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Technology Certifications and Case Study Where Core Microsoft Office Specialist Certification in Excel is an Accounting Major Requirement for Graduation

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Abstract

In this paper we provide a summary of post-undergraduate technology certifications and present a case study of Microsoft Office Specialist certification in Excel 2013 at a Midwestern state university. Our research finds each of the certifications has three basic requirements – education, examination, and experience – and the demand for technology-skilled college graduates is high. Further, we chronicle the process and outcomes relating to a business school's decision to make technology certification, and specifically Excel, a priority.

Introduction

Technology-based certifications available to career-minded accountants have increased at an increasing rate over the past twenty-five years. Triggering this increase is the profession's demand for more tech-savvy personnel, specialization within industries, and major events such as the Enron scandal, the real estate bubble, and retiring baby boomers. Clearly, accounting has gone through many changes in recent years requiring increased knowledge/skills/abilities for those pursuing and within the profession.

According to the American Institute of Certified Public Accountants ("Fundamental Core Competencies" 2016), "Technology is pervasive in the accounting profession. Individuals entering the accounting profession must acquire the necessary skills to use technology tools effectively and efficiently. These technology tools can be used both to develop and apply other functional competencies."

Purpose

The purpose of this paper is twofold: (1) highlight the importance of certifications in general and technology certifications for accountants in particular, and (2) present a case study to illustrate how business schools might use technology certification as a branding opportunity.

Background

Accounting educators are often criticized for not preparing entry-level accountants sufficiently. This criticism may be warranted, but considering the breadth and depth of accounting rules, auditing standards, tax changes, big data, and technology advancements, it is understandable that most undergraduate programs can do little more than introduce the sub-disciplines of accounting and equip their majors with basics in technology.

“New Age” technologies are creating higher demands on businesses and their workers. Accounting technologies continue to be at the top of technology rankings (“ISACA” 2016). Today, accountants are assisted by sophisticated software when recording transactions, organizing data, tracking inventory, preparing tax returns, and auditing financial statements. Computer systems make information timelier for accountants and other users of accounting data. Meanwhile, auditors are able to base their opinions on actual, real-time data. Data extraction software, such as ACL (Audit Command Language), and IDEA make statistical analysis of data patterns as easy as a few keystrokes.

In 2004, the U.S. Department of Labor reported that accountants were focusing more sharply on technology due to the technological demands of their clients and commerce in general. Since that time the pace has accelerated as an increasing number of accountants and auditors are equipping themselves with extensive computer skills to meet the marketplace demand for specialization in correcting problems using software, developing software to meet unique data management and analytical needs, and in protecting company data via cybersecurity. More pronounced today is the declaration of Shafer that technological developments have decreased the number of lower-level accounting positions, while at the same time allowing accounting systems to not be constrained by time or cost (Shafer 1998).

To address the need for tech savvy business school graduates, universities are beefing up their technology requirements. Third party attestation via basic certification is becoming a reality for collegians, especially in the accounting area. Examples include Excel, QuickBooks, ACL, IDEA, and Peachtree.

Certification Requirements

There are three basic requirements for almost all certifications: education, experience, and examination. These requirements are not only found in accounting certifications and licensures, but also in certifications throughout other professions, such as law and medicine. The use of the three requirements is to ensure high quality candidates, strong association of members, and baseline protection of the public.

Education

Formal education is often the basis for accounting knowledge and skill that positions an accountant for continuous learning throughout their life and career. Most degree programs provide the opportunity for accounting students to develop oral, written, and interpersonal skills, along with exposure to the technical and practical skills needed as they transition to the workplace. Accounting educators in recent years have focused on communication and team work skills. Although the coursework completed in obtaining an accounting degree is necessary, it is merely a foundation accountants can later use to reach their career goals (Hutchinson & Fleischman 2003).

Examination

Similar to university coursework, exams are used to verify that the individual has obtained the knowledge necessary to complete the tasks at hand and is able to apply the knowledge to simulated situations. Each of the certifications discussed in this paper requires candidates to pass an examination. Most often a passing grade is seventy or seventy-five percent or higher, and exams are often administered in two or more parts. Allowing candidates to take the exam in sections enables the individual to focus on a condensed amount of material. For some certifications, retests are available and often have no effect on the candidate's end result (Hutchison & Fleischman 2003).

Experience

The experience requirement is in place to verify that candidates have “real life” know-how. Practice within the field itself is an important part of learning any trade or skill. Individuals should learn the relevant information necessary, but applying the rules and knowledge successfully is equally important. Most certifications have a minimum of two years of related experience before a candidate can receive the certification, and in the case of the CPA, a license to practice. This period of field work also allows the candidate to evaluate if they enjoy the specific area in which they are becoming certified.

Certifications Overview

Numerous certifications are available to accounting professionals. According to Foote, there are three reasons to pursue certification: (1) special knowledge in a specific area enhances career opportunities, (2) special training costs associated with being credentialed are justified, and (3) rewards are available through promotions and pay increases (Foote 2003). Amstutz reports, “According to the latest *Salary Guide* from Robert Half, starting salaries for professionals holding graduate degrees or accounting certifications can be 5 to 15 percent more than the market average” (Amstutz 2016).

Accountants and auditors are expanding their services to include budget analysis, financial and investment planning, information technology consulting, and limited legal service

(U.S. Department of Labor 2004). The addition of more specialized designations distinguishes accountants in these and other nontraditional growth areas of accounting. Pragmatically, the following categories capture the essence of the various accounting certifications: technology, business/management, finance, general accounting, and government. The focus in this study is on technology.

Technology

Post-undergraduate certifications for accountants in the technology area are not industry or brand specific. There are three primary technology certifications in this category as follows: Certified Information Systems Auditor (CISA), the Certified Information Security Manager (CISM), and the Certified Information Technology Professional (CITP). See Table 1.

Table 1
Accounting Certifications Emphasizing Technology

Certification	Sponsoring Organization	Education	Examination	Experience	Fees
Certified Information Systems Auditor	Information Systems Audit and Control Association (ISACA)	Bachelor's Degree	4 hours; 200 multiple choice questions	5 years of professional information systems auditing	\$575 registration for ISACA members; \$760 for non-members
Certified Information Security Manager	ISACA	Bachelor's degree	4 hours; 200 multiple choice questions	5 years information security or 2 years plus CISA or Certified Information Systems Security Professional (CISSP)	\$575 registration for ISACA members; \$760 for non-members
Certified Information Technology Professional	AICPA	Hold valid, unrevoked CPA license	computer based exam	Point system - 100 points needed	\$360 application

ISACA (formerly known as the Information Systems Audit and Control Association) notes that its certifications are “globally accepted” (“The Benefits of CISM” 2017). Businesses recognize that CISA certification identifies candidates as “audit professionals that possess the knowledge and expertise to help them identify critical issues and customize practices to support trust in and value from information systems” (“The Benefits of CISA” 2017). Likewise, those holding CISM certification “know how to manage and adapt technology to their enterprise and industry” (“The Benefits of CISM” 2017). To earn CISA or CISM certification, candidates must

pass the appropriate exam, complete an application for certification, and agree to adhere to the code of professional ethics and a continuing professional education program (“How to Become CISA Certified” 2017, “How to Become CISM Certified” 2017).

According to AICPA, the CITP certification is one of the most popular certifications in accounting. “A CITP is a CPA credentialed as a technology professional and recognized for his/her unique ability to bridge between business and technology” (“Certified Information Technology Professional” 2016). Only CPA members of the AICPA can be CITPs, which distinguishes these professionals even further. In order to acquire the CITP, an applicant must be a member in good standing of the AICPA, hold a valid and unrevoked CPA license issued by a legally constituted state authority, sign a Declaration and Intent to comply with all the requirements for recertification, complete the CITP application and receive an evaluated score of at least 100 points, be able to submit up to three references to substantiate business experience in tech related services, and pay a CITP application fee of \$360 (“CITP Application FAQ” 2016).

As highly-focused technologies become an ever more integral part of everyday business operations, it follows that IT certifications will become more and more important. College students do not qualify for IT certifications since they require a degree and experience. However, students can leverage their understanding of technology by becoming Microsoft certified in Excel which does not require either a college degree or experience. Most agree that spreadsheet software is the foundation technology for business professionals, especially accountants. Microsoft Excel is the leading product. Three levels of Microsoft Office Specialist (MOS) certifications are available for Excel 2013 via a testing program offered through Microsoft and administered by Certiport (“MOS 2013 Master Certification” 2016). Candidates who pass the core certification exam receive MOS 2013 certification in Excel (“MOS 2013 Master Certification” 2016). Candidates seeking higher levels of certification may earn MOS 2013 Expert certification in Excel or MOS 2013 Master certification (“MOS 2013 Master Certification” 2016). Expert certification requires completion of two exams; candidates must pass both to earn the certification (“MOS 2013 Master Certification” 2016). Master certification requires completion of a total of four exams; three different “tracks” are available (“MOS 2013 Master Certification” 2016). General information is shown in Table 2.

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Table 2
Microsoft Office Specialist Certifications – Excel 2013

Level	Exam Fee	Exam Time	Other Information
Core	\$96.00	50 minutes	
Expert	\$96.00 per exam	50 minutes per exam	The Excel 2013 Expert certification is comprised of two exams; candidates must pass BOTH exams to receive the “Expert” designation. ¹
Master	\$96.00 per exam	50 minutes per exam	Three “tracks” are available to candidates; each requires successful completion of a total of 4 exams, regardless of the track chosen. ¹

The value of Excel certification while still a student is non-debatable. Students achieving Excel certification help themselves in the job search by reducing career risk, the risk they will graduate and not be professionally employed.

Students entering the job market most likely have no connection with the companies to which they apply. Therefore, recruiters given only the standard statement “proficient in Excel” on a resume are not impressed since nearly all students make that claim. Being Microsoft certified provides prospective employers with the needed third party assurance of the applicant’s basic technology understanding and skill. In addition, the exam material gives something technical to be discussed during the interview – a big plus, especially for an accounting major! According to CompTIA, MOS certification can bring about a 9% increase in starting salary and may enhance future increases by as much as 29% (“CompTIA Certifications” 2017). Moreover, an article by Bhargav reports that employers are more comfortable hiring a certified candidate even if they have to pay a higher salary. In summary, Excel certification means “better marketability, better recognition and better pay” (Bhargav 2012).

Case Study: Process and Timeline

The need for spreadsheet proficiency in accounting graduates is not new. Academic programs work to develop these skills in their students, but in most cases without a clear strategy. In a Midwestern state university (referred to as “the University” in the case presentation), the accounting faculty in the college of business (referred to as “the College”) stepped up and now requires third-party certification in the form of the core MOS Excel exam for all accounting graduates. This cost transfer and skill assurance is well-received by employers and the general external community. It is a “win-win-win” for the accounting program, students, and the employer community.

¹ Visit http://www.certipoint.com/Portal/desktopdefault.aspx?page=common/pagelibrary/mos_master.html for details.

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The University is an official test center for MOS certification exams. The University has been administering MOS exams since 2001, when the College pioneered the practice of offering workshops to help its students review content and prepare to take the MOS exam for Excel. In fall 2014, the exam preparation materials were modified to more closely align with the exam objectives for the core MOS exam for Excel (“Objective Domain” 2014; see Appendix A), and practice test software from GMetrix was purchased.

The annual fee for a block of 500 exams is \$4,200.00 and the fee for the site license from GMetrix is \$4,500.00. The practice test software is available on any University-owned computer, giving students access to the software as they practice and prepare to take the MOS exam. Time for students to complete one GMetrix practice test during the face-to-face workshops was built-in to the process.

Table 3
MOS Excel Cost and Procedures Charges, 2014-2017

Date	Cost for exam site license (Certiport, 500 exams, annual fee)	Cost for practice test site license (GMetrix, annual fee)
December 2014		\$4,500.00
February 2015	\$4,200.00	
December 2015	\$4,200.00	\$4,500.00
December 2016	\$4,200.00	\$4,500.00

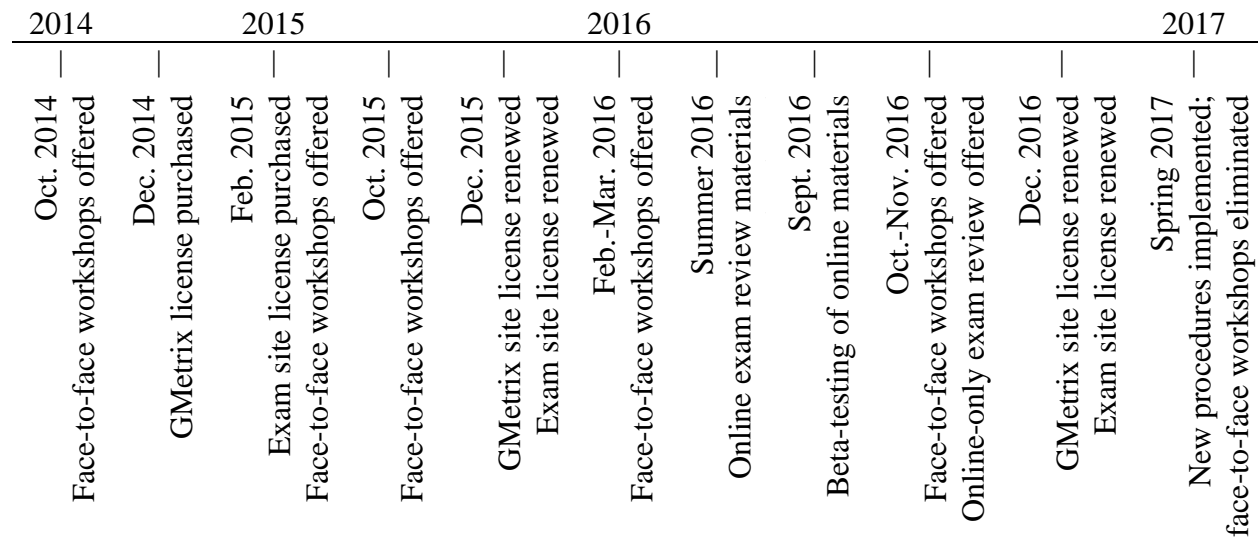
As part of the transition, a course page was developed on Moodle, the University’s learning management system, for students to participate in a series of workshops. On the Moodle page, information is provided for students including instructions on how to create a Certiport account, how to access the GMetrix practice test software, and resources, such as step-by-step instructions and videos on how to perform different tasks in Excel (e.g., “Excel 2013” 2016; “Basic Tasks in Excel 2013” 2016), PowerPoint presentations with the covered content, and sample Excel files for students to use to practice tasks and skills in Excel. Students pay \$45 per exam administration, a significant savings over the individual voucher cost of \$96 through Certiport (“Shop Products” 2014).

An online-only option for students to review materials in preparation for the MOS exam in Excel was created in 2016. To accomplish this, the existing Moodle course page was expanded by using Camtasia to add screen-casting videos. The videos, 22 in all, with a total running time of approximately 2.5 hours, cover the same content as the face-to-face workshops.

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Students in the University's Honors Program beta-tested the revamped Moodle course page, including reviewing and providing feedback about the page, together with all videos and other related instructions and materials. As part of the project requirements, honors students created Certiport accounts, completed at least one GMetrix practice test, and took the MOS exam for Excel. The students provided follow-up comments about how well the content on the Moodle page prepared them for the MOS Excel exam.

Figure 1
Timeline of Actions



Case Study Results

The MOS test was administered in person and proctored according to Certiport's testing requirements ("How to Become a Proctor" 2013). Table 4 shows the Case Study results for the period 2014-2016.

Table 4
Exam Pass Rates by Semester

Semester	# registered for workshops	Attended (F2F) or logged in (online)	# attempted exam	# passed - 1 st attempt	# passed – 2 nd attempt	Overall pass rate (%)
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Fall 2014	47	29	23	15	6	91%
Spring 2015	41	28	28	21	2	82%
Fall 2015	56	36	29	23	3	90%
Spring 2016	58	35	28	22	1	82%
Fall 2016 (F2F)	16	12	10	10	N/A	100%
Fall 2016 (online)	26	24	10	9	1	100%

Going Forward

Beginning with spring 2017, the College plans to eliminate the face-to-face workshops. Students in the College will be provided with information on how to self-enroll in the Moodle course page containing the MOS exam review materials. They will be able to review at their own pace as is convenient with their individual schedules. They will continue to have access to the GMetrix software, and can take practice tests on any University computers. Instead of only being able to test at set times related to the dates of the face-to-face workshops, students will be able to schedule individual appointments with the University's testing services department and test whenever they feel ready to take the exam.

Conclusions

John Radford, CGFM, Controller for the State of Oregon, summed up accounting certifications, "In today's complex and changing world, a professional certification provides employers with a degree of confidence that candidates are prepared for the real world" ("CGFM" 2017).

Requiring technology certification of graduates represents a good "branding" strategy for a business school. Moreover, given the significant demand for technology-savvy business graduates, it seems logical that getting a head start on a technology certification while a student is a great strategy. Colleges of business may assist these students by establishing and requiring a basic third-party technology certification, such as Microsoft Office Certification in Excel, of their business graduates.

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APPENDIX A

OBJECTIVE DOMAIN: MOS EXCEL 2013

1.0 Create and Manage Worksheets and Workbooks

1.1 Create Worksheets and Workbooks

This objective may include but is not limited to: creating new blank workbooks, creating new workbooks using templates, importing files, opening non-native files directly in Excel, adding worksheets to existing workbooks, copying and moving worksheets

1.2 Navigate through Worksheets and Workbooks

This objective may include but is not limited to: searching for data within a workbook, inserting hyperlinks, changing worksheet order, using Go To, using Name Box

1.3 Format Worksheets and Workbooks

This objective may include but is not limited to: changing worksheet tab color, modifying page setup, inserting and deleting columns and rows, changing workbook themes, adjusting row height and column width, inserting watermarks, inserting headers and footers, setting data validation

1.4 Customize Options and Views for Worksheets and Workbooks

This objective may include but is not limited to: hiding worksheets, hiding columns and rows, customizing the Quick Access toolbar, customizing the Ribbon, managing macro security, changing workbook views, recording simple macros, adding values to workbook properties, using zoom, displaying formulas, freezing panes, assigning shortcut keys, splitting the window

1.5 Configure Worksheets and Workbooks to Print or Save

This objective may include but is not limited to: setting a print area, saving workbooks in alternate file formats, printing individual worksheets, setting print scaling, repeating headers and footers, maintaining backward compatibility, configuring workbooks to print, saving files to remote locations

2.0 Create Cells and Ranges

2.1 Insert Data in Cells and Ranges

This objective may include but is not limited to: appending data to worksheets, finding and replacing data, copying and pasting data, using AutoFill tool, expanding data across columns, inserting and deleting cells

2.2 Format Cells and Ranges

This objective may include but is not limited to: merging cells, modifying cell alignment and indentation, changing font and font styles, using Format Painter, wrapping text within cells, applying Number formats, applying highlighting, applying cell styles, changing text to WordArt

2.3 Order and Group Cells and Ranges

This objective may include but is not limited to: applying conditional formatting, inserting sparklines, transposing columns and rows, creating named ranges, creating outlines, collapsing groups of data in outlines, inserting subtotals

3.0 Create Tables

3.1 Create a Table

This objective may include but is not limited to: moving between tables and ranges, adding and removing cells within tables, defining titles

3.2 Modify a Table

This objective may include but is not limited to: applying styles to tables, banding rows and columns, inserting total rows, removing styles from tables

3.3 Filter and Sort a Table

This objective may include but is not limited to: filtering records, sorting data on multiple columns, changing sort order, removing duplicates

4.0 Apply Formulas and Functions

4.1 Utilize Cell Ranges and References in Formulas and Functions

This objective may include but is not limited to: utilizing references (relative, mixed, absolute), defining order of operations, referencing cell ranges in formulas

4.2 Summarize Data with Functions

This objective may include but is not limited to: utilizing the SUM function, utilizing the MIN and MAX functions, utilizing the COUNT function, utilizing the AVERAGE function

4.3 Utilize Conditional Logic in Functions

This objective may include but is not limited to: utilizing the SUMIF function, utilizing the AVERAGEIF function, utilizing the COUNTIF function

4.4 Format and Modify Text with Functions

This objective may include but is not limited to: utilizing the RIGHT, LEFT and MID functions, utilizing the TRIM function, utilizing the UPPER and LOWER functions, utilizing the CONCATENATE function

5.0 Create Charts and Objects

5.1 Insert and Format Building Blocks

This objective may include but is not limited to: creating charts and graphs, adding additional data series, switching between rows and columns in source data, using Quick Analysis

5.2 Format a Chart

This objective may include but is not limited to: adding legends, resizing charts and graphs, modifying chart and graph parameters, applying chart layouts and styles, positioning charts and graphs

5.3 Insert and Format an Object

This objective may include but is not limited to: inserting text boxes, inserting SmartArt, inserting images, adding borders to objects, adding styles and effects to objects, changing object colors, modifying object properties, positioning objects

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Table 2
Microsoft Office Specialist Certifications – Excel 2013

Level	Exam Fee	Exam Time	Other Information
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Master	\$96.00 per exam	50 minutes per exam	Three “tracks” are available to candidates; each requires successful completion of a total of 4 exams, regardless of the track chosen. ¹

² Visit http://www.certipoint.com/Portal/desktopdefault.aspx?page=common/pagelibrary/mos_master.html for details.

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Table 3
MOS Excel Cost and Procedures Charges, 2014-2017

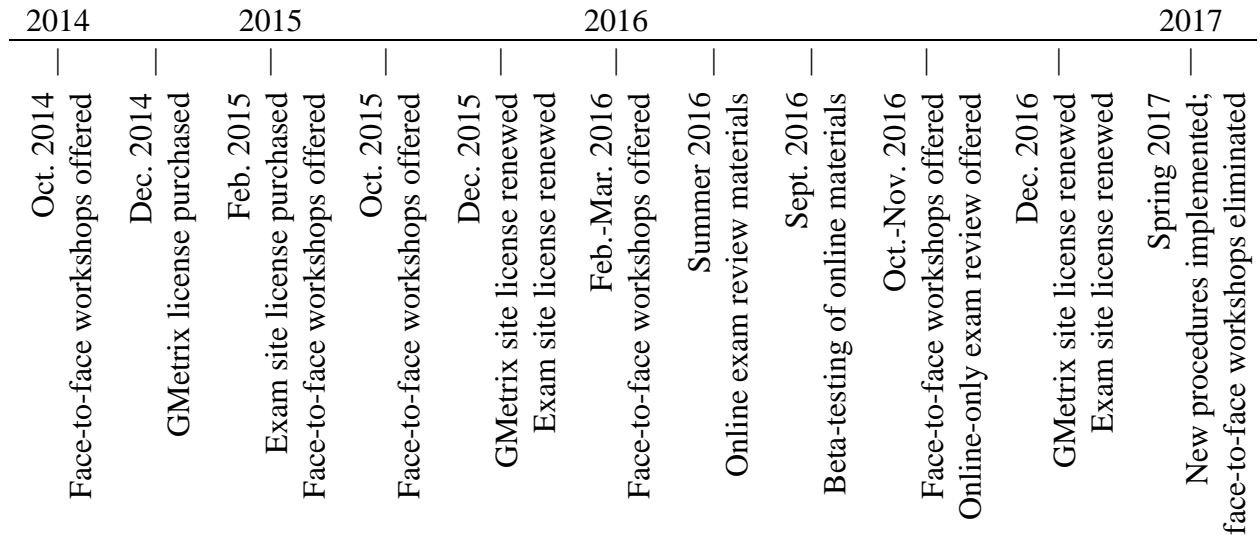
Date	Cost for exam site license (Certiport, 500 exams, annual fee)	Cost for practice test site license (GMetrix, annual fee)
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Exam Pass Rates by Semester

Semester	# registered for workshops	Attended (F2F) or logged in (online)	# attempted exam	# passed - 1st attempt	# passed – 2nd attempt	Overall pass rate (%)
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Fall 2016 (F2F)	16	12	10	10	N/A	100%
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Figure 1
Timeline of Actions



Tax Yield vs. Marginal Tax Rates History and Correlation

Richard Cobb, Jacksonville State University
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Abstract

An internet search of marginal tax rates will yield thousands of hits. A casual scan of these web addresses finds some sites reporting on technical tax issues, while other sites review political arguments concerning adjusting tax rates to support increased government revenues. Many of these reports focus on the subjective definition of *fair* tax planning. Our research uses an objective approach to analyze the related Bureau of Economic Analysis (BEA) tax data in an effort to determine the correlation between the principal research variables of tax rates and tax yield relative to gross domestic product (GDP).

Introduction

When political leaders debate the funding needs of government programs, they must agree on which sources of funds to use and which funding mechanisms will successfully collect the funds required. In the early years of our nation, monies collected from tariffs, custom duties, and specific item taxes were sufficient to meet these government-supported programs. Today the debate is focused almost exclusively on changing individual and corporate tax rates and tax brackets in order to meet funding needs. After reviewing the history of changes involving these tax plans, we find that the highest marginal tax rate has been changed twelve times since World War II. Although all modern tax plans have been debated, approved, and regulated during this period, there has been no clear agreement concerning the effect that tax rates have on tax yield needed to support GDP and economic growth. This research will define tax *yield* as the percentage rate of return from tax revenue generated relative to GDP for various changing marginal tax rates. Our findings will focus on determining the correlation between the research variables from 1946 forward.

Taxation

Taxation is the dominate method of funding government activities and programs. Today we understand that the tax scenario proposing to create a *fair* tax plan is as old as civilization itself. This notion of fairness can be traced to the principles offered by Adam Smith (1776) in his book *Wealth of Nations*. He wrote that taxation should be based, in part, on equity and that individuals who earn more should pay more to support state services. Barro (2009) recognized

this role of the state and wrote that incentives to invest could be supported by state tax policy. He suggested that the reduction of marginal income tax rates could be an incentive to support investment. Emphasizing this theme, Hauser (2010) noted that the *animal spirits* of entrepreneurship were discouraged by higher taxes. This conclusion was also drawn by Ranson (2010), who observed that when taxpayers face higher tax rates, they have an incentive to pay less tax. In the *Wall Street Journal* (2 August 2010), Arthur Laffer echoed these same concerns and noted that “the highest tax bracket income earners, when compared with those people in lower tax brackets, are far more capable of changing their taxable income.” He concluded, for example, that as higher marginal tax rates were reduced, beginning in the 1970s, tax receipts for the top 1% of income earners increased from 1.5% of GDP in 1978 to 3.3% of GDP in 2007. These research examples emphasize the point that tax on income associated with wealth creation represents the cost of acquiring that income and that the incentive to earn more may be tied to reducing tax rates.

Tax Revenue and GDP

Numerous research examples present supporting arguments and graphical representations that stress the importance of tax rates on tax revenue and on changes in GDP. For example, Hauser (1993, 1996) noted that regardless of the changes to marginal tax rates, U.S. tax revenue (federal current receipts) has averaged about 19% of the GDP since WWII. This tax-GDP relationship has been updated through 2016 by the Federal Reserve Bank of St. Louis (FRED) with a graphical presentation of total federal current receipts as a percent of GDP that yielded results similar to those of Hauser. The research theme that monitors total federal tax relative to GDP is also used by the Tax Policy Center (2017) as it tracks revenue as a share (percent) of GDP for all government sources.

Other organizations have used the tax-GDP relationship as a metric to measure economic performance. The Organization for Economic Co-Operation and Development OECD (2014) used tax revenue relative to GDP to measure national performance. The OECD reviewed the total tax revenue as a percentage of GDP for 34 countries in its study and found that the average tax revenue as a percent of GDP for this study group was 35.4 percent. OECD reported that in 2012 the minimum revenue yield country was Chile (20.8%) and the maximum yield country was Denmark (48.0%). For this period, OECD reported that the U.S. average tax revenue was 24.3 percent of GDP. The World Bank (2014) also used tax revenue and GDP to monitor its defined world development indicators (WDI) and then recorded the results in the appropriate WDI table. One such table is *Tax revenue as a % of GDP*. Here, tax revenue refers to all transfers that are compulsory and collected by central government for public purposes. Based on the WDI table definition for tax revenue, the U.S. average tax revenue was 11.0% of GDP for 2014.

A subset of the tax-GDP related research is the federal personal current tax as a percent of GDP. This subset is compiled using Office of Management and Budget (OMB) data and has

been recorded by the Tax Policy Center since 1934. Federal personal current tax was also the focus of the Heritage Foundation (2016) report. This report described the relationship between top tax rates and individual tax receipts. The Foundation observed that yield from individual tax receipts tend to be stable over time as top tax rates change and that higher rates might not lead to higher receipts.

A Question of Correlation

From the research cited, the general consensus is that lower marginal tax rates support growth in GDP and the rate of revenue collection (yield) tends to be stable over time. The evidence of GDP growth with lower tax rates does **not** suggest, however, that a zero marginal rate would yield ever higher revenue. The data show only that since 1946, tax revenue (i.e. total, government, and personal taxes) and GDP have increased as marginal tax rates have declined.

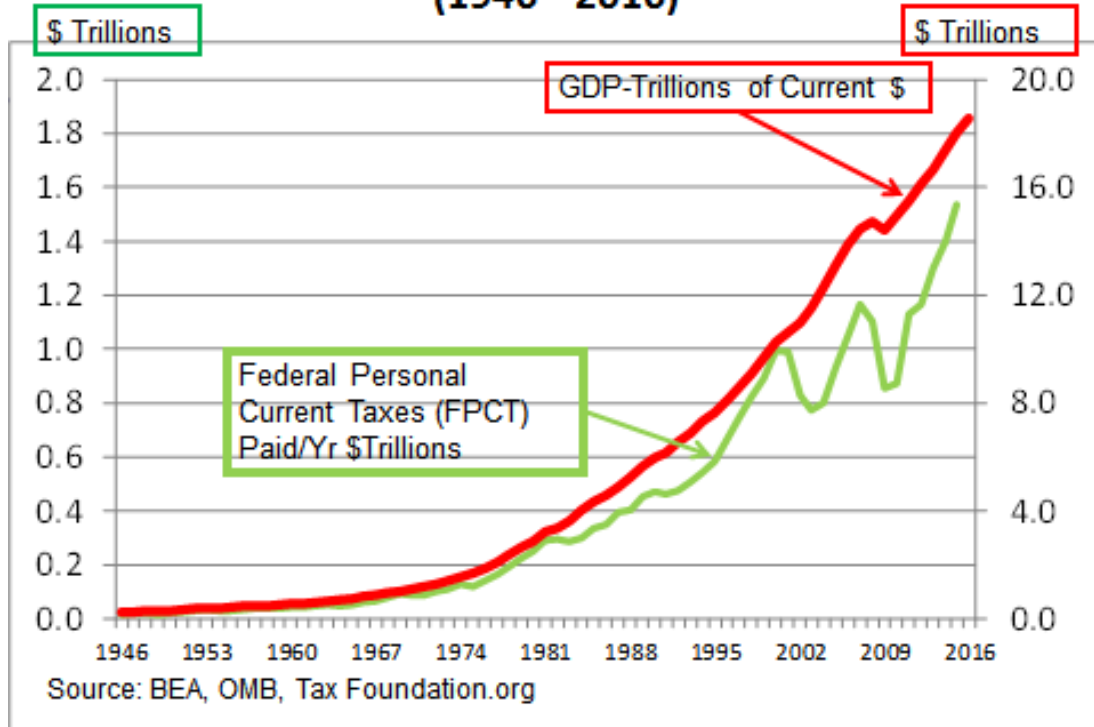
Dependent variables are listed in table 1. Variables included are federal current receipts (FCR), federal personal current tax (FPCT), and gross domestic product (GDP). Also, we include marginal tax rates (MTR) that are considered to be independent over the study period. The broad research objective was to study the direction and the strength of the linear relationships between our study variables listed in table 1.

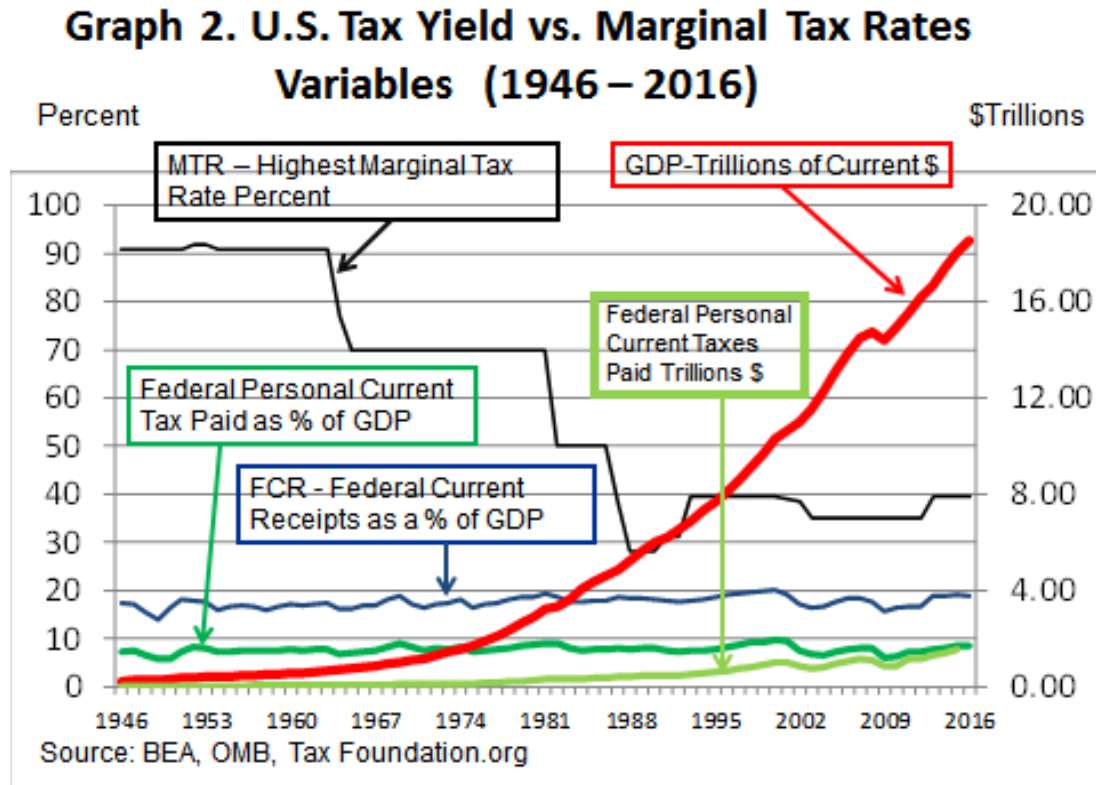
The question of variable correlation was addressed by Hao Li On (2010) when he compared tax rate, tax receipts, and GDP. He noted that while there was positive correlation between tax receipts and GDP, he found less correlation between other variables within the study group. His referenced correlation between tax revenue and GDP is modeled in graph 1. This graph appears to show a strong positive relationship between GDP and federal personal current tax receipts (FPCT). In fact, an analysis of the data finds a correlation of ($r=0.98$) between GDP and FPCT over the time period. We observe in graph 2 that tax yield over time is charted for both federal current receipts (FCR) and for federal personal current taxes (FPCT). Tax yield is defined as the tax revenue generated relative to GDP and calculated for each year of the study period. Additionally, highest marginal tax rate percent and federal personal current taxes paid per year are depicted. During the study period, the highest marginal rate was changed 12 times. And by inspection we can see that a relatively stable yield pattern exists over the study period for FPCT. This stable tax yield is noted in the work of the Heritage Foundation (2016) and by others. Also, a stable yield pattern is observed in the plot of the FCR variable. This yield pattern is often cited and referenced in the work of William K. Hauser (1993, 1996).

Table 1. Research Variables

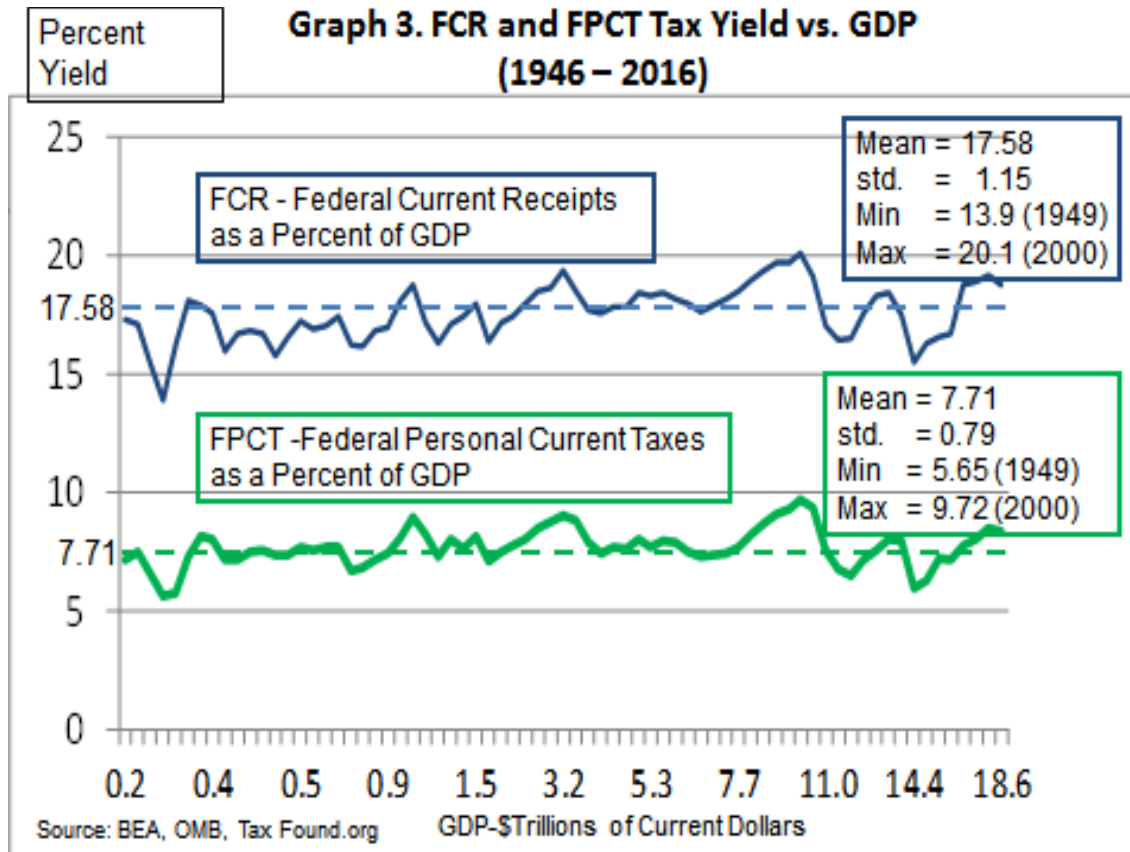
<u>Variable</u>	<u>Description</u>
GDP	U.S. Gross Domestic Product – BEA NIPA Table 1.1.5 seasonally adjusted at annual rates
FCR	Federal Current Receipts – BEA NIPA Table 3.1, government current receipts and expenditures
FPCT	Federal Personal Current Tax – BEA NIPA Table 3.2, government current receipts and expenditures
MTR	Marginal Tax Rate – Highest individual tax rate, Tax Foundation.org
<u>Year</u>	<u>Study years (1946-2016)</u>

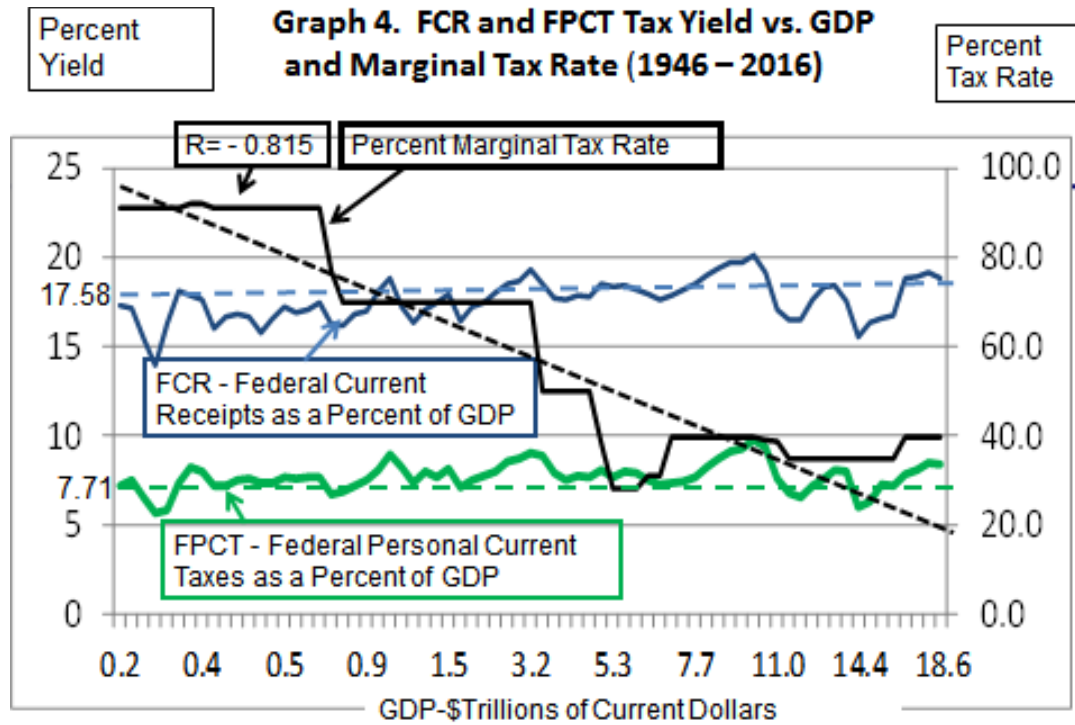
**Graph 1. GDP and Federal Personal Current Taxes:
(1946 – 2016)**



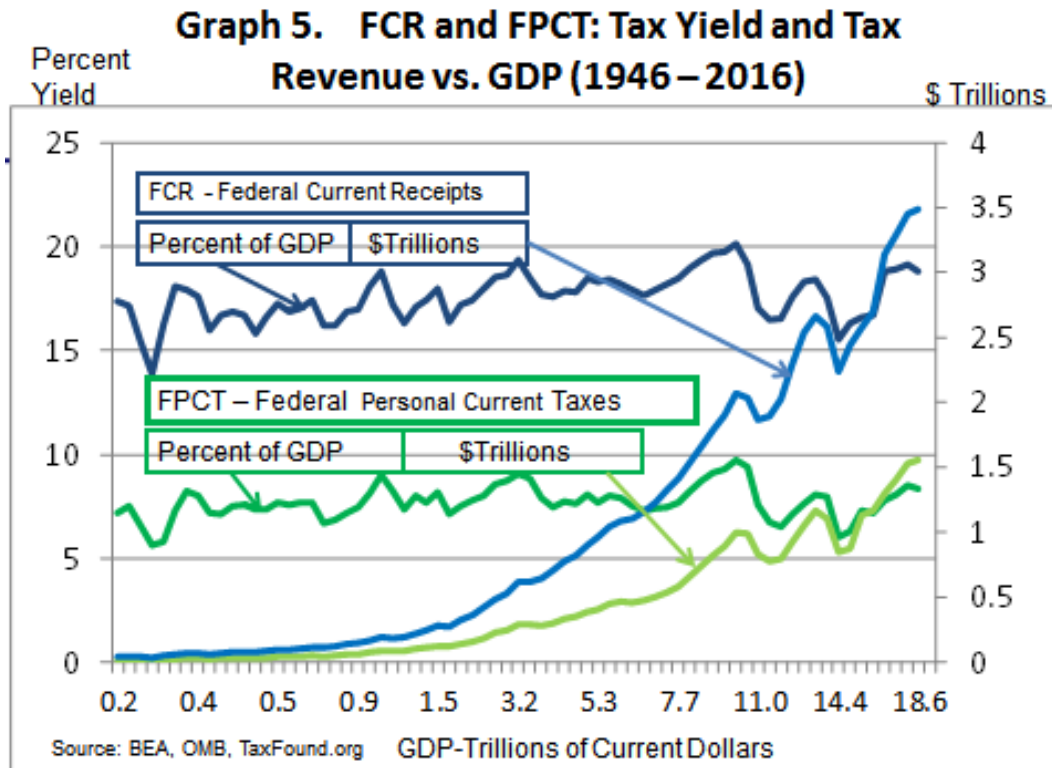


From graph 3, we observe that over time both federal personal current tax (FPCT) and federal current receipts (FCR) exhibit stability of yield relative to GDP. In this graph, study results are plotted and show that FPCT had a mean yield of 7.71% with a standard deviation of 0.79, while FCR had a mean yield of 17.58% with a standard deviation of 1.15 over the study period. From graph 4, we see that as the yield of FPCT and FCR remains stable, GDP grew dramatically from 227.8 \$billion to 18.55 \$trillion, while *marginal tax rates* declined from a high of 92% in 1952 to a low of 28% in 1990 before ending at 39.6% at the end of the study period. Over the study period, the correlation between GDP increases compared to the stepped decreases in marginal tax rates was $r = -0.815$. From graph 5, we observe the growth in nominal tax revenue for both FCR and FPCT. The average yield for both variables remains relatively stable. We find it interesting that minimum and maximum yield occurred for both study variables in 1949 (min yield at a marginal rate of 91%) and in 2000 (max yield at a marginal rate of 39.6%) respectively.



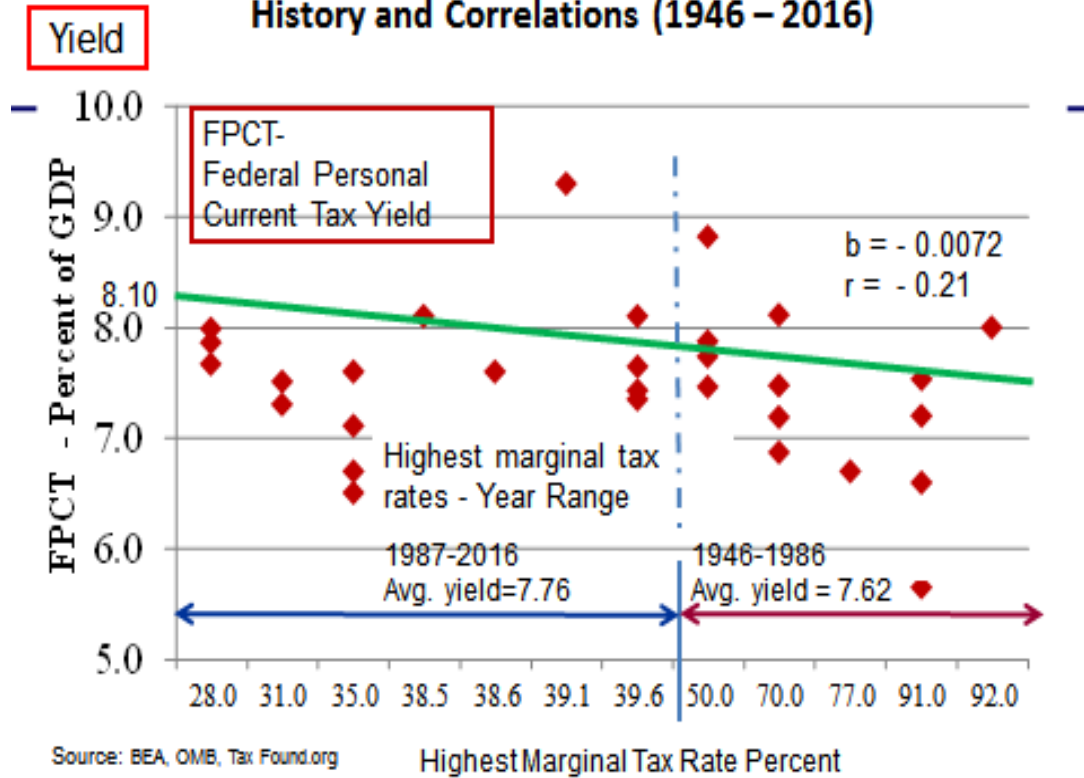


Source: BEA, OMB, Tax Found.org



Correlation analysis between the applicable marginal tax rates by year and the yield for both FPCT and FCR is reviewed in graphs 6 and 7. As previously shown in graph 3, both variables have a small standard deviation relative to their stable means over the study period. Both are negatively correlated with increasing marginal rates (FPCT with $r = -0.21$ and FCR with $r = -0.46$). To further test this correlation over time, we divided the highest marginal rates into two sets. For set one we defined the *high rate years* (1946-1986) as those with the highest marginal rates from 50% to 92%. For set two we defined the *low rate years* (1987-2016) as those with the highest marginal rates from 28% to 39.6%. Once again we saw an improved average yield for both FPCT and FCR when comparing the results from defined high rate years to those defined as low rate years. In the conclusions drawn from an earlier research work focused on tax yield, Fielding and Cobb (2016) found that the average tax revenue as a percent of GDP was consistently higher over the period of lower federal tax rates. Analytical results are summarized in table 2.

**Graph 6. FPCT vs. Highest Marginal Rates
History and Correlations (1946 – 2016)**



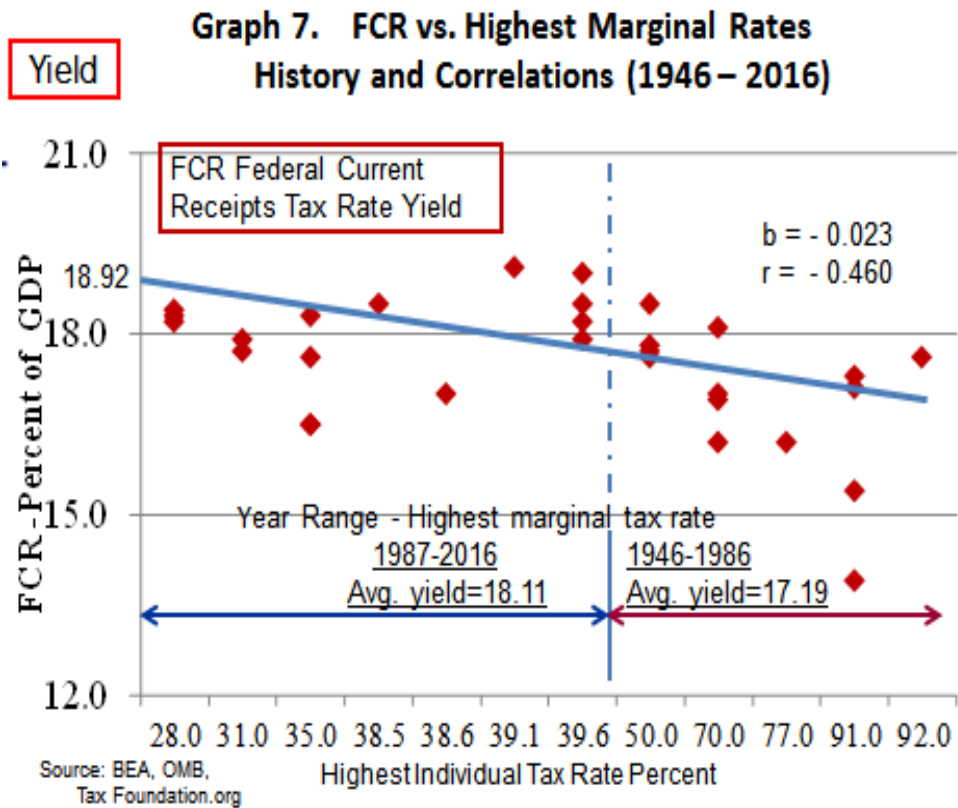


Table 2.
Research Variables and Statistical Description

For Years 1946-2016					
Variable	Measure	Mean	Standard Deviation	Min Value	Max Value
FCR	% of GDP	17.60%	1.15%	13.90%	20.10%
FPCT	% of GDP	7.71%	0.79%	5.65%	9.72%
High Rate Years 1946-1986 MTR Range 50% to 92%					
		Mean	Standard Deviation	Min Value	Max Value
FCR		17.19%	1.01%	13.90%	19.30%
FPCT		7.62%	0.71%	5.65%	9.07%
Low Rate Years 1987-2016 MTR Range 28% to 39.6%					
		Mean	Standard Deviation	Min Value	Max Value
FCR		18.11%	1.13%	15.50%	20.10%
FPCT		7.76%	0.90%	6.54%	9.72%

Conclusions

Laffer (2010) brought attention to the fact that taxpayers in the higher income brackets are capable of tax decisions that can change their taxable income. In the same year, Houser (2010) emphasized that entrepreneurship was discouraged by higher taxes. In both cases, these researchers were referring to the effect higher tax rates have on the decisions individuals make concerning income.

Our research accepts that tax yield stability exists over time and asks what variables play a role in this fact. Beginning in the 1990s, Hauser and others began to review the available data and observed those tax revenue patterns that seemed to question the strength of tax rates in the revenue equation. From our data analysis, we can conclude that over the seventy years spanned in this study, yield from federal personal current tax (FPCT) and from federal current receipts (FCR) was stable, regardless of marginal rates. Though not statistically significant, slightly higher average tax yields occurred during defined low tax rate years for both study variables. This result, based on a large sample size, took place during a period when GDP generally rose and highest marginal tax rates generally declined. The simple conclusion is that Tax Yield = Tax Revenue/GDP. And, since both study variables are shown to have relatively constant yield over time, increased tax revenue is best obtained from growth in GDP

For future research, we feel that lag in revenue flow should be correlated with changing tax rates. We should look for ways to track, quantify, and include subjective data, including the consumer confidence index and the influence of job creation data. Any factor that may influence the redirection or sheltering of income should also be considered.

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Financing Versus Other Input Costs: The Case of Iowa Agriculture Producers

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Todd Muehler, Northern State University

Abstract

Borrowing is a function of convenience, relationships, and creditworthiness among other factors. For those in the business of the production of agricultural products, the cost of borrowing for their business is an input cost, similar to seeds, chemicals, fertilizers and fuel for the farm vehicles. This study will examine agricultural producers with respect to the cost (distance traveled) to obtain various agricultural inputs. What is unknown is whether the distance traveled to obtain financing differs from that for obtaining seed, chemicals, fuel, and feed? This study will examine Iowa ag producers as to whether they shop for financing differently from other inputs. The results may provide insight into how ag producers view credit versus other inputs.

Introduction

Agriculture producers are a mainstay of the local economies in which they operate. Their support of the local economies is vital to the rural communities. The rural communities provide support to the ag producers with those products and services on which the producers depend for their business and farm families.

Studies have examined that relationship between the ag producer and the rural community, and the relationship between lenders and loan performance when the distance between the lender and the borrower increases. Foltz, Jackson-Smith and Chen (2002) studied the purchasing patterns of large and small dairy farms. Gebremedhin and Christy (1996) studied the implications for small farms resulting from structural changes in U.S Agriculture. Yeager (2004) studied the effects of local economic shocks on the demise of community banks. DeYoung, Glennon and Nigro (2006) studied the borrower-lender distance. Berger, Cowan and Frame (2010) studied the use of credit scoring in small business lending by community banks and the attendant effects on credit availability and profitability. Agarwal and Hauswald (2010) studied the relationship between distance and private information in lending. A combination of the results of these studies can inform the relationship between the lender and the small business ag producer found predominately in the north central United States. To add a further dimension and to attempt to view the lender/producer/community relationship from the perspective of the ag producer, this study will examine Iowa ag producers as to whether they shop for financing differently from other inputs. This study seeks to determine whether the distance traveled by the ag producer to

obtain financing differs from that for obtaining seed, chemicals, fuel and feed, as inputs to farm production.

According to Agarwal and Hauswald (2010), “Any borrower deemed creditworthy always obtains credit from the closest bank and would never switch lenders.” Thus, creditworthy farmers should always obtain credit, from the closest bank. If that bank is in the local community where the farmer obtains other production inputs such as feed, seeds, fuel and fertilizer and other chemicals, the distance from the farm to that source of input costs should be insignificant. The local community may not have a provider of the needed input so the farmer may need to go elsewhere for that input. If any of the inputs are not available in the local community, or if the farmer chooses to obtain the input from sources not in the local community, then the farmer would need to travel a greater distance to obtain the needed input for production. The farmer may desire a specific seed or feed or specific chemicals not available in the local community. The farmer’s choice of most input elements may be based on cost or preference or performance. With respect to the input cost of credit (interest), the choice of provider is also influenced by the lender’s expertise and service and the borrower’s creditworthiness. Since credit generally does not require physical transport to be delivered, once obtained, the additional instances of need also may not involve any additional transportation cost to access, which differentiates finance from most other inputs. This may result in a farmer viewing financing differently than other farm production inputs.

Our main contribution to the literature is to provide this different perspective, that from the view of the farmer, as to behavior, seeking inputs to production locally or from suppliers beyond the local community, and whether the farmer differentiates between types of input, specifically the input of finance cost, from those other farm inputs used in the operation.

DATA

To study the question of whether farmers shop for financing differently from other inputs we examined the results of the U.S Department of Agriculture 2008 Agricultural Resource Management Survey, Cost and Returns Report (USDA 2008 ARMS Phase III Survey) (the “USDA survey”) to determine whether the distance traveled by the ag producer to obtain financing differs from that for obtaining seed, chemicals, fuel and feed, as inputs to farm production. The USDA survey data contains responses from farmers regarding where those completing the survey buy the majority of input items used by the farming operation and lists: fuel, fertilizer and chemicals, feed and seed, farm credit, household consumer goods, and household durable goods. The survey asks those completing the survey to identify the distance from the farm in miles, whether the purchase was made in the same county as the home or operation/farm, and asks the those completing the survey to identify the main reason if not purchased in the nearest town or city, giving a list of 6 reasons from which a selection can be made (price of the input, not available, quality or performance, supplier services/information, other support services, or other).

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The study involved Iowa farmers who reported obtaining financing that year. There were 988 Iowa farmers who completed the survey. Of the 988, we excluded observations which report negative travel distance for inputs. Of the remaining surveys, 153 reported obtaining financing. The relevant input variables examined are distanced traveled for Farm equipment (R1251), farm credit (R1250), fuel (R1278), fertilizer and chemicals (R1279), and feed and seed (R1280). Note, questions regarding distance traveled for input variables have only been asked once, which was on the USDA 2008 survey.

MILES

19. About how many miles was it from your home to the nearest town or city with a population of 10,000 or more? 1277

20. Where did you buy the majority of the following input items used by this operation in 2008?

ITEM	Distance from your farm (in miles)	In same county as your home or operation/farm? YES = 1	Main reason if not purchased in nearest town or city: 1 Price of the input 2 Not available 3 Quality or performance 4 Supplier services/information 5 Other support services 6 Other
a. Fuel.....	1278	1286	1293
b. Fertilizer and chemicals.....	1279	1287	1294
c. Feed and seed.....	1280	1288	1295
d. Machinery and implements (include repairs and supplies).....	1250	1289	1296
e. Farm credit.....	1251	1290	1297
f. Household consumer goods (groceries, clothing, household supplies, etc.).....	1284	1291	1298
g. Household durable goods (cars, trucks, appliances, furniture, etc.).....	1285	1292	1299

SECTION I continued on next page.

Summary statistics were computed for these five input variables and presented below.

Descriptive statistics (distance in miles)

Variable	Mean	Median	Std dev	Interquartile	Skewness
Fuel	9.80	6	12.06	3-12	3.90
Fertilizer/chemicals	8.24	5	17.25	3-10	9.39
Feed/seed	9.18	6	12.84	3-10	4.15
Farm credit	14.72	10	15.61	5-20	2.17
Farm Machinery	16.90	15	14.96	8-24	2.07

All inputs are highly skewed to the right. Given non-negative nature of distance this result is expected.

These results appear consistent with expectations of the likely behavior of farm operators. As measured by the medians set forth above, over half of the purchases of fuel, fertilizer/chemicals, and feed/seed were made by the farmer within a distance of less than 6 miles from the farm site. It would be expected that a farmer would buy fuel, fertilizer and feed in bulk and have those delivered to the farm site. As a result, the location of the purchase may be more subject to interpretation with some who consider the delivery to the farm site as the location of the purchase and thus the distance traveled would be very small. Others may consider the purchase location to be the office of the supplier, while still others may consider the purchase location to be the location of the supplier's representative or product staging location. It is unlikely that the farm operator would leave the farm site, travel to the supplier, obtain the input variable (fuel, fertilizer/chemicals or feed/seed) and physically transport those in any significant quantity back to the farm site. In summary, what are thought of as traditional farm inputs --Fuel and fertilizer/chemicals and feed/seed are locally provided. For example, there are multiple seed dealers who also are farmers. On the other hand, farm credit is a regulated business.

The data suggests that farmers traveled the greatest distance from the farm site for farm machinery/implements, including repairs and supplies. This is based on the median distance traveled for machinery. Again, this is consistent with expectations. Farm machinery and implements are infrequent purchases by farmers. Farm machinery and implements also have an economy of scale. There is not a direct linear relationship between the equipment and the number of acres planted. Rather, a step relationship occurs with the same equipment used for a range of acres planted and efficiencies are realized as the same equipment is used to produce more output and over more acres. While necessary for production inputs such as feed/seed, fertilizer/chemicals and fuel, they are not themselves strictly input such as the raw materials and production resources of a manufacturer. The allocation of the usage cost in terms of depreciation is appropriate as an input cost, but that is an accounting entry not involving a third party transactions such as the case with a purchase of machinery. Machinery/implements are also not available in many communities surrounding farmers. Because of the infrequent nature of the demand, machinery/implement dealers typically locate in a hub community serving many community markets and thus the distance traveled by the farmer to the dealer would be expected to be further than that to the local community, except for those few who are most nearly located by the hub. In addition, as with the other bulk inputs of fuel, fertilizers/chemicals and feed/seed, farmers take delivery of the machinery and often repairs are provided at the farm site, even if the purchase was done at a distance and thereby may consider the distance to purchase the machinery input to be negligible or near the farm site. To obtain machinery supplies the farmer may need to travel to the dealer, because many manufacturers of farm machinery now limit repairs or parts to only those provided from authorized manufacturer representatives, and the supplies available in more nearby communities do not generally qualify as authorized.

Farm credit is generally obtained at a distance further away from the farm site than those providing fuel, fertilizer/chemicals and feed/seed, but closer than those providing farm machinery/implements. Based on the median distance, more than half of the farmers obtained credit from providers at a distance of more than 10 miles from the farm site which the traditional inputs of fuel, fertilizer and feed was less than 6 miles and farm machinery was obtained at a distance of more than 15 miles from the farm site. Although not considered part of this study which was focused on the farm business input components, the distance traveled for farm credit was consistent with that traveled by the farmers for consumer goods.

Unlike the other farm business input components, farm credit is unique in that it does not require physical transportation to be “obtained” and utilized in the farming operation. Farmers, like most borrowers, obtain credit by traveling to the provider location to arrange the granting of the credit. The credit is then used in the farming operation by the farmer accessing that credit through checks or draws processed by the provider which does not require additional travel for that access. Unlike the bulk inputs of fuel, fertilizer and feed, the provider does not need to transport the input of farm finance from the provider’s location to the farm site. Similar to the acquisition of farm equipment, the farmer typically travel to the provider’s location for the initial acquisition (although more often for the larger farmers, the provider of both machinery and finance will come to the farm site for the acquisition), but unlike the equipment repairs and supplies, the provider need not make additional trips to the farm site to continue providing that farm credit input component.

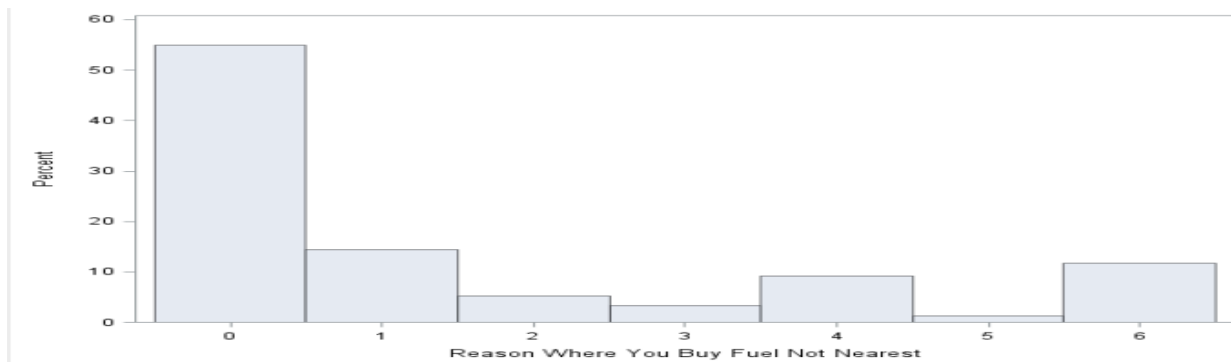
Farmers and the providers of farm inputs are price sensitive and for the physical inputs of fuel, fertilizer/chemicals, feed/seed and machinery the cost of transportation of that input is part of the price calculation. For farm credit the transportation cost component is significantly less because the transportation requirements are minimal. However, as noted above by Agarwal and Hauswald (2010) “Any borrower deemed creditworthy always obtains credit from the closest bank and would never switch lenders.” Thus, creditworthy farmers should always obtain credit, from the closet bank. If that bank is in the local community where the farmer obtains other production inputs such as feed, seeds, fuel and fertilizer and other chemicals, the distance from the farm to that source of input costs should be insignificant. If the farmer travels beyond the local community, the provider of farm credit will generally incur an adverse selection premium passed on to the borrowing farmer in the form of a higher interest rate on the credit provided, due to the higher risk of market and information uncertainty attributed to the greater distance between the borrower and the lender.

The financial services market is highly regulated and not all local providers of credit may be able to extend farm credit as required by the local farmer due to financial regulations. Farms continue to expand in size and in borrowing requirements. Banks have been consolidating over the past 25 years and as they do many banks in rural communities are absorbed into other institutions. This consolidation often allows the local office in the rural community to consider larger loan requests than were possible before the consolidation, however, in many cases even with the consolidation, the borrowing requirements exceed the authorized capacity of the local banking

office. When this happens the borrower may find it necessary to seek credit from sources beyond the local community. While this study does not have the type of data to allow specific determination of individual farm credit requirements, the data seems to indicate that the farmers tend to seek farm credit at distances from the farm that exceed those necessary for the bulk farm inputs of fuel, fertilizer/chemicals and feed/seed.

The data of this study may provide some clarification, however. The data on farm input components contain not only distance, but also seek the selection of a choice of 6 reasons if the farmer-responder, to the survey did not buy the variable (input component) locally. If the farmer did by locally, no response or a “0” response would be provided. If the farmer did not buy locally because of the price of the variable, the response would be “1”. If the farmer did not buy locally because of the variable was not available locally, the response would be “2”. If the farmer did not buy locally because of the variable did not meet the quality or performance of the farmer, the response would be “3”. If the farmer did not buy locally because of the supplier services/information of the variable did not meet the requirements of the famer, the response would be “4”. If the farmer did not buy locally because of other support services of the variable, the response would be “5”. If the farmer did not buy locally because of the other factors of the variable, the response would be “6”.

The following provide the distribution of the responses to the question on the survey regarding the farmer-responder to the survey did not buy the variable (input component) locally.



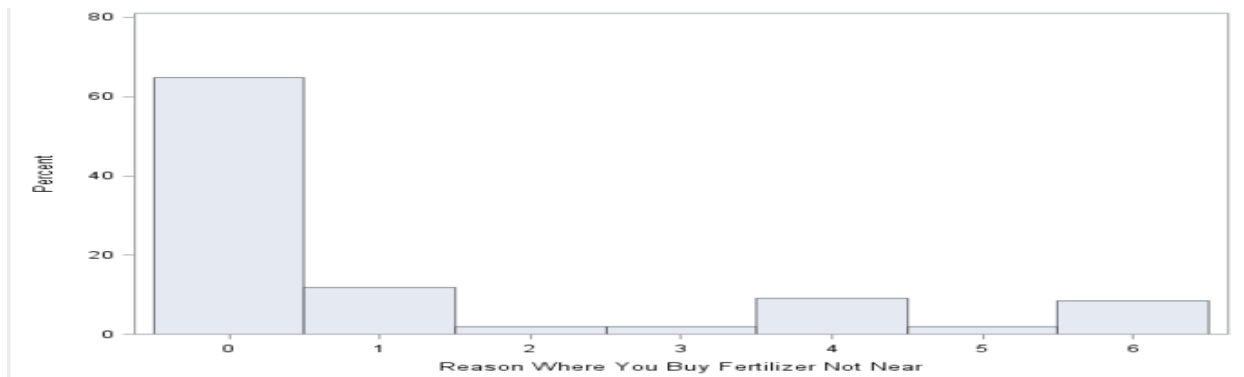
Main reason farmer did NOT buy Fuel in nearest town or city

- 54.9% Bought Fuel at town or city nearest the farm (0)
- 14.4% Did not buy Fuel at nearest town or city because of price (1)
- 5.2% Did not buy Fuel at nearest town or city because it was not available (2)
- 3.3% Did not buy Fuel at nearest town or city because of quality or performance (3)
- 9.2% Did not buy Fuel at nearest town or city because of Supplier services/information (4)

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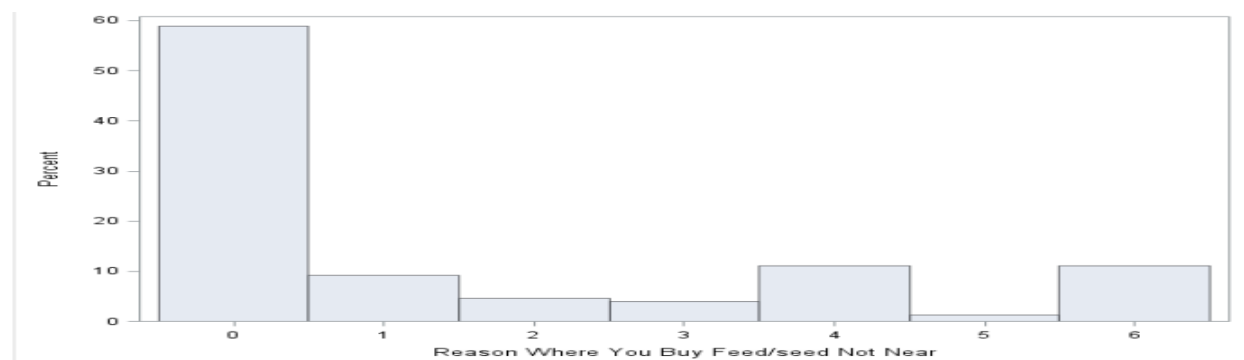
- 21.3% Did not buy Fuel at nearest town or city because of Other support services (5)
- 11.8% Did not buy Fuel at nearest town or city because of Other reasons (6)

Main reason farmer did NOT buy Fertilizer in nearest town or city



- 64.7% Bought Fertilizer at town or city nearest the farm (0)
- 11.8% Did not buy Fertilizer at nearest town or city because of price (1)
- 2.0% Did not buy Fertilizer at nearest town or city because it was not available (2)
- 2.0% Did not buy Fertilizer at nearest town or city because of quality or performance (3)
- 89.2% Did not buy Fertilizer at nearest town or city because of Supplier services/information (4)
- 2.0% Did not buy Fertilizer at nearest town or city because of Other support services (5)
- 8.5% Did not buy Fertilizer at nearest town or city because of Other reasons (6)

Main reason farmer did NOT buy Feed/Seed in nearest town or city



- 58.8% Bought Feed/Seed at town or city nearest the farm (0)
- 9.2% Did not buy Feed/Seed at nearest town or city because of price (1)
- 4.6% Did not buy Feed/Seed at nearest town or city because it was not available (2)
- 3.9% Did not buy Feed/Seed at nearest town or city because of quality or performance (3)
- 11.1% Did not buy Feed/Seed at nearest town or city because of Supplier services/information (4)

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- 1.3% Did not buy Feed/Seed at nearest town or city because of Other support services (5)
- 11.1% Did not buy Feed/Seed at nearest town or city because of Other reasons (6)

Main reason farmer did NOT buy Farm Equipment in nearest town or city



- 37.3% Bought Farm Equipment at town or city nearest the farm (0)
- 9.2% Did not buy Farm Equipment at nearest town or city because of price (1)
- 25.5% Did not buy Farm Equipment at nearest town or city because it was not available (2)
- 2.0% Did not buy Farm Equipment at nearest town or city because of quality or performance (3)
- 11.8% Did not buy Farm Equipment at nearest town or city because of Supplier services/information (4)
- 2.0% Did not buy Farm Equipment at nearest town or city because of Other support services (5)
- 11.8% Did not buy Farm Equipment at nearest town or city because of Other reasons (6)

Main reason farmer did NOT buy Farm Credit in nearest town or city



- 47.7% Bought Farm Credit at town or city nearest the farm (0)
- 3.9% Did not buy Farm Credit at nearest town or city because of price (1)
- 10.5% Did not buy Farm Credit at nearest town or city because it was not available (2)

- 7.8% Did not buy Farm Credit at nearest town or city because of quality or performance (3)
- 8.5% Did not buy Farm Credit at nearest town or city because of Supplier services/information (4)
- 2.6% Did not buy Farm Credit at nearest town or city because of Other support services (5)
- 19.0% Did not buy Farm Credit at nearest town or city because of Other reasons (6)

METHODOLOGY & ANALYSIS

To assess if there is a significant difference between how a farmer views farm credit and the willingness to travel a difference distance to obtain that farm production input variable compared the distance traveled for financing versus other farm inputs. For each farmer, we calculate the difference in distance traveled for financing minus other input. Therefore, the null hypothesis of no difference in distance traveled would be:

$$H_0 : \mu_d = 0$$

$$H_1 : \mu_d \neq 0$$

Both parametric (paired t-test) and nonparametric (Sign test and Signed Rank test) test statistics were used for the comparison. We compared the results of the distance travel for:

- Farm credit versus Fuel
- Farm credit and Fertilizer
- Farm credit and Feed/Seed
- Farm credit and Machinery and implements (including repairs and supplies)
- Farm machinery and Fuel
- Farm machinery and Fertilizer
- Farm machinery and Feed/Seed
- Fuel and Fertilizer
- Fuel and Feed/Seed
- Fertilizer and Feed/Seed

The summary results are presented below. Differences, $X_{1i} - X_{2i}$, where X_1 is farm credit and X_2 is the other farm input were computed.

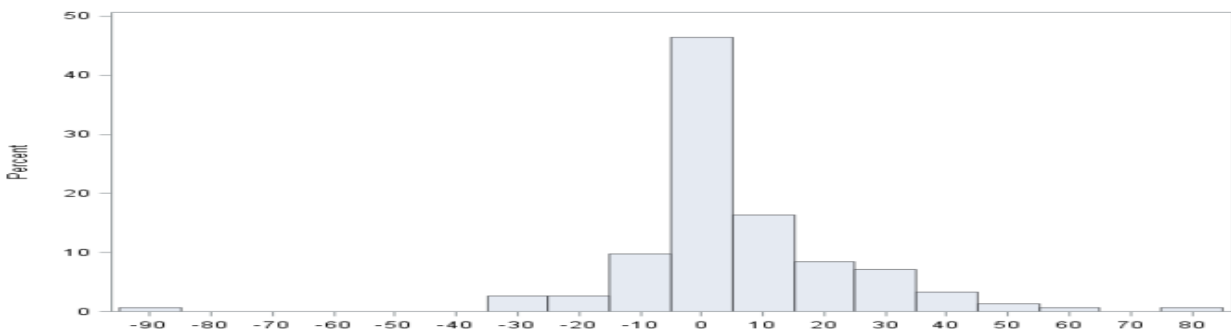
Differences Farm Credit – other farm input variable

Variable	Mean	T	Sign	Signed Rank
Farm credit – Fuel	4.915	3.35***	17***	1212.5***
Farm credit – Fertilizer	6.48	4.63***	23***	1660***
Farm-credit – Feed	5.54	3.73***	19.5***	1291.5***
Farm credit - Machinery	-2.189	-1.35	-9	-594.5

***, **, * denotes statistical significance at 1%, 5% and 10% level

It appears farmers travel further for farm credit than for fuel, fertilizer and feed or seed. These are all significant at the 1% level. With respect to machinery versus farm credit, a greater distance is traveled for machinery but it is not significant at the 10% level.

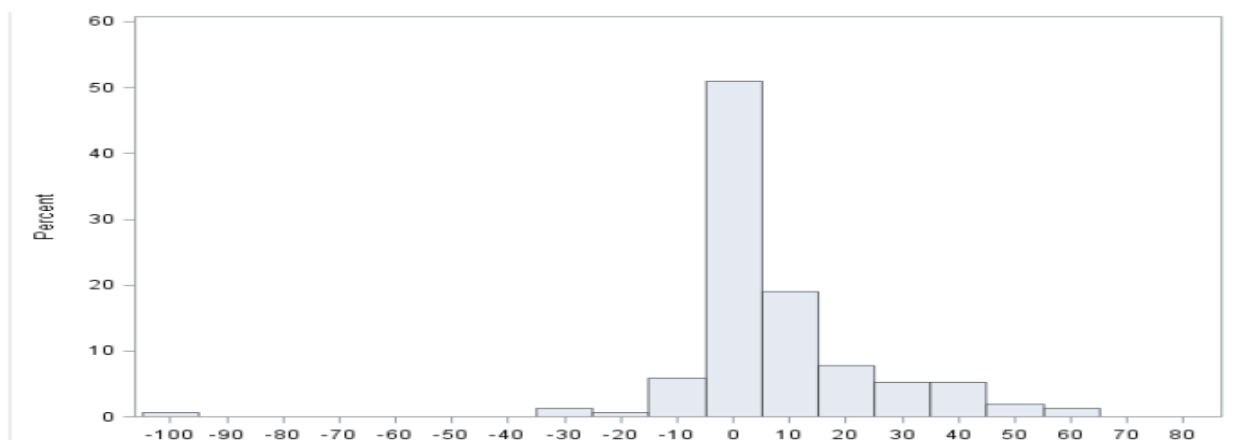
Difference between Variables of Farm Credit and Fuel (Distance traveled for Farm Credit less Distance traveled for Fuel)



Tests for Location: $\mu_0=0$

Test	Statistic	p Value
Student's t	t 3.345824	Pr > t 0.0010
Sign	M 17	Pr >= M 0.0014
Signed Rank	S 1212.5	Pr >= S 0.0001

Difference between Variables of Farm Credit and Fertilizer (Distance traveled for Farm Credit less Distance traveled for Fertilizer)

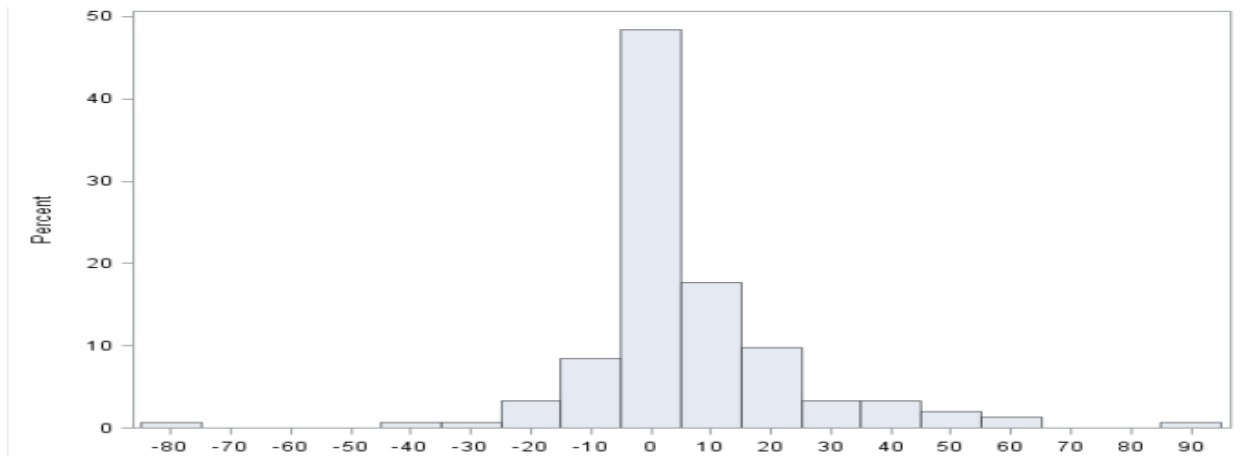


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Tests for Location: $\mu_0=0$

Test	Statistic	p Value
Student's t	t 4.625482	Pr > t <.0001
Sign	M 23	Pr >= M <.0001
Signed Rank	S 1660	Pr >= S <.0001

Difference between Variables of Farm Credit and Feed/Seed
(Distance traveled for Farm Credit less Distance traveled for Feed/Seed)

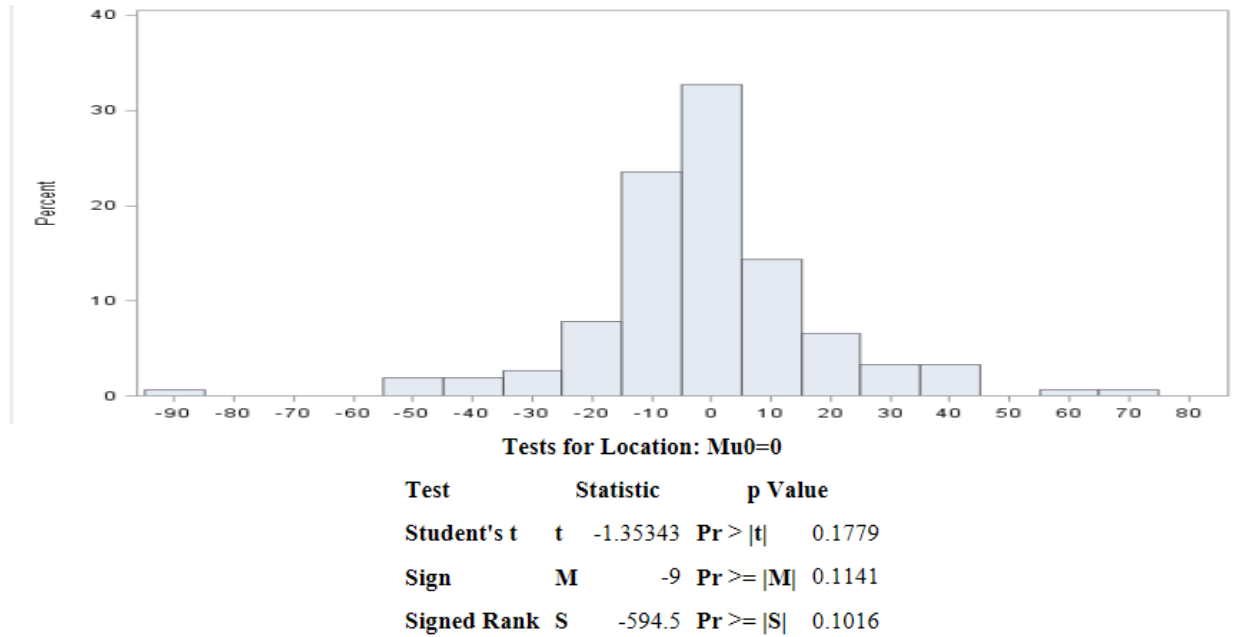


Tests for Location: $\mu_0=0$

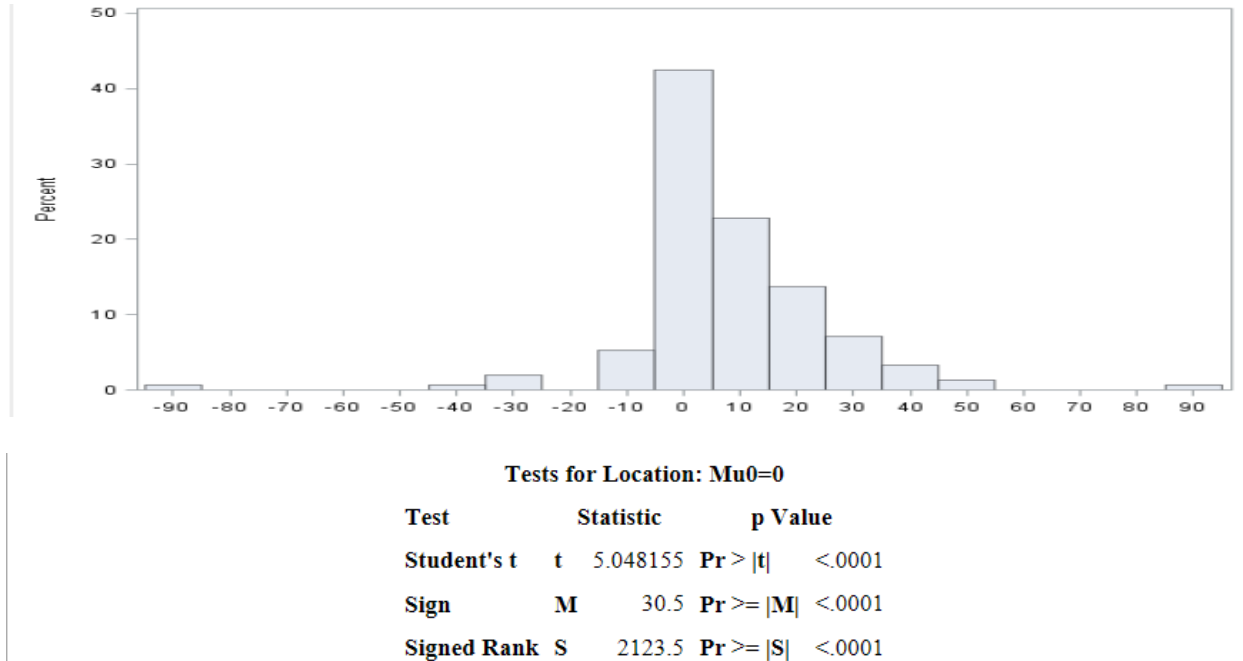
Test	Statistic	p Value
Student's t	t 3.725103	Pr > t 0.0003
Sign	M 19.5	Pr >= M 0.0002
Signed Rank	S 1291.5	Pr >= S <.0001

Difference between Variables of Farm Credit and Farm Machinery
(Distance traveled for Farm Credit less Distance traveled for Farm Machinery)

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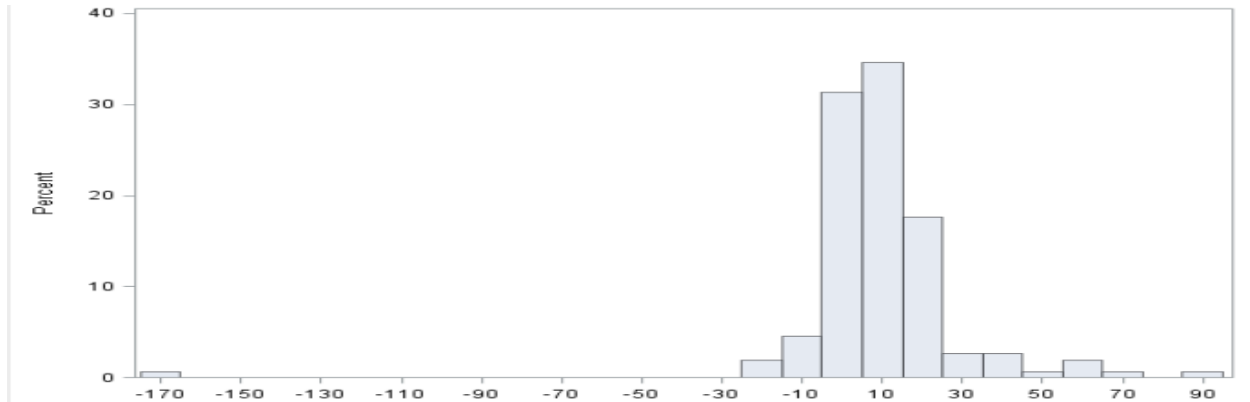


**Difference between Variables of Farm Machinery and Fuel
(Distance traveled for Farm Machinery less Distance traveled for Fuel)**



**Difference between Variables of Farm Machinery and Fertilizer
(Distance traveled for Farm Machinery less Distance traveled for Fertilizer)**

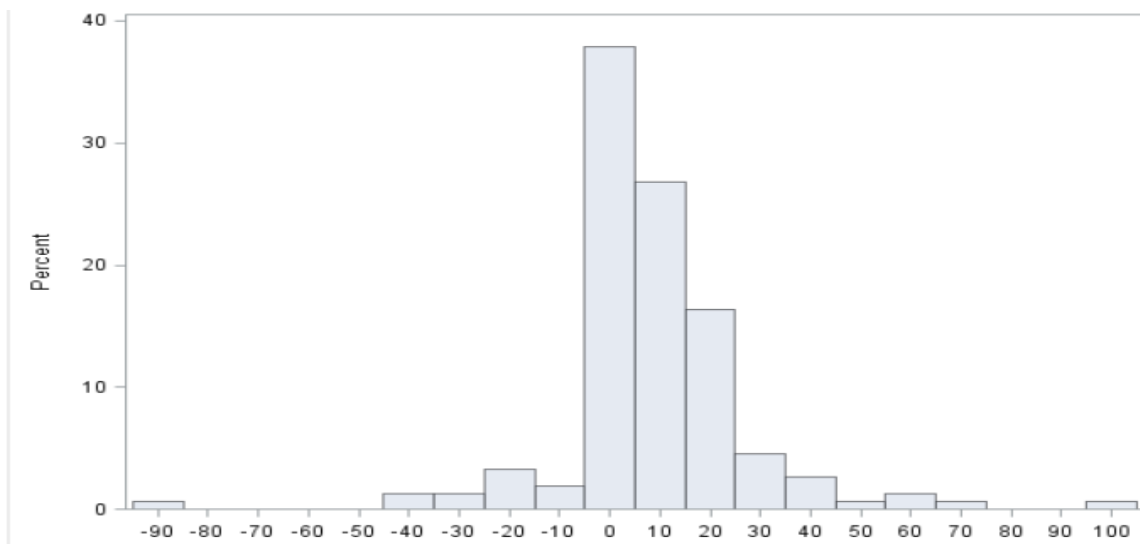
SOBIE 2017



Tests for Location: $\mu_0=0$

Test	Statistic	p Value
Student's t	t 5.015289	Pr > t <.0001
Sign	M 41	Pr >= M <.0001
Signed Rank	S 2989.5	Pr >= S <.0001

Difference between Variables of Farm Machinery and Feed/Seed (Distance traveled for Farm Machinery less Distance traveled for Feed/Seed)

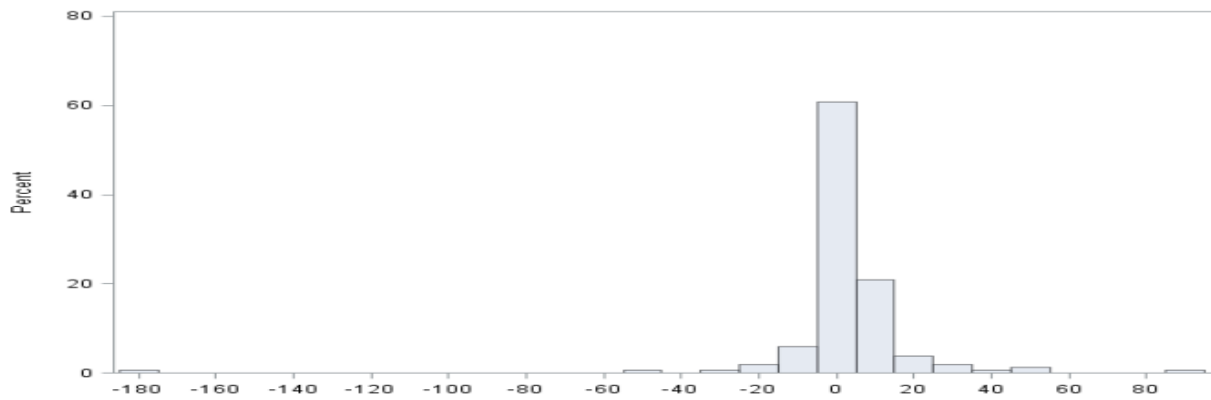


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Tests for Location: $\mu_0=0$

Test	Statistic	p Value
Student's t	t 5.021811	Pr > t <.0001
Sign	M 36.5	Pr >= M <.0001
Signed Rank	S 2250	Pr >= S <.0001

Difference between Variables of Fuel and Fertilizer (Distance traveled for Fuel less Distance traveled for Fertilizer)

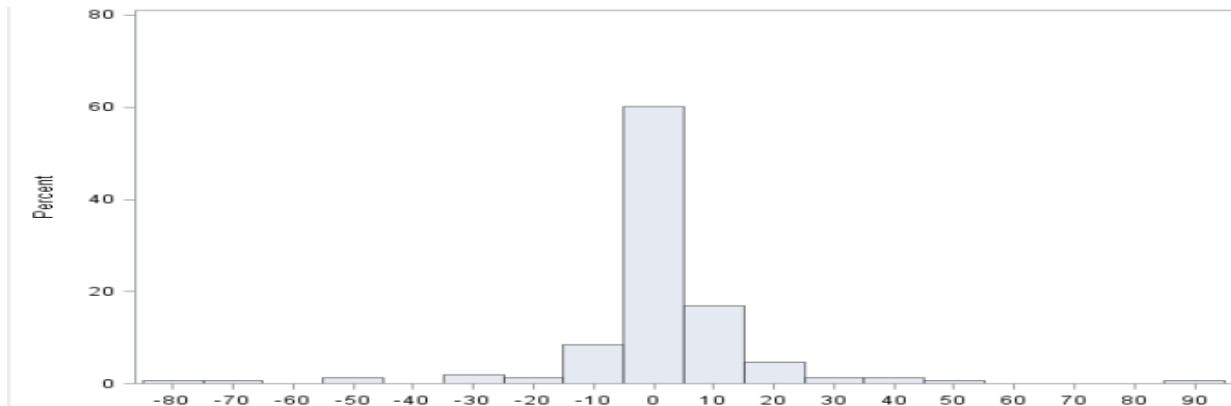


Tests for Location: $\mu_0=0$

Test	Statistic	p Value
Student's t	t 0.979618	Pr > t 0.3288
Sign	M 9	Pr >= M 0.0598
Signed Rank	S 619	Pr >= S 0.0036

Difference between Variables of Fuel and Feed/Seed (Distance traveled for Fuel less Distance traveled for Feed/Seed)

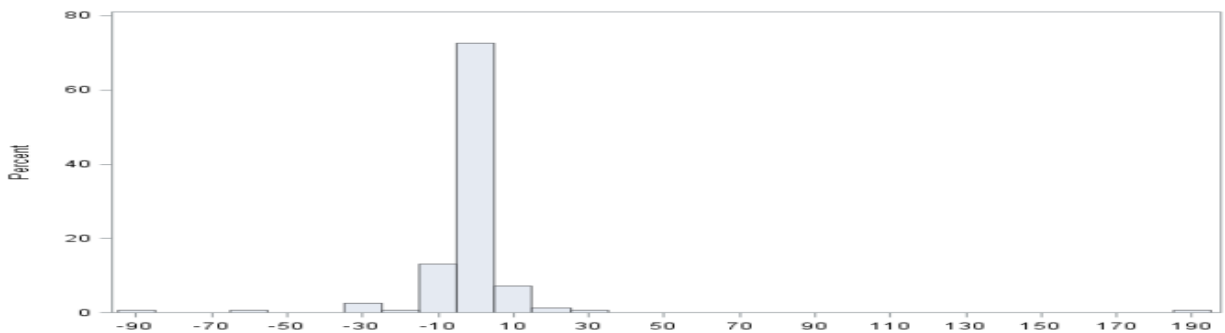
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Tests for Location: $\mu_0=0$

Test	Statistic	p Value
Student's t	t 0.46726	Pr > t 0.6410
Sign	M 4.5	Pr >= M 0.3857
Signed Rank	S 340	Pr >= S 0.1370

Difference between Variables of Fertilizer and Feed/Seed (Distance traveled for Fertilizer less Distance traveled for Feed/Seed)



Tests for Location: $\mu_0=0$

Test	Statistic	p Value
Student's t	t -0.59793	Pr > t 0.5508
Sign	M -6	Pr >= M 0.1753
Signed Rank	S -338	Pr >= S 0.0296

The implication of the differences in distance traveled may not be significant. However, the results of this study do imply that farmers may view their farm credit production input cost variables differently than they do farm production input cost variables for fuel,

fertilizer/chemicals, and feed/seed. Those differences may be as simple as the basic economic equation of supply and demand. Perhaps financing is not as available in the local community, and several studies have identified a decline in the number of sources of financing throughout the country. This study focused on farmers in Iowa ask the initial population. A review of the number of banks in Iowa as of December 31, 2008, the year of the survey, identifies 379 FDIC insured banks chartered in Iowa, of which 360 or 94% reported for agricultural operating and/or agricultural real estate. In addition to the FDIC insured banks with an Iowa charter other banks chartered in states other than Iowa, had branch locations in Iowa. As of June 30, 2009 (banks report branch information annually as of each June 30) 1638 FDIC bank locations were reported in Iowa.

LIMITATIONS

Interpretation of the responder to the survey; e.g. in the case of the distance from the farm from the supplier of fuel which was purchased, if the fuel was delivered to the farm by the supplier, does the responder record the distance traveled by the supplier or does the responder record a distance of zero.

The sole U.S Department of Agriculture Agricultural Resource Management Survey, Cost and Returns Report (USDA ARMS Phase III Survey) which contains the questions of where the farmer bought the majority of the input items was on the 2008 survey.

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Are College Football Betting Markets Efficient? Evidence from Interconference Play

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Abstract

This article tests the efficient market hypothesis (EMH) and the profitability of a simple betting strategy in NCAA college football. We examine all games that have a point spread, from September 2003 through January 2016, for inter-conference matches involving a Power Five/Automatic Qualifying (P5/AQ) team. The tests reject the EMH for these matchups, with a large subset of matches driving this result. The betting strategy evidence suggests it is nonrandom but it is not profitable.

I. Introduction

Over \$90 billion is bet on college and professional football (both legally and illegally) in the United States annually (American Gaming Association, 2016). In 2014 alone, more than 12 million individual bets were made on college football at the top offshore betting sites (Fuhrman, 2015). With large amounts of money, and large numbers of individual bettors, one might expect the market to trend toward efficiency. The Efficient Market Hypothesis (EMH) states that asset prices reflect all publicly available information (Mankiw, 2015). In this paper, we use a variety of existing tests within the literature to ascertain if college football betting markets exhibit efficiency.

The most common form of college football wagering is betting on “spreads” or “lines” which act as handicaps, and purport to reflect market perceptions about disparate team quality, as well as other circumstances that could influence the outcome of a game (such as home field advantage). Betting lines are listed as negative numbers for the favorite, and positive numbers for the underdog. For example, if a sportsbook lists Team A “-7” vs Team B, that means that in order to win the bet, Team A must defeat Team B by more than 7 points in order for Team A’s bettors to “cover” (win the bet). Conversely, the sportsbook would list Team B as “+7,” meaning 7 points would be added to Team B’s score in order to determine who won the bet. If Team B achieves any outcome better than a 7 point loss, Team B’s bettors have “covered.” If Team A defeats Team B by exactly 7 points, then the result for bettors is a tie, called a “push.”

Typically, spread betting on college football games in the United States have U.S. odds of -110, which means that for every \$110 a bettor wagers, he stands to win \$100 for a

cover, in addition to receiving his initial \$110 back. If a bettor loses his wager, he loses the entirety of the \$110. In the case of a push, all bettors would be refunded their \$110. The remaining \$10 is called the “vig” or “juice,” and goes to the sportsbook that offers the wager. The spread, or line, adjusts over the course of the week leading up to the game. Line movement functions as a price, with an increase in the line serving to make the favorite more “expensive,” and the underdog “cheaper,” and vice versa. Because the sportsbook can generate earnings via the “vig,” they often (though not always) attempt to balance the amount of wagering on both sides in order to minimize exposure to any particular outcome, and to take profit from the vig. Because of the existence of the vig, a bettor adhering to the Kelly criterion would lose money if he merely covered half his bets, and failed to cover half. In order to profit, a bettor would need to win in excess of 52.4% of his bets, at odds of -110.

II. Literature Review

Gandar, et al (1988) examined the efficiency of sports wagering by testing whether the betting line generates a “fair bet.” The authors defined a “fair bet” in the context of football wagering as one in which generates a .5 probability of covering for both the favorite and the underdog. Equating fairness with efficiency, the authors tested efficiency by jointly testing the intercept and slope coefficients in the following equation:

$$(1)PS_1 = \beta_0 + \beta_1VL_i + u_i ,$$

where PS = the actual point spread, and VL = the Vegas line. The authors tested the joint hypothesis of “fairness” that $\beta_0 = 0$, and $\beta_1 = 1$ (Gandar et al 1988), asserting that such a condition would indicate no profit as a result of the wagering.

Even and Noble (1992) expanded on the measures of fairness and market efficiency in NFL wagering. Using both the OLS methods employed by Gandar et al (1988), as well as a likelihood ratio test, the authors were generally unable to reject the null hypothesis of fairness/efficiency across NFL betting on both spreads, and totals (the combined score of both teams; bettors can wager on whether the combined total is “over” or “under” the total). However, the authors also concluded that “fairness,” as such, is neither necessary nor sufficient to sports wagering matchups.

Badrinathi and Kochman (1996) look beyond “fairness,” and searching merely for non-random deviations from a probability of .5. Instead, they expand the inquiry to “profitability,” testing whether any of three wagering “strategies” can be said to consistently earn a profit (cover more than 52.38% of the time, assuming equal amounts wagered, and odds of -110). The authors were able to find at least weak evidence of both non-randomness and profitability for some strategies (Badrinathi and Kochman 1996).

Paul and Weinbach (2005) adapted the Even and Noble (1992) log likelihood approach to test not only for efficiency/non-randomness, but also for profitability. To test for profitability, they adjusted the relevant probability of victory, from .5 to .524 (the number needed to exceed the break-even point under the conditions outlined above). Using data on totals wagering from college and Arena football, Paul and Weinbach (2005) found that some naïve strategies (e.g. betting the under in every game, or every game in which the wagering total exceeded some particular benchmark) produced results that were indeed both non-random and profitable.

III. Data and Methodology

In this paper, we analyze wagering on spreads in college football games from the 2003-2016 seasons. The data, acquired from the analytics firm Sports Insights, include the opening and closing betting lines, and actual results, of every Division I college football game over that period. College football teams are sorted into conferences, or miniature “leagues” within the broader league of the NCAA. Division I is the division for the largest, most competitive (and typically most well-funded) athletic programs.

For football only, the NCAA further subdivides Division into the Football Bowl Subdivision (FBS), and the Football Championship Subdivision (FCS). The names reflect the fact that the NCAA conducts a Championship for FCS, while it does not for FBS (the only sport that the NCAA sponsors for which it does not conduct a championship). While FBS teams tend to generate substantially more revenue than their FCS counterparts, they are also required to invest more. FBS teams are required to play in stadia that have capacity for at least 15,000 fans. FCS teams are limited to a *maximum* of 63 football scholarships, and some FCS schools (and indeed some whole FCS conferences) do not offer football scholarships. FBS schools, by contrast, may issue a maximum of 85 football scholarships, and must at a *minimum* offer 90% of that total on average over a period of 2 years. As a result, FBS teams have many structural advantages over FCS teams, and are typically expected to be much stronger.

Within the FBS, the conferences are further subdivided into 2 major groups: the Power Five and the Group of Five. The Power Five conferences are the Southeastern Conference (SEC), Atlantic Coast Conference (ACC), the Big Ten, the Big Twelve, and the Pacific 12 (PAC 12). Prior to 2014, a sixth conference, the Big East, was included with the Power 5 in the group of Automatic Qualifying (AQ) conferences, or those conferences whose champions automatically earned a spot in Bowl Championship (BCS) bowls. In addition to stronger traditions (teams currently in AQ conferences have won the national championship in each of the last 28 years), the AQ schools have structural advantages, such as larger budgets, and the ability to offer “full cost of living” scholarships. As a result, schools in AQ conferences are considered to be substantially stronger than FBS

schools in non-AQ conferences; an even wider gap is perceived to exist between AQ schools and FCS schools.

We apply the aforementioned non-randomness and profitability tests to the naïve strategy of betting on AQ schools to cover against non-AQ and FBS schools. From the Sports insight data set, we include all games featuring an inter-conference matchups involving AQ teams for which there is a closing betting line. The overwhelming majority of games featuring no line are matchups between AQ teams and FCS teams prior to 2007. Because those matchups were generally anticipated to be lopsided affairs, most sportsbooks did not offer lines on AQ-FCS matchups. However, in 2007, Appalachian State, then an FCS team, upset Michigan in Michigan's home stadium. Michigan was ranked #5 in the FBS at that time, and had been a 3 point loss to Ohio State away from playing for the FBS national championship the previous year. Subsequently, lines in AQ-FCS matchups became more common. Now, having lines in such matchups is the norm. Note that having "no line" refers to the absence of a line (and thus the absence of spread betting) at all. If sportsbooks offer a contest as a "pick 'em," which is a line of "zero," that simply means that the straight up winner covers the spread bet. Such matchups are included in the analysis here.

The data set includes 10,265 games, of which 1,983 are inter-conference matchups involving one AQ team playing a non- AQ opponent. These 1,983 matchups are therefore used in our study.

In addition to applying the methodology of Gandar et al (1988), shown in Equation (1), we also utilize the log likelihood efficiency test employed by Even and Noble (1992), as shown below:

(2) $L^u = n[\ln(\hat{q})] + (N - n)\ln(1 - \hat{q})$, where n is number of covers, N is number of matchups, and \hat{q} is ratio of covers to matchups.

Because this method assumes that an efficient market means that $q=.5$, we substitute .5 for \hat{q} , which yields the following likelihood ratio for the null hypothesis:

(3) $2(Lu - Lr) = 2\{n[\ln(\hat{q}) - \ln(0.5)] + (N - n)[\ln(1 - \hat{q}) - \ln(0.5)]\}$

We also utilized the Badarinathi and Kochman (1996) test for non-randomness, as shown below:

(4) $Z_1 = [W - 0.5(B)] \times [B(p)(1 - p)] - 1/2$,

where W is number of covers, B is the number of matchups, and p is probability of winning, i.e. 0.5.

We also tested for profitability, using the aforementioned method of Paul and Weinbach (2005):

$$(5) 2(L^u - L^r) = 2\{n[\ln(q^{\wedge}) - \ln(0.524)] + (N - n)[\ln(1 - q^{\wedge}) - \ln(0.476)]\}$$

Where n is number of covers, N is number of matchups, and q^{\wedge} is ratio of covers to matchups. We further applied the profitability test of Badiranathi and Kochman (1996):

$$(6) Z_2 = \frac{\frac{W}{B} - \frac{1.1L}{B}}{\left\{ \frac{1}{B} \left[\left(\frac{W}{B} + \frac{(1.21)L}{B} - \left(\frac{W}{B} - \frac{(1.1)L}{B} \right)^2 \right] \right\}^{\frac{1}{2}}}$$

IV. Results and Conclusions

The results of the regressions, concerning equation (1) above, are shown as follows in Table 1. The “Total” regression includes the complete data set of inter-conference matchups. The remaining columns are regressions with the data separated between inter-conference matchups between a AQ team with an FCS rival, i.e. “vs FCS”, or another FBS team that is not from a AQ conference, i.e. “vs Non-AQ FBS.” The null hypothesis of “fairness” as proposed by Gandar et al (1988) is rejected at the 5 percent level for matches between AQ teams with those from non-AQ conferences, commonly known as the “Group of Five” conferences and independent schools.

Table 1. Regression results for the efficiency of point spreads

	Total		vs FCS		vs Non-AQ FBS	
	Coeff.	St. dev	Coeff	St. dev.	Coeff.	St. dev.
<i>Constant</i>	0.148	0.446	2.386	2.272	0.274	0.452
<i>Point Spread</i>	1.032***	0.019	0.934***	0.065	1.057***	0.022
N	1983		376		1607	
F test	3000.0		205.71		2222.12	
	3					
<i>Point Spread = 1</i>	Total		vs FCS		vs Non-AQ FBS	
t test	2.90*		1.02		6.43**	
p-value	0.089		0.312		0.011	
Joint test of null hypothesis that the coefficients of <i>Constant</i> = 0 and <i>Point spread</i> = 1.						
	Total		vs FCS		vs Non-AQ FBS	
F test	1.99		0.55		3.73**	
p-value	0.138		0.57		0.024	
			5			

Notes: * indicates significance at the 10% level; ** indicates significance at the 5% level; *** indicates significance at the 1% level.

Table 2. AQ inter-conference matchups

	Total	vs FCS	vs Non-AQ FBS
Games	1983	376	1607
Covers	1031	184	847
Not covered	931	185	746
Push	21	7	14
Percent cover	51.992	48.936	52.707
log like – fair bet	3.148*	0.170	4.712**
log like - profit	0.120	1.785	0.069
Z₁ Nonrandom	1.774*	-0.413	2.170**
Z₂ Profitability	0.149	-0.967	0.631

Notes: The log-likelihood test statistics have a chi-squared distribution with one degree of freedom. The Z test statistics have a normal distribution. * indicates significance at the 10% level and ** indicates significance at the 5% level.

Results of the log likelihood and Z testing are presented in Table 2. The results indicate that the simple betting strategy of the AQ team covering against an inter-conference rival is not profitable at generally recognized levels of statistical significance. However, our results suggest that the market is inefficient. Log likelihood testing of a fair bet is rejected at the 10 percent level and Z testing at the 5 percent level. The results are further broken down into matchups of teams from AQ conferences versus FBS non- AQ conferences, and versus FCS teams. This analysis indicates that the non-randomness is driven by games between AQ schools and FBS schools from non- AQ conferences, i.e. the “Group of Five” and independent schools, with log likelihood and Z test results rejecting efficiency at the 5 percent level.

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Teaching Students the Financial Statement Impact of the New Lease Standard

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Abstract

Accounting students cannot always appreciate why a lessee would prefer to keep a leased asset and the related liability off of its balance sheet. Their lack of appreciation is sometimes because they have not seen a simple comparison of two sets of financial statements – one set keeps the asset/liability off of the lessee's balance sheet while the other includes the asset/liability on the lessee's balance sheet.

Introduction

Currently, students are taught that lessees classify a lease as either operating or capital. Intermediate accounting texts often tell students that a lessee has a desire to classify a lease as operating instead of capital. The texts state that compared to an operating lease, a capital lease has negative effects on a company's debt-to-equity ratio. Although the texts' statement is true, it is rarely accompanied by an example that supports the statement in a way that most intermediate accounting students can easily comprehend.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. The ASU becomes effective for public entities for periods beginning after December 15, 2018, *i.e.*, calendar years ending December 31, 2019. Under the new provision, a lessee will report a right-of-use asset and a liability for all leases with the exception of those leases with a term of 12 months or less.

The purpose of this paper is to present, from a lessee's perspective, an example that compares current and future GAAP for leases and illustrates the impact the change will have on a company's financial statements and debt-to-equity ratio.

The Basics of Current Lease Accounting – Lessee Perspective

Under current GAAP, a lessee classifies a lease contract as either capital or operating. To be classified as capital, the lease must be noncancelable and must meet at least one of the following criteria:

1. The lease transfers ownership of the property to the lessee.
2. The lease contains a bargain purchase option.

3. The lease term is equal to 75% or more of the estimated life of the leased asset.
4. The present value of the lessee's minimum lease payments (excluding executor costs) equals or exceeds 90% of the fair value of the leased asset.

For a lease that is classified as capital, a lessee records an asset and a liability at the inception of the lease contract. The recorded asset and liability amounts are based on the present value of the future lease payments. During the term of the lease, the lessee depreciates the recorded asset. In addition, each lease payment is accounted for as both interest expense and as a reduction of the recorded liability. For a lease that is classified as operating, a lessee simply records periodic rental costs based on the current period's lease payments.

The Basics Of Future Lease Accounting – Lessee Perspective

Under future GAAP, a lessee will classify all long-term, *i.e.*, more than 12 months, leases as either financing or operating. A long-term lease that meets the same general criteria as current GAAP will be classified as financing. A long-term lease that does not meet these criteria will be classified as operating. Under both classifications, a lessee will record a right-of-use asset and a liability at the inception of the lease contract.

During the lease term, there will be differences in accounting for financing and operating leases. Accounting for a financing lease will be the same as current accounting for a capital lease, *i.e.*, recognition of interest and depreciation expenses. Accounting for an operating lease will result in a straight-line recognition of lease expense.

Example

The following presents an example that allows students to compare the financial statement results of recording the same lease under current and future GAAP. The example also shows students how to record the lease-related transactions. The example is broken into five areas:

1. Students are given a simple balance sheet for a hypothetical company before the company enters into a lease agreement as well as some other pertinent data.
2. Students are given the terms and conditions of a lease agreement.
3. Students are given the journal entries and resulting financial statements assuming the lease is accounted for under current GAAP.
4. Students are given the journal entries and resulting financial statements assuming the same lease is accounted for under future GAAP.
5. Students are given a comparison of the difference in selected financial statement ratios as a result of the GAAP rules.

The primary purpose of the example is to allow students to compare how classifying a lease under current GAAP versus future GAAP impacts a company's debt-to-equity ratio. In addition, the example helps students understand how to make various journal entries.

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Hypothetical Balance Sheet And Other Data

The Jones Service Company was incorporated on January 1, year 01. Immediately after its incorporation, Jones' balance sheet consisted of the following:

Cash	<u>\$1,000,000</u>
TOTAL ASSETS	<u>\$1,000,000</u>
Long-term debt	\$ 400,000
Common stock and additional paid-in-capital	<u>600,000</u>
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	<u>\$1,000,000</u>

Other pertinent year 01 data for Jones follow:

- Jones' incremental borrowing rate was 5%.
- Jones did not declare any dividends or pay back any of its long-term debt.
- Jones' net income amounts for years 01, 02, and 03 were \$900,000, \$1,000,000, and \$1,200,000, respectively.
- All of Jones' annual revenue and expense amounts were equal to Jones' annual receipt and disbursement amounts.

Lease Agreement

Jones leased a piece of equipment from Smith Leasing Company by signing a lease agreement dated January 2, year 01. The terms and conditions of the lease agreement as well as other pertinent data follow:

- The lease is noncancelable.
- The lease term is three years; the equipment has a remaining useful life of ten years.
- The lease requires Jones to make three annual lease payments of \$100,000 with the first lease payment on January 2, year 01.

Lease Accounting

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Current GAAP – Assuming the lease agreement did not meet any of the criteria for classification as a capital lease, Jones accounted for the lease as an operating lease and recorded the following lease-related entries during years 01, 02, and 03:

	01		02		03	
Lease expense	\$100,000		\$100,000		\$100,000	
Cash		\$100,000		\$100,000		\$100,000

Future GAAP – Assuming the lease agreement did not meet any of the criteria for classification as a financing lease, Jones accounted for the lease as an operating lease. At the inception of the lease contract, Jones recorded an asset and liability equal to the present value of the future lease payments. The interest rate used in the present value calculation was Jones' incremental borrowing rate. Jones created a lease amortization schedule and used it as the basis for reducing and ultimately eliminating the asset and liability.^a Jones recorded the following lease-related entries during years 01, 02, and 03:

	01		02		03	
Right-of-use asset	\$285,941					
Lease liability		\$285,941				
Lease expense	\$100,000		\$100,000		\$100,000	
Cash		\$100,000		\$100,000		\$100,000
Lease liability	\$100,000		\$90,703		\$95,238	
Right-of-use asset		\$100,000		\$90,703		\$95,238

Under both current and future GAAP, Jones would not record any deferred tax items because its lease expense for book purposes is the same as its lease deduction for tax purposes.

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Comparison of balance sheets; current and future GAAP – The lease transactions combined with the other pertinent data would result in the following balance sheets as of December 31, years 01, 02, and 03:

	01		02		03	
	<i>current</i>	<i>future</i>	<i>current</i>	<i>future</i>	<i>current</i>	<i>future</i>
Cash	\$1,900,000	\$1,900,000	\$2,900,000	\$2,900,000	\$4,100,000	\$4,100,000
Right-of-use asset	0	185,941	0	95,238	0	0
TOTAL ASSETS	\$1,900,000	\$2,085,941	\$2,900,000	\$2,995,238	\$4,100,000	\$4,100,000
Long-term debt	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Lease liability		185,941		95,238		0
Retained earnings	900,000	900,000	1,900,000	1,900,000	3,100,000	3,100,000
Common stock & APIC	600,000	600,000	600,000	600,000	600,000	600,000
TOTAL LIABILITIES & SE	\$1,900,000	\$2,085,941	\$2,900,000	\$2,995,238	\$4,100,000	\$4,100,000

Comparison and Conclusion

By comparing the balance sheets using current and future GAAP, students can easily calculate Jones' debt-to-equity ratio for years 01 and 02.

Debt-to-equity ratio, current GAAP, year 01: $\$400,000 / \$1,500,000 = 0.267$ to 1.000

Debt-to-equity ratio, future GAAP, year 01: $\$585,941 / \$1,500,000 = 0.391$ to 1.000

Debt-to-equity ratio, current GAAP, year 02: $\$400,000 / \$2,500,000 = 0.160$ to 1.000

Debt-to-equity ratio, future GAAP, year 02: $\$495,238 / \$2,500,000 = 0.198$ to 1.000

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^a **Table 1 - Lease Amortization Schedule**

<i>Lease Payment</i>		<i>Liability and Asset Reduction</i>	<i>\$285,941</i>	<i>01/01/17</i>
\$100,000	\$0	\$100,000	\$185,941	12/31/17
\$100,000	\$9,297	\$90,703	\$95,238	12/31/18
\$100,000	\$4,762	\$95,238	\$0	12/31/19

The Effects of Marketing Strategy on Consumer's Happiness: Does Marketing Help Consumer's Happiness at all?

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Abstract: AMA define Marketing as the process to create an exchange with consumers. Understanding Consumer Behavior (CB) is the most important area in marketing discipline, in terms of publications, researchers, and practitioners. CB starts with problem recognition, the lag between desired and current conditions. Marketing is to help consumers to recognize their needs/problems by informing and persuading through promotional activities. This paper raises issue on the relationship between marketing and happiness: Is marketing beneficial to happiness of consumers?

Introduction

Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large. (AMA 2013). Also from previous definition, AMA stated 'marketing is the process of producing, pricing, placing, and communicating, in order to create exchange resulting in long-term relationship. From this, understanding consumer's behavior can be the most important step to build successful marketing strategy.

Study of 'Consumer Behavior' has been major area in marketing discipline. *Journal of Consumer Behavior* is one of the most prestigious publications, with *Journal of Marketing*, in marketing area. In 2015, 46% of newly hired marketing professors majored in Consumer Behavior (DocSig). Also more than half of American Marketing Association's 30000 members show interest in Consumer Behavior area at their profile. Even at undergraduate level, most college list Consumer Behavior or 'Buyer Behavior' as a required class rather than electives for business or marketing majors.

The most critical concept in Consumer Behavior is Consumer's buying decision process. In their seminal work, Engel, Blackwell and Kollat have developed in 1968 a model of consumer buying decision process in five steps: problem (or needs) recognition, information search, evaluation of alternatives, purchase, post-purchase behavior. Consumers can be influenced by external, internal, and situational influences during this process. Depending on the level of purchase involvement, the process might skip information search, evaluation of alternatives, and/or post-purchase behavior. However, problem recognition is the first and most important step in this process. It always happened, regardless of high or low involvement level.

Problem recognition is when consumer recognizes the discrepancy between his or her ideal status and current status (Solomon 2014). When there is no significant gap between these two statuses, consumer does not recognize any problem, resulting in no consumer purchase decision making. Consumer Behavior, therefore, starts letting target consumers recognize needs or problem, by widening the gap between his/her current status and ideal status.

Subjective Well-Being

Subjective well-being has been a major concern to many people for long time. It is recent when the world pays more attention to subjective well-being, because of sufficient level of affluence achieved in most of the world and increasing preferences toward individualism. Moreover, a new area of psychology emerged to study this.

It might be Discipline of psychology started in 19 century, separating from philosophy. It had three main goals: curing psychologically ill people, identifying gifted persons, and helping people be happy. However most psychology studies focused on the first goal. It is in 1998 when Martin Seligman became the president of American Psychology President. He announced that psychology needed to focus on positive aspect of human being, naming 'positive psychology.' Happiness became an important subject of study since then (Peterson and Seligman 2004).

Positive psychology use term 'subjective well-being (SWB)' as operationalization definition. It refers to how people experience the quality of their lives and includes both emotional reactions and cognitive judgments. Though it is called 'subjective,' SWB is not just subjective, but objective concepts because it relies on self-reported measures alone. Subjective well-being is subjective because the subject matter itself that is being measured is a subjective concept for example, life-satisfaction or happiness (Hicks 2011).

SWB is a valid construct that can be reliably measured and correlate well with objective indicators like income, health, and employment, according to Waldron's 2010 work. SWB measures can be divided into three broad types: evaluative measures, experience measures (sometimes known as 'affect' measures) and eudemonic (sometimes referred to as psychological) measures.

Life satisfaction measures are perhaps the most well known and commonly used evaluative measure. Evaluative measures ask the respondent to stand back and make an assessment of their life and, in the case of life satisfaction, score their life with regard to their satisfaction. Other measures include general happiness measures that are not time bounded which generally correlate with life-satisfaction scores. Experience (or affect) measures how peoples feeling and emotions are affected by everyday events. Eudemonic measures are somewhat different to the evaluative and experience based measures but, never-the-less, there seems to be a consensus that they are important to include when measuring SWB. There is certainly the demand for these

types of measures and the theoretical underpinnings relate to a broader understanding of well-being which encompasses purpose and meaning in life as well as including concepts such as competence, autonomy and engagement.

Psychologists have defined happiness as a combination of life satisfaction and the relative frequency of positive and negative affect. The Life Satisfaction is key to measure the happiness.

Marketing Strategy and Happiness

‘Satisfaction’ is believed to come from Old French, or from Latin *satisfactio*, from *satisfacere* ‘satisfy, content.’ The earliest recorded use referred to the last part of religious penance after “contrition” and “confession”: this involved fulfillment of the observance required by the confessor, in contrast with the current meaning ‘fulfillment of one's own expectations.’ Satisfied consumer means happy consumer. Therefore, satisfied consumer does not recognize the needs. Here comes marketing.

Marketing strategy, especially through various marketing communication such as advertising, sales promotion, and personal selling, focuses on extending the discrepancy between ideal and current status of consumers (Kotler and Keller 2015). Promotion, one of marketing mix, informs and persuade target consumers to respond to company's marketing. Satisfied consumer, who is defined as ‘happy consumer’ recognizes his/her need not filled. This is problem recognition, starting point of recognition of unhappiness.

Consumer could fulfill needs by purchasing and using products. At the last stage of consumer buying process, post-purchase behavior, consumer feel satisfied and become happy. Consumer is satisfied, so is marketer. It seems to be happy ending of the story at this moment. However, in order to continuously grow, the company needs to market another product to be sold. Marketers bring a new product and informs consumer. With successful marketing communication, marketer makes consumers recognizes another new needs.

How does marketing help consumer feel happy? How can marketing provide ultimate Life Satisfaction through marketing mix? Is marketing an evil to consumer's happiness? Or not?

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Awareness Regarding Better Business Bureaus and Chambers of Commerce Among College Students: A Concern For Business Schools?

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Abstract

This study examines the awareness of college students regarding the roles and functions of Better Business Bureaus (BBB) and chambers of commerce (CC). The study shows that the overall awareness/knowledge of both BBB and chambers of commerce was low for all students, even lower than the knowledge of the public at large. The study shows a significant positive correlation between the average score regarding awareness of BBB and that of chambers of commerce which suggests - students who have a higher level of awareness of BBB would have higher level of awareness of chambers of commerce. There was a statistically significant difference in the level of awareness according to working experience and race, but there was little difference in terms of gender.

Keywords: Better Business Bureaus, Chambers of Commerce, Small Businesses

Introduction

There are many sources of help or information available to the start-up or existing small business owners. Trade associations, Service Corps of Retired Executives (SCORE), the U.S. Small Business Administration (SBA), Small Business Development Centers (SBDC), state or local economic development agencies, and Dun & Bradstreet are among the several sources of help. Other helpful organizations are the local Chamber of Commerce and the area Better Business Bureau. The chamber can help the small business owner promote his/her small business. For example, the chamber can help by holding networking events such as breakfasts, luncheons, After Hours, speed dating, and committee work. Chamber members may sponsor events, hold a ribbon-cutting for a grand opening and advertise over the chamber website (Lacho & Brockmann, 2011). In addition, the chamber may help the small business owner improve his/her business skills by offering seminars and workshops (Brockmann & Lacho, 2015).

The Better Business Bureau (BBB) provides a sense of trust and security to users of its services, either consumers or businesses. BBB services include dispute arbitration and as a source of getting information about a prospective customer or supplier (Fok, Lacho, & Mitchell, 2013).

Studies by Fok, Lacho & Brockmann (2013) and Fok, Lacho, & Zee (2015) found that college students had a weak knowledge of chambers of commerce. Similarly, a study by Fok, Lacho, & Mitchell (2013) found that college students had little knowledge of BBB. This has important implication since these students will be working for a business or starts their own business. In essence, this should be a concern for business schools since BBB and Chamber of Commerce can be useful and important resources that can help you succeed in the competitive business world.

An example of the lack of student knowledge of helpful sources is illustrated by the following example. One of the authors chaired a panel of persons who have provided financial assistance to small business start-ups or owners. The panel was sponsored by the Student Finance and Economic Association on a college campus. Surprisingly, none of the 20 students in attendance had any knowledge about SCORE. It was also unclear as to how much they know about local BBB and local chamber of commerce. Thus, the purpose of this paper is to explore the association between students' awareness and knowledge of BBB and that of chambers of commerce.

Literature Review

The Better Business Bureau is a non-profit organization that provides services to consumers and businesses alike. A 2007 survey by the Princeton Survey Research Associates International showed that 89% of principal owners and top managers of member and non-member U.S. businesses say they have heard or read something about the BBB (Princeton, 2007). Even more surprising is the finding that specific knowledge about the functions and roles of BBB and its activities is lower than what might be expected. Only the most basic of BBB service areas are commonly known to business leaders overall, taking and processing consumer complaints (78%), and providing consumers with pre-purchase information about companies (Princeton, 2007). The same Princeton Study measured the public's knowledge of the BBB. It was found that 74 percent of the U.S. public cannot identify what type of organization the BBB is.

Despite the important role of BBB's in the U.S. economy, there have been few studies on them. Young (1994) found that 81% of BBB members surveyed used the BBB to check the reliability of unknown companies before doing business with them. Some 68% belong to the BBB because the BBB warned customers of scams (Young, 1994).

The findings of a survey conducted by Princeton Survey Research Associates International found that seven in ten consumers indicated that knowing that a firm is a BBB accredited business makes them more likely to do business with it (Princeton Survey Research, 2007). In addition, Lacho and Mitchell (2010) describe how a BBB Accredited member small business owner can use the services of the Bureau to benefit the firm and contribute to its profitability.

A study by Fok, Lacho, & Mitchell (2012) found that higher level college students had a significantly higher level of knowledge about the BBB. Perhaps experience has led to a higher level of BBB knowledge. At any rate, regardless of work or academic experience, student knowledge of the BBB is low overall. A study by Fok, Lacho, and Mitchell (2013) found that business students at The University of New Orleans (UNO) have little knowledge of the BBB and its services. Another study by Zee, Fok, and Lacho (2015) examined knowledge of the BBB by business school students in two universities in the south. Further study by Fok, Lacho & Zee (2016) showed that the overall knowledge of Chambers of Commerce of business students in two universities was low. There was a statistically significant difference on their average score for the two universities with the university in the rural area scoring higher. There was little difference in the level of knowledge according to sex, age or work experience.

Chambers of commerce is also an important force in any community, urban or rural, large or small. Yet, little academic research has been done on them. Lacho (2008) studied the government affairs activities of chambers of commerce in suburban New Orleans. Each of the studied chambers has a standing government affairs or public committee which monitors local, state and federal issues and informs the membership about them. Members have the opportunity to interact with local, state, and nationally elected officers at locally-based forums such as luncheons or meet them at the state legislature.

Lacho and Brockmann (2011) studied how a small business could be promoted through the services of a chamber of commerce. Their study of a single chamber showed that online listings are used. There are many opportunities for networking, e.g., at luncheons or special networking events. A 2012 study by Lacho and Brockmann examined the educational services provided by a chamber to help small business owners improve their business skills. One service was the traditional lecture/workshop setting followed by a passive educational setting such as a luncheon speaker. Lastly, networking events offered knowledge transfer opportunities.

The study by Brockmann and Lacho (2012) also compared how small chambers in rural areas and large urban-based chambers provided help to promote small businesses and to provide educational services. It was found that rural-based chambers have different priorities than large chambers. Small chambers focus on the community first, then business. A study by Fok, Lacho, and Brockmann (2013) found that college students had little knowledge of chambers of commerce. Finally, Lacho, Fok, and Zee (2015) examined knowledge of chambers of commerce by business school students in a rural setting versus in an urban setting.

The purpose of this study is to examine the relationship between the awareness/knowledge of college business students about the Better Business Bureau and chambers of commerce (CC). (See Research Question 1) Specifically, we have speculated that there may be overall differences in the knowledge of the BBB and that of chambers of commerce between male and female students and between working and non-working students. (See Research Questions 2 and 3). We also investigate whether there is difference in the knowledge of the BBB and that of chambers of commerce between white and not-white students (See Research Question 4).

Research Question 1: There will be no correlation between BBB knowledge scores and CC knowledge scores.

Research Question 2: There will be no differences in BBB knowledge scores and CC knowledge scores between male and female students.

Research Question 3: There will be no differences in BBB knowledge scores and CC knowledge scores between students working full-time or part-time and students not working.

Research Question 4: There will be no differences in BBB knowledge scores and CC knowledge scores between white and not-white students.

Method

Subjects

Subjects in the sample were students from four-year public university in the South. There were approximately 191 students roughly 50% female and 50% male with 61% in the 18-22 age group, 20% in the 23-27 age group, and 12% in the 28-35 age group. 82% of these students were working full-time or part-time. 33% of the students were taking 3 to 4 courses, and 60% taking 5 to 6 courses. The university student population consisted of 72% Caucasian students.

Data

In this study, we assessed awareness and the knowledge of college business students about the BBB with a series of 32 statements requiring a true/false response. These statements involve the BBB's governance and functions/services. The knowledge of chambers was measured using a series of 24 statements on a true/false scale. These statements also included topics such as the chambers' governance, functions, and services.

Results and Discussion

The purpose of this study is to examine the relationship between the knowledge of college business students about the Better Business Bureau and chambers of commerce. The study results show that there is a positive correlation between students' knowledge of BBB and that of chambers of commerce. This suggests that the students who have higher level of BBB knowledge would have higher level of knowledge in chambers of commerce.

The study results also show that working students have a significantly higher knowledge of the BBB than non-working students. It also confirms the findings of other researchers mentioned earlier that higher level college students had a significantly higher level of knowledge about the

BBB. Perhaps experience has led to a higher level of BBB knowledge. At any rate, regardless of work or academic experience, student knowledge of the BBB is low overall.

The findings of this study suggest that students have less knowledge of the BBB than the public at large, about 26%. It agrees with the Princeton Study that measured the public's knowledge of the Better Business Bureau's. It was found that 74 percent of the U.S. public cannot identify what type of organization the BBB is, only 26% can. It also agrees with the findings of other researchers Fok, Lacho and Mitchell mentioned earlier.

It was found that student awareness and knowledge of chambers of commerce were also weak. The findings agree with the results of other studies mentioned earlier. In this study, it was found that in terms of the level of education stages students further along in their college studies have a little higher level of knowledge of chambers of commerce.

The college student of today is the business and community leader of tomorrow. An important issue facing the BBB is how to get its message across to college students, perhaps anyone 18-30 years of age. Also known as Millennials, they represent the new face of the population in the United States. Assume that the higher level college student, 20-22 years of age in the business school is the target market for the BBB. How does the BBB reach them?

An initial step is to identify a business school professor who is active in the local business community. Perhaps the business school could appoint him/her as a liaison with the community.

A traditional way to reach students is to have BBB personnel speak to classes. Internships with the BBB or BBB member firms may be offered to students or selecting a young BBB employee and having him/her take part in school events. A student event may be sponsored by the BBB or BBB members. In addition, scams are an issue today. A "scam day" on the campus may be offered involving Better Business Bureau and Chambers of Commerce education, perhaps being sponsored by a student group or association. Last, a well-done website is a must.

The findings of this study suggest that student respondents have a low knowledge of chambers of commerce which is in agreement with the findings of some of the previous researchers. What is disturbing is that a large percentage of students had misconceptions about some of the basic aspects of a chamber. These aspects include the perception that the chamber is funded by local government, will recommend a business service provider, endorse a political candidate, and that chambers are local government agencies. Our study also found similar lower awareness and lack of knowledge about the Better Business Bureaus among the college students.

How do we improve student knowledge about chambers of commerce? One potential approach would be to encourage faculty members teaching introductory business courses and small business-related courses to include coverage of chambers of commerce. Guest speakers from local chambers could be invited to speak to students.

Universities have a large number of faculty committees. Smaller business schools such as at University of New Orleans (UNO) or Southeastern Louisiana University could set up a chamber-relations committee. The purpose of the committee would be to coordinate activities between the College of Business and area chambers of commerce. In New Orleans, the chamber committee could work with area chambers. These include Chambers in New Orleans, Jefferson, West St. Tammany, East St. Tammany, and other River Parishes Chambers of Commerce. Niche chambers include the Black, Asian, and Hispanic Chambers of Commerce. A similar committee at Southeastern University could coordinate with the Hammond Chamber of Commerce and the chamber at the nearby city of Ponchatoula.

The College of Business committee should be headed by a professor who is externally-oriented, e.g., a chamber member and/or takes part in the activities of other local business groups such as the American Marketing Association. Such a person would have the contacts to procure chamber speakers and arrange to have students take part in chamber's committees and activities. Such activities could include helping with special events such as the Jefferson Chamber Crawfish Boil or the annual Small Business Champions luncheon. Students could also be invited to chambers networking events.

This study suggests areas for future research about student knowledge about chambers of commerce. Perhaps a more interesting and needed area of research is the development of models of how universities and chambers can work together to educate students about chambers, as well as how they function and serve their community.

Conclusion

We can conclude that the student awareness and knowledge about the BBB organizations is weak. Working students seemed to have better awareness and knowledge of the BBB than non-working students. Overall, students at an urban university have a better knowledge of the BBB than those going to college in a rural area. There are a number of ways the BBB may reach college students. These range from traditional classroom lectures to taking part in special events.

The awareness and knowledge of chambers of commerce by college students also appears to be generally weak. In terms of the education level, the students further along in their college studies have a better knowledge of chambers. However, this college age student group needs to be made more aware of the local chambers and their benefits to small business owners.

Thus, awareness of and knowledge about BBB and Chambers of Commerce among business school students should be a concern to Business Schools. Perhaps a needed area of research is an examination of models of how universities and chambers can work together to give a more practical business education to students involving opportunities. Disciplines other than business such as liberal arts, engineering, and science could be included with work with chambers, but that is an issue to be addressed in another paper. The limitation of this study is the use of simple dichotomous questions for collecting data for correlation analysis. We would like to encourage

researchers to use a rating scale or a Likert scale rather than a simple dichotomous questions approach that was used in this study in collecting the data.

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ERM Framework: Where We Began

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Abstract

In 2014, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) announced that they would embark on the revision of their *Enterprise Risk Management – Integrated Framework* (2004). It is understood that periodic analysis and revision is necessary for any framework, especially in a business climate full of rapidly emerging risks. However, throughout the process, it became clear that a simple revision would not be enough. In June 2016, COSO released their *ERM Framework: Enterprises Risk Management – Aligning Risk with Strategy and Performance* exposure draft for a six-month public comment period. This exposure draft represented a major realignment of policy and total rewrite of the framework. With an expected release of final framework in June 2017, this paper will return to the original framework and examine the flaws and areas needing change and/or total realignment. This paper represents a starting place for examining and reviewing the new framework when it is released.

Introduction

In 2004, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) published the *Enterprise Risk Management – Integrated Framework*. Recognized as a best practice guidance concerning the management of risk in organizations throughout various industries within the United States, a survey by COSO in 2010 found that the state of enterprise risk management (ERM) was relatively immature for a majority of the respondents. Instead of viewing strategic planning and operations planning as a linear process, corporations have tended toward a siloed perspective for the two processes. According to Mark Beasley, et al., the traditional approach to managing risk was one of a “silo” approach (2006). Another potential explanation for this practice is the perspective that ERM is simply another compliance function, as opposed to providing insight into the setting and achievement of strategic objectives. A survey conducted by the Financial Executives Research Foundation (FERF) (Metha, 2010) during the same period came to similar conclusions. The FERG survey indicated that responding organizations had a siloed view of risk, either focusing on strategic or operational risks, at the expense of the other. Both the COSO and FERG surveys appeared to show that companies were conducting strategic planning and risk management as separate practices, thereby significantly limiting the benefits of ERM.

After a two year revision process, which resulted in a largely rewritten framework, COSO released its exposure draft, *Enterprise Risk Management – Aligning Risk with Strategy and Performance*, for a six month comment period in June 2016. The framework is more

explicit in stressing the need to consider business objectives in the context of risk appetite. As a prelude to the release of the final framework, proposed to be released in June, 2017, the purpose of this paper is to 1) explore the literature to discover exactly what the status has been for incorporating ERM into the strategic planning process (SPP), and 2) examine the 2004 framework to try to discover why it might have encouraged the siloed view of ERM and SPP. We will first give a short history of COSO and ERM. Then we will examine the current state of literature regarding SPP and ERM. We will then review the 2004 framework to analyze what shortcomings it may have had in regards to ERM and SPP, consulting blogposts of those who commented on the 2004 framework. Finally, we will give our perspective on the process and how to best combine ERM and SPP.

Literature Review

A History of COSO and ERM

COSO is a voluntary private sector initiative dedicated to improving organizational performance and governance through effective internal control, enterprise risk management and fraud deterrence. Five nonprofits are its sponsoring organizations: American Accounting Association (AAA), American Institute of Certified Public Accountants (AICPA), Financial Executives International (FEI), Institute of Internal Auditors (IIA) and Institute of Managerial Accountants (IMA) (McNally, 2013). The focus of this independent private-sector initiative was to study the casual factors that can lead to fraudulent financial reporting. Since being founded, it has also developed recommendations for public companies and their independent auditors, for the U.S. Securities and Exchange Commission (SEC) and other regulators, and for educational institutions (COSO, 2016). COSO's goals have evolved to include ERM, internal control and fraud deterrence. In 2004, COSO issued *Enterprise Risk Management – Integrated Framework*. Since that time, they have also published several thought papers to deal with specific questions and issues with implementation of the ERM guidelines.

One of the goals of the original guidelines was the incorporation of risk management into strategic planning. The guidelines were intended to help risk managers identify potential risk events that may affect the entity and manage risk to be within its risk appetite, and to provide reasonable assurance in achievement of the entity's objectives (COSO, 2004). The framework deals with risk avoidance, acceptance, sharing and reduction (D'Aquila and Houmes, 2014). The 2004 ERM guidelines were a first attempt to recognize the interdependencies among risks and then treatment of risks across all business operations (Dafikpake, 2011).

ERM and Strategic Planning

To successfully revise a framework to bring together the ideas of ERM and the SPP, it is also important to understand the understanding of these processes since the 2004 issuance of

COSO's ERM framework. This literature review is intended to gain an understanding of the mindset of the corporate ERM process leading up to the beginning of the 2014 revision process.

Mark Beasley, et al., in their 2006 article in *Strategic Finance*, described traditional risk management as a “silo” or “stovepipe” process, where risk and strategic planning were managed in isolation. According to the paper, COSO created the *ERM – Integrated Framework* after early adopters of ERM recognized that globalization, changes in technology and numerous other factors were becoming more complex and changing at a greater rate (Beasley, et al., 2006). The goal of the framework was to integrate the risk management process with SPP and operations management. Beasley, et al., suggested that this should not be a difficult conversion because ERM would go hand in hand with the Balanced Scorecard measurement used by many corporations of the time (Beasley, et al., 2006). Balanced Scorecard measurement provides a performance measurement tool for four perspectives within a business: Learning and Growth for Employees, Internal Business Processes, Customer Satisfaction, and Financial Performance. According to Beasley, et al., the two processes (ERM and Balanced Scorecard) have common ground in their focus on strategy, holistic perspective, emphasis on interrelationships, top-down emphasis, desire for consistency, focus on accountabilities, and continuous nature (2006). The challenge is holistically allowing the balanced scorecard to work in a way that ERM would be the natural outcome (Beasley, et al., 2006).

As far back as 2005, it was clear that the advent of legislation and corporate scandals had convinced financial and risk managers that a change was needed (Gates and Hexter, 2006). Although most managers agreed that ERM was important, however, only 11% of firms had fully adopted the practice. In fact, in a series of surveys by Deloitte, from 2009 – 2016, indicated that the number of companies who feel risks have changed “extensively” or “mostly” over the last 5 years has remained around 60%, while only about a quarter of the companies surveyed in 2016 have a “complete formal ERM process in place” (Beasley, Branson, and Hancock, 2012 – 2016). Unfortunately, the number of companies stating they have a management level risk committee that meets regularly remains below 50% with only about 32% of companies having a single chief risk officer in place (Beasley, Branson, and Hancock, 2012 – 2016). Finally, the most disheartening statistic is the number of companies that feel they are not able to integrate ERM and strategy has been increasing, from 33.3% in 2012 to 56% in 2016. In addition to these surveys, other surveys have been conducted which have come to similar conclusions.

While the literature indicates that companies know there is a need for ERM, especially in the context of SPP, these surveys indicate that much needs to be done to bring the companies up to speed. The results of these surveys as well as the ever-changing nature of risk created a need for update of the framework. Thus, in February 2015, COSO embarked on a revision of the framework. During this timeframe, The International Organization on Standards (ISO), which provided the other major framework on ERM, ISO31000, began a revision of their guidelines as well.

The Revisions

On June 14, 2016, COSO released their exposure draft, *Enterprise Risk Management – Aligning Risk with Strategy and Performance* for public comment. One of the prime concerns that led to a revision of the original framework was that organizations were implementing ERM separately from the strategic planning process. Such an approach could lead to the failure to identify risks that could potentially disrupt the achievement of organizational objectives, and the failure to identify strategic opportunities. The newly revised framework attempts to rectify the siloed approach to risk management and strategy formulation. This attempt can be seen simply through the sub-title of the revised framework: *Aligning Risk with Strategy and Performance*. Within the document itself, there are numerous references to how the risk management process informs strategy. Additionally, the cube depicting the former framework (Figure 1) has been replaced by a new graphic (Figure 2). Whereas the first graphic showed the importance of organizational objectives by placing them at the top of the cube, the new graphic depicts the risk management processes as a cyclical process surrounding organizational objectives.

The revised framework also responds to criticism that the initial framework did not provide enough guidance concerning the formulation and application of risk appetite. Specifically, the revised framework has attempted to provide tools to help companies envision how strategic planning aligns with risk appetite and risk capacity.

Results

Strategic Risk Management – The View of Academics, Regulators, and Practitioners

In recent years, there has been increasing interest in what has been termed “Strategic Risk Management” (SRM). Essentially, SRM is a combination of the Strategic Planning Process (SPP) and Enterprise Risk Management. Verbano and Venturini (2011, p. 524) cite others (Chatterjee et al., 2003; Miller, 1992) when they define SRM as “the implementation of an integrated and continuous process of identification and assessment of strategic risks that are considered to be obstacles to reaching the financial and operational goals of an organization”. Similarly, strategic risks have been defined as “those risks that are most consequential to the organization’s ability to execute its strategies and achieve its business objectives” (Frigo, 2011). As the COSO Framework takes the perspective of risk in the context of organizational objectives, it is a natural conclusion that SPP and ERM be considered one integrated process. This belief is shared among academics, regulators, and practitioners.

Mark Frigo is one of the foremost academics in the SRM space. Frigo (2008, p. 47) believes that “to be effective, risk assessment, risk management, and ERM should be embedded in strategic plans and budgets, execution plans, and performance measures”. He also echoes the opinion of numerous other researchers when he states that “Strategic Risk Management is increasingly being viewed as a core competency at both the management and board levels” (2011, p. 82).

Since the Great Recession, regulators have been stressing the need for organizations to better incorporate risk assessment into the Strategic Planning Process. One of the recent studies on the implementation of ERM quotes Federal Reserve governor Randall S. Kroszner to demonstrate that the “economic crisis has highlighted the increasing importance of embedding ERM processes into strategic planning and execution for all types of organizations” (2009, p. 16):

...boards of directors and senior management, who bear the responsibility to set strategy and develop and maintain risk management practices, must not only address current difficulties, but must also establish a framework for the inevitable uncertainty that lies ahead.

Additionally, as mentioned previously, it is obvious from a review of the 2004 ERM Framework that COSO always intended for ERM to be integrated in the Strategic Planning Process.

Practitioners are also seeing the need to integrate ERM within the Strategic Planning Process. This is evident through numerous articles in trade journals, the existence of publications such as Strategic Risk Management magazine, and the focus on the topic by professional organizations. For example, the Risk Management Society (RIMS) has dedicated a web page (<https://www.rims.org/resources/ERM/Pages/StrategicRiskManagement.aspx#>) to Strategic Risk Management and the Institute of Internal Auditors has stressed that auditors need to focus more on strategic risks. Jim DeLoach (2012) of Protiviti, a worldwide consultancy, has stated the following:

The relevance of the risk management process increases if it is integrated with core management processes that truly matter. The idea is to integrate risk management with the rhythm of the business so that it can make value-added contributions to establishing sustainable competitive advantage and improving business performance.

However, the literature on the operationalization of SRM is relatively sparse and gives little guidance to practice. One of the problems is that “from an academic perspective few empirical studies on organization-wide risk management in either government or business exist” (Schiller and Prpich, 2014, p. 4). Without explicit guidance, many organizations have implemented ERM as a “knee-jerk reaction” to regulatory mandate. Norman Marks, a self-described “practitioner and thought leader in internal audit, risk management, and governance” (<https://normanmarks.wordpress.com/about/>), is a well-known and respected voice in the ERM space that speaks to this issue:

Let’s start by considering why organizations should have risk management. It’s NOT because laws and regulations mandate it in many cases.

It's NOT because people say you need it. It's because effective risk management provides a level of assurance that an organization will not only achieve its objectives (or exceed them) but will set the best objectives.

In the same vein, Marks (2015, Location 1021) also states that “when risk management is implemented in response to regulation it becomes a cost of doing business instead of a way to do business more effectively”. It is clear that Marks prefers an SRM approach. This is the reason that companies in the “Optimization” stage of his “ERM Maturity Model” demonstrate that “risk discussion is embedded in strategic planning” (2015, Location 899).

Strategic Risk Management – In Practice

From the above, we can conclude that academics, regulators, and practitioners are in agreement that the Strategic Planning Process and ERM should be integrated. However, Frigo (2011, p. 82) quotes a 2010 study by the Economist Intelligence Unit that concluded that “Strategic risk management remains an immature activity in many companies”. Unfortunately, it does not appear that much advancement has been made since the study was published. Since 2009, the AICPA has conducted an annual survey of financial executives on risk management practices in their companies (with the exception of 2013). In the interpretation of the 2016 survey (Beasley, et al., p. 42) results, the authors note that the “results suggest that there is still opportunity for improvement in better integrating risk oversight with strategic planning”. Disappointingly, the statement “Thus, there appears to be a continued disconnect between the oversight of risks and the design and execution of the organization’s strategic plan” appears verbatim in the 2011, 2012, 2014, and 2016 results (Beasley, et al.). This brings us to the question that we are attempting to answer in this paper: Does the make-up of the 2004 COSO ERM Framework contribute to this disconnect? This is an important question as the Framework remains one of the most popular methodologies to manage risk at organizations. It is also an extremely timely question as the Framework is currently undergoing significant revisions.

The 2004 COSO ERM Framework and Strategic Risk Management

As stated previously, it is obvious that COSO always meant for ERM to be integrated in the Strategic Planning Process. There are numerous references throughout the 2004 document which indicate this. For example, the Framework lists the degree of understanding to which the strategic objectives are being met as one of the criteria for gauging the effectiveness of ERM (COSO, 2004). As another example, the Framework describes an entity’s risk management philosophy as affecting its strategy development (COSO, 2004).

There is evidence in the draft copy of the revised Framework which was released for comment in June 2016 that COSO agreed with critics that the 2004 Framework fell short in the incorporation of SPP and ERM. The draft copy is peppered throughout with references to the

integration of strategy and risk processes. Most telling of all, perhaps, is the sub-title of the proposed Framework – *Aligning Risk with Strategy and Practice*.

It is our opinion that the language and the manner in which processes are described in the 2004 Framework have contributed to the siloed approach of SPP and ERM that are evident through the AICPA surveys (Beasley, et al., 2009, 2011, 2012, 2014, 2015, 2016) on ERM in practice. We now describe the issues that we see in the Framework that have led to this situation and propose changes that we believe will help to resolve them.

The “Bottom-Up” Approach to ERM in the 2004 Framework

From the language that it employs, and the portrayal of the Framework within the COSO ERM “Cube”, COSO appears to be promoting a “bottom-up” approach to risk management. The reason that we say “appears” is that it is likely that COSO did not intend this approach, but rather, the manner in which the process is described could lead to this conclusion. The Framework looks like it is stating that the organization sets objectives, identifies potential events and then determines whether they will affect the accomplishment of objectives. Others also take issue with this apparent “bottom-up” approach. Norman Marks states:

They don’t start with an understanding of the organization’s objectives and then identify risks to their achievement. Instead, they start with something they are worried about (such as systems disruption) and then, perhaps, wonder what objectives might be affected. This bottoms-up process results in worrying about risks that may not be significant to the organization’s objectives, only of concern to individual managers or functions within the organization. It may also result in overlooking risks that are significant but have not been identified by their bottoms-up process” (2015, Location 811 to 815).

The interpretation of a “bottom-up” approach could arise from language throughout the 2004 Framework. Concerning “Objective Setting”, it states that “Every entity faces a variety of risks from external and internal sources, and a precondition to an effective event identification, risk assessment, and risk response is establishment of objectives” (COSO, 2004, p. 35). From this language, it sounds as if objectives are set first, and then events are identified. This would be a reactive as opposed to a proactive approach. Similarly, the quote “In considering alternative ways to achieve its strategic objectives, management identifies risks associated with a range of strategy choices and considers their implications” also appears reactive. It sounds as if strategic objectives are set, and do not change. Rather, alternative means to achieve the objectives are considered.

The language appearing to promote a “bottom-up” approach continues throughout the Framework. Concerning “Event Identification”, the Framework states that “Once the major contributing factors are identified, management can consider their significance and focus on

events that can affect the achievement of objectives” (COSO, 2004, p. 42). Regarding “Risk Response”, it states that “In considering its response, management assesses the effect on risk likelihood and impact, as well as costs and benefits, selecting a response that brings residual risk within desired tolerances” (COSO, 2004, p. 55).

Strategic vs. Operational Risk

It is our belief that confusion concerning the definitions of strategic risk and operational risk are also contributing to the “bottom-up” approach to ERM. The 2004 Framework defines strategic objectives of an organization as “high-level goals, aligned with and supporting its mission” (p. 5). Strategic objectives ultimately dictate operations objectives, which are defined as those that allow for the “effective and efficient use of its resources” (COSO, 2004, p. 5). Presumably, then, strategic risk and operational risk would be any risk that disrupts the achievement of these objectives. In 2010, the Financial Executives Research Foundation (FERF) published a survey on ERM programs in over forty companies. One of the findings of the survey was that organizations implemented one of two types of ERM programs (p. 4):

1. Programs that take a mainly strategic view of risk, and manage it in a qualitative way; and
2. Programs that take a more operational/financial view, and manage risks through quantitative control

The FERG study points out that if companies could integrate both approaches, “the value-adding potential of an ERM program should be expected to rise significantly” (2010, p. 18). It is our belief that the integration of both program types is necessary not just because it enhances the value of an ERM program, but because such integration is essential to effectively manage enterprise risk. Strategic and operational objectives are inextricably linked. If a risk event were to occur that disrupted an operational objective, it has the potential to disrupt strategic objectives as well. As an example, consider a retail bank with a strategic objective of expanding into a new geographical region. If this bank experienced an operational risk event that disrupted its ATM network, this could affect the manner in which customers in the new region viewed the bank and ultimately disrupt its ability to successfully expand. Essentially, organizations cannot view strategic risk as independent of operational risk. In a blog post, Norman Marks takes this same point of view:

If risk is the effect of uncertainty on objectives (the ISO definition, but if you read COSO ERM carefully, you will see they essentially say the same thing), then how is “strategic” risk different? In fact, if a risk doesn’t have a significant potential effect on the organizations strategies and goals, why should we worry about it? Aren’t all risks that matter therefore “strategic risks”? (Marks, 2013)

Based on this point by Mr. Marks and our own observations, we believe that a “bottom-up” approach does not make logical sense considering the inextricable link between strategic and operational risk.

Conclusion

The “Portfolio” Approach to ERM

It is our belief that organizations could achieve Strategic Risk Management through more of a “portfolio” approach to ERM. Such an approach would consider a portfolio of strategic objectives and then consider both the strategic and operational risks of each objective. We portray this approach in Figure 1 in the context of the 2004 Framework (the iconic “COSO ERM Cube”).

In this approach, a portfolio of potential strategic objectives is selected by the organization that fits its overall mission. For each of these strategic objectives, an iterative process is conducted (denoted “Objective Assessment” in Figure 1, with sub-steps 2A, 2B and 2C). The first step of the iterative process is “Event Identification”, where both operational risks and strategic risks are identified for the strategic objective. In the “Event Identification” step, both operational risks and strategic risks must be evaluated interactively, where it is determined how identified operational risks could lead to resulting strategic risks. The “Risk Assessment” step would then be conducted similarly to how it is currently described in the 2004 Framework, where the organization would evaluate identified risks in terms of probability and impact. However, the difference would be that, again, strategic and operational risks would be evaluated interactively. “Risk Response” would evaluate different response alternatives considering residual versus inherent risk for each. Once this iterative process is complete for all identified strategic objectives, the organization would then be able to select the strategic objective in light of the “Objective Assessment” steps conducted.

The approach that we are describing in this section does not vary much from the way in which managers typically weigh alternative strategies. Rather, just as the initial 2004 Framework did not prompt organizations to consider risk for the first time, it is formalizing a process that should be in place for companies.

It is our belief that COSO initially intended such an approach, but did not adequately convey it through the language used in the 2004 Framework. However, hints to this thought process do exist in the document. For example, the Framework states that “As part of enterprise risk management, management not only selects objectives and considers how they support the entity’s mission, but also ensures that they align with the entity’s risk appetite” (COSO, 2004, p. 39). Obviously, it is not possible to consider objectives in light of risk appetite without the identification of potential risk events, which is the next step in the Framework. Therefore, we

believe that the authors of the 2004 Framework meant to convey an iterative process similar to the one that we have portrayed in Figure 1.

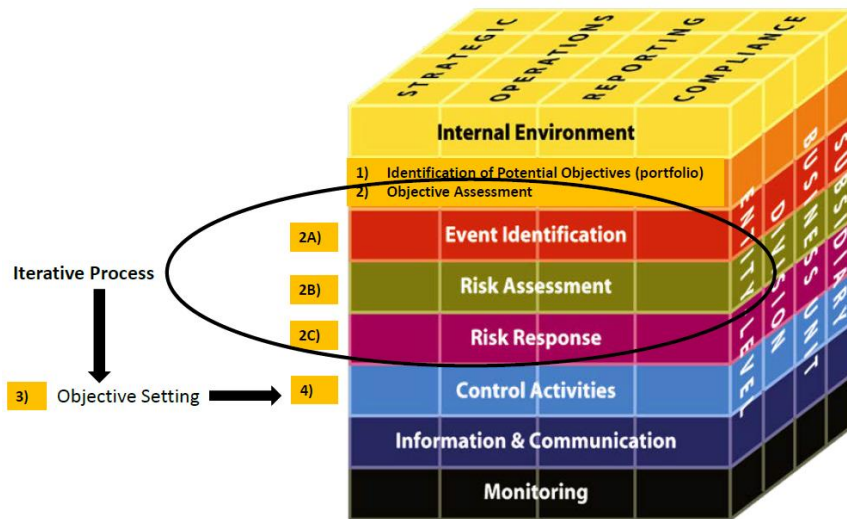


Figure 1: The Portfolio Approach to ERM

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High-risk Occupations: The Influence of Crisis Events on Stress and Burnout among Police.

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Abstract

This study evaluates the boundary conditions of acute crisis events on the stress burnout relationship among police. Findings from surveys distributed to 9 agencies to determine whether crises are key moderating mechanisms indicate differences in perceptions of emotional exhaustion and depersonalization between high and low-stress individuals experiencing high and low crisis events. Findings indicate that when high levels of stress and acute crisis converge, police experience higher levels of emotional exhaustion and depersonalization. Results are more complex than expected, however, as perceived stress intensifies at an increasing rate for those experiencing lower acute crisis for both types of burnout.

Introduction

The primary focus of this paper is to establish the extent to which crisis events influence the stress-burnout relationship in high-risk occupations. Specifically, we investigate how crisis influences this relationship among police. The importance of research in this high-risk occupation is salient given first-responder's direct exposure to natural and manmade disasters (e.g., earthquakes, hurricanes, terror events) and occupational hazards (e.g., officer injury, death, etc.). High-risk occupations also pose distinctive challenges due to increased levels of danger and exposure of workers to different types of stress than less risky occupations. Training, insurance, and healthcare costs are all higher in high-risk occupations than in less risky environments (Deschamps, Pagnon-Badiner, Marchand & Merle, 2003), and police are among the most high-risk and stressful occupational group (Dantzer, 1987). Because attitudes toward police are changing, research among this group is important.

Lazarus' transactional stress theory (Lazarus & Folkman, 1984, 1987) made an important contribution to understanding stress by focusing on how stressful job demands, appraised as either threats or challenges, can lead to affective experiences. These experiences, in turn, influence the effectiveness with which individuals cope with such demands and whether or not they experience burnout. Transactional stress theory also suggests that individuals react differently to stressful situations (Lazarus, 1984) due to individual cognitive processing particularly in the face of stressful or developmental job demands (Gohm 2003; Gohm & Clore, 2000). The question is not whether police stress affects attitudinal outcomes, that much has been established and confirmed (Russell, 2014; Russell, Cole, & Jones, 2014). The question is whether or not a police officer's training kicks in to get the job done correctly when emotionally

charged events outside the bounds of normative police stress occur. Because someone's life may hang in the balance, getting it right every time is an important part of police work. This study addresses an important gap in the literature concerning boundary conditions of stress, intervening crisis, and burnout in increasingly dangerous jobs of first responders; an overlooked occupational setting in managerial research.

Theoretical Framework and Hypotheses

Constructs of interest to this study include police stress, three dimensions of burnout including emotional exhaustion, depersonalization and personal accomplishment, and intervening crisis events. Figure 1 depicts the research model for this study proposing relationships between stress and burnout as governed by intervening crisis events.

Insert Figure I

Stress and Burnout

In accordance with Lazarus and Folkman (1984) and Spielberger and colleagues (Spielberger, Westberry, Grier & Greenfield, 1981), police stress is defined as a relationship between an officer and the environment appraised as taxing or exceeding one's resources and endangering his or her well-being. Sources of police work stressors include danger and job risk, the police administrative organization, and a lack of organizational support; the administrative organization aspect of police stress appears to be the most frequently mentioned source of stress among police (Shane, 2010; Violanti & Aron, 1995; Violanti, Mnatsakanova, Andrew, Hartley, Fekedulegn, Baughman, and Burchfield, 2014). Police face stressful work-related events including physical demands, life-threatening circumstances, and potential to encounter harm along with perceptions about unfair workplace and supervisor treatment (e.g., Anshel, 2000; Anshel, Robertson & Caputi, 1997; Deschamps et al., 2003; He, Zhao & Archbold, 2002; Violanti & Aron, 1995). These factors result in more stress-related complaints, individual effects of stress, and organizational effects of stress among police than for workers in less risky professions (Asterita, 1985; Bakker & Heuven, 2006; Band & Manuele, 1987; Bartone, 2006; Brown & Campbell, 1990, 1994; Burke, 1993; Hart et al., 1995; Jamal & Baba, 2000; Lobel & Dunkel-Schetter, 1990; Lord et al., 1991; Rogers, 1976; Tang & Hammontree, 1992; Violanti & Aron, 1993).

Burnout is defined as a particular type of response among human service providers to occupational stress emanating from emotionally charged and demanding interactions with recipients (Bakker & Heuven, 2006; Maslach, 1982; Maslach & Schaufeli, 1993) emanating from chronic exposure to occupational stress and represents a distinctive response to interactions between the provider and recipient of a service (Cordes & Dougherty, 1993; Lee & Ashforth, 1996; Maslach, 1982). While occupations involving high degrees of interpersonal interaction are

prone to burnout (Cordes & Dougherty, 1993), police officers represent a unique, high-risk occupational group and these workers should feel higher degrees of emotional exhaustion (i.e., diminished or depleted energy and fatigue), depersonalization (i.e., cynicism directed toward both the organization and its recipients), and personal accomplishment (i.e., (decreased) feelings of professional efficacy) when exposed to occupational stressors (Maslach, 1982; Maslach et al., 1996). Several researchers have found positive relationships between stressors and burnout among police police (e.g., Densten, 2005; Thompson, Kirk, & Brown, 2005). Based on documented relationships between stressors and both psychological and physiological distress in the general stress literature (e.g., Cooper & Cartwright, 1994; Holmes & Masuda, 1974; Lehrer, Carr, Sargunraj, & Woolfolk, 1993; Mason, 1971, 1974, 1975a, b, c; Mason, Maher, Hartfley, Mougey, Perlow, & Jones, 1976; Stone, Cohen, & Adler, 1979) and in accordance with observed associations between work perceptions and burnout among police officers surveyed in this study (e.g., Bakker & Heuven, 2006; Maslach, 1982; Maslach & Schaufeli, 1993), stress in police work is expected to augment emotional exhaustion and depersonalization and attenuate personal accomplishment.

Hypothesis 1a: Police stress will positively influence emotional exhaustion.

Hypothesis 1b: Police stress will positively influence depersonalization.

Hypothesis 1c: Police stress will negatively influence personal accomplishment.

Crisis

Crisis is defined as a psychosocial stressor event, of some consequence, likely to produce a significant disruptive imbalance between environmental demands and the response capability of the focal organism (McGrath, 1970). Crisis events, as operationalized in the present study, differ from daily stressors in rarity or infrequency of the occurrence, magnitude or significance of the event, and disruptive capacity of the event creating the need to alter other areas of life or occupation in order to contend with the situation.

Police officers are subject to many types of crisis during the course of their jobs including traffic fatalities, hostage situations, natural disasters, terrorism, and family crisis resulting in inimitable combinations of both work- and non-work-related stressors (Jenkins, 1997). For example, in the event of a natural disaster or police shooting, the officer may assume the dual role as both victim and first responder where role boundaries involving such complex crosspressures are indistinguishable (Raphael, 1986). Officers, in such crisis situations, may be classified as primary victims with maximum exposure to the event, third-level victims as a firstresponder to the event, as well as fourth-level victims as members of the affected community (Shepherd & Hodgkinson, 1990; Taylor & Frazer, 1981). The added difficulty of balancing both responder and victim status during crisis presents confounding circumstances whereby the officer assumes a new and unfamiliar role. These types of crisis events are known as acute stressors (e.g., Anshel, 2000), traumatic exposure (e.g., Regehr, LeBlanc, Jolley, Barath, & Daciuk, 2007), traumatic stressors (e.g., Brough, 2004), and organizational accidents (Perrow, 1984; Weick, Sutcliffe, & Obstfeld, 1999).

The influence of acute stressors and crisis events received scant attention in studies involving police, with the exception of studies involving Israeli police officers and Israeli border guards during a Palestinian uprising (Malach-Pines & Keinan, 2005, 2006, 2007); fire and police dispatchers during Hurricane Andrew (Jenkins, 1997); emergency service providers in disaster (Shepherd & Hodgkinson, 1990); post-disaster body handling (Taylor & Frazer, 1982); police officers handling tragic events (Pogrebin & Poole, 1991); police, fire and ambulance officers (Brough, 2004); and police recruits with previous exposure to traumatic events (Regehr et al., 2007). Thus, it is expected that acute events will govern the relationship between stress and burnout among police in this study:

Hypothesis 2: The relationship between stress and burnout depends upon crisis.

Literature supports the contention that first responders and employees in high risk occupations face increasing stress including acute crisis events. Emerging crisis events may constitute a key moderating mechanism between stress and burnout. Israeli police officers reported very high stress levels and indications of burnout during Palestinian unrest and uprising (Malach-Pines & Keinan, 2007). The highest stressors reported by these officers were not directly associated with terrorism or violence, however. Among the most stressful factors affecting officers were those associated with the organization such as inadequate wages, unjust dealings with subordinates by commanders, unreasonable workloads, and insufficient resources. These officers also perceived their work as important, a sentiment reflected in their high ratings of work satisfaction, which may help to explain why operational stressors, even crisis variables, were not reported among the most stressful influences.

Jenkins (1997) found intrusive and disruptive thoughts explained additional variance beyond that explained by chronic daily job stressors for emergency dispatchers responding to Hurricane Andrew and that coping influences the effects of these thoughts. Results demonstrate social support, anger, and distancing coping mechanisms explain additional variance in intrusion and reappraisal coping explains additional variance in psychosomatic symptoms. These findings underscore the importance of coping to emergency personnel during crisis-related events by showing crisis events create stress beyond that for which the first responder was trained to attend. Shepherd and Hodgkinson (1990) reviewed studies involving disaster work helpers and emergency service providers and concluded a significant number of individuals responding and helping during disasters experienced short-term cognitive, behavioral, and emotional effects, and fewer experienced enduring effects. The most prominent stressors identified in this study are the degree and type of the death encounter and organizational factors.

Taylor and Frazier (1982) evaluated the effect of post-disaster body handling after the crash of an airliner at Mount Erebus. Individuals, including police officers, associated with the recovery and identification of bodies after the crash were interviewed and tested. Initial transient problems were reported in about a third of the respondents; nearly a fifth of the respondents reported continued stress three months after the recovery and identification efforts; some personnel still exhibited stress-related symptoms nearly 20 months post-disaster suggesting disaster stress involves interactions among task and environmental stressors, job competency,

management, follow-up support, and perceptual and emotional defenses. This study highlights the importance of emotional responses of responders to crisis events by differentiating between how transient and continued stressors influence emergency responders after crisis.

In a field study, researchers (Pogrebin & Poole, 1991) evaluated how urban police officers account for emotional responses in their work experiences involving tragic events. These authors posit normative professional conduct and organizational expectancies regarding displayed emotions at work influence how officers contend with emotions following exposure to tragic events. Thus, officers may suppress feelings and create interpersonal barriers to avoid what is considered inappropriate display of emotions at work. Whereas continued suppression of latent feelings may serve to achieve occupationally functional objectives such as maintaining professional demeanor and enhancing in-group cohesion, both the quality and effectiveness of an officers' work is negatively influenced by suppression of emotions over time in this study.

Brough (2004) assessed the ability of both chronic and traumatic stress to predict psychological strain and job satisfaction in firefighters, ambulance drivers, and police in New Zealand. Results from structural equation modeling analysis demonstrate occupational stressors uniquely affect police. Organizational stressors more strongly predict job satisfaction levels than does exposure to trauma among all three groups evaluated in this study. Traumatic and organizational stress predicts psychological strain in firefighters and police officers, but not for ambulance drivers. In the police sample, operational hassles exhibit a weak ($\beta = .22, p < .01$) direct influence on psychological strain. An indirect influence, through symptoms associated with exposure to trauma, is also observed among police officers. This study supports the contention that chronic organizational and traumatic stressors differentially affect first responders.

Regehr et al. (2007) evaluated the impact of prior police-related traumatic exposure and ensuing signs for posttraumatic stress on responses of police recruits intensely stressful circumstances. A video simulator was used to construct an acutely stressful policing situation. Results from biological stress indicators, heart rate and cortisol secretion, and subjective measures of anxiety show these biological responses are not influenced by prior exposure to, or symptoms of, trauma in this sample of police recruits. Biological responses are, however, associated with subjective anxiety. Moreover, psychological stress responses are more pronounced during the acute stress simulation, which is associated with less previous exposure to prior trauma, previous traumatic symptoms, and social support. These relationships become more pronounced as time after the acute event passes. While exposure to previous trauma does not increase the risk for individuals evaluated in this study to suffer biological distress during an acute crisis simulation, this study raises legitimate concern regarding aggregate negative influences of continued exposure to trauma on first-responders' psychological well-being.

The effects of acute stress in a crisis on individual and organizational outcomes receive little research attention despite findings confirming the negative consequences of stress on organizations through events such as increased absences, increased turnover, decreased satisfaction. Furthermore, the critical nature of police work to society and the increased propensity for police officers to experience acute crisis as part of the job indicates this

occupational group is well suited for investigation into how crisis affects police beyond that of daily stressors. The relationship between stress and various outcomes among police officers is also well established. A missing link in stress research among police officers pertains to how affective and behavioral outcomes like burnout are influenced by acute and chronic stressors.

General stress theory coupled with the above discussions of empirical findings associated with exposure to crisis suggests exposure to an acute stressor by way of a crisis will magnify the overall effects of the relationship between stress and burnout. In accordance with theory on stress and empirical evidence of the effect of crisis on first responders, the following hypotheses are posited:

Hypothesis 2a: The relationship between stress and emotional exhaustion is moderated by crisis such that when a crisis is perceived to be more severe the positive impact between stress and emotional exhaustion is stronger than when crisis effect is perceived to be less severe.

Hypothesis 2b: The relationship between stress and depersonalization is moderated by crisis such that when a crisis is perceived to be more severe the positive impact between stress and depersonalization is stronger than when crisis effect is perceived to be less severe.

Hypothesis 2c: The relationship between stress and personal accomplishment is moderated by crisis such that when a crisis is perceived to be more severe the negative impact between stress and personal accomplishment is weaker than when stress is perceived to be less severe.

Methods

The paper-based survey, used as part of a larger study of multiple police departments in the southern and southwestern United States, consists of 15 sections, each containing multiple items. Most of the 302 items, including 12 demographic questions in the survey require Likert-style responses and two of the items are open-ended questions. A pilot study was used to assess the validity and reliability of the survey and the instrument was found to be reliable and valid with the pilot study data, and the study was approved by the focal University's Institutional Review Board (IRB). Chi Squared tests revealed no differences among respondents where data were collected on departmental premises by researchers and those that were collected internally and sent to researchers. A total of 379 respondents (78.6% response rate) completed the survey. The majority of the respondents were non-Hispanic white men, between the ages of 32 and 45. Most officers were married with at least one child living at home and had at least some college experience. Just under half of those responding reported working in urban departments and equally classified their respective agencies as city, county, or state agencies with less than 100 officers. Over 40 percent of the respondents worked for agencies employing between 100 and 500 officers. The majority of respondents ranked themselves as either officers or deputies, having less than 15 years' experience in police work, and as working in patrol capacity.

Police stress was measured by Spielberger et al.'s (1981) 60-item police stress survey ($\alpha = 0.95$). A stress index was created for items (e.g., *assignment of disagreeable duties; delivering a death notification*) rated on both intensity and frequency. Burnout was measured using the 24-item (Emotional Exhaustion $\alpha = 0.87$, Depersonalization $\alpha = 0.70$, Personal Accomplishment $\alpha = 0.73$), previously validated MBI measure (permission granted by CPP, 2009). Statements like "*I feel burned out from my work*" and rated how often an event occurred on a scale of zero to six (0 = *never* to 6 = *everyday*). Crisis was evaluated with a 6-item ($\alpha = 0.92$) crisis item, created to assess the effect a crisis event had on an organizational member's department, unit of assignment, and duties as well as their home or personal property, personal life, and well-being. Respondents were asked to what extent they were affected by a crisis that occurred over the past year on a scale of one to five (1 = *not affected* to 5 = *strongly affected*). The mean crisis rating for this sample is 2.865 (SD = 1.156) indicating that officers perceived crisis to have a moderate effect with maximum and minimum scores fated at 5.00 and 1.00 respectively. Control Variables are based on a review of the extant literature (Kohan & Mazmanian, 2003; Liu, Spector & Shi, 2008; Violanti & Aron, 1993, 1995; Wolfgang, 1995) and to help minimize spurious relationships, controls for gender (*male* = 1, *female* = 2), ethnicity (*White (non-Hispanic)* = 1, *African-American* = 2, *Asian-American* = 3, *Hispanic* = 4, *Other* = 5), age (*18-24 years* = 1, *25-31 years* = 2, *32-38 years* = 3, *39-45 years* = 4, *Over 45 years* = 5), current rank (*Officer/Deputy* = 1, *Sergeant* = 2, *Lieutenant* = 3, *Captain* = 4, *Chief or Higher* = 5), and department size in number of sworn officers (< 10 = 1, 11-50 = 2, 51-100 = 3, 101-500 = 4, > 500 = 5). Ethnicity, organizational size, and age were coded in groupings to help respondents feel that their ratings were confidential and would not be easy to identify.

Hierarchical multiple regression (HMR) analyses was used to test direct hypothesis and hierarchical multiple moderated regression (HMMR) analyses were used to test moderated hypotheses. HMR and HMMR are appropriate because it is important to determine any significant increase in predictive power beyond that of the control variables. Moreover, the order in which the variables are entered into the regression is theoretically important. Tests of moderation were conducted in accordance with current research (i.e., Dawson, 2013; Hays & Matthes, 2009; Barron & Kenny, 1986). To avoid potential autocorrelation between the interaction effect of the independent and moderating variables, independent and moderating variables were centered for the HMMR analyses in this study (Aiken & West, 1991).

Results

The effects of stress on emotional exhaustion, depersonalization, and personal accomplishment were examined in a separate hierarchically arranged multiple regression analyses. Results are presented in Table 4. Gender, age, ethnicity, current rank, and department size were used as control variables in these analyses.

Insert Table I

Hypotheses 1 (a-c) address the main effects between stress and each dimension of burnout. Hypotheses 1a and 1b are supported ($\beta = 0.357$; $p < 0.01$; $\beta = -0.405$; $p < 0.01$) and hypothesis 1c is not supported ($\beta = -0.015$; $p = NS$). The change in R^2 indicates police stress explains 12.2, and 15.8 percent of the variance beyond that explained by the control variables for emotional exhaustion and depersonalization respectively. Of the two significant dependent variables, depersonalization explains the largest percentage of variance (15.8%). None of the control variables are significant for emotional exhaustion and depersonalization outcome variables.

Hypothesis 2 states the relationship between stress and burnout depends upon effects of crisis events beyond normal stressors. Hypotheses 2a-c state that the crisis influences the direct stress-burnout relationship such that perceptions of emotional exhaustion and depersonalization increase and perceptions of personal accomplishment diminish when high levels of crisis are perceived. Results from HMMR analysis for H2 and H2 (a-c) are depicted in Tables 2.

Insert Table II

Hypothesis 2 is supported for the emotional exhaustion ($\beta = -0.383$; $p < 0.10$) and depersonalization ($\beta = -0.512$; $p < 0.05$) dimensions of burnout. There is no statistically significant moderated relationship for stress between crisis and personal accomplishment ($\beta = 0.251$; ns).

The 2-way moderated relationship of crisis on stress for emotional exhaustion is depicted in Figure 2. To the degree that organizational members experience a more severe crisis event they perceive higher overall levels of emotional exhaustion and this perception intensifies with increasing levels of stress. The ordinal interaction indicates that officers experiencing low crisis perceive lower overall levels of emotional exhaustion, as expected, and they appear to experience emotional exhaustion at a slightly accelerated pace over officers perceiving high crisis as stress levels increase and H2a is supported.

Insert Figure II

The ordinal relationships depicted in Figure 3 indicate that officers perceiving more severe level of crisis experience higher overall levels of depersonalization under both low and high stress conditions. Officers perceiving low crisis appear to experience slightly increasing levels of depersonalization as stress increases versus officers reporting more severe crisis events; H2b is supported.

Insert Figure III

Discussion

Empirical and theoretical studies associated with stress (e.g., Anshel, 2000; Anshel et al., 1997; Deschamps et al., 2003; He et al., 2002; Lazarus & Folkman, 1984; Violanti & Aron, 1995) and burnout (e.g., Bakker & Heuven, 2006; Densten, 2005; Maslach, 1982; Lambert et al., 2010; Martinussen et al., 2007; Maslach & Schaufeli, 1993; Russell, 2011, 2012, 2014; Thompson et al., 2005) suggest that there is a direct relationship between stress and both emotional exhaustion, depersonalization dimensions of burnout and an inverse relationship between stress and the (diminished) personal accomplishment dimension of burnout. Findings in this study generally support these conclusions.

Motivation theory provides a grounding for potential results surrounding convergence of daily and acute stressors (Vroom, 1964). At times of intense or acute crisis, motivational goals shift from personal fulfillment to that of survival. Less intense crisis leaves room for personal motivational goals to remain for pursuit. Thus, personal motivation may apply more appropriately at lower levels of stress and crisis whereas falling back on training and running on adrenaline are tactics that apply in situations characterized by acute crisis. This theory provides potential explanations as to why both emotional exhaustion and depersonalization increase at increasing rates as stress increases among officers in this study.

Findings in this study support this conclusion, but results are more complex than expected. While results for hypotheses H2 H2a and H2b are in line with both expectancy and conservation of resources theory, there is a point at which low levels of crisis begin to increase at increasing levels as stress increases; although officers find themselves experiencing lower overall levels of emotional dissonance at lower levels of crisis they still have to distance themselves and depersonalize from circumstances surrounding the stressful events and crisis. Specifically, officers in this study experiencing less intense crisis under high-perceived stress experienced increasingly stronger levels of emotional exhaustion and engaged in increasingly stronger levels of depersonalization, contrary to expectations. Moreover, engagement in depersonalization appears to increase at increasing rates as stress increases.

Limitations

Because a single method of measurement was used, mono-method bias (a threat to construct validity) is a potential limitation to this study due to the use of only one method of measurement (Trochim & Donnelly, 2007). Procedural and statistical remedies were applied to minimize the effects of consistency artifacts (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff & Organ, 1986). Harmon's one-factor test and confirmatory factor analysis revealed the presence of multiple factors (Eigenvalues greater than one) accounting for various levels of variance indicating no common factor is present (Podsakoff et al., 2003). While efforts were made to minimize CMV, it is impossible to rule out the possibility that it exists in this study. Various agencies were sampled, but only one high-risk occupation was examined in this study. City, state, and county level agencies participated representing a wide cross-section of agencies, and rural, suburban and urban departments of differing sizes contributed to the final sample.

Despite all efforts, external validity is limited and generalizing results from this study requires caution.

Theoretical and Managerial Contributions

Few studies evaluate how stress and acute crisis converge in high risk organizations to create an organizational environment that differs from one characterized by daily stressors, where daily stressors differ from acute crisis in rarity or infrequency of the occurrence, magnitude or significance of the event, and disruptive capacity (e.g., Brough, 2004; Jenkins, 1997; Malach-Pines & Keinan, 2005, 2006, 2007; McGrath, 1970; Pogrebin & Poole, 1991; Shepherd & Hodgkinson, 1990; Taylor & Frazer, 1982). This study provides a first step in addressing this important gap in the literature. As such, one of the major theoretical contributions of this study is the assessment of the moderating mechanism crisis plays on the relationship between stress and burnout among individuals in an under researched area, namely high-risk occupational settings.

Results from this study also have implications for managers. First and foremost, findings are in alignment with research in the area (Bakker & Heuven, 2006; Barton, 2006; Densten, 2005; Lambert et al., 2010, 2012; Martinussen et al., 2007; Russell, 2014; Thompson et al., 2005) that confirms that stress is directly associated with perceptions of emotional exhaustion and depersonalization. Specifically, officer's perceptions of these dimensions of burnout increase, as perceptions of stress are perceived. Moreover, crisis events augment these effects indicating that convergence of acute stressors creates circumstances whereby officers must cope with the additional stress and depersonalize in order to cope with the added pressure. Potentially these results allow managers to better understand the negative effects of both organizational stress and repeated exposure to crisis events, and the potential for an officer to be both a responder and a victim simultaneously must be evaluated. It is vital to ensure that managers are aware of the variables that might affect officers' capabilities to perform their duties in the midst of a crisis.

The examination of stress-outcome relationships in high-risk occupations inundated by crisis is a major contribution. Because police face more danger and are exposed to different physiological and psychological stress than individuals in less-risky occupations, understanding how a crisis event influences officer's behavior and affective perceptions, above and beyond that of the high levels of stress associated with the job, is paramount. The nature of risk associated with police work makes it highly likely that these individuals will face crisis events at some point in their careers.

The development of a scale to measure the effect a crisis has on police is also a major contribution. It is recommended that researchers include crisis as a distinct variable in their continued assessment of stress on individuals, particularly in high-risk occupations. It is further recommended that researchers use this scale in research associated with other high-risk and lessrisky occupations to determine its validity in different occupational settings.

Future Research

It is important that future research efforts investigate these hypotheses with other samples from other high-risk and less risky occupations to determine the robustness of results. Moreover, longitudinal design, collecting data from multiple sources, and conducting field interviews will help address questions centering on common method variance. Adding additional outcome variables will expand the nomological network related to these associations. **Conclusion**

An abundance of stress research exists, the majority showing the negative associations with desired individual and organizational outcomes. Research and managerial recommendations about stress and burnout have implicitly stated that stress and burnout are both bad. This study found that although stress has direct main effects on two dimensions of burnout, interactive effects of stress and crisis are more interesting and complex than once thought – specifically under increasingly stressful circumstances it may be that lower levels of crisis that more strongly influence emotional exhaustion and depersonalization under increasingly stressful circumstances. More specifically, results indicate that the interaction of stress and less intensive crisis augment burnout, at increasingly higher stress levels. It may be that at more intensive crisis, officers fall back on their training and simply run on autopilot whereas at less intensive crisis officers must tap into resource stores to fulfill unmet expectations – questions for further study. My hope is that this study will stimulate additional questions and that future investigations will further knowledge about the associations regarding stress, crisis, and burnout in addition to other important variables.

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Table I.
Hierarchical Models for Direct Relationships (H1 a-c)

	Emotional Exhaustion		Depersonalization		Personal Accomplishment	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
	β	β	β	β	β	β
Gender	0.068	0.055	-0.043	-0.057	0.072	0.073
Ethnicity	0.050	0.064	-0.069	-0.052	0.027	0.027
Age	-0.030	-0.026	-0.017	-0.013	0.044	0.043
Department Size	-0.050	0.017	-0.112	-0.036	-0.069	-0.072
Current Rank	0.099	0.091	-0.101	-0.109	0.062	0.062
Stress		0.357***		0.405***		-0.015
<i>F</i> Change	1.075	40.015***	1.517	54.248***	1.318	0.066
<i>R</i> ²	0.019	0.141	0.026	0.184	0.023	0.023
ΔR^2	<u>0.019</u>	<u>0.122</u>	<u>0.026</u>	<u>0.158</u>	<u>0.023</u>	<u>0.000</u>

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

Table II.
Hierarchical Moderated Multiple Regression Models

	Emotional Exhaustion				Depersonalization				Personal Accomplishment			
	Step1	Step2	Step3	Step4	Step1	Step2	Step3	Step4	Step1	Step2	Step3	Step4
	β	β	β	β	β	β	β	β	β	β	β	β
Gender	0.068	0.055	0.049	0.055	-0.043	-0.057	-0.061	-0.053	0.072	0.073	0.072	0.075
Ethnicity	0.050	0.064	0.074	0.084	-0.069	-0.052	-0.047	-0.033	0.027	0.027	0.028	0.035
Age	-0.030	-0.026	-0.052	-0.058	-0.017	-0.013	-0.027	-0.035	0.044	-0.043	0.038	0.034
Dept. Size	-0.050	0.017	-0.010	-0.027	-0.112	-0.036	-0.051	-0.074	0.069	0.072	-0.077	-0.089
Cur.Rank	0.099	0.091	0.077	0.082	-0.101	-0.109	-0.117	-0.110	0.062	0.062	0.059	0.062
Stress		0.357***	0.309***	0.524***		0.405***	0.379***	0.667***			-0.025	0.116
Crisis			0.209***	0.467***			0.112**	0.457***		-0.015	0.042	0.211
StressxCrisis				-0.383*				-0.512**				-0.251
<i>F</i> Change	1.075	40.015***	13.734***		1.517	54.248***	3.989**	5.810**			0.455	1.135
<i>R</i> ²	0.019	0.141	0.181		0.026	0.184	0.195	0.212	1.318	0.066	0.025	0.029
ΔR^2	0.019	0.122	0.040		<u>0.026</u>	<u>0.158</u>	<u>0.011</u>	<u>0.016</u>	<u>0.023</u>	<u>0.023</u>	<u>0.002</u>	<u>0.455</u>

Dept. Size = Department Size; Cur.Rank = Current Rank

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

Figure I .
Hypothesized Model of Stress and Burnout Influenced by Crisis in High -risk Occupations.

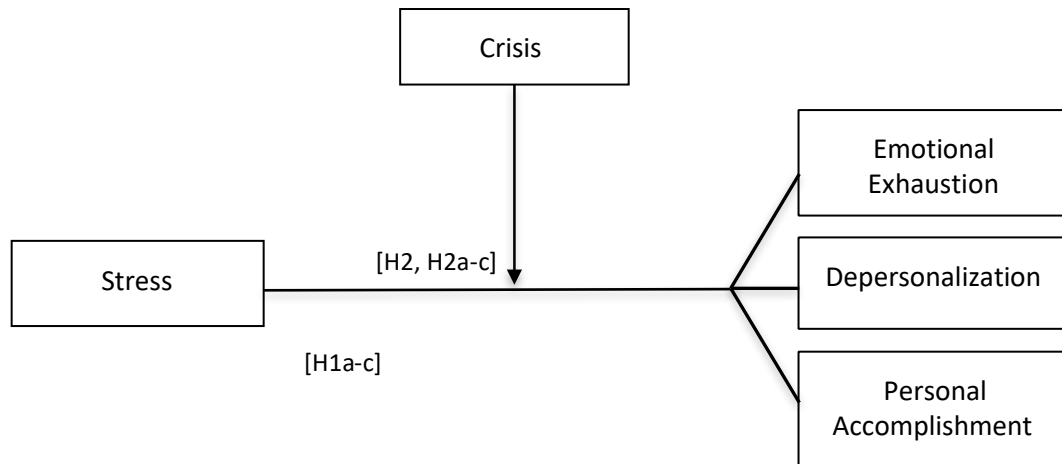
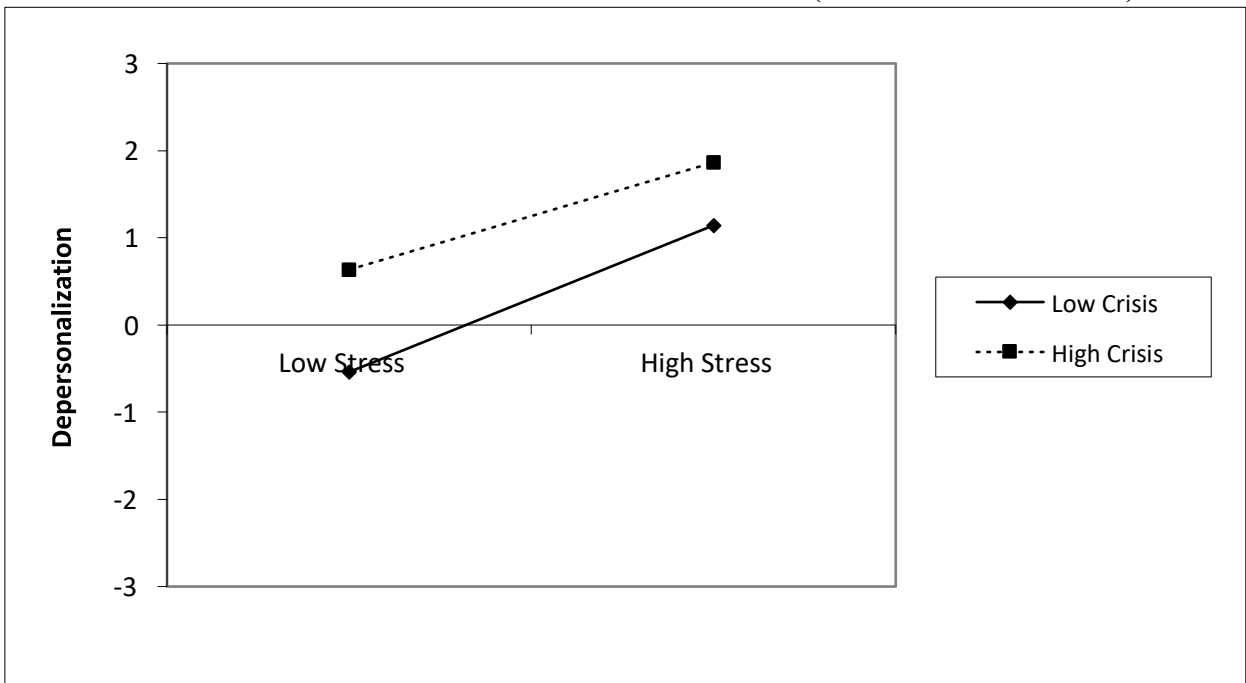


Figure II.
Moderated Interaction of Stress and Burnout (Emotional Exhaustion) for Crisis



Duopoly, Privatization and Environment

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Abstract:

We use a segmented market model to analyze the impact of privatization on environment and trade policy. In particular, we use a quantity setting mixed duopoly model to analyze the effect of privatization on strategic trade-off between environmental policy and trade policy where the welfare maximizing government imposes an emission standard instead of a pollution tax as the instrument of environmental policy.

Introduction

The literature on strategic environmental policy has analyzed the effect of free trade and privatization on environment (Antweiler et al (2001), Barrett (1994), Burguet and Sempere (2003), Hamilton and Requet (2004), Kennedy (1994), Tanguay (2001), Ulph (1996) and Walz and Wellisch (1997), Ohori (2004, 2006), Serizawa (2000), Sturm (2001)). In particular, using a two country - one good duopoly model, they investigated whether free trade and environmental laws are compatible with each other. Authors such as Barrett (1994), Kennedy (1994) and Tanguay (2001) have found that trade liberalization may lead to “ecological dumping” or lowering of environmental tax. In the absence of tariff, optimal environmental tax is lower than efficient tax which is equal to marginal damage. When tariff is removed environmental tax may act as a rent extracting instrument in place of tariff. In other words, by lowering tax environmental policy is being used as a substitute for trade policy to provide domestic firm a competitive advantage. Although this result was the dominant one, others such as Burguet and Sempere (2003) have found that environmental tax may increase under certain condition. A bilateral reduction in tariff will increase output and lower price. But it also increases damage to the environment. This reduces incentive to use environmental policy strategically to gain competitive advantage and increases incentive for higher environmental protection and higher tax. Hence, under certain conditions trade policy and environmental policies may not be strategic substitute.

Several authors, in an effort to extend the literature, also analyzed the effect of privatization of public enterprises on environmental and trade policies (Barcena-Ruiz and Garzon (2006), Fjeill and Pal (1996), Ohori (2004), Serizawa (2000)). Investigation of the effects of privatization of public enterprises on environment and welfare has gained momentum in view of global move towards free trade. Barcena-Ruiz and Garzon (2006) and Ohori (2004), using a mixed oligopoly model with one private and one public firm, have shown that while environmental tax is lower than marginal damage regardless of whether public firm is privatized or not, privatization raises both tax and tariff. On the one hand, under privatization, government has an incentive to protect newly

privatized domestic firm by lowering environmental tax and consequently raising output and profit, it also has an incentive to protect environment by raising environmental tax.

In this paper we extend the mixed oligopoly model where a welfare maximizing public firm competes with a profit maximizing private firm by incorporating emission standard as a tool of environmental policy. The objective is to analyze the impact of privatization on environmental and trade policy within the framework of an international mixed duopoly. In an earlier paper (Dasgupta and Lee (2013)) we have shown that although privatization raises environmental tax confirming results obtained by Ohori (2004) and Barcena-Ruiz and Garzon (2006) tariff may or may not increase. In this paper we analyze the effect of privatization on the tradeoff between environmental and trade policies. Specifically, we investigate whether environmental policy and trade policies are strategic substitutes after public firm has been privatized.

The paper is organized as follows. In second and third section we present the basic model and a summary of the results related to environmental tax, respectively. The results presented in section 3 are those presented in Dasgupta and Lee (2013) In section 3, we consider only trans-boundary pollution. Note that if local pollution is considered instead of trans-boundary pollution then results are strengthened (see Ohori (2004)). In section 4, emission standard replaces pollution tax as the instrument of environmental policy. We show that while the trade-off between environmental policy and trade policy still holds before privatization if the damage is sufficiently small the same level of damage may not guarantee the trade-off after privatization. Finally, in section 5 we offer some concluding remarks.

The Model

We consider a segmented market or reciprocal dumping model of trade with two countries (Brander and Krugman (1983), Ohori (2004), Tanguay (2001)). In each country, government sets pollution tax, e , and tariff, t , to control environment and import respectively. Firms in home country (1) and foreign country (2) produce a homogeneous output, Q , for home and foreign markets. Each unit of output generates one unit of pollution. Total production by firm i , $i=1,2$, $Q^i = \sum_j q_j^i$

Where q_j^i represents output produced in country i sold in country j . Without loss of generality we assume that firm in home country (country1) is the welfare maximizing public firm while firm in foreign country (country 2) is a profit maximizing private firm. After privatization, both firms maximize profit. Letting total consumption, $Q_j = \sum_i q_i^j$, $j=1,2$, the linear demand

function is given by $P_i = a - Q_j$ where a represents the choke price or the price intercept of the demand function. We let c denote constant marginal cost which is identical for both firms. Also, t_i and e_i represent tariff and environmental tax respectively. Profit for firm i , $i,j=1,2, i \neq j$

$$\pi_i = \left[a - \sum_j q_j^j - c - e_i \right] q_i^i + k \left[a - \sum_i q_i^i - c - e_i - t_j \right] q_j^i \quad (1)$$

The first term and second term on the right hand side of (1) represent profits from domestic and foreign market respectively and k represents additional information cost associated with foreign markets (Gordon and Bovenberg(1996), Tanguay (2001)). Following Tanguay (2001) and Ohori (2004), we assume $k = \frac{1}{2}$. Public firm maximizes social welfare, $W_i, i = 1, 2$, where, for all

$i, j = 1, 2, i \neq j$, and letting d represent constant damage

$$W_i = CS_i + \pi_i + ET_i - ED_i + TR_i - rd \sum_j q_j^i$$

(2)

Note CS_i, π_i, ET_i, ED_i and TR_i reflect consumer surplus, profits, environmental tax revenue, environmental damage and tariff revenue respectively where for all $i, j = 1, 2, i \neq j$

$$CS_i = \sum_j q_j^i, ET_i = e_i \sum_j q_j^i, ED_i = d \sum_j q_j^i, TR_i = t_i q_i^i \quad (2a)$$

Trans-boundary pollution is introduced through the parameter r where it represents fraction of total costs of foreign pollution that enters national welfare (Bakshi and Roychowdhury (2008) and Tanguay (2001). The last term on right hand side of (2) represents cost of trans-boundary pollution.

Main Results:

We analyze and explain the results before and after privatization of the publicly owned firm. First, we consider public firm (firm 1) competing with a privately owned firm (firm 2).

(3.1) Before Privatization:

This is a two-stage game where government, in first stage, picks optimum tax and tariff that maximize social welfare given by (2) and firms pick outputs in the second stage by maximizing profits in (1) given optimum tax and tariff. As is customary, we solve the second stage first and choose for $i, j = 1, 2, q_j^i$ by maximizing profits in (1). First order conditions yield,

$$\begin{aligned} q_1^1 &= a - c - d \\ q_2^1 &= \frac{(a - c) - 4d + 2e_1 + e_2 - 2t_2}{3} \\ q_1^2 &= \frac{d - e_2 - t_1}{2} \\ q_2^2 &= \frac{(a - c) + 2d - e_1 - 2e_2 + t_2}{3} \end{aligned} \quad (3)$$

Governments, in first stage, maximize social welfare to choose e_i and t_i . Using (2), (2a) and (3) yield the following solutions for optimum tax and tariff. We let $A = a - c - d$.

$$\begin{aligned}
 e_1 &= d - \frac{2A}{11} - \frac{0.5rd}{11} \\
 e_2 &= d - \frac{3A}{11} - \frac{3.5rd}{11} \\
 t_1 &= \frac{A}{11} + \frac{8.5rd}{11} \\
 t_2 &= \frac{2A}{11} + \frac{6rd}{22}
 \end{aligned} \tag{4}$$

It is clear that $e_i < d$ for $i = 1, 2$. This implies that optimal environmental tax is less than marginal damage. The result is consistent with Ohori (2004). This is the “rent-shifting” effect. Government has an incentive to use environmental tax to extract economic rent and give domestic industry competitive advantage. The presence of publicly owned firm does not change the results obtained in the literature on strategic environmental policy (Barrett (1994), Kennedy (1994)). Comparing with results obtained by Ohori (2004) we observe that trans-boundary pollution lowers environmental tax even further, strengthening the “rent shifting” effect. Also, from (4), $e_2 < e_1$ regardless of whether trans-boundary pollution is considered. However, in presence of trans-boundary pollution, $t_2 > t_1$ if $(a - c - d) > 2.5rd$. If $r=0$ the result coincides with Ohori (2004). From (3), environmental tax in home country (country 1) raises home production and lowers production in foreign country (country 2). Therefore, higher tax will shift output from foreign firm to domestic firm. This gives the domestic government an incentive to set tax at a relatively high level. However, in foreign country a lower tax implies higher output. Therefore, foreign government has an incentive to set tax at a relatively low level to offset the rent shifting effect. Note that, from (3), relatively high tax set by home country also lowers consumption of domestically produced good in foreign country. Therefore, foreign government has an incentive to set tariff at a high level to protect domestic market and discourage import. Finally, if trans-boundary pollution is low enough, that is if $r < \frac{(a - c - d)}{2.5d}$, then home country may benefit by setting a relatively low tariff. This is due to what Tanguay (2001) calls pollution shifting effect where home country prefers having output produced abroad and importing to producing at home since $r < 1$. Substituting e_i and t_i for $i = 1, 2$, from (4) in (3) we get,

$$\begin{aligned}
 q_1^2 &= \frac{A}{11} - \frac{2.5rd}{11} \\
 q_2^1 &= -\frac{5.5rd}{11}
 \end{aligned}$$

$$q_2^2 = \frac{7A}{11} + \frac{4.5rd}{11} \quad (5)$$

Comparing (5) with results obtained by Ohori (2004), It is clear that optimal exports decrease due to trans-boundary pollution. Therefore, for a given level of damage, higher trans-boundary pollution will lower export and raise home consumption of domestically produced good. Note that home consumption of publicly owned firm's output is independent of trans-boundary pollution since $q_1^1 = a - c - d$ from (3).

(3.2) After Privatization:

In the second stage, both firms maximize profit. Differentiating (1) with respect to q_j^i for $i, j = 1, 2$, and using the first order conditions we get, after letting superscript represent optimal values after privatization,

$$\begin{aligned} q_1^{1P} &= \frac{[a - c - 2e_1 + e_2 + t_1]}{3} \\ q_2^{1P} &= \frac{[a - c - 2e_1 - 2t_2 + e_2]}{3} \\ q_1^{2P} &= \frac{[a - c - 2e_2 - 2t_1 + e_1]}{3} \\ q_2^{2P} &= \frac{[a - c - 2e_2 + e_1 + t_2]}{3} \end{aligned} \quad (6)$$

From (6), we observe that environmental tax lowers domestic output and raises foreign output. Tax also raises import. Tariff, on the other hand lowers import and raises domestic output. In order to determine the effects of privatization on tax and tariff we solve the first stage where governments choose optimal tax and tariff by maximizing welfare. Differentiating (2) yields after substituting from (6) in the first order conditions, for $i = 1, 2$,

$$\begin{aligned} e_i^P &= d - \frac{A}{6} + \frac{8rd}{15} \\ t_i^P &= \frac{A}{3} + \frac{2rd}{3} \end{aligned} \quad (7)$$

Optimal tax continues to be less than marginal damage. Also optimal tariff is strictly positive. Hence, presence of trans-boundary pollution does not alter the “rent shifting” effect that holds before privatization. Comparing (7) with (4), it is clear that privatization raises environmental tax in both countries unambiguously. This result is consistent with that obtained in Ohori (2004).

This implies that incentive to use tax as a rent shifting tool is much stronger before privatization than it is after privatization. Comparing tariffs we get, from (7) and (4), $t_2^P > t_2$ but $t_1^P > t_1$ only if $r < \frac{A}{3d}$. Although privatization raises tariff in country 2, it does so in country 1 only if trans-

boundary pollution is sufficiently low. In this case, both countries are willing to use tariff as a rent shifting tool rather than environmental tax. From (6), higher environmental tax raises import and lowers domestic production. If r is sufficiently low, import is particularly attractive relative to domestic production. To protect domestic firm and transfer rent from foreign producers to domestic producer government has an incentive to raise tariff. However, for a high level of trans-boundary pollution, import may no longer be attractive relative to domestic production and hence there may no longer be a need to protect domestic firm by raising tariff. Therefore if $r > \frac{A}{3d}$ then $t_1^P < t_1$.

Intuitively, it will be clear once we examine optimal output after privatization. Substituting optimal tax and tariff from (7) in (6) we get, for $i, j = 1, 2, i \neq j$

$$\begin{aligned} q_i^i &= \frac{A}{2} + \frac{2}{45}rd \\ q_j^i &= \frac{A}{6} - \frac{28rd}{45} \end{aligned} \quad (8)$$

We observe from (8) that higher trans-boundary pollution raises consumption of domestically produced goods and lowers import. Therefore, in presence of high trans-boundary pollution, the incentive to raise tariff to lower import and use tariff as a rent shifting tool decreases. That job is being accomplished by trans-boundary pollution.

Duopoly with Emission Standard

We assume firm 1 is welfare maximizing publicly owned firm and firm 2 is profit maximizing private firm. We also allow firms 1 and 2 to represent countries 1 and 2, home and foreign respectively. For $i = 1, 2$, production generates emissions according to $\alpha = Q^i - a$ where α represents emissions and a is abatement. The abatement costs are given by $Z = \frac{a^2}{2}$. Emissions cause purely local damage. The damage function is $D(\alpha) = \frac{d\alpha^2}{2}$ where d is the damage parameter. Following Strum (2001) we normalize constant cost to zero. In the second stage firms choose q_i^j for $i, j = 1, 2$ by maximizing for $i, j = 1, 2, i \neq j$, $\pi_i = [A - \sum_j q_j^i]q_i^i + k[A - \sum_j q_j^i - t_j]q_j^i - \frac{1}{2}(Q^i - \alpha_i)^2$.
(9)

In the first stage, government chooses α and t by maximizing, for $i = 1, 2$,

$$W_i = CS_i + \pi_i + TR_i - \frac{1}{2}d\alpha^2 \quad (10)$$

(4.1) Before Privatization:

As is customary, we solve the second stage first. Differentiating (9) and (10) respectively with respect to q_i^2 and q_i^1 for $i = 1, 2$ and solving the first order conditions yield,

$$q_1^1 = \frac{17A + 11\alpha_1 + 2\alpha_2 + t_1 + 7t_2}{28}$$

$$q_2^1 = \frac{-4A + 8\alpha_1 - 4\alpha_2 - 2t_1 - 14t_2}{28}$$

(11)

$$q_1^2 = \frac{10A + 14\alpha_1 - \alpha_2 - t_1 - 5t_2}{28}$$

$$q_2^2 = \frac{9A - 7\alpha_1 + 17\alpha_2 + 5t_1 + 7t_2}{28}$$

From (11), we observe that higher tariff lowers import and vice versa. However, effect of tariff on total output requires explanation. Note that total output produced by firm i is $Q^i = \sum_j q_j^i$

For firm 2 higher tariff (t_2) lowers import and raises output. For profit maximizing firm 2, higher output is consistent with higher profit. However, for firm 1 higher tariff (t_1) lowers both import and total output. As tariff is raised the welfare maximizing firm has an incentive to raise output since it increases profit and welfare. But higher output also raises environmental damage and lowers welfare. In this case, pollution effect (environmental damage) dominates profit. Hence, total output decreases as tariff is raised. It is also clear from (11) that as emission increases total output in both home and foreign countries would increase. This is not surprising since both raising emission and lowering of environmental tax represent laxer environmental standard. However, a closer look makes it clear that as emission is raised at home (α_1) not only will home output and output sold by home public firm in foreign country increase but also there is a decrease in foreign consumption of its own output produced by privately owned firm (q_2^2). This implies home government uses emission as a strategic instrument to expand market share for its own public firm. The result is consistent with Ohori (2004) where the instrument of choice was environmental tax.

We now investigate whether trade liberalization leads to lowering of environmental standard. In other words, we check if a lower tariff will raise emission level. We solve the first stage by choosing α_i for $i = 1, 2$ maximizing W_i for $i = 1, 2$ from (10) after substituting for q_i^j for $i, j = 1, 2$ in (10). The first order conditions are as follows:

$$\frac{\partial W_1}{\partial \alpha_1} = 985A + (995 - 1568d)\alpha_1 + 5\alpha_2 + 394t_1 + 384t_2 = 0$$

$$\frac{\partial W_2}{\partial \alpha_2} = 37A - 197\alpha_1 + (745 - 1568d)\alpha_2 + 207t_1 + 25t_2 = 0$$

(12)

Equation (12) shows that trade liberalization (lower tariff) raises emission level (*higher* α) provided level of damage is sufficiently low. If $d < \frac{995}{1568}$ and $d < \frac{745}{1568}$ for countries 1 and 2 respectively then trade policy and environmental policies are strategic substitutes. This implies that one of the fundamental results obtained in the literature on strategic environmental policy holds even if environmental tax is replaced by emission level as the instrument of environmental policy. However, if $d > \frac{995}{1568}$ and $d > \frac{745}{1568}$ the damage may be too high for countries 1 and 2 respectively to use environmental policy as a rent extracting tool.

(4.2) After Privatization:

In the second stage both firms choose output by maximizing profit given by (9) while governments choose optimal tariff and emission standard in the first stage by maximizing welfare given by (10). We solve the second stage first to get, for all $i, j = 1, 2$ and $i \neq j$

$$q_i^i = \frac{A + t}{2} \tag{13}$$

$$q_j^i = \frac{4\alpha - 7t - 3A}{2}$$

Equation (12) shows that a lower tariff raises import and vice versa. A lower tariff also raises total output and consumption of domestically produced goods. These results are the same as those obtained in the previous section where a public firm was competing against a privately owned firm. Also, a laxer environmental standard represented by higher α raises output and vice versa. The relation between output and emission standard remains the same after public firm has been privatized. Higher output implies higher profit. But it also so means higher damage. Profit consideration dominates environmental consideration. This is particularly true when both firms are privately owned.

We turn to the question of whether there is a trade-off between tariff and emission level chosen by the welfare maximizing government. Differentiating W_i with respect to α_i , $i = 1, 2$ and setting it to zero we get,

$$(12 - 2d)\alpha_i - \frac{47}{2}t_i - 8A = 0 \tag{14}$$

From (14) it is clear that if $d < 6$ a lower tariff will lead to a choice of a lower emission level. Hence trade liberalization may not lead to a laxer environmental standard. This result is similar to that obtained by Burguet and Sempere (2003) where the instrument of environmental policy was pollution tax. From (11), a lower tariff raises output, But it also increases damages to the

environment reducing the incentive to choose a higher emission level. However, as tariff is removed tariff revenue decreases and import becomes relatively less attractive and export becomes relatively more attractive. This raises the incentive to increase domestic output by choosing a higher emission level and a laxer environmental standard. If $d < 6$ then there may not be a trade-off between tariff and emission level. Note that if damage per unit is sufficiently high ($d > 6$) then it is clear that trade liberalization will lead to a choice of a laxer environmental standard.

Conclusion:

We have analyzed the effect of privatization on the trade-off between trade policy and environmental policy where instruments of trade policy and environmental policy are tariff and emission level respectively. We have shown that in a mixed duopoly model governments have an incentive to use environmental policy as a strategic substitute for trade policy if damage is sufficiently low ($d < \frac{745}{1568}$). However, from (14) it is clear that same condition is not enough to guarantee trade-off when the publicly owned firm is privatized. Therefore, relative to mixed duopoly it will take a much higher damage per unit in market with two privately owned firm for the governments to use environmental policy strategically as a rent extracting tool.

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ABSTRACTS

Social Media: Education to Business

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Extended Abstract

The last two decades have seen traditional media transformed into new channels that encompass digital, computerized, and networked information and communication technologies (Eid, Ward 2009.) We know them as Social Media (SM) that our current generation of students, Millennial's , as the future generation of business operatives, will be using social media to research, identify work related situations, run the business and communicate with coworkers, clients, consumers and competitors. They primarily use Facebook and Twitter in school, but quickly learn that email and Linked-in are the business platforms most used in the business world. There are still many professors who consider Social Media to be a fad and a detraction and try their best to keep it out of there classes. But the time has come to accept that SM is here to stay, and to embrace it as a new and effective teaching tool.

Technology is the best way to connect with Millennia's in school and in the business world. Social media is being taught and used even in 1st grade classrooms (@coolatteacher.) Social media has been shown to be the best way to teach our students, and they also learn the power and importance of social media for business. Classroom applications and exercises in Social Media not only helps them learn but gives them practice for business applications. Social Media skills have been considered the most important skill sought for by employers (Afshar.) Students today, both at the graduate and undergraduate level, are being hired as Social Media Directors (Clampitt, 2017) Students that are not familiar with or do not use Social Media (SM) will not progress in business as quickly. As part of their business curriculum students should be required to create and use Facebook, email, Twitter and Linked-in. These are basics for classroom study today and the work environment tomorrow.

Joshua Waldman in his "Career Enlightenment" Blog compiled statistics from many sources (see reference list.) Specifically, he confirms that for both personal and business, Email usage is still the most commonly employed means of business communications with 91.7% using personal accounts and 89.6% using business accounts. Facebook is a competitive second at 58.5% which is significant portion of the population. The 7th Annual Social Media Marketing Report of the Social Media Examiner reported that 96% of the small business participants in their survey used SM, and 92% of them agree or strongly agree the SM was critical for their business.

In business, email is still out performing other media. In the world of Social Media Facebook outperforms all competitors. In business Facebook is not king but with almost 60% of business people surveyed using it for business communications that makes Social media an important

communications link. The important issue is preparing students for business communications by creating assignments and projects requiring the use of Social Media and common email usage.

While all students in a class may not bother to obtain a text – they will still have a smart phone. More and more students are signing into online classes via cell phone or tablet rather than a computer. It is proposed that, as the cell phone is the primary way students access Social Media, that it is an excellent way to reach them with the course material as well. In fact, Rheingold reports that the “Social Media Virtual Classroom Project” (funded by the HASTACC/MacArthur Foundation Digital Media & Learning competition) is developing a complete Social Media Classroom which “Social Media Virtual Classroom Project” (funded by the HASTACC/MacArthur Foundation Digital Media & Learning competition) is developing a complete Social Media Classroom. Social Media has already invaded our classrooms, we need to use it instead of fighting it.

Driving this need to teach social media and to use it as a teaching tool, originates from the importance it has in business, both in promotion and management. Businesses heavily uses SM to communicate with consumers but also to run the business. 20% of the 340M+ tweets that are sent each day are business usage. More than 80% of people expect the CEO’s of business to have an online profile. This raises a company’s profile and makes the brand seem more honest and trustworthy. (2013 CEO, Social Media and Leadership survey by BRANDfog.)

In today’s business world, companies who do not make use of SM are viewed as outdated, and beginning to fall behind the competition. Small businesses, who have very small advertising funds, have used SM to grow and thrive. Social media is an essential part of doing business today. (Hendricks, Drew <http://www.forbes.com/sites/drewhendricks/2014/02/25/3-ways-social-media-is-driving-a-business-revolution/>)

Gen Z will become college juniors next year, and by 2020 will comprise 40% of all U.S. Consumers. The lives of Gen Z are organized and shaped by what they have on their cellphones. They use various cellphone apps to organize and control their lives. Gen Z’s have an entrepreneurial spirit and many want to start their own businesses – based on the information available at their fingertips via cell phone Their experiences with interactions via their cell phone with people from other socio/economic backgrounds have made them socially conscious. They don’t make a sharp distinction between home and work life (Fujioka.)

In addition to email, Facebook, Twitter and Linked-in there are a wide variety of other Social Media sites, all which have different uses, which can be adapted for classroom use. Googling “using Social Media to teach” will provide a wealth of information about these sites and how they can be used. Anyone who has college students, or children of almost any age, know that they constantly are on their phone. As educators, we should harness this technology and use it to our advantage.

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\$port \$ponsorship: Big Money

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Extended Abstract

Introduction

The success of sports sponsorship depends on how much money the company earns by paying the premier athletes millions. The sums athletes are paid for sponsorship are so large that many people are skeptical that companies can earn back such high amounts. But a quick look at the numbers shows why. LeBron James was paid \$60m/yr., by Nike. Nike earned \$400M/yr. on his shoe line only. James has earned \$450m in his career via sponsorship, increasing his sponsors sales between 10 and 50% each time (Badenhausen.)

James, at \$77m is third in total winnings in 2016 behind Cristiano Renaldo (\$88m) and Lionel Messi (\$81m) but in endorsements both Renaldo at \$32m and Messi at \$28m fall far behind James' \$54m <https://www.forbes.com/pictures/mli45ffmil/1-cristiano-ronaldo/#34d2c9cd7039> Salary-wise all athletes fall behind boxer Floyd Mayweather, generally considered the worlds richest athlete with lifetime career earnings totaling \$800m by 2017 (Beran) However, the majority of his wealth is from winnings as he has had, unlike young, richer athletes, few sponsorships

Sports sponsorships have many benefits to offer a company, but perhaps the most beneficial is in the areas of brand awareness, brand image and connecting with the target market. According to Buttrill sports sponsorship:

- a) Provides new advertising channels
- b) Able to identify target market and create brand audience alignment
- c) Can align with brand image when athletes values embody it. Elevates a brand's image by putting a face on those values " Brands must tap into the spirit of the athlete they are sponsoring, creating campaigns that drive a sense of enthusiasm for the sport not dependent on their sponsored athlete winning every game."
- d) Athletes come with their own audience thus creating an additional channel if creative development is used to optimize (Buttrill.)

Through its football sponsorship association, Hyundai / Kia Motors positioned itself as a brand that delivers the excitement of the soccer to fans all over the world, and remains deeply committed to supporting and furthering the development of the sport by sponsoring FIFA from now through 2022. FIFA to expects to reap US \$1.4 billion in sponsorship revenues from Brazil 2014 with 19 additional sponsors. (The Most effective sports marketing & sponsorship: Samsung & Hyundai-Kia)

Difficulty of measuring exact monetary effects

The issue of measuring the monetary effects of sports sponsorship is the same which perplexes any company trying to measure the exact monetary influence promotion has on sales. There are too many variables which intervene and very few measures with any degree of exactness. Thus:

-1/3 to 1/2 of American companies don't have a comprehensive measure of ROI

-a comprehensive approach can increase returns by as much as 30%

Some measures which may be used are:

- a) Cost per reach (Reach calculations should favor exposure to the target demographic over total numbers.)
- b) Unaided awareness per reach (brand awareness, related to leveraging)
- c) Sales/Margin per dollar spent, difficult to quantify. Two methods:
- d) Tie sponsorship to key qualitative measures such as unaided awareness, etc.. Then track the impact of each variable on short- and long-term sales
- e) Link econometric data such as spending and reach over an extended time, then isolate the impact of sponsorships
- f) Long term brand attributes. "A qualitative assessment or survey can help companies identify the brand attributes that each sponsorship property supports. Analysis of those results helps marketers determine which sponsorships are reinforcing a common brand theme."
- g) Indirect benefits. For example hosting clients at a sporting event. Positive ROI is more likely for sponsors of better performing teams, sponsors that affiliate at a high level and sponsors outside the automotive industry. (Analyzing Return-on-Investment in Sponsorship: Modeling Brand Exposure, Price and ROI in Formula One Racing)

" The World Cup in Brazil generated \$1.4B from sponsorship deals with 20 major companies, a 10% increase from the 2010 World Cup. Global estimates place revenues from sports sponsorship rising to beyond \$45B by '16.--- Charles Russell Speechlys. (SBD Global/April 22, 2015/Marketing and Sponsorship)

Risks of sports sponsorship

O.J. Simpson, Tiger Woods, Michael Vick and the list goes on and on. When you designate an athlete as the face of your product, any misdoings by the athlete may have a negative impact on your brand. In the 90's when Simpson was arrested for murder, many of his sponsors such as Hertz and Samsonite stood by him and were lauded for their loyalty. All of his sponsors finally cancelled his contracts as his guilt became more evident and he did not get them back, regardless of the not guilty verdict.

The contracts of today's most sponsored athletes generally contain a morals clause which allows the sponsor to end the contract if the athlete is associated with any negative activity. Michael Vick and Tiger Woods had a different experience than O.J. Simpson. Some of their biggest sponsor's dropped them as soon as the negative publicity began, and those that didn't were criticized by the public (<https://www.thoughtco.com/tiger-woods-dropped-sponsors-1566402>, <http://www.cbc.ca/sports/football/sponsors-come-down-hard-on-michael-vick-1.662542>.) Another reason they are dropped so fast is the negative impact on profits. The Tiger Woods scandal of 2009 purportedly cost his sponsors a collective \$5 to \$12 billion. It was estimated that it reduced shareholder values in the sponsoring companies by 2.3%.

Will sports sponsorship continue?

Almost certainly. For many sports, NASCAR for example, the team or athlete and the sponsor were intimately linked from the beginning. Many companies have learned that sports sponsorship is the best method to achieve brand awareness and gain a higher profile, to revive a failing or negative brand image, to project a specific brand image or better reach their target markets. Sports sponsorship can give a higher profile for the teams and athletes, but also means a great deal of money. And right now sports sponsorship is big money for both athletes and business.

The Role of Foundations in Entrepreneurial Activities

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Abstract

Entrepreneurship is considered crucial in economic growth and job creation. To date within a multidisciplinary theoretical framework the role of foundations in entrepreneurial activities is relatively less studied. Foundations could be valuable in mobilizing resources and disseminating them in supporting entrepreneurship development despite continuous change in economic, cultural and technological conditions. In this paper based on an interdisciplinary theoretical context a few critical roles of foundations in entrepreneurial activities will be highlighted to identify best practices and critical domains in which foundations support and foster entrepreneurial activities. The paper will also present propositions, future research areas and implications.

Female Entrepreneurs In Developing Countries: What Could Be Possible Challenges?

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Abstract

Female entrepreneurial activity varies in developed versus developing countries. To date most literature on female entrepreneurship has been focused on developed countries and contingency studies on female entrepreneurial activities in developing countries are rather limited. There is also a need to build more theoretical explanations for female entrepreneurial activities in various contexts and contents. Based on an integrative theoretical structure the paper aims to bring an understanding on possible obstacles for female entrepreneurial activities in developing countries. The study suggests that by exploring numerous external factors and underpinning crucial impediments for female entrepreneurial activities in developing countries it may be easier to offer assistance and develop policy implications for female entrepreneurial activity in a cross country research.

Personal Knowledge Management (PKM) and the Leadership Development of African-American Women Leaders: A Narrative Inquiry

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Abstract

The lack of diversity in corporate leadership positions, especially among African- American women, has garnered significant research and attention in various industries. The research purpose sought to examine how the underrepresentation of African- American women in leadership roles influenced the personal knowledge management (PKM), leadership development, and motivation to lead (MTL) of African-American women leaders. Qualitative method and a narrative design inquiry was used to explore participants' personal and professional experiences before and after formal leadership attainment. The narrative design included interviewing a small cross-section of six African-American women serving in leadership roles throughout the New York tristate area (New York, New Jersey, and Connecticut). The sample participants were individually interviewed in a face-to-face setting, using semi-structured and open-ended questions that focused on personal and professional experiences related to leadership skills. Specific themes of positioning were discovered fundamental to the leadership experiences of the African-American women participants. Access to higher education, membership in social organizations, community service involvement, and workplace challenges, to include the application of an assertive personality were found to be common leadership influences among the participants. Findings in this study may proffer organizational leaders with the insight needed for promoting best practices of diversity and inclusion initiatives targeting African American women or other minority population groups for leadership roles.