a "reviewing" procedure designed to avoid conflict between external audit groups on behalf of investors. These internal audit functions are in place to identify problem areas for management and provide solutions to remedy these problems. However, because of their holistic access to the entire company, most of the identification of unethical behavior in industry is identified first by these accountants. For instance, the identifying whistle-blower at WorldCom was an internal auditor. The procedures in place provide whistle-blowers and auditors an opportunity to step forward with respect to reporting unethical practices. Many countries have implemented laws that protect employees that uncover unlawful acts. One method governments use to promote whistle-blowing is to prohibit retaliation against employees who report wrongdoing in good faith (Bailey, 2008).

Without these protections: there would be more unethical behavior in industry, limitless worry about getting caught, selfish acts of self preservation rather than acting in the interest of investors or the public. The Sarbanes-Oxley Act protects investors by improving the accuracy and reliability of corporate disclosures and by providing for civil and criminal action to protect whistle-blowers (Aguilera & Vadera, 2008; Beard, 2007; Orin, 2008). Whistle-blowing protection has created a new dynamic in the accounting world that enables accountants to pursue their careers with confidence and not be intimidated by the laws that govern their profession.

FINDINGS

The questionnaire consisted of questions focused on ethics and accounting standards as well as participant background information. The questionnaire was distributed to 100 participants, ages ranged from 20 to 60. It was distributed equally between males and females and was representative of various ethnic and cultural backgrounds. The highest level of education ranged from undergraduate to graduate school. Based on the results of the questionnaire, education and age were not determining factors in decisions about ethics and accounting standards.

All respondents believed that ethics and accounting standards should follow the same guidelines. The participants rated the questions on a scale from 1= low to 4= high. The responses varied from medium= 3 to high= 4 regarding the importance of each question. Results regarding the responsibility for reporting false financial information are revealed in Figures 1 and 2.
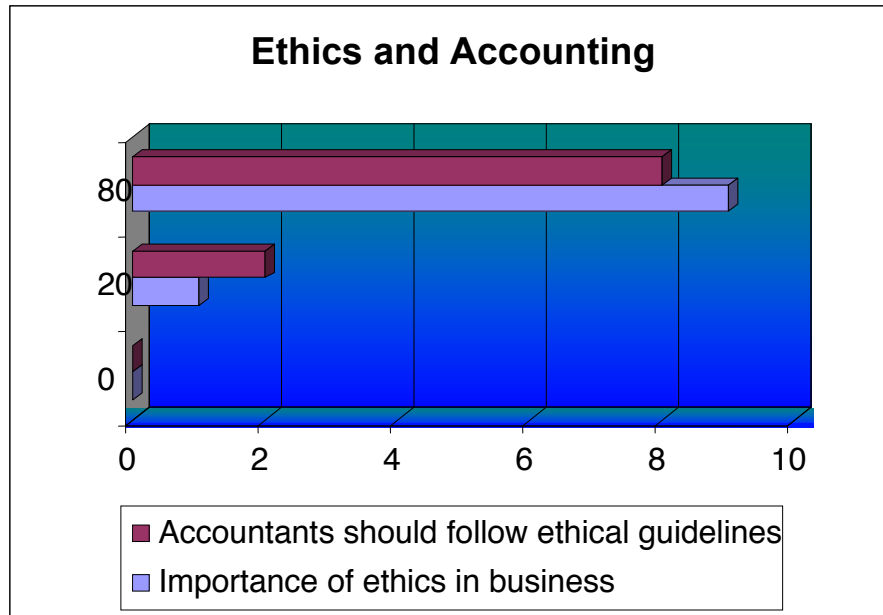
FIGURE 1

Interestingly, the majority of respondents, 80 percent, believed that a company's accountants should be held accountable if false financial statements are prepared. It is plausible to reason from this finding, given media coverage of "ongoing" accounting scandals and implementation of new laws and regulations, that the respondents' recognized the importance of identifying the "most likely" source for unethical practices to occur.

Mirroring Figure 1, the survey suggested that both CEO's and CFO's should be accountable for the information contained in their corporate financial statements. The questionnaire showed that 60% of the respondents believed that CEO's and CFO's should be accountable for such information and 40% indicated accountability at a medium level. These findings support the need for "mission" statements that specify actions (i.e. person responsible for preparing financial documents, communication roles, legal and ethical implications) that affect "stakeholders."

Aila and Jyvaskyla (2004) found in their study that ethics in accounting depends on the act and practice of individuals and on their morality. Further, they found that an act is morally correct for an accounting professional if it is consistent with legislation and provides value for stakeholders and society.

It was also interesting that the majority (70%) of the respondents in Figure 2 believed that the CPA should bear more responsibility for producing false financial statements and 60% of the respondents in Figure 3 felt the company's CEO and CFO should be responsible. When most people think of these types of reports, they think of accountants. Hence, it is more probable that

one would expect the CPA to be the most responsible for these financial statements, since they deal with these reports directly.

Should CPA and accountants be held responsible when reporting false financials?

10%

20%

70%

Low

High

FIGURE 2

Should CEO and CFO be responsible for false financials?

0%

40%

60%

Low

High
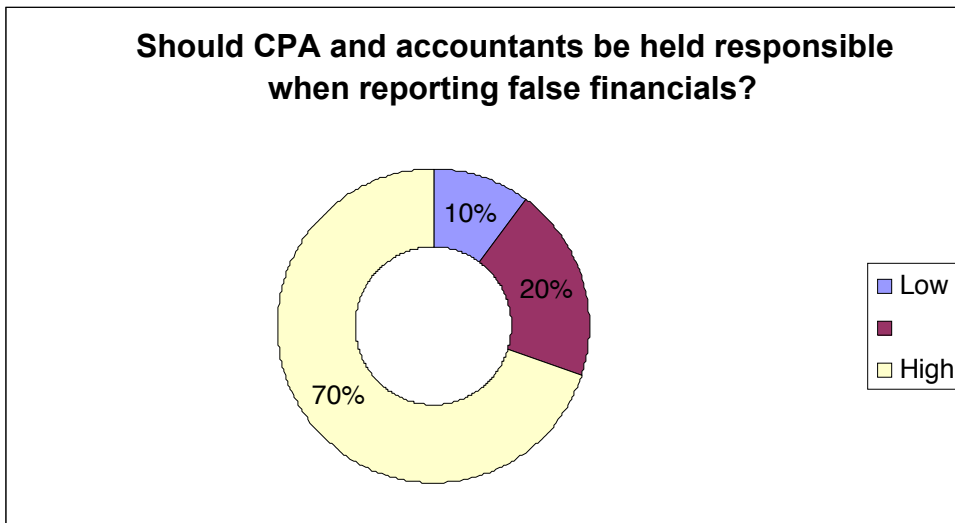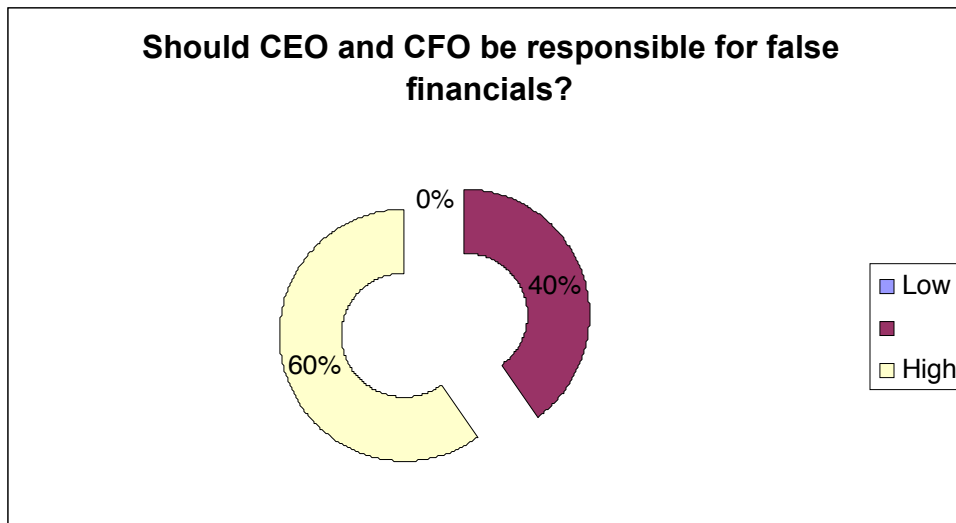
FIGURE 3

Corporations need to recognize that although their business operations are within the letter of the law, they conversely may not be executing operations ethically. Companies can increase investor confidence by reporting transparent financials instead of incorrectly reporting gains over losses.

As global markets continue to mature and competition increases, some companies seek to report inaccurate information in order to continue positive relations with investors. Many businesses comply with regulated laws; however, further actions can be taken to increase ethical operations. First, new regulations, such as the Sarbanes-Oxley Act increase the transparency of business operations to investors. Second, ethical training classes improve employee awareness of issues in many aspects including diversity, teamwork, and employee interaction. Third, every company

should incorporate a general Code of Ethics in order to increase ethical behavior along with policies to counteract ethical dilemmas. These requirements could result in employees understanding how the company must act ethically as well as being equipped to resolve issues that arise.

SUMMARY AND CONCLUSION

If one is bound by sound business ethics, then the probability of being persuaded to falsely reflect maximum profit and value for stockholders or to serve and please greedy agendas, could be lessened. Ethics is like revenue, it's needed to produce success and longevity. When ethics and accounting principles, laws and regulations are not followed, the potential risk of multi-million dollar lawsuits or imprisonment increase exponentially. Both of these punishments could jeopardize a reputation, career, and life.

In general, most corporate accountants are required to have a four year degree in either finance or accounting while many Certified Public Accountants (CPA's) must possess a business degree, as well as 30 additional hours, which should include a course in ethics as well as continuing education courses. Accountants must possess a level of confidentiality as well. Accounting professionals should also have objectivity, which is clear judgment without emotional influences or personal prejudice. Some standards that help companies and individuals maintain good character are the Generally Accepted Accounting Principles (GAAP), the Financial Accounting Standards Board (FASB), and the American Institute of Certified Public Accountants (AICPA). If one pledges to remain competent, maintain confidentially, integrity, and objectivity, then there should not be engagement in dishonest acts and unlawful accounting practices.

The CEO and CFO are at the top level of management and must exercise good, ethical judgment at all times. They are sworn to certify the audit report accuracy, free of falsified information and provide all the necessary disclosures. Their job is to analyze cash flow which should assist them in being able to identify major discrepancies or misstatements. The most common financial statement consists of four reports: the balance sheet, the income statement, the statement of cash flows, and a statement of retained earnings.

There are organizations that enforce a code of professional conduct. Some of these organizations include: The Institute of Management Accountants (IMA), the American Institute of Certified Public Accountants (AICPA), and the Institute of Internal Auditors (IIA). One initiative of the AICPA is to require 150 hours of continuing education which enables accountants to learn about unknown ethical practices. Another effort by government is the Sarbanes-Oxley Act of 2002, which holds companies accountable for preparing fraudulent financial statements.

A company's ultimate goal is to increase shareholder value without compromising its mission statement or code of conduct. These two core fundamentals help to establish reputable companies who hire individuals that behave honestly and ethically. It has now become more evident than before, especially after numerous corporate scandals and scares in accounting practices, that ethical values must take priority over greed and obsession of wealth. As scandals continue to occur, consumers are losing confidence and trust in business and industry. Corporate scandals are a vicious cycle which can be avoided with the honest acts of individuals, lawful

practices, and corporate willingness to maintain moral character. In today's society, one must insist on ethics and good decision making. Without this foundation, capital markets will suffer. Companies would fail and have minimal public investment with exclusion of honest accountants, managers, and employees.

Ethical standards and accounting practices are still an area for concern. Scandals continue to be a part of the business world, although history has proven that unethical behavior leads to corruption. The results of the study highlighted a number of factors. The questionnaire revealed: (1) education and age were not determining factors in the respondents' decisions about ethics and accounting standards; (2) ethics and accounting should follow the same guidelines; (3) the CPA is the most responsible for financial statements; (4) the CEO and CFO are accountable for financial information and the ethical stability of the organization; and (5) the findings support the need for "mission" statements that specify actions that affect stakeholders.

Overall, if everyone in business understands ethics and is committed to complying with the laws, standards, guidelines, and policies and procedures, then the outcome of personal decisions made by individuals would be much more profitable for the company in the long run. Even though CEOs and CFOs are directly responsible for the accuracy of corporate financial statements, people who prepare these financial statements should be honest, ethical, and trustworthy. If the individuals who prepare them lack professional standards or ethical values, then questionable review of the company's financial statements will exist.

This study supports the concept that there are several standards that everyone must adhere to in order to maintain a level of ethics with regard to accounting practices and the preparation of financial statements. These ethical standards include competency, honesty, fairness, responsibility, confidentiality, integrity, and objectivity.

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COMPUTER-BASED CLASSROOMS IN BUSINESS SCHOOLS: FACTORS IMPACTING STUDENT PREFERENCES

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ABSTRACT

Universities face increased pressures to both reduce costs and, at the same time, serve more students. Using on-line or virtual education is often viewed as a mechanism to serve these competing interests. Indeed, the number of on-line courses has increased significantly over the past decade. And, while most students actively use the Internet to both collect information and engage in social interaction, the results of this study suggest that they actually prefer the traditional classroom setting for most of their coursework.

INTRODUCTION

Advances in technology have significantly impacted the manner in which courses are delivered to students. In fact, many universities have made on-line learning an important element of their strategic plans. On-line learning allows institutions to reach a much larger pool of students, offers these students a more flexible alternative for pursing degrees, and can be provided without the costs associated with building space and energy costs (Piskurich, 2006). Given the declining budgets in many universities, the pressure is often great to reduce costs and, at the same time, serve more students. Computer-based learning is often considered a practical approach to reducing these pressures.

The ability to provide courses on-line has been greatly enhanced over the past decade by advances in technology and the declining cost of this technology. A majority of students now have their own personal computers and, in many cases, are no longer confined to accessing the Internet from their home, office, or classroom. Indeed, wireless technologies allow students and instructors access to course materials wherever they may be located.

Given the pressure to offer more computer-based courses, many universities have established incentives to get faculty more involved. Financial incentives to attend various technology training sessions and course releases to then build on-line instruction are common. And, universities are benefiting greatly from the increase in these virtual courses. In addition to serving more students at lower costs, many institutions elect to charge students a premium fee to take on-line courses. These fees are then used to provide necessary technology, training, and personnel to establish computer-based classrooms, and, in some cases, excess fees are then used to cover other budget shortfalls.

A key assumption made by university administrators in encouraging this move to more on-line learning is that student demand for these courses will be strong. On the surface, this belief seems reasonable. One need only observe the extent to which students engage in virtual social networks, exchange text messages, and surf Internet sites to conclude that most students are comfortable with technology and use it often to communicate with others. However, based on comments we have heard from students, we question whether or not computer-based learning provides the college experience that students expect. Thus, this study examines the assumption that students prefer computer-based learning over the more traditional approach.

THE CHANGING NATURE OF THE CLASSROOM

With the development of video film over 80 years ago, technology was introduced into the classroom (Mackay & Stockport, 2006). Over the years, instructors have continued to introduce emerging technologies such as television, DVDs, satellite feeds, and computer systems to supplement traditional classroom instruction. However, even with advances in technology and the Internet, the traditional classroom setting has remained the dominant means of delivering courses to students in higher education. Rosenberg (2001) suggests that the inability of students to interact with these technologies may be a primary reason that they have been unable to replace more traditional instruction. But, as technologies become more interactive and as university officials continue to encourage more e-learning, it seems reasonable that the computer-based classroom may one day replace the traditional classroom as the preferred approach. In fact, it is estimated that enrollments in totally on-line courses is increasing 12-14 percent per year (Allen & Seaman, 2008). And, projections from a recent Ambient Insight report suggest that by 2014, 3.55 million students in the United States will take all of their classes on-line and that an additional 18.65 students will take at least some of their classes on-line (Nagal, 2009).

The most basic approach to creating a computer-based classroom is for instructors to simply present materials that they normally cover in class to students over some type of web-based platform (e.g, Blackboard). Students review PowerPoint overheads, read lecture notes, watch short videos, and complete exercises. They then use automated systems to submit work and take exams. While there are opportunities to communicate with instructors and other students via chat rooms and e-mail, most of these on-line courses are self-paced and provide only minimal interaction. A majority of computer-based courses follow this basic, on-line approach. But, others are taking a much more interactive approach by constructing virtual classrooms.

Next generation virtual classrooms take the form of a computer-based simulated environment. Using Internet-based virtual worlds such as *Second Life*, instructors can construct classrooms.

Students, taking the form of avatars, then enter these simulated classrooms and interact with others. Unlike the on-line courses that primarily present information and then automatically grade and post assignments, these virtual classrooms provide real-time simulations and significantly more interaction. For example, virtual environments can be constructed to mirror college classrooms, student centers, and laboratories. Students and instructors, as avatars, can move around these environments and enter the virtual rooms at regularly scheduled times. Real-time communication can then take place using text, graphical icons, chat, and gestures (Wang & Braman, 2009). While some faculty are skeptical of these digital classrooms (Foster, 2007), it is estimated that hundreds of educational institutions now own or rent land in Second Life (Linden Research, 2009).

Given the emergence of computer-based alternatives for conducting college classes and the limited research that has been conducted in this area, this study took an exploratory approach and examined a broad range of factors that were believed to offer some insight into student preferences. First, the study examined the extent to which students felt comfortable with Internet applications. It was expected that the more students who used the Internet on a regular basis, the more they would be favorably disposed to computer-based learning.

Second, the study examined how the type of course might impact student preferences. It was believed that courses primarily designed to simply provide information and that offered minimal student participation would likely be perceived as good candidates for computer-based learning.

Finally, the study examined individual differences among students. In terms of academic-related factors, it looked at both the students' major area of study and students' preferred learning style. It believed that certain majors, where more objective material is presented on a regular basis (e.g., Accounting), might be more suited to computer-based instruction. It was also thought that the learning style (visual vs. verbal vs. kinesthetic) of the student might be particularly influential in how they perceived computer-based learning.

The study also looked at how individuals with competing demands on their time might perceive computer-based classrooms. Specifically, those students with longer commutes to school and those who were employed would be more likely to prefer on-line alternatives. In fact, it was believed that those students with longer commutes would be especially interested in on-line alternatives because it would save not only drive time, but also the costs associated with operating an automobile.

The study then attempted to gain some insight into the impact of computer-based learning on social interaction among the students. It did this by looking at one's age and relationship status. It was believed that younger students, who had grown up in the MySpace/Facebook era, may be more comfortable with on-line interaction and see computer-based learning as simply an extension of their normal social activities. Additionally, it was believed that individuals who were not in a committed relationship might prefer more traditional classroom settings. Given that many students meet their future spouse while in college, the social interactions afforded by face-to-face classes would be an important part of the "college experience."

METHODOLOGY

One hundred and ninety junior and senior undergraduate students in a university business school participated in this study for extra credit. Two surveys were administered to the students. The first survey asked questions related to demographics, learning styles, and Internet use. The second survey asked about student preferences regarding the delivery of courses. Prior to administering the second survey, students viewed a brief PowerPoint presentation that described, in very general terms, differences between traditional classroom instruction, on-line classes, and virtual classrooms.

Of the 190 students participating in this study, 51% were management majors, 12% were marketing majors, 9% were accounting majors, 6% were finance majors, and the remaining students were in disciplines such as Management of Information Systems (MIS), economics, and real estate. The average age of the respondents was 22 years and they reported working just over 17 hours per week. Over 84% of the students lived off campus and reported, on average, commuting 11 miles each way.

The primary purpose of this study was to begin to explore how students feel about computer-based learning and to indentify some of the factors that might influence their perceptions. While a correspondence analysis on the data was not conducted, given the relatively modest sample size of the study and the number of categories involved in some of the tables, there was insufficient power to find significant statistical differences for most of the factors examined. Thus, with the exception of the types of courses, where one was able to use all 190 responses for each category, only descriptive statistics and general trends are reported in the results below.

RESULTS

Internet Proficiency

Using items from the Internet Addiction Test (IAT) (Widyanto & McMurran, 2004), the extent to which our respondents used the Internet on a regular basis was first determined. Table 1 shows the percentage of respondents that replied either frequently, often, or always to four items from the IAT.

TABLE 1. INTERNET ADDICTION ITEMS

How often do you find that you stay on-line longer than you intended?	68%
How often do you check your e-mail before something else that you need to do?	60%
How often do you lose sleep due to late-night log-ins?	22%
How often do you choose to spend more time on-line over going out with others?	6%

These responses show that over two-thirds of the students admitted that they use the Internet more than they should. However, based on the responses, their Internet use does not appear to

significantly interfere with sleep or social interactions. Additionally, 91% of respondents indicated that they had a Facebook account and 52% noted that they also had a MySpace account.

Even though our sample appeared to be computer savvy and comfortable with Internet applications, overall results showed that the traditional approach to delivering classroom instruction was preferred by most students. Specifically, when asked which method of delivery was most preferred, 74% selected the traditional approach, 21% chose the on-line approach, and only 5% indicated that they would prefer the virtual classroom. Given the novelty of the interactive, virtual classroom and the ability to create and customize avatars, it was a surprise that more students did not select this option as the preferred method. When questioned about the avatars, 72% admitted that they found the avatars *interesting* and 51% indicated that they found the avatars *entertaining*, but 35% noted that they were also somewhat *creepy*.

While the traditional classroom was the clear preference of the respondent group, most students did express a desire to take at least some of their coursework in a computer-based environment.

Course Preferences

In the survey, students were asked to select the method of delivery that they would be more comfortable with for eight different categories of courses. Students could select traditional, on-line, or virtual classroom instruction. A correspondence analysis of the data revealed a significant difference (Chi-square – 218.66, p < .001) in the responses. Table 2 provides the results.

Study respondents clearly prefer taking Math courses in a traditional classroom. Given the objective nature of this material, one might consider this an ideal fit for computer-based learning. However, many students seem to struggle with math courses, and they may feel that face-to-face communication with the instructor is critical to success.

There also was a clear preference to take major business courses in a traditional setting. In fact, students expressed a desire to take almost 80 percent of their major courses in a traditional classroom. Given these findings, business schools that are significantly increasing the number of computer-based courses should make certain that they do not progress so quickly that their students become dissatisfied.

Students were much more interested in taking their humanities and social sciences either on-line or in a virtual classroom. Given that respondents in this study were business students, one might question if these results can be generalized to other students groups.

TABLE 2. PREFERENCES BY CLASS TYPE

	Traditional	*On-Line*	*Virtual*
Math	88% [a]	8%	3%
Major Business Courses	79% [a]	11%	7%
Sciences	74% [a]	14%	12%
English	68% [a]	19%	12%
Oral Communication	67% [a]	18%	15%
Introductory Business Courses	65% [a]	24%	10%
Humanities/Fine Arts	38% [b]	43%	19%
Social Sciences	37% [b]	47%	15%

Note: Percentages with the same letter are not significantly different.

Individual Factors

In the survey, students were asked to select the percentage of each type of learning environment (traditional, on-line, or virtual) that they would prefer during their college education. The study then examined these responses across a number of individual factors to try to determine areas that were potentially important in influencing student perceptions.

Academic Major

Table 3 shows that there were some differences between academic majors. Most notably, marketing students showed a clear preference for more traditional classes. Given that more extroverted students often gravitate toward careers in sales management, it seems reasonable to assume that they may desire more interaction and face-to-face meetings with their professors and classmates.

On the other hand, finance and MIS majors did not express as much of a desire for traditional classes as the other majors. It is not surprising that MIS majors would feel comfortable with computer-based classrooms. In fact, MIS majors actually lead the other groups in their desire to have virtual classrooms. However, initially there was uncertainty why finance majors responded as they did. Results actually show that finance majors expressed more of a desire for the on-line classroom setting than any of the other academic majors. In retrospect, it is believed that the student responses may have been influenced by the on-line skills of the finance faculty. Many of the finance faculty have several years of experience in on-line learning and have developed very interesting and effective on-line courses. Thus, it is possible that the faculty served as a moderating influence on the student responses.

TABLE 3. PREFERENCES BY ACADEMIC MAJOR

	N	Traditional	On-Line	Virtual
Marketing	22	68%	25%	7%
Other	12	68%	23%	9%
Accounting	17	62%	27%	11%
Double Major	25	61%	28%	11%
Management	95	59%	27%	14%
Finance	11	55%	32%	13%
MIS	3	55%	28%	17%

Learning Styles

In this survey, students were asked to identify themselves as either visual, verbal, or kinesthetic learners. Visual learners benefit most from pictures, charts, written notes, and diagrams. Verbal learners seem to retain information better when they can hear information being presented, relying on voice inflections and body language to communicate the intended message. Kinesthetic learners do their best when they have hands-on experiences (Drago & Wagner, 2004). Methods such as role playing, simulation, and laboratory settings work best with this group.

As shown in Table 4, those students who identified themselves as verbal learners preferred to take almost 75 percent of their courses in a traditional setting where they could both hear and see the instructor. And, those who learned best through seeing the information were most favorably disposed to on-line courses. Given that most of the information communicated through on-line courses is available in written form, visual learners may be predisposed to successfully complete coursework provided in computer-based environments.

TABLE 4. PREFERENCES BY LEARNING STYLES

	N	Traditional	On-Line	Virtual
Kinesthetic	27	63%	27%	10%
Verbal	19	74%	18%	7%
Visual	88	58%	29%	14%
Not Sure	32	61%	28%	12%

Commute Time

Table 5 shows that for students actually commuting, those with the longer drive seemed to prefer more computer-based learning. Unexpectedly, however, students living on campus were also inclined to take more computer-based classes. In fact, this group reported that they would take 15% of their courses in a virtual classroom. The rationale behind these results is unclear. However, it is possible that students living on campus may believe that any problems encountered using computer-based classrooms could be more easily resolved since they could simply walk across campus and meet with instructors during office hours.

TABLE 5. PREFERENCES BY COMMUTE TIME

	N	Traditional	On-Line	Virtual
Live On Campus	36	57%	28%	15%
Commute < 10 Miles	113	63%	25%	12%
Commute 10-24 Miles	14	63%	31%	6%
Commute 25 Miles or More	33	56%	30%	14%

Hours Worked

While there was little difference across respondents who either did not work or who worked part-time, the flexibility offered by most computer-based courses was appealing to full-time workers. Table 6 shows that those working full-time expressed a desire to take less than half of their courses in a traditional classroom setting.

TABLE 6. PREFERENCES BY HOURS WORKED

	N	Traditional	On-Line	Virtual
No Work	58	64%	24%	12%
< 20 hours/week	50	59%	29%	12%
20-39 hours/week	67	62%	28%	10%
40 or more hours/week	15	48%	31%	21%

Age

Surprisingly, the younger respondents in our survey preferred more traditional classes than the older respondents. Given that younger students have been exposed to computer-based applications for most of their lives, it was assumed that they would feel more comfortable with on-line and virtual learning. Yet, as shown in Table 7, the 19-20 year old students preferred to take about two-thirds of their courses in a traditional classroom setting. It is possible that the self-paced nature of many computer-based systems may be daunting for younger students who may not yet feel comfortable managing college coursework.

TABLE 7. PREFERENCES BY AGE

	N	Traditional	On-Line	Virtual
19-20 years old	45	66%	26%	8%
21-22 years old	94	59%	27%	14%
More than 22 years old	48	58%	28%	14%

Relationship Status

As anticipated, respondents who reported that they were in a committed relationship were inclined to take more computer-based courses. However, given the opportunities to meet individuals in the traditional classroom setting, it was anticipated that the difference would be larger than the percentages contained in Table 8. It is possible that the respondents felt that they

had a sufficient number of other social outlets so that those created in the traditional classroom were not that meaningful.

<div align="center">TABLE 8. PREFERENCES BY RELATIONSHIP STATUS</div>

	N	*Traditional*	*On-Line*	*Virtual*
Not In A Relationship	103	62%	25%	12%
In A Relationship	85	58%	29%	12%

CONCLUSION

Given advances in technology, and the affordability and availability of personal computer systems, computer-based learning offers a viable alternative for the delivery of courses. And, considering the current, weak economy and the resulting budget cuts, many universities are gravitating toward more of these on-line learning environments. Potentially, computer-based courses can serve more students at a reduced cost.

Unfortunately, administrators may incorrectly assume that student demand for these on-line courses will be strong. And, given the extent to which students surf the Internet, use e-mail, and participate in on-line social networks, there is a reasonable basis for this assumption. However, based on the results of this study, almost 75 percent of the business students surveyed were much more inclined to take traditional classes. Student preferences for the traditional classroom setting were significantly higher in math courses and major business courses. And, while not statistically significant, trends in the data also suggested that one's preference for computer-based courses is potentially influenced by such factors as a student's major area of study, learning style, hours worked per week, relationship status, commute time, and age.

Undoubtedly, computer-based classrooms have the potential to open up a much larger pool of potential students for universities. Additionally, universities that fail to provide on-line learning opportunities may find themselves at a competitive disadvantage. However, our findings suggest that administrators should proceed with some caution and closely monitor student evaluations of computer-based courses. Based on our findings, the proper balance of traditional verses computer-based classes will likely depend on both the types of courses offered and individual characteristics of the student population.

Suggestions for Future Research

There are additional research opportunities related to the increased use of computer-based classrooms. First, it might be interesting to examine the impact that faculty experience with online instruction has on student perceptions. This body of research has shown a trend where both MIS and finance majors were more favorably inclined to take computer-based classes. And, coincidentally, at the university where the students were surveyed, the faculty in these disciplines had the most experience with on-line classes. It is also possible that certain faculty gravitate toward computer-based learning. And, examining the factors that determine faculty success with computer-based learning might be beneficial in improving the quality of these courses.

Second, given the students' overall desire for traditional courses, future research should attempt to determine additional factors that might be impacting these preferences. It is possible that students may perceive that virtual classes simply do not provide the social interactions and mentoring opportunities that they believe should be part of the "college experience."

Finally, it might be interesting to examine how learning outcomes are impacted by more computer-based instruction. In many universities, learning outcomes are assessed by in-class exercises, oral presentations, and group activities. And, because assessment is carefully examined during accreditation visits, universities must ensure that a common, consistent means of assessment is used across both traditional and computer-based classes. Thus, it might be useful to investigate potential assessment issues raised by computer-based learning.

Limitations

It is important to mention several limitations associated with this study. First, all respondents were from the same university. Thus, the extent to which the results can be generalized to other student populations is questionable. It is possible that factors such as the location and size of the university could impact the results.

Second, while we were able to report descriptive statistics and show trends in the data, given the modest sample size and the number of categories involved in some of the factors examined, there was insufficient power to find significant statistical differences for many of the individual factors.

Third, the average age of this sample was 22 years and only about 25% of the sample was older than 22. As one gets older and has to find ways to better balance family obligations with other responsibilities, it seems reasonable that perceptions regarding the flexibility afforded by computer-based classrooms may change. Thus, it is possible that these results cannot be generalized to universities with more non-traditional student populations.

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EXPLORING EMPLOYEE CONSCIOUSNESS OF HPWS AND COMMITMENT IN JAPANESE ORGANIZATIONS – AN EMPIRICAL APPROACH

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ABSTRACT

This paper explores the linkages between employee consciousness of the High Performance Work System (HPWS) and their commitment through a matrix approach. The impact of individual human resource practices in HPWS on employee outcomes is also investigated. The data collected came from the enquiry responses of non-managerial Japanese employees in sixteen companies in the Kanto region of Japan from around October 2008 to February 2009. The average response rate was 52% (n=227). Discriminant analysis reveals that HPWS, affective commitment and occupational commitment were the most important discriminant variables in the four predicted groups of HPWS-Commitment linkages. Hierarchical Ordinary Least Squares (OLS) regression indicates an increase in teamwork, employee participatory programs, and the sharing of company information with employees as human resource practices in HPWS that could increase employee commitment and reduce stress, though some practices could also increase job intensity. The research findings contribute to the extant literature in HPWS and employee psychology. The practical implications of the findings are also discussed.

INTRODUCTION

Past research has shown how strategic Human Resource Management (HRM) can be used to design a set or bundle of Human Resource (HR) practices (staffing, training, workplace flexibility, compensation, employee influence, performance evaluation) to improve organizational performances (Guest, 1999; Pfeffer, 1994) and increase employee commitment (Appelbaum, Bailey, Berg, & Kalleberg, 2000). Such HRM practices, supposed to be the best, are known as the High Performances Work System (HPWS) (Ramsay, Scholarios, & Harley, 2000) and are implemented in different economies in the world (Lawler, Chen, & Bae, 2000). However, increasing evidences of incorporating HR practices under HPWS, as performance appraisal and performance based pay systems in Japanese organizations, are said to have induced low levels of satisfaction and motivation in Japanese employees and have been linked to severe work pressures and strain on the permanent employees. Do these issues influence employee commitment of Japanese employees? There is a dearth of research producing empirical studies of employee consciousness of HPWS practices and its effect on employee outcomes in Japanese organizations. This paper attempts to fill this gap by investigating empirically how employee consciousness of HPWS and employee commitment are related in Japanese workplaces.

Consciousness is defined in this paper as employee cognition or perception of the organizational environment of the company's policies and practices (Burke, Borucki, & Hurley, 1992) which eventually goes on to shape employee behavior in the organization (Ostroff, Kinicki, & Tamkins, 2003) and influences employee job satisfaction (James & James, 1989). A survey targeting the non-managerial employees was conducted in sixteen Japanese companies around the Kanto region of Japan and the responses of 227 (52% response rate) were collected and analyzed for this purpose. This paper hypothesizes that the employee consciousness of HPWS and their commitment varies across the predicted four groups of non-managerial employees in Japanese organizations. It is important to identify these four groups and study their behavior to explore the employee consciousness of Japanese employees. If the discriminating variables between the groups and their inter-linkages could be identified, we could control them with appropriate HRM practices. The principal objectives of this study are: (i) to investigate the differences between the groups; (ii) to discriminate effectively between groups; (iii) to identify important 'discriminant' variables; and finally (iv) to detect which individual HRM practices in the HPWS have a significant relationship with the different forms of employee commitment and other behavioral outcomes. Statistical results show the employee consciousness of HPWS and commitment was correctly classified into four groups with 90.07% of the original group cases as per the author's prediction. As the paper unfolds, arguments regarding such linkages have been theorized and several statistical tools have been used to analyze the problem and to provide support to the hypotheses. In the end, a discussion on the findings with limitations is drawn to justify both academic and managerial implications of this paper.

HPWS

There are considerable arguments about which HRM practices actually constitute HPWS (Chaudhuri, 2009a; 2009b). This paper adapts a working definition of HPWS as a group or bundle of HRM practices that can incite employee commitment and thereby improve organizational performance. In the wake of an extensive literature survey of HPWS by the present author (Chaudhuri, 2009a; 2009b; Chaudhuri, 2010), the most widely referred HR practices were selected to the construct HPWS bundle in this study. They are: (i) selective recruitment; (ii) formal and continuous training; (iii) internal promotions or selections to fill vacant positions from within the organization; (iv) merit based promotions; (v) teams as a fundamental unit of organization; (vi) employee participation programs; (vii) performance based pay systems; (viii) formal performance appraisals (360°); (ix) development appraisals; (x) formal communication programs to keep employees informed about the firm; and (xi) regular use of employee attitudes survey.

HPWS AND EMPLOYEE COMMITMENT

Most authors believe HPWS can promote positive behavior in employees. The HRM practices, used in HPWS, have their sources in the soft Harvard model (Beer, Spector, Lawrence, Quinn-Mills, & Walton, 1984) organizational commitment as is found by Appelbaum et al. (2000), Takeuchi, Chen, and Lepak (2009), and Chaudhuri (2009b, 2009c). However, Godard (2004) and Ramsay et al. (2000) argued that HPWS can be exploitative and, if imposed upon workers, can also cause stress and strain, having a negative influence on the commitment levels of employees. Several authors have also argued that employee discretion can have effects which ultimately

intensify work and create stress, causing a split in the work/life balance and influencing employee affective commitment (Chaudhuri, 2009a; Chaudhuri & Oba, 2009). However, some stressors can also be exploited to increase employee affective and normative organizational commitment (Chaudhuri & Oba, 2009). Research has also shown stressors have a mediating role between HPWS and affective organizational commitment and occupational commitment (Chaudhuri, 2009b; 2009c).

THE SETTING OF THE STUDY IN JAPAN

Japanese management style now leans towards its American counterpart (like Management by Objectives (MBO)), in the weakening of seniority systems and the introduction of performance based evaluation systems for short-term goals, to name just two examples. However, researchers have doubted the transparency of the evaluation of employee performance in Japanese organizations and have linked this to low employee satisfaction and motivation (Nakamura, 2006; Tatsumichi & Morishima, 2007). An increase in workload per individual has occurred due to recent measures to reduce the workforce, and intensified competition among workers has resulted from the introduction of performance-based wage systems resulting in excessively long working hours (Japan Institute of Labor, 2003). Increased working hours have led to tiredness and depression amongst the Japanese employees (Ogura, 2006). Unpaid overtime or service overtime is very prevalent today and job burn out or *Kharoshi* is common in Japanese organizations (Genda, 2003). An official report released by the Ministry of Health, Labor and Welfare (2008), Government of Japan, suggests 61.8% of general employees suffer stress and anxiety in their work places, mostly due to issues of both the quality and quantity of work and human relations in the work place, among other reasons. Do these factors affect employee commitment? This makes the study of employee consciousness of HPWS and commitment in Japanese organizations relevant.

RESEARCH DESIGN

Previous authors such as Gerhart, Wright, McMahan, and Snell (2000), Macky and Boxall (2007), Purcell (1999), and Sparham and Sung (2007) have criticised the methodological approach to rely upon a single informant – the managers – to say which HR practices are being used in their organizations. Their opinions actually could be an anomaly from a reality in which the HPWS practices are actually followed in their workplaces. This fact is ignored by most of the authors leading to measurement error. Employee-level studies are also criticised as they tend to be occupational or organizational-specific or from employees of single firms, and are difficult to generalize the findings producing conflicting results (Godard, 2004). Questionnaires were thus targeted to the general, non-managerial employees in Japanese organizations to bridge this gap in the existing literature. Since Japanese culture still traditionally emphasize an interpersonal relationship (Hofstede, 1991) and a high context communication style (Hall, 1976), the author found it practical to consult with his research guide and faculty members to use their personal contacts to conduct the survey (Takeuchi, R., Lepak, Wang, & Takeuchi, K., 2007; Takeuchi, Chen, & Lepak, 2009). The author then took their personal letters of references along with a cover letter written in Japanese, to contact the officials in personnel departments (*Jinjika/jinjibu*) to seek an appointment for site visits and permissions to undertake this survey. Similarly, contacts were established with the Japanese trade and labor union officials for their cooperation

in this study. Responses from non-managerial employees were finally collected from multiple sources, including the HR heads of the companies and representatives belonging to the in-house (company) union members of RENGO (*Nihon Rodo Kumiai So Rengo Kai*), and affiliated organization *Soubu Chiiki Kyogikai*. The respondents were asked to fill out the questionnaires in most cases and collected from the survey sites. While in some other cases, the HR managers and the union officials were requested to follow up the matter with the willing participants and collect the answer sheet on our behalf (Lincoln & Kalleberg, 2003). The completed questionnaires were then asked to be returned to the author in prepaid self-addressed envelopes (provided by the author). There were no incentives and cash payments offered to any participants but as a part of Japanese custom, the author took small gifts (*omiyage*) as a token of gratitude to personnel managers of the companies and the union officials who assisted in the data collection process.

MEASURING INSTRUMENTS

As the target was native Japanese speakers, all the questions were translated into Japanese, initially by the author, following the general conventions of back translation as proposed by Brislin (1990) and then modified with the help of two academic guides of this author, Prof. H. Oba and Prof. C. Nakano. Both are native Japanese speakers and faculty members in Economics at Reitaku University. A 6 point Likert scale (very accurate = 6, accurate = 5, partially accurate = 4, partially inaccurate = 3, inaccurate = 2, and very inaccurate = 1) was applied to all measurement of all the variables used in the study. HPWS was measured by using 21 items (Cronbach α= .89) derived from Chaudhuri (2009a, 2009b). Stressors were measured adapting the 24 item scale (Cronbach α= .86) from Chaudhuri (2009b), Chaudhuri and Oba (2009). An employee commitment scale (Cronbach α= .82), comprising three forms of organizational commitment, was adapted from Meyer and Allen (1991) and an occupational commitment from Blau, Paul, and St. John, (1993). Interclass correlations (ICC 2) of all the three scales were all greater than ICC 1 and were above the acceptable level of 0.60 (Glick, 1995) confirming the use of mean aggregated responses of the employees as a single bundle to be appropriate. A job intensity scale (Cronbach α= .64) was adapted from Kalmi and Kauhanen (2005). Other scales were Affective (Cronbach α= .86), normative (Cronbach α= .61), continuous organizational commitments (Cronbach α= .62) adapted from Meyer and Allen (1991) and occupational commitment (Cronbach α= .75) adapted from Blau et al. (1993).

SAMPLE

Data was collected between October, 2008, and February, 2009, from 16 companies ranging from large conglomerates to small companies involved in various industries in the Kanto region of Japan. In total, 250 responses (52%) from non-managerial employees were collected, of which 23 were rejected owing to incomplete responses. Thus, 227 samples were found suitable for analysis. All the respondents in the study were native Japanese males (98%) and 73% of the respondents were married. Average respondents were divided within the age group (mean = 2.39, SD = 0.95) of 30 - 39 years old, which were the largest at 48%, followed by age group 40 - 49 with 21%. Respondent groups below the age of 29 years and between 50 and 59 each comprised 15% of the sample. All respondents were permanent non-managerial employees in their organizations. Their areas of work were production (41%), maintenance (30%), administration

and others (17%), sales and marketing (11%), IT and software development (only 1%). Forty-six percent were high school graduates and 40% were university graduates, as well as some graduates of professional schools, and other forms of education. Forty-three percent of respondents worked (mean= 2.43, SD=1.724) in organizations employing more than 5000 people, while 26% worked in organizations employing between 1000 and 4999 people. The rest worked in medium and small sized organizations ranging from 300-999 at 5%, 100-299 at 7 %, 50-99 at 9 %, and 10-49 people at around 10%. Sixty-six percent of the respondents were the main bread earners in their family (mean= 0.66, SD = 0.476) and 75% had dependants (mean= 3.03, SD = 1.376) in their family. About 42% of the respondents had more than 16 years of service in the current organization (mean = 1.86, SD= 0.886). A large proportion (74%) had no experience in working in other organizations, according to figures for years of service in other organizations apart from the one where he/she was currently employed (mean = 0.255, SD = 0.437). About 70% of the respondents had a monthly salary of between 250,000 and 350,000 yen (approximately US$2500-3500) while 18% earned above 350,000 yen and 12% below 250,000 yen monthly.

CONTROL VARIABLES (DEMOGRAPHIC)

Following Cohen (2009) and Macky and Boxall (2007), this author used six controlled demographic variables in this study: (1) Employee age (in terms of birthday) into 5 Age groups (1= Age within 29 years; 2= Age ranging from 30-39 years; 3= Age ranging from 40-49 years, 5= Age ranging from 50 and above); (2) years of service in the current organization (the actual number of years of each respondent); (3) years of service in other organizations (1 was assigned when a respondent had never experienced job-hopping, while a 0 was assigned when one had not); (4) the number of employees in the workplace (company size) (measured in terms of the number of employees in each establishment); (5) being the main bread earner (1 for yes, 0 for no); and (6) the number dependants (actual number).

MATRIX DESIGN

Adapting Oba's value-conscious theory (2007), the author designed four possible forms of relationships between employee consciousness of HPWS and employee commitment. The X-axis is denoted by the HPWS platform and Y-axis is the employee commitment, both having positive and negative ends. The four possible groups or profiles of linkages are: $X^+ Y^+$ matrix = High HPWS and High Commitment (group 1); $X^+ Y^-$ matrix = High HPWS and Low Commitment (group 2); $X^- Y^+$ matrix = Low HPWS and High Commitment (group 3); $X^- Y^-$ matrix = Low HPWS Low Commitment (group 4).

TOOLS USED FOR THE ANALYSIS

Discriminant Analysis (DA) SPSS 13 version software was used to predict the four groups, as described in the matrix design, of the respondents based on the median score value of the average responses of HPWS, (3.43) and Commitment, (3.95) respectively, most commonly used in the organizational behavior studies (Gellatly, Hunter, Currie, & Irving, 2009). The steps described by DeCoster (2004) of median split process in SPSS was followed and the measurement error in the grouping process occurred in the previous version of this paper

(Chaudhuri, 2010) was corrected in this paper. The perceived high group was predicted as having higher values than each of these median values, while the perceived low group would be relatively lower than the median value. The mean values of perceived HPWS, affective, continuous, and normative organizational and occupational commitment, stressors and job intensity, along with the demographic controlled variables were entered together as independent variables to predict these four groups. Finally, to study how individual HR practices in the HPWS bundle are related to different forms of employee commitments, and to stressor and job intensity, hierarchical OLS regression analysis was performed in two stages. In the first stage, the demographic controlled variables were entered; then, the individual HR practices were entered one by one using SPSS 13 version software.

FINDINGS

Discriminant Analysis (DA)

To test the significance of the model as a whole, this research has the following two hypotheses: Null hypothesis: the four groups have the same mean discriminant function scores; and the Alternate hypothesis: they are not all equal. The result of the model is shown in Table 1. The value of Wilks' λ statistic in DA for the test of function 1 through 3 functions is .174 (chi-square = 380.41) showed a probability of 0.000 < 0.001. Test of function 2 through 3 functions is .502 (chi-square = 149.172) showed a probability .000 < 0.001. After removing function 2, the Wilks' λ statistic for the test of function 3 (chi-square = 17.94) had a probability of 0.08 > 0.05. Thus, the model produced significantly differentiated scores among the groups (see Table 1). The significance of the maximum possible number of discriminant functions supports the interpretation of a solution using the two discriminant functions. That is the null hypothesis is rejected and the model differentiates scores among the groups significantly.

TABLE 1. TEST OF FUNCTIONS AND WILKS' LAMBDA

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1 through 3	**.174**	**380.41**	**39**	**0.000**
2 through 3	**.502**	**149.70**	**24**	**0.000**
3	.921	17.94	11	0.08

From the Table 2, Eigen values, verify the relation between dependent and independent variables. The larger the Eigen value, the more of the variance in the dependent variable is explained by that function. Since the dependent in this application has four groups, there are three discriminant functions. The Eigen values of the estimated discriminant functions in descending order of importance. The second column lists the percent of variance explained by each function. The third column is the cumulative percentage of variance explained. The last column is canonical correlation, where the squared canonical correlation is the percent of variation in the dependent discriminated by the independents in D. A. Eigen values showed 67.27 % of variance among the 4 groups that can be explained by function 1, whereas only 29.67% of this variance can be explained by function 2, and just 3.06 % by function 3. The degree of relationship between the predictors and groups (canonical correlation) due to function 1 is 0.809, greater than function 2

being (0.674) and function 3 being (0.281). Thus function 1 is more important than functions 2 and 3 (see Table 2).

TABLE 2. EIGEN VALUES OF THE FUNCTIONS

Function	Eigen value	% of Variance	Cumulative %	Canonical Correlation
1	1.888[a]	67.27	67.27	0.809
2	0.883[a]	29.67	96.94	0.674
3	0.086[a]	3.06	100	0.281
A	First 3 canonical discriminant functions were used in the analysis.			

Table 3 describes the test of the Significance of the independent variables in the model. The smaller value of Wilks' λ for an independent variable, the more that variable contributes to the discriminant. Affective organizational commitments have distinct differences amongst the four groups. Table 2 showing the values of Wilks' λ statistic for the predictor variables of HPWS to be .415 with high significant F= 104.58 (p<.001) followed by affective commitment to be .540 with high significant F= 63.32 (p <.001), occupational commitment , λ statistic = .585 , F = 52.74 (p <.001) and these predictors are more significant contributors than the others. Among other independent predictors as normative commitment (λ= .787) followed by the perceived stressors (λ=.860) and perceived job intensity (λ=.944), continuous commitment (λ=.948) all have statistical significance and also contributed in the model. However, only the years of service in the other companies among the demographic variable differed in the four groups (λ=.942) having significant p (<.01). All these predictors, as shown in Table 3, which discriminate the four predicted groups, differ considerably by their mean discriminant function scores.

TABLE 3. MEANS (STANDARD DEVIATIONS) BY GROUPS, ***p<.001, ** p<.01

Discriminant variables	Group 1 (n = 71)	Group 2 (n = 41)	Group 3 (n = 40)	Group 4 (n = 75)	Wilks' Lambda	F-value
HPWS	3.88 (0.28)	3.71 (0.25)	3.02 (0.37)	2.82 (0.55)	0.415	104.58 ***
Affective organizational Commitment	4.94 (0.60)	3.84 (0.68)	4.50 (0.55)	3.50 (0.77)	0.540	63.32 ***
Continuous organizational commitment	4.11 (1.07)	3.90 (0.95)	4.58 (0.95)	4.36 (0.88)	0.948	4.09 **
Normative organizational Commitment	3.73 (.95)	2.68 (.81)	3.44 (0.90)	2.72 (0.94)	0.787	20.17 ***
Occupational commitment	4.65 (0.82)	3.63 (.72)	4.50 (0.51)	3.32 (0.68)	0.585	52.74 ***
Job intensity	3.99 (0.83)	4.27 (0.66)	3.94 (0.72)	3.72 (0.86)	0.944	4.44 **
Stressors	2.95 (0.69)	3.45 (0.62)	3.42 (0.51)	3.51 (0.58)	0.860	12.11 ***
Years of service in other co.	.14 (.35)	.17 (.38)	.40 (.50)	.33 (.47)	0.942	4.60 **

The standardized discriminant function coefficients should be used to assess each variable's unique contribution to discriminant function. The standardized canonical discriminant function coefficients, which are presented in Table 4, reflect the contribution of one independent variable

in the context of the other variables in the model. A low standardized coefficient might mean that the groups do not differ much on that variable or it might just mean that a variable's correlation with the grouping variable is redundant with that of another variable in the model. The larger the standardized coefficient, the greater is the contribution of the respective variable to the discrimination between groups (Klecka, 1980). The standardized discriminant canonical coefficient functions revealed that HPWS (.69), followed by affective organizational commitment (.36) and occupational commitment (.38) were all positively related to the function 1 and contributed more than other variables in the model.

The Fisher's classification function coefficients adapted are shown in Table 5. These are used to classify the cases between the groups. Group 4 (n=75) showed a decrease of coefficients in HPWS, affective, continuous and occupational commitments, along with perceived job intensity but an increase on perceived stressors in comparison to group 1 (n=71). The classification of the cases relatively are more in the Group 4 (n=75), having employees with both low consciousness of HPWS and commitment. Chart 1 show the graph of the group centroids in the model. Strong evidences of linkages in employee consciousness between HPWS and commitment can be observed in the sample.

TABLE 4. STANDARDIZED DISCRIMINANT FUNCTION COEFFICIENTS

Standardized Discriminant Function Coefficients	Function 1	Function 2
Age (Groups)	.06	-.01
Number of employees (Groups)	-.15	.10
Years of service in the same company	.00	-.06
Dependants	-.09	-.10
Main bread earner	-.05	-.02
Years of service in other companies	.05	.00
HPWS	.69	-.79
Stressors	-.10	.01
Job Intensity	.19	-.10
Affective Organizational Commitment	.36	.48
Continuous Organizational Commitment	.18	.39
Normative Organizational Commitment	.03	.43
Occupational Commitment	.38	.41

TABLE 5. FISHER'S LINEAR DISCRIMINANT FUNCTIONS

Discriminant Variables	Group 1 (n= 71)	Group 2 (n= 41)	Group 3 (n= 40)	Group 4 (n= 75)
Age (Groups)	3.23	3.06	3.00	3.00
No of employees (Groups)	.52	.71	.92	.82
Years of service in the same co	2.36	2.73	2.56	2.36
Having dependants	3.24	3.58	3.39	3.48
Main bread earner	-1.23	-. 96	-1.04	-0.89
Years of service in other co	5.48	5.74	5.74	5.13
HPWS	27.26	28.03	21.73	21.68
Affective organizational commitment	6.67	4.49	6.55	4.77
Continuous organizational commitment	7.68	6.74	7.93	7.01
Normative organizational commitment	0.64	-0.37	1.01	0.47
Occupational commitment	11.85	10.44	12.12	9.99
Job Intensity	1.67	1.68	1.27	0.89
Stressors	13.15	13.88	14.00	13.75
Constant	-150.71	-137.06	-139.00	-113.67

Table 6 shows how well the discriminant function worked for each group of the dependent variable. DA correctly classified about 86.8% of the original group cases as per the prediction. This is further supported by the results showing 81.9% of the cross validated groups were correctly classified, which is quite satisfactory. Prediction of individual groups through DA resulted in 94.37% (cross validated 91.55%) of cases being classified in Group 1 (n=71, High HPWS/ High commitment); 85.37% (cross validated 80.49%) in group 2 (n=41, High HPWS/ Low commitment); 77.50% (cross validated 70%) in group 3 (n=40, High commitment/Low HPWS); and 85.33% (cross validated 80%) in group 4 (n=75, Low HPWS/ low Commitment). The estimated discriminant function produced relatively more cases in Group 4 than in other groups in the model.

TABLE 6. CLASSIFICATION RESULTS OF THE GROUPS

		Matrices		Predicted group membership			Total
			Group1	Group2	Group 3	Group 4	
Original	Count	Group 1	67	2	2	0	71
		Group 2	4	35	0	2	41
		Group 3	7	0	31	2	40
		Group 4	1	6	4	64	75
	%	Group 1	94.37	0	2.82	0	100
		Group 2	9.76	85.37	0	4.88	100
		Group 3	17.5	0	77.50	5.0	100
		Group 4	1.33	8.0	5.33	85.33	100
Cross-validated	Count	Group 1	65	3	2	1	71
		Group 2	4	33	0	4	41
		Group 3	9	0	28	3	40
		Group 4	1	7	7	60	75
	%	Group 1	91.55	4.23	2.82	1.41	100
		Group 2	9.76	80.49	0	9.76	100
		Group 3	22.5	0	70.00	7.5	100
		Group 4	1.33	9.33	9.33	80.0	100
86.8% of original grouped cases correctly classified. 81.9% of cross-validated grouped cases correctly classified. Group 1= High HPWS/High Commitment; Group 2=High HPWS/Low Commitment Group 3= High Commitment / Low HPWS; Group 4= Low Commitment/ Low HPWS							

CHART 1. GRAPH SHOWING CENTROIDS OF THE GROUPS

Canonical Discriminant Functions
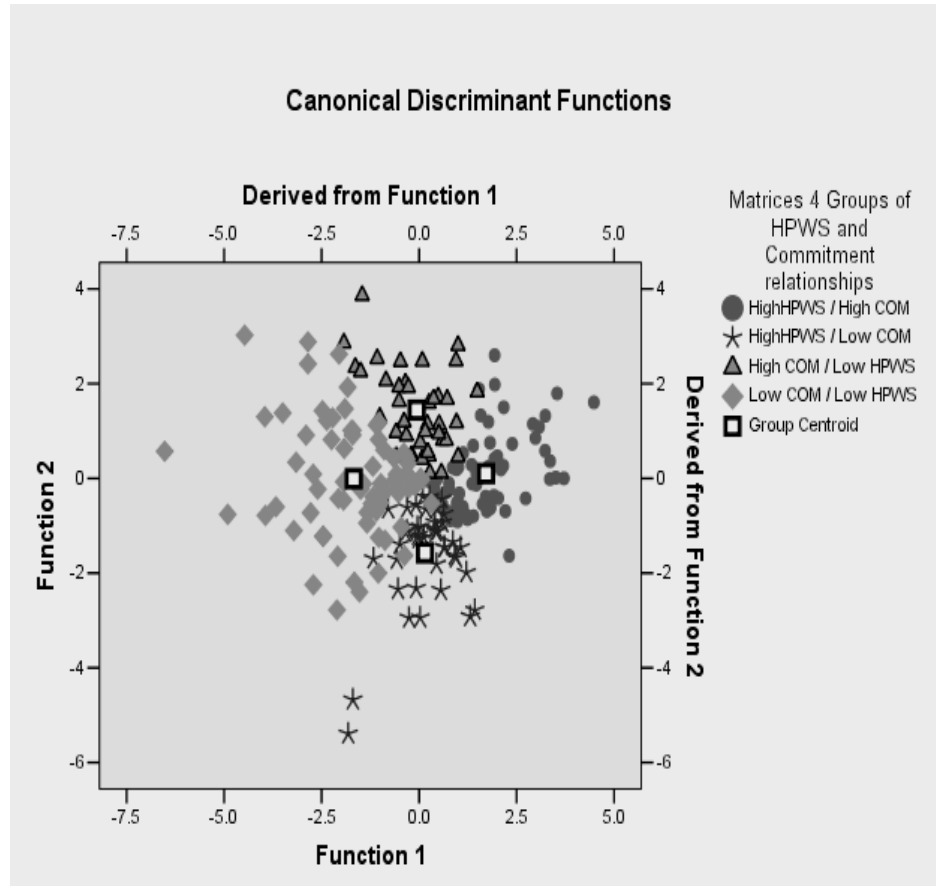
Hierarchical OLS Regressions

In order to investigate how the individual HR practices in HPWS influence different forms of commitments and other employee outcomes a two staged OLS regression analysis was conducted (Chaudhuri, 2010). Initially the demographic variables were entered and then in the second stage all the individual items in the HPWS were entered one by one in the model. Table 7 showed that employee participation programs (β=.24, p< .01), team work (β=.15,p<.05) and information sharing on the company's financial status (β=.23,p< .01) were significantly related to the employee affective organizational commitment. Overall, the regression equation revealed values of R^2 Δ= .38, F=5.18(p<.001) and FΔ=6.20(p<.001). The number of employees (β=.16,p<.05), and training was found to be significantly and negatively related (β= -.17, p< .05) to continuous organizational commitment. However, the overall regression equation resulted in R^2 Δ= .13, F=1.61 (p<.05), but did not result in any significant F Δ between HPWS individual HR practices and employee continuous organizational commitment, or employee participation programs (β=.21, p<.05), formal grievances and complaint resolution system, (β= -.17, p < .05) to normative organizational commitment. Overall, the regression equation produced R^2 Δ= .22, F= 2.17(p< .001) and FΔ= 2.65 (p< .001). Employee age (β= -.22, p < .01), having dependants in the family (β= -.13, p < .05), years of service in the current organization (β= -.12, p < .05) were

negative, but being the main bread earner (β= .19, p < .01) was positively related to occupational commitment. Employee participation programs (β= .21, p < .05), self-directed team work (β= .16, p < .05), information sharing on the company's financial status (β=.17, p < .05) and measures of occupational safety (β= .16, p < .05), were found to be positively and significantly related to employee occupational commitment. The overall equation revealed $R^2 \Delta$= .21, F=3.01(p<.001) in the first stage, F= 2.89 (p< .001) in the second stage and FΔ= 2.72 (p< .001). Years of service in the current organization (β=-.26, p < .01) were negatively related, while years of service in other organizations (β=.28, p < .001) were positively and significantly related to stressors. H.R. practices such as participation programs (β= -.19, p < .05) and formal communication programs (β= -.21, p < .05) were negatively related to stressors. However formal grievance resolution and complaint system had significant positive relationships (β=.17, p < .05) with stressors. The overall result was $R^2 \Delta$= .17, F= 4.77(p< .001) in the first stage, F= 3.01(p< .001) in the second stage and FΔ= 2.33 (p< .001) in the regression equation. Employee age (β=-.20, p < .05), years of service in the organization (β= -.20, p < .05) were negatively related to job intensity. HR practices of rigorous selective recruitments (β=.18, p < .05), information sharing of the company's financial results (β=.23, p < .01), and employee attitude surveys (β=.17, p < .05) all had a significant positive relationship, but measures of occupational safety had a negative significant relationship with job intensity (β= -.19, p < .05). Overall, the OLS regression resulted in $R^2 \Delta$= .18, F= 2.04(p< .01) and FΔ= 2.17 (p< .01) with job intensification.

TABLE 7. TWO STAGED HIERARCHICAL OLS REGRESSIONS OF DEMOGRAPHIC AND INDIVIDUAL VARIABLES OF HPWS ON EMPLOYEE OUTCOMES (n= 227) ***p<.001, ** p<.01 , * p<.05

Independent Variables	Standardized beta coefficients(t – values) of outcomes (dependent variables)											
	Affective		Continuous		Normative		Occupational		Stressors		Job Intensity	
	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	Stage1	stage2	Stage1	stage2	Stage1	Stage2
Age(Groups)	-.07 (-.82)	-.03 (-.38)	.15 (1.72)	.00 (.77)	-.02 (-.27)	-.05 (.55)	-.22 (-2.47) **	-.22 (-2.51) **	-.12 (-1.38)	-.09 (-.99)	-.20 (-2.23) *	-.13 (-1.40)
No of employees(groups)	-.11 (-1.49)	.00 (-.05)	.16 (2.31) *	.13 (1.73)	.05 (.65)	.08 (1.02)	-.03 (.44)	.02 (.22)	.05 (.69)	.07 (.96)	-.04 (-.62)	.04 (.50)
Years of service in the current co	.06 (.67)	-.03 (-.43)	-06 (-.72)	.02 (.17)	.03 (.30)	.07 (-.78)	-.09 (-1.12)	-.18 (-2.16) *	-.26 (-3.13) **	-.16 (-1.95) *	-20 (-2.30) *	-.24 (-2.77) **
Having Dependent	-.01 (-.15)	.02 (.37)	-.01 (-.19)	-.05 (-.72)	-.07 (-1.00)	-.02 (-.26)	-.13 (-1.91) *	-12 (-1.84)	-.05 (-.81)	-.08 (-1.23)	-.08 (-1.17)	-.05 (-.68)
Main bread earner	.04 (.65)	.05 (.86)	-.08 (-1.26)	-.05 (-.70)	.02 (.28)	.00 (-.07)	.17 (2.61)	.19 (2.80) **	.02 (.36)	.05 (.76)	.02 (.25)	-.04 (-.60)
Yrs of service in other co(dummy)	-.07 (-.98)	.14 (2.08)	.00 (.03)	-.02 (-.23)	-.06 (-.85)	.09 (1.18)	-.05 (-.65)	.08 (1.09)	.28 (4.19) ***	.14 (1.86)	.08 (1.15)	.12 (1.50)
Selection		.06 (.84)		.03 (.37)		.14 (1.63)		.07 (.87)		.00 (.02)		**.18 (-2.16)***
Training		.00 (.03)		**-.23 (-2.13)***		-.03 (-.33)		-.17 (-1.69)		-.01 (-.08)		.02 (.16)

Internal promotion	-.12 (-1.77)	.08 (.97)	-.07 (-.96)	-.02 (-.22)	.09 (1.20)	-.04 (-.57)
Empowered	-.05 (-.68)	-.16 (-1.74)	.09 (.94)	-.06 (-.71)	-.05 (-.58)	.02 (.23)
Participation programs	**.24 (2.87)****	.09 (.90)	**.21 (2.11)***	**.21 (2.24)***	**-.19 (-1.98)***	-.16 (-1.58)
Team work	**.15 (2.23)***	.05 (.59)	-.01 (-.07)	.06 (.84)	.00 (-.02)	.05 (.64)
Self directed team	.04 (.50)	-.12 (-1.39)	.05 (.61)	**.16 (1.95)***	-.14 (-1.77)	-.06 (.64)
Performance Appraisal	.00 (.01)	.11 (1.60)	.01 (.15)	-.02 (-.30)	.03 (.49)	.02 (.28)
Formal performance feedback	-.07 (-1.07)	-.09 (-1.18)	.09 (1.23)	-.03 (-.40)	.11 (1.51)	.06 (.77)
Regular constructive feedback	.11 (1.42)	.04 (.46)	-.03 (-.33)	.06 (.64)	.03 (.32)	.07 (.75)
Pay for performance is based on quantified results	.11 (1.40)	-.09 (.99)	-.02 (-.17)	.02 (.26)	.01 (.16)	.05 (.56)
Profit sharing schemes	-.08 (-1.04)	.13 (1.51)	.03 (.37)	-.05 (-.63)	.04 (.54)	.11 (1.25)
Additional pay rise in last year	-.11 (-1.81)	-.03 (-.38)	-.03 (- .41)	-.07 (-1.04)	.08 (1.28)	.07 (.97)
Information sharing on co financial status	**.23 (3.01)****	-.05 (-.55)	.11 (1.27)	**.17 (2.09)***	.01 (.10)	**.23 (2.66)****
Information sharing on co strategic plans	.16 (1.86)	.05 (-.50)	.11 (1.11)	.01 (2.06)	-.05 (-.52)	-.18 (-1.81)
Formal com- munication programs	-.03 (-.40)	.03 (.33)	.01 (.10)	.14 (1.49)	**-.21 (-2.30)***	-.05 (-.49)
Employee attitude survey	.04 (.70)	.11 (1.45)	.02 (.22)	.02 (.27)	.01 (.17)	**.17 (2.33)***
Few status difference	.00 (.03)	-.11 (-1.45)	-.11 (-1.50)	-.01 (-.09)	-.05 (-.72)	.06 (.75)
Good career Opportunities	.09 (1.17)	-.02 (-.25)	.08 (.82)	.00 (.01)	-.04 (-.40)	-.04 (-.40)
Formal grievances and complaint resolution systems	-.11 (-1.62)	-.10 (-1.21)	**-17 (-2.19)***	-.14 (-1.90)	**.17 (2.27)***	.15 (1.87)
Measures for occupational safety	.07 (.97)	.01 (.10)	.09 1.08	**.16 (2.05)***	-.10 (-1.31)	**-19 (-2.42)***
R ^{2} (adjusted)	.03(.00) .41(.33)	.05(.03) 18(.07)	.01(-.02) .23(.12)	.08(.05) .28(.18)	.12(.09) .29(.19)	.04(.01) .22(.11)
R ^{2} Δ	.38	.13	.22	.21	.17	.18
F	1.07 5.18***	2.08 1.61*	.40 2.17***	3.01** 2.89***	4.77*** 3.01***	1.44 2.04**
F Δ	6.20***	1.45	2.65***	2.72***	2.33***	2.17**

DISCUSSIONS AND IMPLICATIONS

This paper provided evidences of four possible forms of HPWS-Commitment relationships through the existence of four Groups, as predicted from the employee consciousness of HPWS and Commitment. DA gave the highest accuracy level with respect to those who felt a low perception of both HPWS and Commitment. From the company's perspective, it is important to understand which employees are likely to have such low perception of HPWS and commitment so that pro-active strategies can be initiated to minimize such cognition. The members belonging to Group 4 can be named as the '*De-Active*' and in addition, efforts should be made to shift their consciousness to Group 1 (employees with higher consciousness of HPWS and Commitment), named as the '*Active*' members or to Group 3, where at the least people have greater consciousness to commitment, the '*Confident*' group of members. The individual HR practices in the HPWS could be utilized in this regard. Existence of the members (n= 41) in Group 2 (having High consciousness of HPWS and Low consciousness of Commitment), should be treated as a warning for the HR practitioners. These members, named as the '*Blue*', have low perceptions of commitment in spite of having higher perceptions of HPWS. This could be due to the ill effects of over implementation of HR practices in HPWS, or these members, '*Blue*', could be too modest in expressing their cognition regarding commitment towards organizations or to their work. Japanese people culturally appear to have a strong self-effacement and 'does not appear to maintain a significant discourse regarding the importance of self-esteem,' (Heine, Lehman, Markus, & Kitayama, 1999, p. 779). Results from the regression analysis show that creating low stressful working conditions and encouraging 'teamwork' among employees, increasing various 'employee participation programs' in operations and 'sharing information about the company's financial results' could increase employees' affective, normative organizational and occupational commitments. However, there is also evidence of intensification of work. Hence, for the HR practitioners efforts of reducing stressful working conditions and job intensity could yield in higher employee commitments in workplaces.

No significant influence of demographic controlled variables were observed in the relationships except that age (groups), years of service in the current organization and being the main bread earner had some influence on occupational commitment alone. However, authors as Mathieu and Zajac (1990), Meyer and Allen (1991), Macky and Boxall (2007) also did not find strong and consistent relationships of the demographic variables with organizational commitment in their studies. Employees with fewer years of service in their present companies showed higher consciousness of stress and job intensity in the workplace. Statistically, biasness of the non-managerial employees as the single rater could not be found, as the mean responses of all the variables used in this study did not show any skewness in the distribution.

Theoretically, this paper provides academic support for the argument made previously by the authors that HPWS can increase employee commitment (Appelbaum et al., 2000; Comb, Liu, Hall, & Ketchen, 2006; Takeuchi et al., 2009). This paper also supports the arguments, that HPWS can increase job-intensity (Ramsay et al., 2000; Godard, 2004) and also could reduce workplace or job stressors in Japanese organizations (Takeuchi et al., 2007; Takeuchi et al., 2009). Thus, this paper contributes to the extant literatures in HRM and employee psychology.

LIMITATIONS

The sample size in the study was also not representative of the entire population of the employees in Japan. It did not include representation of automobile industries, or pharmaceutical industries, to name a few, so in no way can the result be generalized. Microeconomic studies among different industries with a much larger sample size in the future could render some important findings in this subject. Randomization of the samples could not be applied, yet efforts were made to collect data from multiple sources including union representatives of different organizations to minimize biasness as far as possible. Influence of common method bias was reduced by assuring the participants of the anonymity and confidentiality of the responses (Gellatly et al., 2009). However, in Japanese cultures, people normally tend not to disclose their individual true feelings or intended statement (concept of *honne* = real self) and they often get subdued by norms, "immersed" by surroundings, and use socially-tuned statements shaped to please the larger majority (*tatemae* = public stance) (Davis and Ikeno, 2002; Doi, 1986; Heine et al., 1999). Such a contrast and duality or multiplicity of the Japanese mindset is important to consider in studying Japanese minds (Heine et al., 1999). Respondents may have refrained from expressing their true feelings to describe their working environment, in relation to stressors or intensity and their perceptions of individual psychological relationships with their organizations. Therefore, such speculations of biasness may not be ruled out completely. Thus, assessing employee consciousness in Japanese workplaces is highly complicated and challenging. The measurement of consciousness could have been better with more sophisticated statistical tools. Reliability measures of Continuous and Normative organizational commitment are also low and this may have hindered various measures of associations and linkages between the variables used in this study. The grouping of the respondents in four matrices or groups was restricted only on their three forms of organizational commitment and occupational commitments. Future studies should include other forms of commitments in workplaces and should also target responses from the managers. How their consciousness could differ with the non-managers' perceptions in HPWS workplaces could be an interesting topic for further exploration. This study was conducted in a period when Japan was undergoing economic recession. In a macro level, the results could have been different if this study was conducted in an economical boom period.

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UNDERSTANDING THE DO-IT-YOURSELF CONSUMER

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ABSTRACT

The goal of this study was insight into why some consumers avoid a service encounter and choose "do-it-yourself" (DIY) service. Fifty adults were interviewed, grouped into self-described DIYers or confirmed non-DIYers. Thematic analysis of open-ended responses resulted in a conceptual model of the antecedents and outcomes of DIY service. Motivations affecting DIY activity included: saving money, control over the procedure, a feeling of accomplishment, meeting the expectations of others, lack of trust in service providers, and fear of doing a poor job. However, DIY activity required a set of enabling factors as well: necessary equipment, facilities, knowledge and skill, and perceived time to perform the task. For some consumers, the decision to DIY appears to be related to a service failure with a provider. Performance of one DIY activity did not necessarily predict a pattern of other DIY tasks. Guidelines to better market to the DIY segment are offered.

INTRODUCTION

In one of the early articles investigating self-service, Bateson (1985) identified a consumer segment that preferred to "do it themselves" and render a large part of the service within a service encounter, even in the absence of monetary or time-saving incentives. The author labeled this participative group the do-it-yourself (DIY) consumer. However, some consumers take the participative role to the extreme and choose to provide all of their own service, avoiding a service encounter entirely. Examples include changing one's own motor oil and filter, cutting one's own hair, and preparing one's own income taxes. Although understanding the motivations for DIY service would seem to be of interest to both academicians and service providers, it has been noted that there is a relative lack of literature on this topic (Davidson & Leather, 2000; Godar & Godar, 2001).

An example of the managerial significance of DIY service may be illustrative. The Automotive Aftermarket Industry Association periodically conducts exit interviews of a sample of about 2,000 shoppers at retail auto parts stores around the nation. Comparison of surveys conducted in 1994 and 2000 revealed that the percent of respondents changing their own motor oil dropped from 75 percent to 55 percent (DIYer maintenance down, 2001). The implication of this behavioral trend is likely to be more business for rapid oil change service providers, e.g. Jiffy

Lube, and reduced sales of motor oil and oil filters at auto parts stores. That is, the decrease in DIY shifts a tangible goods sale away from one retailer to another as well as adding a service component fee. In order to better design service plans and advertising strategy, it makes sense that managers would want to understand the motivations and situational factors that propel DIY service.

The goal of the present study is better insight and understanding of DIY service, focusing on three particular DIY activities: self-service oil changes, haircuts, and income tax preparation. From thematic analysis of study participant responses, a conceptual framework of DIY service is presented. Finally, based on the framework, certain guidance is given that may aid in the development of service marketing strategy.

BACKGROUND

Relation to Self-Service

Conceptually, DIY service might be viewed as an extreme form of consumer co-production of a service. Indeed, the current service paradigm is that companies generally desire to engage customers in the co-production of their service (Bitner, Ostrom, & Meuter, 2002; Honebein & Cammarano, 2006; Meuter, Bitner, Ostrom, & Brown, 2005). This may range from simply filling out a form (such as a medical history) to busing one's own table in a fast-food restaurant, to e-ticket check-in and printing of one's own boarding pass for an airline flight. Co-production has been described as a sliding scale, ranging from the company doing all the work to the customer doing all of the work (Honebein & Cammarano, 2006). However, as illustrated in this paper, there is a distinction between DIY service and self-service. In the case of self-service, there is still a service encounter (if not with company personnel, then at least with some form of self-service technology and the brand of the company). With DIY service, the consumer does not have an encounter with the service provider or his brand (although the consumer may need to purchase or rent materials from a retailer to accomplish the DIY task).

DIY Literature

There is a relatively small body of DIY literature. A significant portion of this research stream is devoted to DIY home-improvement product retailing. Topics covered by these studies include: refinements in retail strategy to better serve DIY consumers (Browning & Zabriskie, 1985; Hornik & Feldman, 1982), the size of the DIY market (Brogan & Cort, 1997; Davidson & Leather, 2000), and competition among retailers for DIY consumers (Jones, 1984). The focus of these early investigations was on the use of sales personnel, communications, and in-store displays to better appeal to and serve the DIY segment.

A smaller body of work has investigated what motivates DIY service. One study notes that DIY home improvement is not always about saving money; rather, it may be about achieving an outlet for creativity and fulfillment (Browning & Zabriskie, 1985). Another author concludes that both motives operate simultaneously (Williams, 2004), proposing a typology of DIYers based on these motives (Williams, 2008). Yet, the most insightful investigation of DIY motives comes from the work of Bateson (1985). From focus group discussion, this author identified core

motives for consumers who wish to be very active co-producers of service within a service encounter. These include: control (of the procedure, the outcome, and the timing of service production), independence (not wanting to depend on others), and risk (financial, psycho-social, and performance).

Although existing studies have shed some light on the DIY consumer, it has been noted that motives for this behavior remain underexplored (Davidson & Leather, 2000; Godar & Godar, 2001). The current investigation seeks a better understanding of these motives and presents a conceptual framework of DIY service that may aid in the development of marketing strategy.

FRAMEWORK FOR DIY

Conceptual Model

Based on thematic analysis of responses from participants in this study, a model of the antecedents and outcomes of DIY service is presented in Figure 1. The model is presented now so that the reader may refer to the model as interview results are presented and determine how the results support the model as configured.

The model proposes two sets of factors as antecedents to DIY service performance: motivational factors and enabling factors. Elements within the motivational factor box are given a positive or negative valence sign relative to whether the element would favor or inhibit DIY service performance. Enabling factors are conceptualized as situational factors that may facilitate or inhibit DIY service performance, but unlike motivations, they are listed absent a valence sign, suggesting that they do not have an affective component. Although motivational factors and enabling factors are presented as separate boxes, motivations are conceptualized as influencing enabling factors. For example, lack of knowledge or skill (enabling factors) may inhibit DIY service performance, but a motivated consumer may choose to acquire the requisite knowledge and skill to perform the DIY activity. Thus, the two sets of factors are linked. Both sets of factors as well as experience in DIY service performance are proposed to influence future purchase decisions, the behavioral outcome of DIY service performance.

There is a conceptual similarity between the enabling factors shown in Figure 1 and transaction costs, as discussed in the economics literature. From the point of view of a service provider (or DIYer), transaction costs are acquired resources specific to the performance of a service that cannot be easily redeployed without a significant loss in value (Husted & Folger, 2004). For example, needed resources for a DIY oil change include knowledge, an oil filter wrench, and a portable ramp (for vehicles that have a low ground clearance). These assets are rather specific to an oil change procedure and appear to meet the definition of transaction costs. More will be said about this point in the discussion.

Usefulness of the Model

Conceptualizing DIY service as shown in Figure 1 is believed to have practical usefulness. For example, the motivational factors are believed to be relatively fixed (linked to enduring individual values, attitudes based on experience, and personality). In contrast, the enabling

factors are more transient - perceived time available for a task can change depending on one's level of motivation. Knowledge, skill, and necessary equipment can be acquired. This has strategic implications; service providers can probably do little to change enduring attitudes and
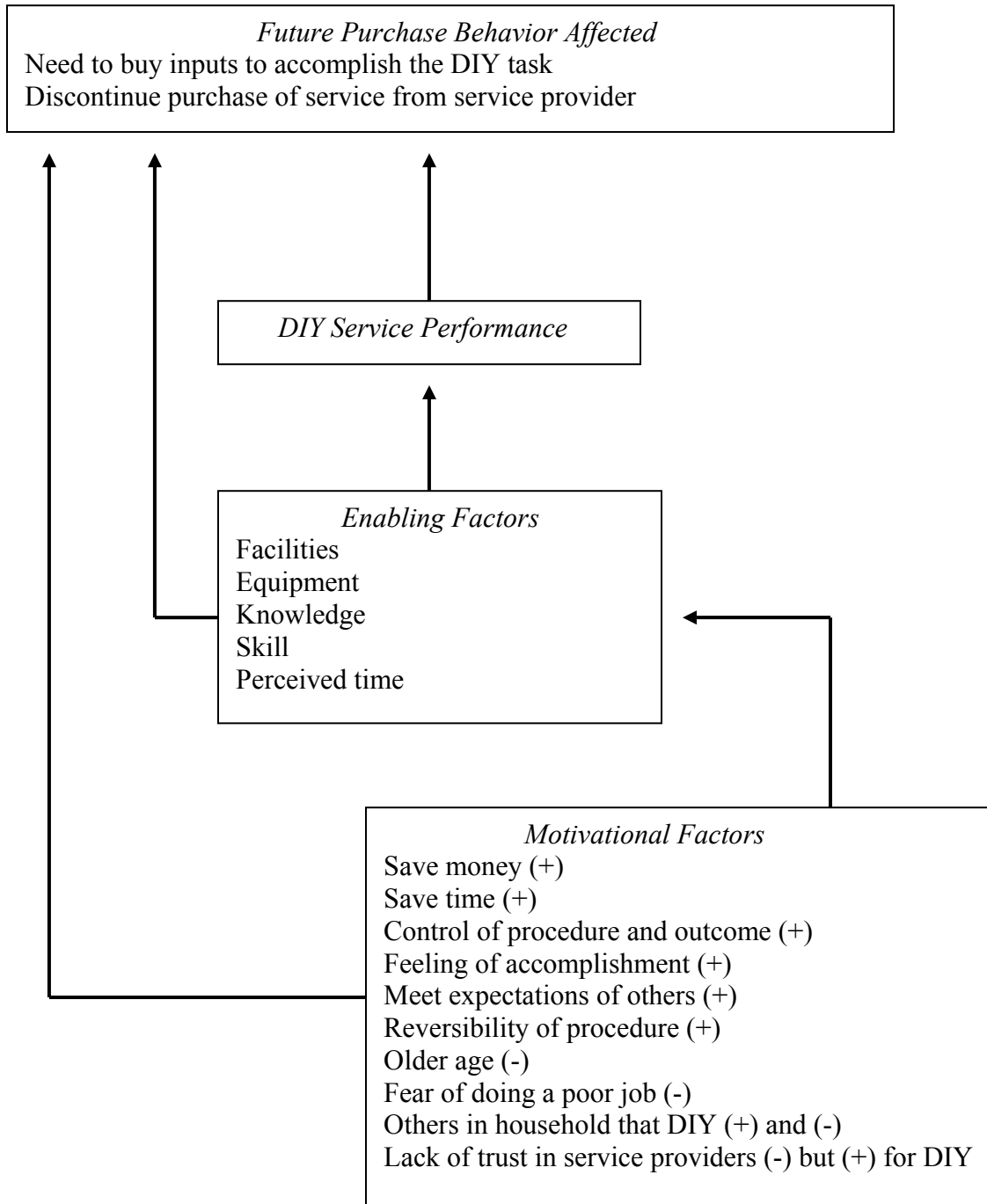
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┌─────────────────────────────────────────────────────┐
│            Future Purchase Behavior Affected          │
│  Need to buy inputs to accomplish the DIY task        │
│  Discontinue purchase of service from service provider│
└─────────────────────────────────────────────────────┘

              ┌──────────────────────────────┐
              │    DIY Service Performance    │
              └──────────────────────────────┘

        ┌──────────────────────────────┐
        │        Enabling Factors       │
        │  Facilities                   │
        │  Equipment                    │
        │  Knowledge                    │
        │  Skill                        │
        │  Perceived time               │
        └──────────────────────────────┘

                ┌──────────────────────────────────────────┐
                │          Motivational Factors             │
                │  Save money (+)                           │
                │  Save time (+)                            │
                │  Control of procedure and outcome (+)     │
                │  Feeling of accomplishment (+)            │
                │  Meet expectations of others (+)          │
                │  Reversibility of procedure (+)           │
                │  Older age (-)                            │
                │  Fear of doing a poor job (-)             │
                │  Others in household that DIY (+) and (-) │
                │  Lack of trust in service providers (-) but (+) for DIY │
                └──────────────────────────────────────────┘
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FIGURE 1. MODEL OF ANTECEDENTS AND OUTCOMES OF DIY SERVICES

values, but they may be able to change the enabling factors. As an example, Lowe's Home Improvement Centers typically offer classes on how to lay the flooring tile sold in the store (changing the consumer's knowledge enabling factor). Other companies rent equipment to facilitate DIY service (tools for laying carpet, spray-painting equipment, etc.). Overcoming the knowledge barrier is made even easier when it can be incorporated into a software product. An example is software to facilitate the preparation and e-filing of federal taxes. This mitigates both a lack of knowledge and perceived time on the part of the consumer. In general, companies would appear to be more successful in appealing to the DIY segment by focusing on the enabling factors rather than the motivational factors.

METHODS

Data Collection

A sample of adults residing in Albuquerque, New Mexico, in 2008 was surveyed. The goal of sampling was to collect representatives from two sub-groups (people who typically engage in DIY service or the polar opposite – people who typically avoid doing any DIY service). To tap these segments, a modified snowball sampling technique was employed. Names of potential interviewees were solicited by asking people if they knew acquaintances that would either fit the DIYer profile or the polar opposite. An overall sample of 50 individuals was obtained, approximately evenly split between DIYers and confirmed non-DIYers.

Interviews were loosely structured. Respondents were first asked to explain why they considered themselves a DIYer or non-DIYer. They were then asked to explain why they behave the way they do toward DIY service, whether they knew anyone else who acted towards DIY as they do, and finally, respondents were asked to speculate on this other person's motivations to do or not do DIY service. Although a number of different types of DIY service were addressed, interviews tended to focus on self-service motor oil changes, haircuts, and income tax preparation. The interview was completed with demographic information.

Analysis

Responses to open-ended questions were studied in an effort to extract underlying motivations or situational factors that might explain the reported behavior. The conceptual model in Figure 1 is based on this thematic analysis.

RESULTS

Oil Changes

Individuals who typically changed their own motor oil and filter offered a variety of explanations for their behavior:

- To save money, to maintain my own vehicle, and to see for myself what the wear and tear on the underside of my vehicle looks like [male, age 23]

- Because it's cheaper and faster; all my brothers [and I] were taught at a young age [male, in his 20's]
- Because mechanics can make mistakes, I usually don't [male, in his 20's]
- More economical, relaxing to work on stuff, and like knowing I did it myself and don't have to rely on somebody else's work [male, in his 20's]
- I know it gets done right, and I feel more independent [male, in his 20's]
- Lack of trust [male, age 24]
- I like to control the outcome and because I am a bit of a perfectionist [male, in his 20's]
- It's the thrill of understanding the activity and how you can do it yourself and to justify my cheapskate ways; why would I pay when I can do it better myself [male, age 65+]

People who typically do not change their own motor oil and filter had the following explanations:

- I don't know how to and would not want to break my car [male, in his 20's]
- I don't have a place to do it efficiently [male, in his 30's]
- [Not] convenient; oil disposal problem [male, in his 20's]
- I don't know how to change it and am too busy [female, age 44]
- New vehicle, warranties, maintenance plans [male, age 42]
- Because I am not well versed in the process of the oil change, and Jiffy Lube is convenient [male, age 23]
- I prefer to have a professional do something correctly than to have to use trial and error doing something myself [male, in his 20's]
- If I don't need to, I won't. I don't know how or enjoy doing stuff like oil changes. I never had to do things myself. I have 4 brothers, a dad, and a step-dad to help me [female, in her 20's]
- I did more when I was younger [male, in his late 50's]

Several themes among the responses of oil-change DIYers were identified. These include: saving money, control over the procedure, and independence (not having to rely on someone else). Perhaps related to independence, the response from the one older gentleman suggests that performing the activity may contribute to enhanced self-efficacy. In addition, there are responses focused on the issue of trust and the possibility of the mechanic making a mistake. At first, the interpretation of these later comments was not entirely clear. However, upon discussion, it appears that they refer to two specific mistakes that may be made by rapid oil-change service providers. The first is an over-tightening of the oil pan drain plug after draining the oil and re-inserting the plug. The oil pan metal is relatively thin, and the threads can easily be stripped by over-tightening. Unfortunately, this condition is not easily repaired, and the result is a periodic drip from the oil pan. The second issue is over-filling the vehicle with oil. Excess oil results in oil pressure that is too high, and this can cause leakage at the seals, especially the crank-case seals. Most vehicles are not equipped with oil-pressure gauges, and so the condition can go undetected for some time, exacerbating the damage to the seals. As with the first issue,

this condition is not easily repaired, and the result is a "leaker" vehicle in your garage or driveway.

Among confirmed non-DIYers of oil-changes, the most prominent themes were: not knowing how, fear of doing the task incorrectly, and being too busy. Additional comments related to the convenience of oil-change service providers, the related problem of having to correctly dispose of used oil, not wishing to do the task when one is older, and not having a garage or the equipment to do the procedure.

Even though responses for only the first DIY activity have been covered at this time, the identified themes support most of the elements within the motivational and enabling factor boxes in Figure 1. However, two motivational elements, "meet expectations of others" and "others in household that DIY," deserve some further explanation. Two comments from this section suggest that others in their household typically engage in DIY oil changes. For the female that mentioned this, it had the effect of dis-motivating her to learn to do a DIY oil change because there were others in the household to do the procedure for her. In the case of the male with four brothers who apparently DIY, there may be some implied social pressure to engage in DIY oil changes because this is something "men" are supposed to do.

Haircuts

People who chose to cut their own hair gave the following justifications for their behavior:

- I cut my hair because I know what I want and what I will get. I benefit because I get the haircut that I want, when I want [male, age 25]
- Because it's cheaper and I do not have much hair to cut – I feel more relaxed at home [male, age 61]
- Because [a barber] costs too much plus it's way out of my way. I benefit more; I save time, money, gas, and it's not a burden [male, age 21]
- I cut it when I want, at the hour I want, when I want. It's easy, cheap, and you spend less time than going to a hairdresser [male, age 32]

Other people had no desire to cut their own hair and explained their behavior thusly:

- Because a barber can cut my hair cleaner and better than I can [male, age 27]
- It's a lot easier to have someone who knows what they are doing versus me doing it myself [male, age 29]
- It's only 15 dollars and I know it's going to look good compared to saving money with the risk that I might have to end up shaving my head from messing up [male, age 21]
- I usually wait a long time between cuts, so it's much too difficult to do myself. Most people I know go to a hairdresser because they want it styled a certain way and it's easier than doing it yourself [male, age 28]

The primary themes given by respondents who cut their own hair were that the activity saves them money and is more convenient than going to a barber or stylist (saving travel and waiting

time as well as gasoline). The interpretation is that self-barbering appears to result in a higher level of overall value than going to a stylist. Notably, the trust issue mentioned by oil-change DIYers was not stated here. This may be due to the reversibility of a bad haircut (it will grow back), whereas vehicle damage that results in oil leaks is more permanent. Among people who did not want to cut their own hair, the reasons given were lack of skill and fear of doing a poor job.

Income Tax Preparation

Respondents who chose to prepare their own tax returns explained their behavior as follows:

- I want to make sure it gets done correctly. I have trouble delegating tasks to others [female, early 20's]
- Because of the availability of high-end software that helps me be in charge [female, late teens]
- Saving money and being accurate. My dad will probably teach me [more] in the future and I am sure more people would if they had someone to teach them [female, early 20's]
- If you have the time, it's a good learning experience and less expensive [female, early 20's]
- Don't feel like paying people to do my tax [male, mid 20's]
- If my tax return required various schedules, I would probably use an accountant [female, mid 20's]

Those that preferred to use a tax professional gave the following reasons:

- Because companies like H & R Block provide professional services at an affordable rate [male, early 20's]
- Don't have the time and it is too complex [male, over 30]
- Because of the convenience and efficiency, and I don't have the knowledge [female, over 30]

The income tax preparation DIYers raised several points. One is that they want the return to be correct and accurate (meaning that they want all legitimate deductions to be taken to minimize their tax). There appears to be a concern that a seasonal employee at a tax preparation service may not be well-trained enough to serve them properly. One person mentioned being taught by her father, and this is an important point for all DIY activities (listed as "others in the household that DIY" in the motivational factors box in Figure 1). Having a tutor to teach one how to DIY increases personal knowledge, serves as a role model, and perhaps also reflects a household value placed on the ability to DIY. Lack of knowledge, time, and complexity were all mentioned by non-DIYers as reasons to not prepare their taxes, but there are user-friendly software products that mitigate these reasons, and the availability of this software was mentioned by a DIYer as a specific reason to prepare her own tax return.

Pattern of DIY Activities

Although the focus of this study was on self-service oil changes, haircuts, and income tax return preparation, respondents were encouraged to mention other DIY activities they perform. The one noteworthy finding from this evidence is that the pattern of activities chosen for DIY appears to be relatively specific to the individual. That is, just because a person is a DIYer for one activity does not necessarily predict that the person will DIY other types of activities in any particular pattern.

An example of the above is an 82 year old gentleman who engages in DIY plumbing, hair-cutting, yard work, and house painting. Yet, this person does not change his own motor oil or prepare his own taxes. Another example is a 47 year old male who performs DIY plumbing, yard work, house painting, and income tax preparation. But this same individual does not change his own motor oil or cut his own hair. A further example is a 44 year old woman who cuts her own hair, performs her own yard work, grooms her own pet, but does not prepare her own taxes.

Service Failure and DIY

During interviews, respondents occasionally addressed the relationship between service failure and their decision to DIY. A 20 year old female mentioned that a salon-performed hair dye had turned out really awful, prompting her to dye her own hair and vow never to go back to a salon for this service. This was an insightful comment because it suggests that the customer is lost not just for the offending service provider, but for all service providers who perform the same type of service. However, there was also evidence that service failure can occur within a DIY context. Another female, age 25, reported that she attempted to DIY her own hair highlights after a salon had allowed bleach to burn her scalp and spill onto and bleach her shirt. Unfortunately, her attempt at DIY highlights resulted in orange-colored hair so she decided to return to a salon service provider (noting that she is now very careful about who she trusts with her hair).

DISCUSSION

From the qualitative data obtained from respondents in this study, a conceptual model of DIY service has been proposed (Figure 1). This is believed to be a contribution because there is no current model of DIY service in the scant literature on the topic. The paucity of literature on DIY service has been noted by others (Davidson & Leather, 2000; Godar & Godar, 2001). An additional contribution of the proposed model is that it may guide service providers in developing marketing strategy (dealt with in more detail in the managerial implications section).

The present study finds that the core motivational factors identified by Bateson (1985) for participation in self-service (control, independence, and perceived risk) also apply to consumers who choose to avoid a service encounter and DIY. Additional motivational factors were found as well as a set of enabling factors that appear necessary for a motivational intent to progress to actual DIY service performance (Figure 1). The behavioral outcome of DIY service is an influence on future purchase decisions. For example, a consumer who performs DIY motor oil changes would need to purchase motor oil and filter elements rather than having these supplied by a service provider e.g. Jiffy Lube.

Three general findings within the current study are noteworthy. The first is the observation that the pattern of DIY activities for any one individual is somewhat unique, meaning that performing a specific type of DIY activity does not necessarily predict performance of any other specific type of DIY activity. For example, people who cut their own hair did not necessarily choose to change their own motor oil or prepare their own tax returns, and vice-versa.

The second general finding is an anecdotal association between service failure and the decision to DIY. The respondents who mentioned this appeared to have had strong affective reactions to the service encounter which prompted a withdrawal from not only the particular offending service provider but from all service providers in the industry. There is a body of literature linking service failure with customer anger (Bonifeld & Cole, 2007; Bougie, Pieters, & Zeelenberg, 2003; Kalamas, Laroche, & Makdessian, 2008) and linking anger resulting from service failure with customer exit behavior from the business (Maute & Dube, 1999). However, service failure does not appear to have been previously linked to the decision to DIY.

A possible theoretical explanation for the link between service failure and the decision to DIY may be offered. The scenario begins with service failure eliciting within the consumer a perception of unfairness as well as the affective state of anger, conditions that have already been linked to service failure in the literature (McColl-Kennedy & Sparks, 2003). Part of the consumer reaction to perceived unfairness is a mental state described as "counterfactual thinking," contrasting what is perceived to be with what might have been (Morris & Moore, 2000). In a service failure context, one counterfactual thought might be 'This would have turned out better if I had done it myself' providing some impetus to a DIY decision the next time around.

However, forgoing an exchange with a service provider and choosing to render one's own service entails certain transaction costs for the DIYer. Basically, a transaction cost is a cost associated with an economic exchange that is independent of the market price of the good or service (Husted & Folger, 2004). For example, a weekly shopping trip to the grocery store requires one to spend time travelling to the store, standing in line, loading and unloading one's groceries, as well as the cost of gasoline for one's vehicle – all costs that are independent of the price of the purchased items. From the perspective of a service provider (or DIYer who chooses to be his/her own service provider), transaction costs are acquired resources that are specific to a particular service performance and cannot be easily redeployed. For example, in the case of DIY oil changes, there is a need for an oil filter wrench and possibly a portable ramp (for vehicles that have a low clearance to the ground). Basically, the DIY consumer is engaging in a "make-or-buy" decision, similar to the way a business might decide to internally manufacture or purchase needed items or service.

One difference between transaction cost analyses by a firm versus a DIYer is that the latter analysis is likely to be heavily influenced by emotion. Indeed, for some, the decision to DIY is linked to a service failure, and the strong affective reaction resulting from this may cause the consumer to overweight certain benefits of DIY. However, the decision to DIY does result in the elimination of certain transaction costs. For example, a number of respondents in this study, especially those commenting about self-service haircuts, appeared to note a decrease in their overall transaction costs (not having to travel to the barber or stylist and not having to wait for service).

The third general finding from this study is a gender difference for respondents who engage in DIY motor oil changes. Men were much more likely to be DIYers for this activity than women. This might be explained by gender role theory (Grandley, Cordeiro, & Crouter, 2005; Gutek, Searle, & Klepa, 1991). The theory suggests that there is a social pressure to engage in activities that are congruent with one's gender role. For women, a DIY motor oil change may not be considered "ladylike" and this may serve as a negatively valenced motivation to perform the activity. Conversely, men may be expected to engage in "mechanical" activities, including DIY oil change maintenance.

Managerial Implications

It may be noted that there are businesses that specifically target DIYers and derive much of their revenue from this segment e.g. auto parts stores. Presumably, these companies would like to promote the growth of the DIY segment. Conversely, there are businesses that sell the service that a DIYer is performing e.g. auto repair and maintenance, and these companies would probably prefer to see a diminishment in DIY activity. So, the issue may be looked at from both angles.

One strategy that may be employed to inhibit DIY performance is restricted sale of an input needed for the service. For example, purchase of certain brands of hair care products have historically been restricted to licensed professionals. In the current study, women mentioned that they were loyal to a particular brand (such as Matrix or Redken) that was not available outside of a salon – inhibiting their desire to DIY their own hair care. This is an example of distribution strategy affecting the ability to DIY. In this case, the marketer apparently sees more overall value in serving only the professional segment.

The other side of the coin is strategy to promote DIY activity. Here, management attention is probably best focused on situational factors that hinder DIY activity rather than attempting to manipulate individual motivations, as the latter are probably more enduring and permanent. Companies that target the DIY segment already appear to be following this strategy. For example, Home Depot has a tool rental business that mitigates lack of equipment as a factor. Also, Lowe's Home Improvement typically offers in-store demonstrations on how to perform certain installation tasks, facilitating the knowledge factor. Indeed, a number of cable channels run shows demonstrating how homes can be updated and rehabilitated by DIYers. And, such programs are also available on DVD for relaxed viewing at home. Overall, DVD and CD-ROM technology allows potential DIYers to have a virtual mentor and guide within their own home for the DIY task they wish to perform.

It is worth noting that not all services can be converted into a DIY activity. For example, no matter how angry a consumer may be with their bank or insurance company, there is no DIY substitute for these service providers.

Limitations and Future Directions

The limitations of this study are similar to those for exploratory research in general: 1) use of small samples that may not fully represent the population of interest, 2) potential for over-

reliance on the responses of certain individual participants who just happen to express themselves well, and 3) potential for misinterpretation of open-ended responses by the investigator. In addition, probing and follow-up to open-ended responses in the present study was somewhat constrained. For all of these reasons, the ability to generalize the findings to a broader population is limited.

Future research on this topic may wish to investigate the relationship between personality type, strongly held individual values, and the tendency to engage in DIY service performance. Certain personality types and/or values may make the person more likely to DIY. Additionally, the finding in this study of a decision to DIY after a service failure suggests that experience (as opposed to personality and values) may have an influence on DIY activity. Finally, the strong affect that results from service failure may interact with personality and/or values in the final decision to DIY.

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