Volume 8, Number 1 **Print ISSN 1944-656X**
Online ISSN 1944-6578

BUSINESS STUDIES JOURNAL

Editor

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University of Central Oklahoma

The official journal of the Academy
for Business Studies, an Affiliate of
the Allied Academies

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TABLE OF CONTENTS

BULLYING IN THE WORKPLACE: STUDENTS' PERSPECTIVES

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ABSTRACT

Students at an AACSB-accredited School of Business were surveyed to determine their experiences with and views concerning workplace bullying. Almost 73% of the students agreed or strongly agreed that bullying is a problem in today's workplace which corresponds with a 2014 Survey by the Workplace Bullying Institute finding that 72% of the workers recognize the existence of workplace bullying. Of the student respondents who have held a job, 33% indicated that they have been bullied in the workplace. Namie (2015) found that approximately 27% of United States workers have suffered abusive conduct at work.

Employees who are targets of workplace bullying suffer long-term negative effects from the bullying. These effects range from reduced productivity, depression, and anxiety to thoughts of and attempts to commit suicide; and targets are more likely to leave their jobs. Managers and business owners can help reduce the occurrence of workplace bullying among their employees.

This paper will present the results of the survey, how they correspond to findings among those already in the workplace, and provide recommendations for preparing today's and tomorrow's leaders to recognize, report, and reduce workplace bullying.

INTRODUCTION

Workplace bullying is expensive for the organization. Research shows that about 37% of United States employees have experienced bullying (WBI, 2014). The costs associated with bullying for the company include having to replace employees who leave because of the bullying, lower productivity as the staff cope with bullying, and investigating reports of bullying (McLaughlin, 2014). In a review of Teresa Daniels' 2009 Book, *Stop Bullying at Work: Strategies and Tools for HR and Legal Professionals*, Bonnie Osif (2010), quotes Daniels as writing: "Bullies poison their environment by creating low morale, fear, anger, and depression among the targets and their employers. Employers pay for this in lost efficiency, absenteeism, medical costs, high turnover, severance packages and lawsuits" (p. 8). The role of bullying as a precursor of the targets' leaving the organization has been well documented in the research (Glambek, Matthiesen, Hetland, & Einarsen, 2014).

The research clearly shows that bullying in the workplace is a serious problem and creates a toxic environment that is detrimental to the target, those witnessing the bullying, and the company. Proactive management and organizations that work to create a healthy work environment can help reduce the bullying and its associated costs to both the targets and the organizations (Sheehan & Griffiths, 2011). How aware of workplace bullying are today's students who will be business managers and business owners? What do these students think about this issue? The purpose of this study is to assess students' perceptions of the issue of workplace bullying including their awareness of and beliefs about this issue. The information gleaned from this research may benefit professors who choose to address the issue of workplace bullying in their classes along with measures to help reduce the instance of bullying in the workplace.

REVIEW OF THE LITERATURE

In 1992, Adams and Bray wrote about employer abuse and workplace trauma and warned that “bullying at work is claimed to be a more crippling and devastating problem for employees than all other work-related stress put together” (p. 18). Unfortunately, over 20 years later, workplace bullying remains a problem; in fact, the increased use of social media has created new methods for employees to be bullied (Hall & Lewis, 2014). The number of employees affected by bullying is high. According to research in 2014 by the Workplace Bullying Institute (WBI), 37 million workers in the United States reported that they were subjected to conduct that was abusive; 65.6 million employees are affected by workplace bullying either directly or through witnessing it (Namie, 2015).

Workplace bullying has no one definition, but most definitions include repeated behavior which causes harm. Two of the best known names in this field are Gary Namie and Ruth Namie (Hall & Lewis, 2014). In fact, according to Gary Namie (2003), they actually introduced the term “workplace bullying” in 1998 to the popular press and defined workplace bullying as “interpersonal hostility that is deliberate, repeated and sufficiently severe as to harm the targeted person’s health or economic status; malicious, health endangering mistreatment of one employee…by one or more employees” (Namie, 2003, p. 1). Vega and Comer (2005) write that bullying is “the pattern of destructive and generally deliberate demeaning of co-workers or subordinates…” (p. (101). In addition to behaviors that are repeated, most authors include the word intentional or deliberate in their definitions. However, Carbo and Hughes (2010) write that targets should not have to prove intent from the bully because having to prove that the behaviors actually occurred is difficult enough, and proving intent is even more difficult if not impossible. Although the bullying may not include physical violence against the target, Rhodes and his co-authors argue that all forms of bullying include violence and see bullying as a form of “violent disrespect for the other person…” (Rhodes, et al. 2010, p. 98).

The bully and the bully’s target may be male or female. In his national survey, Naime (WBI, 2014) found that in general, 69% of the bullies were men, and 60% of the targets were women; however, females are more often bullied by other females (68%) than by males (57%). The bully may be a co-worker or the boss although the majority of bullies are bosses (Dade & Schuering, 2014; WBI, 2014).

Bullying for both men and women can have devastating effects including chronic stress, anxiety, poor physical and mental health, and a litany of other effects (Vega & Comer, 2005). Appelbaum, Semerjian, & Mohan (2012) write about the dire consequences for the organization and targets since bullies “can significantly impact daily task-abilities of employees and shatter employee motivation, task learning, and team interdependence” (p. 206). Sheehan and Griffiths (2011) write that when considering the cost of bullying to the organizations and targets, the impact on society should not be underestimated.

Workplace bullying is not illegal in the United States unless the target is a member of a protected class; however, other countries have made bullying illegal (Vega & Comer, 2005). Since 2003, twenty-five states and United States Territories have proposed legislation that would help fight workplace bullying; however, not one of these bills affecting private employers has passed into law (Dade & Schuering, 2014). Thus, workplace bullying continues to affect over 65 million workers in just the United States (Namie, 2015).

METHODOLOGY/DEMOGRAPHICS

A convenience sample of 319 students at an AACSB-accredited College of Business were surveyed over five semesters to determine their awareness of and experience with workplace bullying. The students were also asked their beliefs about workplace bullying with the understanding that beliefs are not necessarily the catalyst for action. The survey was anonymous, voluntary and given online. Of the 319 students surveyed, 168 of the students were female, 150 were male, and one chose not to answer. Most of the students (249) were between the ages of 18-24, with 50 students 25-35, 14 students 35-45, 4 students 45-55, and 2 students were 55 and over. Of the students who responded to the question asking them identify which country they were from, 258 were from the United States, and 27 of the students from China. The remaining students were from Vietnam, 4 students, Japan, India, and Mexico, 3 students each, South Africa, Saudi Arabia, and Turkey, 2 students each, and Belgium, Brazil, Germany, Jordan, Nigeria, and Tanzania had 1 student each.

RESULTS

As a primary purpose of the research was to determine students' perceptions of the issue of workplace bullying, the students were asked the extent to which they agreed with the statement that bullying is a problem in today's workplace. No distinction was made with this question to determine whether the student had ever experienced bullying either directly (as a target) or indirectly (as an observer) or had ever held a job; this question was simply an attempt to determine how the students currently viewed this topic. As one student wrote in the comment section, "I have not faced bullying myself, nor have I witnessed it, but I feel that it could be there given a different work environment." As shown in Figure 1, almost 73% (72.9) agree or strongly agree that bullying is a problem in today's workplace. Interestingly, this number is similar to the results found in the 2014 Survey by the Workplace Bullying Institute's Workplace Bullying Survey. The WBI survey found that 72% of the workers surveyed were "aware" that workplace bullying exists (Namie, 2015). One student skipped this question.

Figure 1
TO WHAT EXTENT TO DO YOU AGREE WITH THIS STATEMENT: BULLYING IS A PROBLEM IN TODAY'S WORKPLACE

Answer Options	Response Percent	Response Count
Strongly agree	22.3%	71
Agree	50.6%	161
Undecided	16.4%	52
Disagree	10.4%	33
Strongly disagree	0.3%	1
	answered question	**318**
	skipped question	**1**

In Figure 2, the responses are given to the question "Have you ever been bullied in the workplace?" The number of students responding was 318; however, 40 of those students had not held jobs. Of the 278 students who have held jobs, 33% (92) indicated that they have been bullied in the workplace. Students were able to check more than one if they had been bullied by both a manager or supervisor and another employee; thus there were 242 responses which may have resulted in the higher percentage of students reporting being bullied than a national survey which found that approximately 27% of United States workers have suffered abusive conduct at work (Namie, 2015).

Figure 2
HAVE YOU EVER BEEN BULLIED IN THE WORKPLACE? YOU MAY CHECK MORE THAN ONE IF APPLICABLE

Answer Options	Response Percent	Response Count
I have not held a job yet	12.6%	40
Yes, by another employee(s)	18.6%	59
Yes, by a supervisor/manager	17.9%	57
No, I have not been bullied in the workplace	59.1%	188
	answered question	**318**
	skipped question	**1**

The students were also asked to describe the bullying behavior they had received if they had ever been bullied. Their responses are in Figure 2.1. The types of behavior the students reported ranged from relatively minor teasing described by one student as being “bullied in a playful manner” to more serious types of behavior including threats and physical conduct. The bullying behaviors described by the students is consistent with the types of bullying behaviors shown in the research. Daniel (2009) gives examples of bullying behaviors that include emotional outbursts and inconsistent and unfair treatment toward employees. LaVan and Martin (2008) write that bullying can be many different types of behaviors that are called many different things and that “bullying shows many similarities with sexual harassment in workplaces, even if the sexual element is missing” (p. 149).

Workplace bullying is usually not reported for a number of reasons including fear of retaliation. Figure 3 presents the responses to the question “If you were bullied in the workplace, did you report it?” Of the students responding to this question, 79% responded no, they did not report it. Workplace bullying tends to be underreported, according to LaVan & Martin (2008), who write about the ethical issues involved with encouraging reporting such as potential retaliation by the bully and the tendency to blame the victim. One way to encourage victims to report workplace bullying would be to implement a clear, easy-to-follow reporting process (Zigelstein, 2013).

Figure 2.1
BULLYING BEHAVIORS EXPERIENCED BY THE STUDENT RESPONDENTS

1	Even though I was doing what my boss told me to do, an older co-worker would isolate me in the storage room and yell at me for not doing my job correctly.
2	My supervisor and her supervisor….would tell us we were lazy, stupid, etc. We were threatened with being fired, demoted, and legal issues. It was like domestic violence. I was the only person who was not put on medical health leave by a doctor.
3	Withholding information from me; making plans with my supervisors without my knowledge (with regards to my projects), ignoring my requests for assistance, but bragging about how much they helped me.
4	I was bullied in a playful manner by my co-workers because I was the youngest like it was hazing.
5	The department manager would write me up for minute things she would otherwise overlook on older co-workers.
6	My manager sent me unprofessional text messages; calling me a liar because I had a death in the family.
7	My co-worker made up rumors about me to make me look bad.
8	My immediate supervisor would belittle, threaten, harass me
9	I was required to do menial, often pointless tasks that no one else was required to do….I assume because I was the newest hire. It was akin to hazing.
10	The store manager would make demeaning, condescending statements to me; it was not constructive criticism. When she was challenged, the harassment worsened.
11	I was made fun of in public by my manager. I was called out in front of my co-workers. I was yelled at and threatened in front of other managers. I was made fun of because of my looks and my weight.
12	I worked in a medical practice with a physician from another country who made rude comments about my weight and would act like he was choking me—actually physically putting his hands on me!
13	A co-worker I used to work with would always call me fat and say I ate too much.
14	Belittling. Immediate supervisor threatening/harassing co-workers
15	I was treated differently from the other employees. I wasn't allowed to do the things they did. The person doing the bullying was my supervisor.
17	My manager would use derogatory names such as stupid, fat, lazy
18	My manager bullied me and ended up getting fired for it.
19	Sexual harassment and name calling
20	Mocking and other forms of psychological bullying
21	They laughed and made fun of my language.

Figure 3
IF YOU WERE BULLIED IN THE WORKPLACE, DID YOU REPORT IT?

Answer Options	**Response Percent**	**Response Count**
Yes, but it did not stop.	12.5%	31
Yes, and it stopped	8.5%	21
No, I did not report it.	79.0%	196
	answered question	**248**
	skipped question	**71**

Figure 3.1 shows the reasons the students gave for not reporting being bullied. Their reasons appear to be consistent with reasons given in the research. McLaughlin (2014) writes that over 50 percent of those bullied do not report it, and over three-fourths of those bullied leave the place where they are bullied and start over someplace else, as several of the respondents indicated they did, with one student writing, "It was just easier to leave." Another student wrote, "I was afraid it would affect my job security," and often this is exactly what happens. A 2012

study by the Workplace Bullying Institute found that 77.7% of those bullied were no longer at the job where they were bullied which, put another way, found that once a worker was targeted for bullying, there was almost a 78% chance of that person leaving his/her job (WBI, 2012). Several of the students' reasons include the fear of retaliation and shame which LaVan & Martin (2008) and Osif (2010) mentioned in their articles. One student wrote, "I think I was just scared. I'm not a confrontational person and was scared she would come up to me about reporting it, and that would make it worse." McLaughlin (2014) calls workplace bullying a silent epidemic and suggests that Human Resource Managers can help with this problem by first developing fair policies for reporting complaints and then ensuring prompt follow up. One of the students did not report the bullying because "I didn't really understand how wrong it was at the time." Gillen, Sinclair, Kemohan, Begley, and Luyben (2012) suggest that not having a clear definition of bullying may be one of the reasons bullying is not reported.

Figure 3.l
REASONS STUDENTS GAVE FOR NOT REPORTING BULLYING

1	I didn't really understand how wrong it was at the time.
2	The bully was very close with my supervisor. I didn't feel discussing an issue with her best friend.
3	I felt that nothing would be accomplished, and she would still have her job at the end of it all.
4	Because I am afraid of causing trouble.
5	In both instances, the bully was either the owner or the CEO of the company, so there was no one to report it to.
6	It makes me feel weak and like I need help. Authorities don't do much about it at all which means it makes no difference.
7	Reporting it would only affect my job in a negative way, and the bullying would continue.
8	I knew nothing would be done anyway.
9	I felt it would make things worse. People would treat me as a tattle tale or too sensitive.
10	You don't want people to find out you told on them.
11	I believe reporting the bullying would have made the situation worse.
12	I think I was just scared; I'm not a confrontational person and was scared she would come to me about reporting it and that would make it worse. She did end up getting fired for bullying other co-workers.
13	I'm afraid it will affect my job security.
14	I wasn't sure who to report it to.
15	I just quit my job instead of reporting it.
16	It didn't bother me too much
17	I didn't think anyone would listen to me.
18	It was easier to just leave.
19	I tried several times speaking with two different managers and was basically told I was overreacting.
20	I resolved it myself with confrontation and confidence.
21	If I reported it, there wouldn't be any change.
22	I eventually stopped trying to report it because I was getting nowhere with it.
23	I chose not to because it was done in a playful manner.
24	Because the bully was the business owner so no one could stop him.
25	I don't want to be embarrassed.
26	I chose to leave the problem and not associate with that person anymore

The students were asked if they thought bullying has a long-term effect on the person bullied. Figure 4 shows that slightly over 74% (74.1%) of those who responded (317) answered yes. Only 7.3% answered no, and 18.6% were not sure. The students' responses may have been based on information they learned from class lectures, articles, television programs, or news sources; their responses may also have been based on their own experiences with bullying or from empathic thinking. The students surveyed were College of Business students hoping to become business owners or managers, and their beliefs that bullying has a long-term effect on the targets may signal that tomorrow's organizational leaders are more cognizant of the issue of bullying and its effects because research shows that workplace bullying does indeed have a long-term effect on the person being bullied as well as management of the organization. Carbo & Hughes (2010) wrote that those bullied in the workplace "suffer devastating effects both personally and professionally" (p. 387).

The bullied person's productivity levels as well as development as an employee also suffer (Hall & Lewis, 2014). Bosses sometimes bully their employees with the intention of getting the employees to work harder when actually, the bullying has the opposite effect (Meinert, 2014). Glambeck, Matthiesen, Hetland, and Einarsen (2014) found that the long-term effects of bullying included job insecurity and intention to leave one's job. In addition to job insecurity, bullying can affect the employee's health with symptoms including anxiety, melancholy, depression, Post-Traumatic Stress Disorder (PTSD) and even, in some cases, suicidal thoughts and attempts (Carbo & Hughes, 2010).

Figure 4
DO YOU THINK BULLYING HAS A LONG-TERM EFFECT ON THE PERSON BULLIED?

Answer Options	Response Percent	Response Count
Yes	74.1%	235
No	7.3%	23
Not sure	18.6%	59
	answered question	**317**
	skipped question	**2**

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The students surveyed were from one AACSB-accredited College of Business and were primarily white students between the ages of 18-24. Because of this, broad generalizability is not supported. However, most of the responses in our survey were consistent with the research. For example, 74.1% of our respondents believed work-place bullying has a long-term effect on those bullied, and the research certainly supports that bullying can have long-term health problems (Meinert, 2014, Persson, 2009, Coyne et al., 2000, Namie, 1999). Another limitation was that some of the questions asked for students' beliefs about the issue of workplace bullying and did not ask the respondents to identify their reasons behind their beliefs. Because most of the student respondents were so young, their lack of work experience limits their opportunities to encounter workplace bullying. When asking the students if they believed bullying has a long-term effect on the targets, no effort was made to define long-term or to determine why the students had this belief or on what basis they came to have this belief.

Future research that includes a more diverse sample, including ethnicity, age, and experience may help the results be more generalizable. Workplace bullying via social media, cyberbullying, and cyber abuse will likely increase as employees, organizations, and society increase their use of these interactive and often anonymous platforms. Borstroff, Graham, and Market (2007) wrote that "E-Harassment is evolving into one of the most prevalent types of harassment in the workplace" (p. 44). Future research on all types of cyberbullying would be helpful in being proactive to recognize and reduce all forms of workplace bullying.

IMPLICATIONS FOR MANAGEMENT

According to Kahn and Kahn (2012), the best way to reduce workplace bullying is by educating the workers. Business students should have an awareness of the issue of workplace bullying. An awareness of the problem, an understanding of the behaviors that may constitute workplace bullying, and the effect bullying has on the target and the organization should help business students be better prepared to create the type of workplace environment that will enable employees to be productive employees who are treated with dignity by other employees. The following are some specific recommendations for business owners and managers to reduce or prevent workplace bullying and for professors who wish to discuss this issue with their students.

1. Managers should take the target's allegation seriously.

If a victim reports bullying, managers should properly and thoroughly investigate the issue. Cooper-Thomas, Gardner, O'Driscoll, Catley, Bentley, and Trenberth (2013) looked at direct and buffering effects of three contextual factors, constructive leadership, perceived organizational support, and anti-bullying actions. They found all to have direct negative relationships with bullying. Perceived organizational support also buffered the relationship between bullying and performance.

2. Bullying policies should be in the employee handbook.

Managers should have clear guidelines, definitions, and consequences of workplace bullying. Cooper-Thomas, et al. (2013) found effective organizational anti-bullying actions moderated the relationship of bullying with wellbeing and organizational commitment. This study provides empirical evidence to support the importance of managers investing in bullying policies. Mikkelsen, Hogh, and Berg (2011) write that many managers in their study reported not being informed about conflicts, and employees (and managers) were sometimes doubtful that bullying actually took place. Thus, increasing general knowledge and awareness of bullying is important in the prevention of these behaviors. Porath and Pearson (2013) suggest penalizing bad behavior. Instead of just transferring the bully to another department, managers should terminate the bully. They found a manager of one company stated his department had been burned so many times by bullies, that he no longer considered internal candidates for managerial positions. Namie (2007) stated "if bullies are publically stopped, the employer sends a message of zero tolerance for bullying" (p.46).

3. Managers need to differentiate between bullying and conflict.

Namie (2007) suggests differentiating between bullying from conflict between two people with equal power. Furthermore, it is suggested targets are nice people and tend to be nonconfrontational to the point of not being able to defend themselves.

4. Managers must understand there are newer bullying tactics rising in the workplace today.

Cyberbullying, such as email, social media, and text messaging, are becoming real concerns among workers (Washington, 2015; Hall, 2012;). Mangers need to address what is acceptable and unacceptable behavior regarding cyberbullying (Washington, 2015). According to Hall and Lewis (2014), managers should clearly communicate policies and regulations along with ethical guidelines on the usage of social media, email communication, text messaging, and other forms of electronic communication. "It should be made clear to employees through policies and other training that abusive comments made online, be they directed at fellow employees, customers, or even the company itself, will not be tolerated and will be treated as though they were made in the workplace" (Hall, 2012, p. 42).

CONCLUSIONS

Almost 73% of the students in this survey agree or strongly agree that bullying is a problem in today's workplace, and indeed it is a problem that affects over 65 million Americans directly or indirectly (Namie, 2015). Bullying in the workplace is associated with high monetary costs for organizations which include employee turnover, lower productivity, and higher absenteeism. The personal costs to employees affected by bullying include mental and physical problems such as anxiety, stress, and depression. There are no laws against bullying in the United States although legislation has been proposed. However, research has found that managers can make a difference to reduce bulling through constructive leadership, perceived organizational support and anti-bullying actions (Cooper-Thomas, et al, 2013). The business students surveyed for this article indicated their awareness that bullying exists and has long-term effects on the targets. Perhaps as these students continue their business studies, graduate, and become managers and business owners, they will implement the types of policies and create the safe workplace environments that will eliminate or reduce workplace bullying.

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LOWERING AND RAISING TAX WITHHOLDING: DO WORKERS NOTICE?

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ABSTRACT

Labor theory indicates that modifying marginal tax rates affects labor supply. But do employees notice when their paychecks rise due to temporary, lower Social Security withholding or fall when that rate expires? Overall, 38.7 percent of the respondents were unaware of the rate expiration, versus 46.7 percent who were unaware of receiving the earlier rebate, indicating employees had imprecise knowledge of their paychecks. For politicians seeking credit for small tax rebates, tampering with employee withholding tables is inefficient for building political capital. Those who noticed the decrease in take-home pay reacted by trimming short-term savings, monthly expenses and durable goods budgets, slowing economic recovery.

Key Words: *Economic Stimulus, Tax Rebate, Mental Accounting, Social Security, FICA*

JEL Classification Codes:

H24 Personal Income and Other Nonbusiness Taxes and Subsidies
H21 Efficiency • Optimal Taxation

ACKNOWLEDGEMENTS

The authors wish to acknowledge the support and advice they have received from colleagues and the reviewers. In particular, Marilyn Spencer was helpful in securing some of the data used in this analysis.

INTRODUCTION

Justifying the Reagan marginal tax rate cuts, many have argued that lower marginal tax rates stimulate economic activity. Taking this further, since 2001 the U.S. federal government has used a variety of temporary tax rebate schemes to provide short-term stimulus for a lackluster economy. Such tax rebates do stimulate spending. One-time, lump sum checks are more efficient for stimulating savings, while spreading the same total amount for a taxpayer over smaller, more frequent pay periods (e.g. through adjusting withholding tables for a year) results in a more efficient spending stimulus, because a greater percent of the smaller, more frequent rebate amounts is spent than if distributed in one lump sum (Chambers and Spencer, 2008). Similarly, Akerlof and Shiller (2009) noted that human psychology affects global capitalism. Grunwald (2012) described the 2009 U.S. Treasury Secretary, Larry Summers, and his economic team as advocating "for leaking out the tax cuts without fanfare." Obama responded by supporting two additional tax cuts, first in 2009, and then replaced by another tax cut in 2011; these were designed "not to be noticed," in a very deliberate intervention to nudge spending rather than saving. By manipulating the timing and stealth of the delivery of the funds, the government expected to enhance the impact on the economy. The 2011 tax cut expired January

31, 2013. For decades, not only labor theory but also numerous econometric studies on labor supply indicate a positive elasticity of labor supply from take-home wages. But what if workers are not familiar enough with the amount in their paystubs to notice?

Tversky and Kahneman (1986) were path breakers in arguing that losses loom larger than gains. While the two gradual tax cuts of 2009 and 2011 may have been only marginally noticed, would the expiration of those tax cuts, which reduces an employee's take-home pay, gain more taxpayer attention? And, how would this reduction in take-home pay affect spending? The answers are important in determining whether and how the stated government's agenda and its rebate distribution choice will likely affect spending versus saving.

This paper examines the 2009, 2011 *and* 2013 tax rebate changes to answer the following research questions: (1) Comparatively, how many U.S. taxpayers knew whether or not they received the 2009 and 2011 rebates, (2) whether they noticed the 2013 rebate reversal, and (3) comparatively, what types of investment/saving and spending that result from rebates and the rebate reversal.

Because the 2009 and 2011 tax rebates were delivered in small amounts through decreased periodic payroll withholding, no action was required on the taxpayer's part to receive either refund. The taxpayer would be less likely to notice this type of rebate than a tax rebate where a check came in the mail, as in 2008. Similarly, the 2013 rebate expiration that resulted in less take home pay may have gone unnoticed, because the taxpayer did not have to write a separate check for the increased tax liability. Given Tversky and Kahneman's (1986) finding that losses loom larger than gains, it seems possible that taxpayers would have noticed the 2013 expiration of the 2011 tax rebate even if they did not generally notice the 2009 or 2011 tax rebates.

The remainder of this paper is organized as follows: previous literature is reviewed; the research questions are stated, followed by the methodology for gathering and analyzing data pertinent to the research questions; results are presented, followed by a discussion of those results and conclusion; and, lastly, limitations and future directions for research are presented.

LITERATURE REVIEW

For decades, not only labor theory but also numerous econometric studies on labor supply indicate a positive elasticity of labor supply from take-home wages (Ashenfelter and Heckman, 1976; MacRae and Yezer, 1976; Dunn and Cordes, 1994; Blundell, et al, 1998). Economists disagree on how taxpayers handle income from different sources and, in particular, tax rebates. Several researchers have studied how taxpayers spend rebates or cope with higher taxes (Shapiro and Slemrod 2003a, 2003b; Slemrod and Bakija, 2004; Chambers & Spencer, 2008), however these studies assume that taxpayers are aware of how their paychecks are affected by the tax change. Mental accounting theory asserts that individuals informally segregate and label funds, often depending on the regularity of the income flow (O'Curry, 1997; Thaler, 1999). These accounts are periodically reconciled and evaluated (Read, et al., 1998). For poorer households, reconciliation periods are shorter than for wealthier households. New York taxi cab drivers reconcile their earnings daily (Camerer, et al., 1997); MBA students reconcile their meals and entertainment budgets weekly and their clothing budgets monthly (Heath and Soll, 1996); and physicians reconcile their budgets yearly (Rizzo and Zeckhauser, 1998). Shefrin and Thaler (1988) theorized that a "lump sum bonus" is treated differently from "regular income," even when the bonus is fully anticipated; a lump-sum bonus increases savings more than regular income because it: (1) lowers what would have otherwise been distributed as regular monthly income, so workers lower regular spending; and (2) allows for "a considerable binge" and/or an increase in savings when the bonus is received. Framing of income also matters. Epley, et al. (2006) also found that people spent more of an income increase when they perceived that income to be a "bonus" rather than a "rebate." Baker, et al. (2007) found that individuals spent more money from a likely recurring income source, specifically dividends, than from capital gain income from the sale of equities.

Friedman (1957) theorized that individuals will spend income from permanent sources, but not from temporary sources. Blinder (1981) asserted that a permanent tax decrease results in more prompt spending response than a temporary tax decrease, which he surmised would be treated as half normal income tax change and half pure windfall. The regularity of tax cuts may affect how individuals use the funds (Souleles, 2002) and Johnson, et al. (2005). Shapiro and Slemrod (1995) had previously found that almost half of the taxpayers who received the 1992 reduction in tax withholding from paychecks expected to spend most of the money, even though that meant reducing their year-end refund or increasing the amount of tax due on with the filing of that year's tax return. Parker (1999) found that temporary social security tax reductions for high-income wage earners were not used evenly over the upcoming fiscal year; they were generally spent in the period the tax cut was received. In contrast, only about a quarter of the taxpayers expected to spend their lump-sum 2001 tax rebate (Shapiro and Slemrod 2003a, 2003b). Slemrod and Bakija (2004) tentatively attributed the difference in savings percentages of 1992 and 2001 to changing economic conditions. However, Chambers and Spencer (2008) showed that changing the distribution of hypothetical tax rebates from a one-time lump sum amount to smaller, monthly rebate amounts totaling the same as the lump sum would in itself increase the percent of the refund spent instead of saved.

In any market, each transaction involves a "transaction cost" in terms of time, effort, safeguard or self-control bias, and the cost of a single, lump-sum deposit may be less than the cost of a series of 12 periodic deposits. Ironically, behavioral economics assumes that an individual will forego such a cost/benefit analysis in the decision-making process if small monetary amounts are involved, because such weighing is in itself somewhat costly. Instead, behavioral economics considers individuals to be "cognitive misers," employing heuristics where the type of decision is fairly routine (Fiske and Taylor, 1984; Orbell and Dawes, 1991; and Prelec and Loewenstein, 1991). Heath and Soll (1996) outlined two steps individuals use to track differences in expense spending: (1) expenses are noticed; and then (2) expenses are assigned to their proper accounts. The implication is that some expenses may be unnoticed altogether. Arguably, taxpayer awareness of tax rebates received and reversed may go unnoticed, similar to other expenses. Chambers et al. (2009) found that tax rebates of less than about $500 are immaterial to most of those taxpayers.

2009 and 2011 Federal Tax Rebates and the 2013 Federal Tax Rebate Expiration

In 2009, a tax rebate was distributed in the form of lower taxpayer withholding from individual paychecks, in amounts much lower than the $500 materiality threshold. Similarly, a lowering of the FICA tax by 2 percent of taxable income was initiated in 2011, replacing the 2009 rebate and lasting through 2012. Both of these lowered taxes were intended to stimulate the economy through additional consumer spending. This 2011 rebate expired in 2013, restoring the higher FICA withholding from individual paychecks, resulting in lower take home pay.

The American Recovery and Reinvestment Act of 2009 (Public Law 111-5) authorized a new Making Work Pay tax credit of 6.2 percent of earned income, which was paid through reduced withholding, resulting in larger take home pay, generally over several pay periods, up to a total of $400 for single taxpayers and up to $800 for married couples filing joint returns. Individuals whose paychecks were small and/or uneven might have received additional take home pay, but because the amount was small, they may not have attributed the increase to a tax rebate. The credit was phased out for single taxpayers with modified AGI between $75,000 and $95,000, and for married couples filing jointly with modified adjusted gross income between $150,000 and $190,000. Sahm, et al. (2010) found that 60 percent of taxpayers likely receiving a 2009 rebate did not know whether they received a rebate at all.

The 2011 tax rebate was distributed by reducing the employee's portion of the social security tax from 6.2 percent to 4.2 percent of the first $106,800 of earnings. This was a savings of approximately $1,000/year ($83/month) for the average family, but upper income families could see as much as $2,136, based on two earners who reach maximum social security earnings, and other families, e.g. the unemployed or retired, received nothing. In 2013, the 2011 tax rebate expired, restoring the social security tax back to 6.2%, levied on the first $113,700 of earnings.

RESEARCH QUESTIONS

Heath and Soll (1996) recognized that awareness of expenses explicitly precedes their assignment to a mental account. Generally, individuals notice extra money received, but in the filing season for tax year 2009, so many taxpayers could not recall whether or not they received a tax rebate that the Internal Revenue Service implemented a hotline so that taxpayers could call to verify whether they received a rebate. If losses loom larger than gains, then perhaps taxpayers would have noticed the loss in take home pay when the 2011 tax rebate expired in 2013, even if they had not noticed the gain in take home pay in 2009 and in 2011.

RQ 1 *Descriptively, what percent of working individuals noticed the change in tax withholding in 2009 and 2013?*

Shapiro and Slemrod (1995) measured the use of the 1992 rebates as either: "(A) spend, (B) save, (or) (C) repay debt," where debt repayment was considered a form of saving by Shapiro and Slemrod (1995) because it increases net worth. However, these choices do not distinguish between short-term savings, which do stimulate the economy (though not immediately) and long-term savings. This study uses the six categories developed by Chambers and Spencer (2008) that allow for more precise answers while still keeping a manageable number of options: (1) investing in long-term savings vehicles like certificates of deposit and debt/equity securities; (2) paying down credit card debt; (3) paying down long-term notes payable; (4) spending for monthly bills; (5) spending on durable goods; and (6) saving for short-term goals like a vacation.

Throughout this study, saving (overall) is defined consistent with Shapiro and Slemrod (1995) as either increasing assets and/or decreasing liabilities, that is, an increase net worth. Short-term saving is initially included as part of savings, delaying the stimulation of the economy. In a second analysis, short-term saving is included as part of spending because it is expected to be spent before a 12-month period has elapsed, stimulating the economy at the expense of net worth. For the 2009 and 2011 rebates and the 2013 rebate expiration, this study examines how individuals respond:

RQ2 *Compared to the use of the 2009 and 2011 tax rebates, how was the 2013 cancellation of the 2011 rebate financially recovered among (1) investing in long-term savings vehicles like certificates of deposit and debt/equity securities; (2) paying down credit card debt; (3) paying down long-term notes payable; (4) spending for monthly bills; (5) spending on durable goods; and (6) saving for short-term goals like a vacation.*

METHODOLOGY

2009 Payroll Tax Reduction

From April through August 2009, 218 survey questionnaires were distributed to members of the Corpus Christi, Texas community. The survey was conducted in a way to ensure the anonymity of respondents. Respondents included 130 university students, some of whom received extra credit equal to about one percent of points accumulated toward their final grade for their response. Students have been found to be good substitutes for the public at large (Walters-York & Curatola, 1998), so the results in this paper have been aggregated across groups as presented here. However, the student and non-student groups were segregated for additional analysis, and consistent with Walters-York & Curatola (1998), no significant behavioral differences were found.

The instrument asked whether respondents received a 2009 tax rebate through reduced withholding, allowing for three responses: “Yes,” “No” and “I don’t know.” Those who responded affirmatively were then asked the amount of the rebate and how much of the rebate they spent on each of the six categories. They were also asked to respond to questions on demographics and financial status. The dollar amount that an individual allocated to each of the six categories was converted to a percent of the total rebate then sorted into saving and spending categories. Investing and paying off credit card debt and/or notes are classified as (long-term) savings (items 1 through 3); monthly spending and purchasing durable assets are classified as spending (items 4 and 5). Saving for an infrequent expense (short-term savings, item 6) was added to total savings in one analysis and the total spending category for that analysis is named “Immediate Spending.” In the second analysis, it is included it as spending instead of saving because it will stimulate the economy before the end of the year, and the amount saved is labeled “short-term saving.” Research Question 1 was also analyzed using t-statistics to ascertain whether the number of respondents choosing “I don’t know” was significantly different from zero, and whether it changed from 2009 to 2013. Because the number of respondents who were expected to know they had received a rebate was small, the second research question was analyzed using descriptive statistics.

2011 Payroll Tax Reduction

In February and March, 2011, another survey questionnaire was distributed to university students, some of whom received extra credit equal to about one percent of points accumulated toward their final grade. The survey was conducted so as to ensure anonymity. Respondents were asked to calculate their rebate. The advantage to this approach is that it controls for the awareness that they were at least eligible to receive it; however, that awareness impairs the comparability of the 2011 results to the 2009 results. Students were then asked how much of the rebate they would spend on each of the same six categories used above used for 2009. The amount for each of the categories was converted to a percentage of the total rebate then sorted into saving and spending categories in the same manner as for the 2009 rebate. The two research questions were analyzed with descriptive statistics. Of the 2009 respondents who perceived that they had received a rebate, the percentages of the amounts spent and saved were regressed to control for adjusted gross income, gender, size of the yearly rebate and perceived business experience.

2013 Payroll Tax Reduction Reversal

In March through September of 2013, another survey questionnaire was distributed to university students; 171 questionnaires were completed and returned. As before, (1) some of whom received extra credit equal to about one percent of points toward their final grade, and (2) the survey was conducted so as to ensure the anonymity. A copy of this survey is attached in the Appendix. Students were first asked whether they were employed. The 29 unemployed respondents were eliminated from further analysis. Of the remaining 142 responses, twelve failed validity checks embedded in the instrument (eight of these failures were from students).

The survey asks students whether more money was being taken out of their 2013 paychecks than their 2012 paychecks, to control for those who did not have paychecks in 2012. Students were then asked how much of the difference they would have otherwise spent on each of the same six categories used above for 2009. The amount for each of the categories was converted to a percentage of the total difference in take home pay then sorted into saving and spending categories in the same manner as for the 2009 rebate. The two research questions were analyzed with descriptive statistics. A t-test was run to see if the number of those who did not know whether more was being taken out of their paychecks was significantly greater than zero, and a second t-test was run to see if the number of students who did not know whether their rebate was reversed in 2013 was significantly greater than the number of respondents who did not know whether they received a rebate in 2009.

RESULTS

Average income for the 218 respondents in the 2009 survey was approximately $66,693 for those who responded that they had received a rebate and $57, 082 for those who did not know whether they had received a rebate. Median income of the entire group was $43,000. By comparison, in 2008, the average for U.S. households was $71,498 with a median income was $52,029 (U.S. Census Bureau, 2009). While the sample household means and medians were below the national numbers, a sample with these lower amounts are more like potential stimulus recipients, because high earners did not receive stimulus payments. Non-family households account for approximately one-third of all U.S. households and roughly half of this sample. The 2008 average income for all U.S. non-family households was a much lower, at $45,375, with a median of $31,649 (U.S. Census Bureau, 2009). Overall, respondent income in this sample appears comparable to the national numbers, even when students are included in the sample. This may be because the students sampled attend a university with a largely non-traditional student population, where it is common for students to work at least part time. Demographically, respondents averaged 28 years of age, had some college, averaged eight years of business experience, and had perceived business experience averaging 2.9 on a 5-point Likert scale. Roughly 55 percent of the respondents were female. None of the control variables were significant.

For the 2011 lowered FICA tax, 124 analyzable responses were received, of which 17 respondents, 13.7 percent, had no income and no rebate. The remaining 107 were analyzed further with descriptive statistics. Respondents of the 2011 survey earned an average income of approximately $41,553; all other demographic results were similar to those of 2009. For the 2013 FICA tax reversal, 171 responses were received and analyzable, but 29 respondents (17.0%) had no income and no reduced FICA tax expiration. Descriptive statistics for the 2013 respondents were similar to the 2009 and 2011 results. Focusing on the two research questions:

RQ1 *Descriptively, what percent of working individuals noticed the 2009 and 2013 2% change in tax withholding?*

Of the 218 responses to the 2009 survey, 102 (46.7 percent) did not know whether they received a stimulus payment. Survey responses indicating that respondents would have been eligible for the rebate were separated out from those surveys indicating ineligibility. While filing status was not collected, the total number of respondents eligible to receive the rebate was at least 125 of the 151 respondents (82.8 percent) of those who reported AGI, and possibly as high as 98.0 percent of all respondents. Using a t-statistic, the number of people who did not know whether they had received the stimulus was significantly different than zero, at $p \leq 0.0001$. Only 66 of the respondents who did not know whether they had received higher take home pay also answered the AGI question, of which at least 55 (83.3 percent) should have, based on self-reported AGI.

Of the 142 analyzable responses to the 2013 survey, 55 (38.7%) were unaware of the decrease in their paychecks due to the expiration, 84 (59.2%) were aware of the change, and 3 people (2.1%) did not respond to the question. Using a t-statistic, the number of people who did not know whether they received these stimulus payments was significantly different than zero at $p \leq 0.0005$; however the difference between the number of 2009 respondents who were unaware of receiving the tax rebate and the number of 2013 respondents who were unaware of the FICA expiration was not statistically significant.

RQ2 *Compared to the use of the 2009 and 2011 tax rebates, how was the2013 cancellation of the 2011 rebate financially recovered among (1) investing in long-term savings vehicles like certificates of deposit and debt/equity securities; (2) paying down credit card debt; (3) paying down long-term notes payable; (4) spending for monthly bills; (5) spending on durable goods; and (6) saving for short-term goals like a vacation.*

The 55 respondents who reported receiving rebates in 2009 reported receiving an average of $38.82 per pay period; 55.3 percent of respondents were paid bi-weekly. Of these, 11 respondents did not provide information on how they distributed the rebate among spending and saving categories, leaving 44 analyzable distribution observations. Those respondents reported spending 59.8 percent immediately, and 72.0 percent by the end of the year. See Table 1.

Table 1
DESCRIPTIVE STATISTICS FOR AMOUNT OF 2009, 2011 AND 2013 REBATES AND REVERSAL SPENT, IN PERCENTAGES

	2013 FICA Rebate Expiration		**2011 FICA Rebate**		**2009 Income Tax Rebate**	
	Immediate Spending	*Spending & Short-Term Savings*	*Immediate Spending*	*Spending & Short-Term Savings*	*Immediate Spending*	*Spending & Short-Term Savings*
Mean	-46.2	-90.7	48.5	61.0	59.8	72.0
Standard Error	0.057490	0.032670	0.042543	0.041629	0.069515	0.062380
Median	0.50000	1.00000	0.479904	0.875000	1.000000	1.000000
Mode	0.00000	1.00000	0.000000	1.000000	1.000000	1.000000
Std. Deviation	0.437880	0.248820	0.440070	0.430619	0.461108	0.413785
Kurtosis	-1.729100	7.615290	-1.780480	-1.620480	-1.772650	-0.61990
Skewness	0.142670	-2.864920	0.052417	-0.404880	-0.410200	-1.081270
Range	1	1	1	1	1	1
Minimum	0	0	0	0	0	0
Maximum	1	1	1	1	1	1
Count	58	58	107	107	44	44

Respondents of the 2011 survey invested a significantly larger percentage of the rebate in stocks and bonds than the respondents of the 2009 rebate and also significantly increased the pay down of long-term notes and credit cards. The long-term savings increase was financed by cutbacks to monthly expenses, and to a lesser extent, durable goods. The percentage invested in short-term savings was relatively the same for the two groups. The immediate spending increases of 2009 and 2011 were essentially reversed by the 2013 rebate reversal. However, short-term savings also substantially decreased due to the rebate reversal. See Table 1 and Table 2.

Table 2
COMPARATIVE DISPOSITION OF REBATES, IN PERCENTAGES

As Percent of Rebate	2013 2% FICA Rebate Reversal	2011 2% FICA Rebate	2009 Regular Pay Period Rebate
n=	58	107	44
Investments in debt/equity	-3.6	22.0**	4.4
Short-term Savings	-44.4	12.0	12.1
Pay Long-term Notes	0.0	8.5**	0.6
Pay Credit Cards	-5.7	21.4**	11.7
Spend: Monthly Expenses	-29.4	34.3**	50.0
Spend; Durable Goods	-16.8	1.7**	5.3
Other	0.0	0.0	4.5
Percent Spent Immediately	**-46.2**	**36.0**	**59.8**
Percent Spent Within Year	**-90.6**	**48.0**	**72.0**

* All percents are rounded.
** Percent of 2011 rebate applied is significantly different ($p \leq .05$) from the 2009 percent of monthly rebate.

Spencer and Chambers (2012) observed that individuals' spending/savings disposition changed as an unexpected effect of the latest recession, likely because the unemployment rate and weeks unemployed rose dramatically, while at the same time the value of real assets declined precipitously. When consumer expectations concerning the future become bleak, that can cause a heuristic shift between spending and saving that appear as a response to some new exogenous change, instead of an endogenous shift in disposition toward income. The correlation between immediate spending and those who said they would spend a lot of money if they received it was 0.789. Interestingly, the correlation between those who thought they would spend the rebate immediately and those who said they would spend a little money if they received it was -0.399. This could be because the respondents felt that the amount of money in the rebate was material, contrary to Chambers, et al. (2009), or that respondents general perceptions of what they would do with money does not match up well with specific hypotheticals. The correlation between those who would spend, rather than save a lot of money, and those who would spend only a little money was -0.172, which might indicate that (1) money in budgets may not be strictly fungible, (2) different amounts of money are matched to different uses, consistent with mental accounting, or (3) with a hypothetically large amount of money, spending would be sated, and the desire to save would be met next.

DISCUSSION

The 2009 stimulus was largely unnoticed by individual taxpayers. This could indicate little precise knowledge of paystub information, a high rate of functional financial illiteracy or a high materiality level among taxpayers (Sahm, et al., 2010; Chambers, et al., 2009). The expiration of the FICA tax rebate was also largely unnoticed, although to a lesser degree. While the number of people not noticing the 2009 and 2013 tax changes was significantly different from zero, there was no significant difference in the number of unaware respondents from 2009 to 2013, contrary to Tversky and Kahneman (1986). This may be because all of these numbers are immaterial to taxpayers, consistent with Chambers, et al. (2009). However, the correlation between respondents saying they would spend a lot of money and the respondents' actual choices in this situation correlate strongly.

Answering Research Question #1, more people noticed decreased income than increased income, but the number of people who did not notice a change in their paychecks was large in both cases. The rebates of 2009 were stealth rebates; most individuals were unaware of the changes in take home pay. Fully 46.7% percent of those in the 2009 rebate study who answered the AGI question *did not know* whether they had received the stimulus. In the 2013 survey, 38.7 percent were unaware of smaller paychecks, whereas 59.2 percent were aware of a change. These results support either a functional financial illiteracy or a general neglect of the composition of their pay. But, whatever the cause of this lack of awareness, it seems clear that a small change in marginal tax rates would be insufficient to significantly affect the number of hours offered in the labor market.

Answering Research Question #2, as shown in Table 1, most of the 2013 respondents planned to immediately stop spending approximately the same amount as the extra they spent from the 2009 and 2011 tax rebates, across both regular monthly expenses and purchases of durable goods. By the end of 2011, 61.8% was planned to be spent, versus a 90.7% reduction in yearly spending by the end of 2013, indicating an asymmetry in the stimulus effects of this tax rebates/cancellation. That is, cancelling a rebate appears to slow a rebate more than granting a rebate stimulates the economy. The tax rebate cancellation has likely slowed the economy, but the effect may be lost in the noise of government shutdowns and an otherwise growing economy. A much larger reduction in the amount of short-term savings the income would fund indicates that the effect of the 2013 rebate expiration likely lasts over several quarters, starting immediately. Individual households with less in short-term savings may be less able to absorb such adverse financial shocks.

Two major implications are suggested by these results: (1) it is difficult for a politician to earn political capital for championing a tax rebate that has gone largely unnoticed. Besides the economic cost, the rebate reversal created is a political cost (or disadvantage), as noted by Grunwald (2012). (2) Government may well be able to tax more if the tax is collected a little bit at a time, and in small amounts per payment. A small, regular tax may go largely unnoticed by some, and even those who notice may be unconcerned with having to pay it, negating the political damage of raising tax rates by a small percentage or broadening a tax base. More so, there is likely to be little material political fallout for letting a tax rebate expire versus a raise in tax rates, but doing so could slow the economy over several quarters.

How did consumers change credit card payments when take home pay shrank? They reduced the amount respondents paid on credit cards by very little. This could be because (1) they regularly pay the minimum on credit cards, allowing for no room to reduce the amount they would spend, (2) the credit cards are largely paid off, so there is no payment to reduce; or (3) the heuristic shift causes a lingering, post-recession distaste for credit card balances.

As shown in Table 2, the 2013 tax rebate cancellation was borne in the majority by short-term savings and spending on durable goods (44.4% and 16.8%, or 61.2% in total). However, neither of these categories were large categories of spending in either 2011 or 2009, indicating another asymmetry between tax rebates granted and tax rebates cancelled. The reasons for this are unclear: maybe taxpayers didn't trust that the rebates actually would expire. Indeed, Congress has a history of renewing tax breaks, sometimes retroactively. Maybe taxpayers plan to lease durables rather than buy them. Most cars, furniture and major appliances can be rented. Perhaps many durables are considered luxuries, and not needed. Short-term savings may have been designated for financial setbacks (as a "rainy day" fund), and perhaps taxpayers classified the tax rebate cancellation as a small financial setback.

While the 2009 and 2011 rebates were enacted to be temporary, the funds were generally spent, consistent with Beach and Wilson (2001), who concluded that decreases in marginal tax rates would stimulate economic growth more than lump sum tax rebates of the same magnitude, because (1) decision-makers' assumptions are based on the income stream, and (2) evenly distributed "lumps" of rebates are not perceived as a permanent.

LIMITATIONS AND FUTURE DIRECTIONS

A limitation of this study was how the 2011 survey was constructed. Unlike the 2009 survey, the respondents were asked if they had received a rebate and, if so, how they had spent it. The 2011 participants were informed that they had or would be receiving a rebate, and then asked how they intended to spend it. These are different constructs, making a direct comparison difficult. However, Sheppard et al. (1988) found a significant 0.53 correlation between intent and actions, giving us an indication of how respondents reacted in 2011.

This sample contained a high number of students with a high business concentration. For example, for the most recent tax rebate year, 88 of the 101 students were business majors. This concentration should arguably bias against financial ignorance, which likely understates the percentage of respondents that do not know what's in their paycheck. However, *ceteris paribus*, this education may be offset in part, whole or more than whole by less experience receiving and perhaps reading paychecks. Indeed, in the most recent tax rebate year, as a percent, 60% of the students did ***not*** notice the rebate expiring, whereas only 53% of the non-students were ill-informed. That is, the effect of education was more than offset by other factors, perhaps having had fewer paychecks and less experience in how to calculate their pay.

To test for differences between student and non-student samples, respondents were segregated into those two groups, and descriptive statistics were re-run for the immediate spending and the immediate spending plus the short-term savings percentages. Some differences were found. Immediate spending for students was 64.1% v. 57.9% for non-students, and immediate spending plus short-term savings for students was 72.8% v. 76.2% for non-students. However, the difference in immediate spending between these two groups was not statistically significant. Both results support Walters-York & Curatola (1998). Because behavior differences between students and non-students were not significant, these numbers are presented in the paper in aggregate.

The fact that taxpayers did not notice small amounts of higher income in their paychecks may also speak to the financial literacy of the general population. It is uncertain to what extent people know what goes into or out of their paychecks, and this calls for further study.

CONCLUSION

Public policy analysts, economists and politicians can learn lessons from the FICA rebate reversal: first, employees have only a casual knowledge of the amount of money in their paychecks, making it difficult for policymakers who wish to use this as a tool to elicit changes in the amount of labor offered by workers. Second, making small tax adjustments, whether up or down, to taxpayers' paychecks goes largely unnoticed. This is good news for a less than forthright employer or taxing entity raising taxes, but bad news for politicians distributing tax rebates and wishing to earn appropriate credit for assisting a broad base of taxpayers. Third and finally, those who did notice the change in their take-home pay reacted to the reversal of the FICA tax rebate by intentionally trimming their monthly expense and durable goods budgets, which likely slows the economic recovery.

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APPENDIX – 2013 INSTRUMENT

Payroll Tax Change Survey – Please *check the answer* that corresponds to the category that best describes you:

1. Did you have a job in 2012 that continued into this year? ☐ Yes ☐ No

(If no, please skip to question #12.)

2. **If you circled "Yes":** How are you are paid? ☐ Weekly ☐ Bi-weekly ☐ Monthly ☐ Other (please explain) ___

3. What is your current monthly income? $_____________

4. **If you circled "Yes" in #1:** Compared to 2012, is more money being taken out for taxes on your 2013 earned income? ☐ Yes ☐ No

(If no, please skip to question #12.)

5. **If you circled "Yes" in #4:** Approximately how much ***more*** is taken from each paycheck than last year? $_____
Given your answer to #5, how will you make up that amount of money?

6.	Invest less (in stocks, bonds, savings account, etc.)?	$
7.	Increase credit card debt?	$
8.	Finance more through long-term notes (e.g. mortgage, car note, etc.)?	$
9.	Take out about evenly every month for expenses?	$
10.	Buy fewer durable assets (e.g. car, boat, washing machine, furniture)?	$
11.	Save less for an infrequent expense (e.g. vacation, bigger holiday gifts)?	$
	Amount must total your answer in #5 above------------→	__________

12. **Gender:** ☐ Male ☐ Female 13. **Age at last birthday _______** 14. **Zip code __________**

15. **Currently taking college classes?** ☐ Yes ☐ No
16. **Your major (*college students only*) ___________________________**
17. **What is the estimated value of your financial assets (savings, investments etc.)? $_________**

IN *PERCENTAGES*, how your financial assets are distributed among the following (must add up to 100%).
18. Checking accounts _______% 19. Saving accounts _______% 20. Stocks/bonds/mutual funds _______%
21. Retirement/pension funds _______% 22. Other _______% (*please specify)*_____________
23. **What is the estimated value of your real assets (home, vehicles, personal property, etc.)? $__________**
IN *PERCENTAGES*, how your real assets are distributed among the following (must add up to 100%).

24. Home _______% 25. Vehicles ____% 26. Personal property *(furniture, tools, electronics, jewelry, etc.)* ____%

27. Other real estate _______% 28. Other _______% (*please specify*) ________________________

29. What is the highest level of your education? ☐ Less than high school ☐ High school/GED
☐ Some college ☐ Bachelor's degree ☐ Master's degree ☐ Above Master's degree

30. What is the subject area is your highest degree *(college graduates only)*? _________________________
31. How you would classify your business experience level: ☐ Very Low ☐ Low ☐ Average ☐ High ☐ Very High
32. What is your racial/ethnic identity? (Check all that apply) ☐ African American ☐ Asian American
☐ Hispanic American ☐ Native American ☐ White American Other (*please specify)* ________

33. When a passenger in a car, how often do you wear a seat belt? ☐ Always ☐ Most of the time ☐ About ½ of the time ☐ Sometimes ☐ Very seldom

34. When you *get **a little*** extra money each month, what do you normally do with it? ☐ Spend it ☐ Save it ☐ Pay off debt

35. When you get ***a lot*** of extra money, what do you normally do with it? ☐ Spend it ☐ Save it ☐ Pay off debt

Thank you!

ESTIMATING CROWD SIZE: A MULTIDISCIPLINARY REVIEW AND FRAMEWORK FOR ANALYSIS

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ABSTRACT

For decades, academicians and practitioners have identified a multitude of applications for crowd size: festival managers and destination marketers use it to estimate the success of promotional campaigns, sponsors calculate ROI, world leaders determine the popularity of political movements, and the police and military gauge the effectiveness of their security policies. For open-access, non-ticketed events, estimating crowd size is not a straightforward matter. Festival managers, business researchers, sports and entertainment marketers, social scientists, computer scientists, and electrical engineers have tackled the problem, many working in "silos" unaware of each other. This paper reviews and compares multiple approaches to measuring crowds, and provides a breakdown of which assessment variables are affected by specific crowd, venue, and event characteristics. Researchers in all disciplines may benefit from applying an analysis of crowd, venue, and event characteristics, to identify which detection modes, methods of analysis, number of detection locations, and number of measures over time are appropriate for estimating crowd size.

INTRODUCTION

For decades, numerous articles in the popular press, in trade journals, and in academic literature have described the importance of obtaining accurate estimates of crowd size for a multitude of reasons. Social scientists, historians, newspaper reporters, advertising and public relations professionals, community leaders, and political scientists, to name just a few, have sought accurate methods of identifying the size of crowds, in order to describe such things as the popularity of social movements, the measures required for safety in crowd control, the economic impact of planned events, or the impact of crowds on the environment.

In situations where tickets to events are required, establishing the number of attendees at an event is a straightforward process: simply count the number of tickets sold. But for open-access, non-ticketed events, another means of calculating the size of the crowd must be devised.

As the need for crowd counts has occurred in a diversity of situations, for a variety of applications, several different approaches have been pursued, independently of each other, to estimate the size of crowds at open-access, non-ticketed events.

A review of the literature reveals that no multidisciplinary review of methodologies for estimating crowd size has been undertaken. Rather, reviews occur within disciplines with little regard for what may be developing in other areas of study. The purpose of this paper is to review, compare, and contrast the multitude of methodologies developed in a variety of disciplines for the estimation of crowd size, and to provide a framework for determining appropriate assessment methodologies relative to event and crowd characteristics.

Section 2 of this paper presents an overview of the depth and breadth of interest in, and need for, accurate calculations of crowd size. Section 3 contains a description of the study methodology. Findings are in Section 4, discussion in Section 5, and conclusions and recommendations in Section 6.

LITERATURE REVIEW

A review of literature in academic journals, trade journals, and the popular press confirms the widespread desire for accurate assessment of crowd size for open-access, non-ticketed events.

Politicians, community leaders, and social psychologists want to gauge the popularity of various religious or social movements by comparing the size of crowds in attendance for different demonstrations, political rallies, and organizational meetings (Drury & Stott, 2012; Furedi, 2009; Miller, 2014; and Rohlinger & Snow, 2003).

The police and the military have a need to estimate the numbers of people in a given space, and anticipate crowd behavior, in order to provide adequate security (Banarjee, Abukmail & Kraemer, 2008; Barany, 2011; Bialik, 2011; McKenzie, et al., 2008; Stuart, 2012).

Advertisers and public relations firms that buy the right to display brand names and logos at sporting events and other public gatherings require accurate head counts of crowds in attendance in order to assess the number of impressions achieved per ad dollar spent (Chebli & Gharbi, 2014; Davies, Ramchandani & Coleman, 2010; Ibrahim, 2014; Levin, Joiner & Cameron, 2001; Mickle, 2014.)

Festival organizers who want to determine the extent to which their efforts "pay off" in economic terms need to know the number of festivalgoers in attendance as well as the average amount spent by each one (Holmes, 2015; Lennon, 2014; Stambro, 2013.)

For ticketed events, calculation of crowd size is straightforward. Organizers must simply tally the total number of tickets sold. It is for non-ticketed, open-access events that researchers devise other, more circuitous routes to arrive at total attendance figures. Because there is no single accepted formula for arriving at a figure, inconsistencies in crowd size estimates often occur, and may cause substantial turmoil.

Take, for example, the "Million Man March" initiated by Louis Farakhan in October of 1995 in an effort to impact public perceptions of African American males and to address social and political issues of concern to Blacks. The National Park Service received considerable flak from event organizers when it reported that attendance on the Washington Mall totaled only 400,000 (McPhail & McCarthy, 2004). The controversy over attendance figures prompted ABC News to commission the expert opinion of Boston University's Center for Remote Sensing, which analyzed original negatives of aerial photographs and put total attendance between 650,000 and 1.1 million ("Million Man March," 1997).

Thus, many report that accuracy in estimating crowd size is an important issue, with a variety of applications. From the advertising industry to the military, the need for accurate estimates of crowd size has resulted in a diversity of approaches and development of a multitude of methods. This paper takes the unique approach of reviewing and comparing the various methods. How are the experts in various fields approaching the issue and resolving the problem?

METHODOLOGY

As the present study is not intended to be a comprehensive content analysis of the work in crowd size calculation in several disciplines, but is instead an attempt to discover similarities and differences across disciplines, a two-stage process was used, to reveal the most recent efforts to assess crowd size in several academic areas.

First, an initial review of the literature in the most recent issues of major journals in the social sciences, business, computer science and engineering, and tourism and hospitality management was conducted. Second, a snowball sample of articles was derived from relevant articles cited in the original works. The two-step method used here was designed to identify the various approaches being pursued in academic and industry "silos."

FINDINGS

Many of the researchers working to estimate crowd size have pursued similar routes, but are apparently unaware of each other's efforts.

Image-Based *Grid/Density* Model: Jacobs

The earliest proposed methodology for estimating the size of crowds in open-access, non-ticketed events also has the greatest longevity — the *grid/density* method first described by Herbert Jacobs in a 1967 issue of the *Columbia Journalism Review* (Jacobs, 1967).

Jacobs, a journalism lecturer at the University of California at Berkeley in the Sixties, had occasion to view many student demonstrations from his office above Sproul Plaza, where rallies often occurred. He obtained blueprints to determine the square footage of the plaza, which was divided by stone pavement lines into 22-foot squares, and calculated how many square feet each spectator would cover. Using photos taken from his upper floor window, and personal observation from walking through the crowds, he calculated the average density per square (for example, 85 people in a square indicated an average density of 5.7 square feet of space per person), and multiplied that by the number of squares over the entire grid. His density-per- square figure varied over the space of the grid, as he noted that the density of the squares increased the closer the square was to the speaker, or decreased overall on days that the speaker generated little interest.

As simplistic as Jacobs' method sounds, the concept has served as the basis for a substantial number of crowd-estimating techniques developed in many different disciplines, even well into today's computer-based methods, as will be shown in the following paragraphs.

Recent Image-Based *Grid/Density* Models: High-Tech Updates of Jacobs

Several researchers have maintained the basic logic of Jacobs' model but have augmented its implementation through the use of advances in image capture and analysis. While Jacobs used photos taken from his office window and counted individuals manually, other researchers have employed more advanced methods of capturing images, for example, using aerial photos taken by drones, satellites, and surveillance balloons (iRevolutions.net, 2014; Melina, 2010; Raybould, et al. 2000) as well as more high-tech methods for analyzing the images, mainly using computers with sophisticated software programs, such as background removal software using pixel statistics (Davies, Yin & Velastin, 1995) or pattern recognition software using texture analysis (Marana, et al. 1999).

Austin Choi-Fitzpatrick is a political sociologist working with his students in Hungary to develop methods to estimate crowd size, mainly for political protests, using drones (Choi-Fitzpatrick, 2014). Their goal is to develop imagery that does not reveal facial data but will allow a body count, to protect the privacy of individual crowd members. The photos are divided into grids so that the grid/density method can be applied.

Curt Westergard of Digital Design & Imaging Service works with Arizona State University journalism professor Steven Doig to calculate the size of crowds on the Washington Mall for CBS News (Gaynor, 2012). Wireless panoramic cameras are sent above the mall on a surveillance balloon tethered to a truck. The cameras transmit photos to computers on the ground, which overlay grids and establish crowd numbers based on the grid/density method.

Computer scientist and software engineer Ming Jiang and his colleagues analyze video imagery of crowds by combining background subtraction with pattern recognition techniques. They first estimate crowd density in various sections of the image by applying a pixel statistical algorithm combined with a texture analysis algorithm, and then add the numbers derived for each of the sections to arrive at a total number of people in a scene (Jiang, et al. 2014). The method used by Jiang and his colleagues represents an enhancement of Jacobs' method in its high-tech, computerized analysis, and its use of a video image rather than a photo.

Idrees and his colleagues propose that because it is nearly impossible for a human being to count very high-density video images of crowds with any accuracy, it is necessary to use computer-based approaches to estimate crowd sizes for extremely dense crowds (Idrees, et al. 2013). Their approach is somewhat similar to that of Jiang, et al.'s (2014) in its use of computer software for pattern recognition modeling. Textures of video images are analyzed for each of several small patches into which the image is divided, counts for each patch are obtained, and the count for the entire image is the sum of counts from individual patches — essentially a grid/density approach, but an enhanced version, using computer analysis of videos.

Several computer science researchers have used "blob" size to count people in videos that are converted to binary images. Blob size optimization is a method for estimating crowd size proposed by Daud, Arif and Basalamah (2012). In this approach, video is converted, frame by frame, to separate moving objects (people) from the foreground. Foreground segmentation and pixel analysis allow identification of "blobs," the connected regions in the binary image. Blobs are analyzed for their value, and the optimal blob area is used to count the people in the video. Yoshinaga, Shimeda, and Taniguchi (2010) use a similar method by subtracting background from video images to segment regions into blobs, extract features from blobs, and apply a neural networking method to estimate the number of people in the video.

Thermal cameras are another means of image capture used by researchers, police, and retailers to detect people. Thermal sensors offer the opportunity to conduct crowd size estimation in low light situations. Rather than using photographs or video images, Maria Andersson and her colleagues (Andersson, Rydell & Ahlberg, 2009) employed thermal infra-red sensors to estimate crowd size, using the grid/density method. Several companies offer infra-red sensors to monitor foot traffic and customer movement, and to monitor crowd size (Thermal Imaging People Counters, 2015; IRISYS, 2015), but most thermal applications have occurred indoors and with small crowds.

Grid/Density Models Combined with Spectator Surveys

A number of researchers recommend combining crowd observation with some type of survey data.

Seidler, Meyer, and MacGillivray (1976) propose that a revision of Jacobs' method called "*zone-sector strategy*" be combined with on-the-spot interviewing of participants. The authors recommend dividing the crowd into zones, basically "imaginary concentric rings which half-circled the speaker's platform," and sectors, which "were wedge-like areas extending outward from the speaker's platform and formed by straight lines cutting through the zones." The purpose of forming such a grid over the crowd was to partition the crowd for sampling purposes.

Audiences London Limited (2011) recommends combining observation with follow-up surveys to correct possible error due to crowd "churn" and researcher oversight in handing out "counting items." First, they recommend doing headcounts at intervals over the course of the event and combining headcount results with "dwell time," as assessed through crowd surveys, to incorporate crowd turnover, or "churn," into final estimates. Second, they recommend that if items are given away as counting aids at the entrance or exit, that results of a survey to determine the proportion of people who obtained or did not obtain an item be considered in calculation of the final estimates.

Davies, Coleman, and Ramchandani (2010) also recommend combining the grid/density calculations with a spectator survey, to separate spectators who happen upon an event at random from those who attend with purpose.

Models for Moving Crowds

An alternative to the grid/density method grew out of concern for the difficulties involved in accurately assessing the size of moving crowds. People participating in a march, for example, may not be accurately counted using static photographic images or videos that are used in conjunction with the grid/density model.

Audiences London Limited (2011) recommends a number of very simple ways to estimate moving-crowd size when there are identifiable entries and exits into the crowd space. One recommendation is simply to count the number of people entering or exiting the site. Counting aids such as manual clickers or a turnstile could be used as well. A disadvantage of the method is the need for defined entry and exit sites.

The use of what might be termed "absent" counting aids is also recommended by Audiences London Limited: beginning with a known number of items, such as stickers or programs, the authors recommend handing an item to every person who enters or exits, and determining how many are missing after the event, to indicate how many were handed out. This method, again, requires defined entry and exit sites in order to be viable (2011).

Hong Kong University Public Opinion Program (2006) devised a "count and follow-up" method of crowd estimation for moving crowds. Their method requires selection of an inspection point where participants passing the point are counted. A follow-up survey is conducted to determine the proportion of participants who did or did not pass the observation point. Final estimates are calculated based on a combination of the two pieces of data.

Yip and his colleagues (Yip, et al. 2010) recommend a revision of the Hong Kong approach that they consider more practical because it does not require a follow-up survey. Theirs is called the "double count and spot-check" method, which they claim is more efficient than the count and follow-up method. For double count and spot-check, researchers must identify two inspection points, one near the front and one near the rear of the event, and count participants at both points. The survey would not be necessary. A disadvantage is the need for well-defined entry and exit sites.

Electronic, Non-Image Based Models: Device-Dependent Methods

Recently, researchers in computer science, electronic engineering, and information technology have tackled the problem of crowd size estimation using electronic methods that obviate the need for visual images. These non-image based models require people to carry various radio devices, such as RFID chips, mobile phones, or other wireless transmitters in order to be detected.

Casinos are sophisticated users of RFID (radio frequency identification) technology, such as embedded consumer loyalty cards or bracelets. “Crowd contouring” is accomplished by combining the number of people in various areas of the casino with information about their demographics, past gambling behavior, food and drink purchases, and the like (Schüll, 2012). While casinos’ applications of RFID technology may serve as an example of what can be done, the application is indoors, with people willing to provide a good deal of personal information in order to participate in the casino activities.

Academic researchers have also used RFID technology, but because the communication range is very short and the RFID systems are expensive, RFID is often used for indoor applications rather than outdoors (Kannan, et al. 2012; Ni, et al. 2004). Kannan and his colleagues (2012) devised a unique low cost method of counting crowds using audio tones emitted and received by mobile phones. In a study using 25 smartphones, the researchers were able to assess crowd size with up to 90% accuracy.

Other researchers have used mobile smartphones in various ways to estimate crowd size. Kravets, et al. (2013) created a technique they call “CrowdWatch,” by positioning agents classified as “watchers” and “samplers” at various locations throughout the crowd, each with specific monitoring responsibilities. Weppner, et al. (Weppner & Lukowicz, 2013; Weppner, et al. 2014) used a similar technique, sending individuals with mobile phones out in a grid pattern, to scan for Bluetooth devices. For Weppner’s European study, the authors counted on near saturation with Bluetooth devices.

Botta, Moat and Preis (2015) estimated crowd size in a football stadium and an airport by observing Internet and mobile phone use, monitoring texts, tweets, and phone calls, also assuming near saturation with mobile devices.

Electronic, Non-Image Based Models: Device-Free Methods

The previously-described methods have the disadvantage of requiring that devices be held by crowd members. Other researchers have begun working with WiFi-type solutions, which operate much like sonar or radar imaging, and require no devices. In the WiFi-type solutions, signals emitted from a source are reflected off of objects in the environment, including people. The reflections are captured and assessed, and used to calculate the size of the crowd.

The “Electronic Frog Eye” described by Xi, et al. (2014) counts crowds using WiFi based on a CSI (Channel State Information) system, which is sensitive to variations in the wireless environment caused by moving objects. The authors use commercially available devices, and report that their approach outperforms existing “state-of-art” approaches.

Indirect Methods of Assessment

It is worth noting that some communities and festival managers have used indirect indicators of crowd size. The New York Sanitation Department, for example, weighs garbage generated by parade participants to calculate attendance (Feldman, 1987). Audiences London (2011) recommends recording the number of drinks or the amount of food sold to gauge crowd size.

Summary of Methods

The different methods of direct assessment of crowd size can be divided into three basic categories: grid/density methods, streaming-crowd methods, and hybrid methods, outlined in Tables 1 through 3. The methods differ in the ways that crowd members are detected (either through personal visual detection, or mediated means, such as photographs or electronic transmissions), and in the assessment methods (either manual count or computer software analysis).

The six grid/density methods are direct visual detection using manual headcounts, photo-based detection using manual headcounts, computer subtraction techniques using software analysis, computer pattern-recognition techniques using software analysis, thermal/infrared- based techniques using software analysis, and electronic transmission-based techniques (RFID, Bluetooth) using software analysis.

Table 1
ASSESSMENT OF CROWD SIZE: GRID/DENSITY METHODS

	Detection Mode	Assessment Method	Associated With
GD1	Personal/Visual	Manual headcount	Jacobs 1967
GD2	Photos/Videos	Manual headcount	Melina 2010; Raybould, et al. 2000; Choi- Fitzpatrick 2014
GD3	Computer Subtraction	Software analysis	Davies, Yin, Velastin 1995; Jiang, et al. 2014
GD4	Computer Pattern Recognition	Software analysis	Marana, et al. 1999; Jiang, et al. 2014; Idrees, et al.
GD5	Thermal/infrared	Software analysis	Andersson, Rydell, Ahlberg 2009; IRISYS 2015
GD6	Electronic transmission (RFID/Bluetooth)	Software analysis	Schüll 2012; Kannan, et al. 2012; Ni, et al. 2004; Kravets, et al. 2013; Weppner and Lukowicz 2013; Weppner, et al. 2014

All three streaming-crowd methods require defined entry and exit, as well as direct visual detection. They differ in the means of assessment. One uses a manual headcount, one a mechanical count (the use of clickers), and one a proxy count (equal to the number of "counting aids" such as stickers or bracelets that are distributed).

A single hybrid method is the physical distribution, to every member of the streaming crowd, of RFID-embedded materials such as bracelets, a method which requires personal visual detection (to ensure that every attendee receives the RFID-embedded materials), and, for the embedded giveaways, electronic-transmission based techniques of detection and computer software analysis.

Table 2
ASSESSMENT OF CROWD SIZE: STREAMING-COUNT MODELS

	Detection Mode	Assessment Method	Associated With
SC1	Personal/Visual	Manual headcount	Audiences London Limited 2011; Yip, et al. 2010
SC2	Personal/Visual	Mechanical (clicker)	Audiences London Limited 2011
SC3	Personal/Visual	Proxy count (number of "counting aids" distributed: bracelets, stickers, etc.)	Audiences London Limited 2011

Table 3
ASSESSMENT OF CROWD SIZE: HYBRID MODEL

	Detection Mode	Assessment Method	Associated With
H1	Personal/Visual and Electronic Transmission	Proxy count (number of RFID embeds distributed) and software analysis of RFID transmissions	Schüll 2012

Indirect methods and surveys can be used to supplement the grid/density, streaming- count, and hybrid methods.

DISCUSSION

An examination of the nature and purpose of an event, as well as the characteristics of the crowd and the venue itself, may provide clues as to which measurement methods are most likely to be productive for any given set of circumstances. Specifically, the restrictions of venue entry and exit, the size, visibility, dispersion, and churn rate of the crowd, and the levels of spatial and temporal differentiation of the event may be critical in determining the appropriate mode of detection (visual or mediated via photography, computer, or electronic transmission), the measurement method (manual headcount or computer software analysis), the number of detection locations (single or multiple), and the number of measures (“snapshots”) over time (single point in time or multiple points in time). Table 4 identifies how characteristics of the crowd, venue, and event can influence the choice of detection mode, method of analysis, number of detection locations, and number of measures over time.

Crowd Characteristics: Size, Visibility, Dispersion, and Churn Rate

For grid/density models, the crowd size suggests primarily which mode of detection, measurement method, and number of detection locations would be appropriate. For a small crowd, for example, visual detection, a manual headcount, and a single detection location are sufficient. As the crowd increases in size, researchers should use mediated (photo-based, computer-based, or electronic transmission-based) detection, or place several sensors within the crowd, or both.

If crowd visibility is obstructed, then researchers need to use electronic transmission- based detection (such as thermal infrared sensors, RFID, or Bluetooth) or multiple detection locations in areas that would otherwise not be visible from a single detection location.

Finally, a crowd that is unevenly dispersed, say, one that is denser near the speaker’s podium, would best be measured using multiple detection locations, and crowds with high churn rates might be more accurately assessed using repeated measures over time.

Venue Characteristics: Access/Defined Entry and Exit

Venues with defined entry and exit points allow the use of streaming-count methods of assessment. If the crowd is small, visual detection and manual headcounts at entry and/or exit points is possible. Similarly, a small crowd would allow the use of visual detection combined with measurement methods of either mechanical means (the use of “clickers”) or proxy counts (the number of stickers or other “counting aids” distributed). Crowd size can be expected to result in an interaction effect, such that larger crowds require multiple detection locations — multiple defined entry and exit points — in order for the same methods to be successful.

TABLE 4 ASSESSMENT OF CROWD SIZE: IMPACT OF EVENT VARIABLES ON MEASUREMENT VARIABLES				
	Measurement Variables Affected			
	Detection Mode	**Method of Analysis**	**Number of Detection Locations**	**Number of Measures Over Time**
By:				
Crowd Characteristics				
Size	X	X	X	
Visibility			X	
Dispersion			X	
Churn Rate				X
Venue Characteristics				
Access Type	X	X	X	
Event Characteristics				
Spatial Differentiation			X	
Temporal Differentiation				X

Event Characteristics: Spatial or Temporal Differentiation

Events may be classified along a continuum relative to differentiation of purpose, as evidenced by the spatial and temporal characteristics of the event. At one end of the continuum are undifferentiated, single-purpose gatherings, where no changes occur from beginning to end, and all activity at the event is focused on the same function. At the opposite end are highly differentiated, multipurpose events, which perform several functions either at different locations within the venue or at different points in time over the course of the event. Differentiation in the purpose of the event can result in corresponding variation in layout of the venue (spatial differentiation), or in corresponding changes in event activities over time (temporal differentiation). As the event becomes more differentiated, so should the assessment methods used. An undifferentiated event can be measured using a single detection location, at a single point in time, whereas a multipurpose event suggests the necessity of either multiple detection locations (for spatial differentiation), or multiple measures over time (for temporal variation).

CONCLUSIONS AND RECOMMENDATIONS

The fields of economics, marketing, social psychology, political science, advertising, public relations, tourism, hospitality, and the sciences all have specialized needs and unique applications for information about crowd size, but as of yet no single analytic method has been proposed for determining the appropriate estimation method. An examination of crowd, venue, and event characteristics, however, may help to identify the characteristics of the appropriate measurement method, as well as eliminate methods that would be inappropriate.

Identifying the purpose of an event, for example, will go a long way in determining the mode of detection, method of measurement, number of detection locations, and measures over time that would be desirable for achieving accurate estimates. The less differentiated the event in its purpose, the simpler the methods required. A state welcome center that is tasked with identifying interest among traveling tourists, for example, can engage in simple visual, manual, single-location, single-measure assessment, but a tourist commission charged with identifying which specific events or activities constitute the destinations of attraction within the state may need to use mediated detection techniques, computer analysis, multiple locations, and repeated measures. Similarly, broader brush-stroke measures may be sufficient for assessing the crowd at a campaign rally for a single Presidential candidate, where one's mere attendance constitutes a voicing of interest, whereas more precise tracking of crowds and their movement may be desirable for a multipurpose event such as a county fair, a flea market, or a festival. At those types of multipurpose events, the greater the degree of variation across the event space (food vendors here, music tent there) and the greater the number of changes in event characteristics over time (the winner of "American Idol" sings at eight o'clock on the final day of the event), the more important it is to have multiple detection locations and multiple measures ("snapshots") over time.

LIMITATIONS AND FUTURE RESEARCH

While the present paper does not provide a guarantee for the elimination of error in estimates of crowd size, it attempts to identify the first steps necessary for shaping a strategic plan to reduce wasted efforts in crowd measurement. Potential avenues for future research include comparisons of methods, application of new technologies, and identification of the markets for which new technologies might assist in the achievement of additional marketing goals based on two-way communication.

A comparison of methods would be greatly informative. Where crowds have near-saturation with Bluetooth devices, for example, combining the Bluetooth-based measures with some of the more rudimentary models (simple visual detection and manual assessment) would help to generate expectations for the errors associated with various methods.

Application and comparison of new technologies offer vast opportunities for learning about the possible applications of drones, RFID chips, and Bluetooth devices for improving estimates of crowd size. As the technologies are always changing, their use in research remains a constant challenge.

Researching the markets most likely to use new technologies may also provide insight into the possibility of combining crowd size estimation with other goals, such as consumer engagement, brand awareness, or product promotion. A crowd with Bluetooth saturation, for example, allows not only the unobtrusive detection of crowd size, but also the possibility of communicating with crowd members. Beacons placed at multiple locations throughout a crowd can use BLE (Bluetooth Low Energy) technology to send electronic messages to individuals who have turned on location services and Bluetooth, on their Bluetooth devices such as smartphones. In addition, if users have enabled certain mobile apps, they will transmit data regarding demographics, social network influence, and brand-related behavior as well. Tracking the market segments most likely to use Bluetooth, as well as the events they are most likely to attend, has potential to yield significant insights for marketing applications.

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WELCOME TO MYRTLE MANOR: THE FINANCIAL IMPACT OF REALITY TELEVISION ON THE GRAND STRAND OF SOUTH CAROLINA

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ABSTRACT

The objective of this project is to evaluate the types and magnitude of financial impacts that the reality television show "Trailer Park: Welcome to Myrtle Manor" *has on the surrounding Myrtle Beach and Grand Strand Community of South Carolina. Financial impacts considered include: Direct, indirect, and induced effects of production; merchandise sales; destination advertising; and film-induced tourism. Adhering to the Conservatism Principle in accounting, all estimates utilize third-party benchmarks of impact to provide a conservative and independent estimate of the financial impacts. In addition, the views of both proponents and opponents of reality television, film production tax incentives, and resulting destination image effects are included in the analysis.*

Clients for this project include TLC's reality show "Trailer Park: Welcome to Myrtle Manor," *as well as the show's production and distribution companies, Jupiter Entertainment and The Weinstein Company. This project serves as one of the maiden projects of the Community and Business Engagement Institute within the E. Craig Wall Sr. College of Business Administration at Coastal Carolina University in Conway, South Carolina. The Institute's mission is the following:*

> The Community and Business Engagement (CoBE) Institute is a chance to connect the subject matter expertise of our faculty and students to provide high-quality business solutions to the local community. Through collaborative consulting projects, students will receive real-world practical experience that develops critical thinking and problem-solving skills. In turn, local organizations will gain valuable business assistance from faculty experts in the field (Coastal Carolina University, 2015).

This study demonstrates that the reality TV series Trailer Park: Welcome to Myrtle Manor *has a positive financial impact on the Grand Strand economy of South Carolina, and does so in multiple ways. The results of the financial impact analysis include the following:*

1. *The total direct production spending within the Grand Strand, excluding salaries, for Seasons 1-3 total $781,266.*
2. *Using the economic impact factor currently employed by the South Carolina Film Commission and the South Carolina Department of Parks, Recreation, & Tourism, the total economic impact of production, excluding salaries, is $1,484,405 for the three seasons of filming.*
3. *When considering the total estimated range of spending by visiting production staff, one leisure traveler would have to vacation in the Grand Strand for 41-52 years in order to create an equivalent financial impact.*
4. *When considering the total estimated employee spending other than lodging, transportation, and meals – which is paid for by the production company – one leisure traveler would have to vacation in the Grand Strand for 12-16 years in order to create an equivalent financial impact.*

5. *Utilizing current economic impact indicators and measures employed by the South Carolina Film Commission and the South Carolina Department of Parks, Recreation, & Tourism, the estimated financial impact of the production and staff is $2,078,270.*
6. *Merchandise sales have totaled almost $800,000 and generated sales taxes paid to the state of $67,566.*
7. *If only 1% of the visitors to the Grand Strand based their travel choice on images of the area seen in movies or TV shows, these film-induced tourists contribute over $101 million in gross retail sales, $186,608 in accommodations taxes paid, and $100,236 in admissions taxes paid.*
8. *If each episode of the reality TV series* Trailer Park: Welcome to Myrtle Manor *is treated as the equivalent of only one 30 second nationwide primetime commercial, the three seasons of the show provided an Advertising Value Equivalency of $3,338,000.*

These results, adhering to the Conservatism Principle, provide strong evidence that the reality TV series Trailer Park: Welcome to Myrtle Manor *and its producers, Jupiter Entertainment and The Weinstein Company, are providing positive and multifaceted financial impacts to the Grand Strand of South Carolina.*

INTRODUCTION

"I think the love-hate is fundamental. Everyone hates reality television, and everyone's watching it. Everyone hates Facebook, and everyone is on it."

-- Bo Burnham, American comedian, singer-songwriter, poet

The objective of this project is to evaluate the types and magnitude of financial impacts that the reality television show *"Trailer Park: Welcome to Myrtle Manor"* has on the surrounding Myrtle Beach and Grand Strand Community of South Carolina. Financial impacts considered include: Direct, indirect, and induced effects of production; merchandise sales; destination advertising; and film-induced tourism. Adhering to the Conservatism Principle in accounting, all estimates utilize third-party benchmarks of impact to provide a conservative and independent estimate of the financial impacts. In addition, the views of both proponents and opponents of reality television, film production tax incentives, and resulting destination image effects are included in the analysis.

Clients for this project include TLC's reality show *"Trailer Park: Welcome to Myrtle Manor,"* as well as the show's production and distribution companies, Jupiter Entertainment and The Weinstein Company. This project serves as one of the maiden projects of the Community and Business Engagement Institute within the E. Craig Wall Sr. College of Business Administration at Coastal Carolina University in Conway, South Carolina. The Institute's mission is the following:

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REVIEW OF LITERATURE

The Origins of Trailer Park: Welcome to Myrtle Manor

Trailer Park

Welcome to Myrtle Manor is produced by Jupiter Entertainment and distributed by The Weinstein Company. Jupiter Entertainment produces dozens of reality shows, including A&E's *Biography,* History Channel's *Modern Marvels,* Discovery Channel's *How Stuff Works?,* Animal Planet's *Wild West Alaska,* and Oxygen's *Snapped* (Jupiter Entertainment, 2015). The Weinstein Company produces and distributes both television shows and movies, including Peabody Award winning shows *Project Runway* and *The No. 1 Ladies Detective Agency*. The Weinstein Company was awarded the Academy Award for Best Picture in 2011 for *The King's Speech*. In 2012, The Weinstein Company was awarded eight Academy Awards, including Best Picture for *The Artist* and Best Documentary for *Undefeated* (The Weinstein Company, 2015). Jupiter Entertainment and The Weinstein Company describe *Trailer Park: Welcome to Myrtle Manor* as follows:

> *Welcome to Myrtle Manor follows the crazy antics at a trailer park in Myrtle Beach, South Carolina. Each sixty-minute episode takes viewers along for a wild ride as Becky, a 3rd generation operator, attempts to transform the community into a five-star resort. Through all of the ups and downs, these quirky mobile home residents live up to the saying, 'If you mess with one, you mess with the whole trailer park' (Jupiter Entertainment, 2015).*

Patrick's Mobile Home Park is owned by Cecil and Barbara Patrick. The park is managed by their daughter, Becky Robinson. Becky's daughter, Alyson Johnson, served as manager for a number of episodes in Season One, and has worked with her family and the business throughout her life. Off camera, Cecil's and Barbara's daughter Dana Painter, CPA serves as chief financial officer of Myrtle Manor's financial and licensing operations.

In an interview with Cecil Patrick, Becky Robinson, Alyson Johnson, and Dana Painter, the family described how the reality show evolved. One day Becky and Dana were working in the Park's offices when a luxury SUV pulled up. Looking out the window, the two sisters joked that the man inside was either lost or trying to sell drugs. The man came into their offices and asked to rent eight trailers. When he refused to explain why he wanted these trailers, the women turned him down flat. The man returned to the park several times. When he first revealed that he was scouting for a potential reality show, the family thought he was joking.

After many months of discussion, the family agreed to participate in the show *Welcome to Myrtle Manor* and signed an agreement with The Weinstein Company. However, Cecil Patrick had three nonnegotiable rules. First, no filming on Sunday, as the family and the Park's residents attend church. Second, no scenes involving open or graphic sex. Third, no cursing by anyone involved in the production or on the show itself. The Weinstein Company agreed, and tasked one of the producers of *Jersey Shore* with production of the first season.

The family received and watched Episode One the night before its airing on TLC Network on March 3, 2013. In this episode, young residents were shown drinking heavily, passing out, and other resulting antics. According to Cecil Patrick, the "F-Bomb" was bleeped and censored out of the dialogue nine times in Episode One. According to every member of the family, they were mortified. Mr. Patrick picked up the phone, fired the production company, and demanded they immediately leave his Park.

The next day Cecil Patrick received a call from The Weinstein Company. According to their representative, the firm had already invested over $1 million in the show, and wanted to continue production. They asked the family to bear with them through the next two completed episodes. After Episode Three, filming with a new crew would focus more on the actual residents of the Park, and all of Mr. Patrick's rules would be followed. The Weinstein Company then hired Jupiter Entertainment to film the show. To this day, employees of Jupiter Entertainment do not curse while in the Park, and they warn new employees to do the same.

With Jupiter Entertainment, after Episode Three, the show's focus changed dramatically. Longtime residents became the focus. For example, one of the younger residents portrayed in the early episodes was Taylor Burt. Over the course of one weekend in April 2013, Burt was arrested for having sex with a minor, and cast members Amanda Lee Adams and Lindsay Colbert were arrested for driving under the influence (Hines, 2013). Both Burt and Colbert were excused from the cast. Burt's mother and longtime Park resident, "Miss Anne" Johnson, became one of the focal characters. Seasons Two and Three chronicle her battle with breast cancer and romance with Park head of security, wordsmith Marvin Gerald.

Another major story line involves Chelsey Keller and Jared Stetson, who meet in Season One, get married in the finale, find out they are pregnant in Season Two, and return with baby Bellamy in Season Three. One of the most popular residents is "Miss Peggy" Beaulieu, who has lived in the Park longer than any other resident, and has exceptional witticisms and charm. Her humor is matched by resident Kimberly Evans, who lived in the Park for several years before the show began, and joined the cast as a regular in Season Two. The show is narrated by Cecil's sister, "Miss Jeana (with a "J")" Futrell, who returned to the Park after her divorce. The onsite hair salon, Tangulls, is co-owned by cast members Roy Bullard and Gina (with a "G") Shelley, whose witticisms equal those of Miss Peggy. Other colorful residents and cast members include self-proclaimed male model and jingle writer Roger "Bandit" Kelly; Brittney Austin, who became Amanda's roommate during Season Two; Jessica Burke, who dated and broke up with Taylor in Season One, then returned in Season Three to become Amanda's and Brittney's roommate; and Brock Reiman, who joined the cast in Season Two as the Park's handyman and resident lothario, having briefly dated all three roommates Amanda, Brittney, and Jessica (TLC, 2015).

During the interview, amusing anecdotes regarding reaction of the local community permeate the discussion of Season One. When tourists began visiting the Park, they told Patrick and family members that when they asked for directions from their hotel staff, they were told the Park was located in Surfside Beach, which is south of its actual location. When the family approached a cousin who owned a T-shirt manufacturing business, the cousin declined the offer of an exclusive manufacturing contract for *Myrtle Manor* merchandise. When approached by producers, many local businesses refused to allow filming at their location.

What a Difference a Season Makes

As of the writing of this study, Season Three of *Trailer Park: Welcome to Myrtle Manor* finished airing on TLC Network. Starting with the Season Two, The Weinstein Company changed the show's name from *Welcome to Myrtle Manor* to *Trailer Park: Welcome to Myrtle Manor*. The change was made in order to spawn other trailer park spinoffs (Deadline, 2013).

News articles discussing the show have been published throughout North and South America, Europe, and Australia/Oceana. Countries that carry the most news articles about the show include the U.S., Canada, Brazil, England, Australia, and New Zealand (Newsbank, 2015).

The family did not originally keep a guest book of visitors. Since they began to keep a guest book, the Park has received visitors from all 50 U.S. states, 8 Canadian Provinces, and 19 foreign countries. Just during the week of March 24, 2015, the Park received visitors from South Carolina, North Carolina, Georgia, Florida, Alabama, Tennessee, Virginia, West Virginia, Pennsylvania, Nebraska, New York, Michigan, Missouri, Ontario, Nova Scotia, New Brunswick, and England. The family began selling merchandise online in April 2015. In the first three weeks they received orders from 23 U.S. states, some states with multiple orders. One fan from England paid $30 on shipping for a $20 Myrtle Manor T-shirt. In addition, Myrtle Manor maintains a 4.5 star (out of 5 stars) rating on TripAdvisor, and is listed in the top 20 outdoor activities for tourists visiting the Grand Strand (Tripadvisor, 2015).

During the interview, family members recounted stories told to them by visitors to the Park. One woman told them that watching and laughing with the show helped her through her cancer treatments. While attending a business conference in Washington, DC, a man from Australia paid for a round trip ticket from Washington, DC to Myrtle Beach just to visit the Park. Tangulls, the hair salon on Park property and shown in the series, was opened at the request of a man who flew into Myrtle Beach with his family. His daughter's wish for her 16th birthday was to have her hair done by the show's hairstylists Roy and Gina ("with a G"). A man visited the Park one day with his extended family. While chatting with Cecil Patrick, he said that the family had been visiting attractions in Orlando, Florida, but it was raining that day in Florida. So the man flew his entire family up to Myrtle Beach in his private jet to visit the Park for that day, then flew back to Orlando.

Filming for Season One began in the summer of 2012. In mid-March of 2013, Myrtle Manor merchandise sales began at the Park. Upon entering the Park, a long trailer on the right provides Myrtle Manor backdrops for visitors' photographs free of charge, as well as Myrtle Manor Merchandise for sale. After their cousin declined the offer to exclusively manufacture Myrtle Manor T-shirts, the family agreed that merchandise had to be made in America. Cecil Patrick received a call from a Texas manufacturer. The owner drove at his own cost from Texas to Myrtle Beach to ask the family for their business. According to Myrtle Manor CFO and family member Dana Painter, the City of Myrtle Beach business office informed her that they received a number of license requests to sell merchandise based upon the show's "Weiner Girls" storyline from Season One. This storyline follows the efforts of three of the Park's residents as they try to sell hotdogs along the Myrtle Beach Boardwalk.

The show averages over 1 million viewers per episode (The Nielsen Company, 2015). Both hours of the double episode, season three finale made the Top 100 shows. The first hour ranked number 63, with the second hour higher at number 48. This was the only TLC show to make the Top 100 for that day, Thursday, April 29, 2015 (Metcalf, 2015). Before considering the financial impact of these activities, a discussion of the reality television industry is warranted.

A Brief History of Reality…Television

The reality television (TV) genre can be traced back as far as 1948, to Allen Funt's show *Candid Camera.* This was the first television show to incorporate hidden cameras into its format, and the first to be “unscripted.” Other shows quickly followed suit, including *What's My Line* in 1950 and *To Tell the Truth* in 1956. *The Dating Game* in 1965 became the first show to incorporate dating into the genre of reality TV. Throughout its history, reality TV has also intertwined elements of game shows (Slocum, 2015). This can be seen today in shows such as *American Idol*, *Big Brother*, and *Dancing with the Stars* (Baltruschat, 2009).

The term "reality television" was coined by anthropologist Margaret Mead in the 1970s (Slocum, 2015). At the time, PBS' *An American Family* debuted as the first show to follow the lives of a middle-class California family, the Louds. The Louds lived in front of the camera for seven months in 1971. During this time the parents Pat and Bill separated and divorced. In addition, cameras followed the New York life of their gay son Lance. Hundreds of hours of tape were condensed into twelve, one-hour episodes that aired in 1973. No host, interviews, or narration was provided. Each week, a record ten million viewers tuned to the new public network to watch the Louds (PBS, 2015). Mead wrote an article about the show in TV guide entitled 'As Significant as the Invention of Drama or the Novel' (1973). She considered the genre a new method for viewers to increase their understanding of one's self (Ruoff, 1996).

Even with this first show of the newly-named genre, participants disagreed with its level of reality. The Loud family contended the editing of the hundreds of hours into the twelve hour series made their situation seem worse than it was in real life. Two of the producers accused a third of instigating arguments and filming the result. The latter contended that the cameras and his presence affected the Loud's behavior, but no one could say with certainty how their behavior was affected (Hadley, 2013).

Cops debuted on Fox Network in 1988 during the Writers Guild of America strike. The show joined *Unsolved Mysteries* (1987) and *America's Most Wanted* (1988). Since its inception, *America's Most Wanted* led to the capture of over 1,100 criminals in the United States and 30 other countries (Caldwell, 2015). However, these shows represented "a fundamental shift from programming rooted in investigative journalism to documentaries of diversion and display" (Baltruschat 2009, p. 41).

The Real World debuted on MTV in 1992. Created by producers Jonathan Murray and Mary Ellis-Bunim, the show combined Murray's expertise in documentaries with Ellis-Bunim's expertise in soap operas. The two producers "figured if you put a diverse group of people together out of that you would have conflict and story and drama and that will be the arch of the series" (Chozick, 2011).

Survivor debuted on CBS in 2000. A record 50 million people watched the first season finale. The show incorporated elements of multiple reality TV show styles. First, a documentary style of filming was used. Second, a game show with a million dollar grand prize was at stake. Third, a diverse group of people were assembled to play (Vanderwerff, 2012).

Reality TV shows today utilize social media to determine winners, show support for programs and current cast members, and search for future cast members. The 'confessions' of cast members in shows like *Survivor* -- paired with advances in technology -- have changed viewers' perceptions of themselves from being the recipients of to participants in computer-mediated communications (Stephanone, et al. 2010). Social Cognitive Theory suggests that "people learn by watching others," and that people are "more likely to imitate those with whom they identify" (Chegg, 2015). Stephanone, et al. (2010) compared the consumption of reality TV with behavior on social networking sites. Controlling for age and gender, the authors found a consistent, positive relationship between the consumption of reality TV and the users' quantity of time spent on social networking sites, their network size, their proportion of 'online only' friends, and the frequency in which they share photos.

When *Survivor* aired in 2000, it became the first reality TV show to earn a spot in the primetime Nielsen top ten ratings. Since the 2002-2003 season, reality shows have garnered the majority of the primetime audience viewing top ten shows. In the 2007-2008 season, this number peaked when 77% of the top ten primetime viewing audience tuned into reality TV shows. In contrast, sitcoms began the decade earning 40% of the top ten primetime viewing audience. After that, sitcoms garnered a share of the top ten primetime viewing audience in only three other seasons of the 2000-2010 decade (The Nielsen Company, 2011).

Government Incentives – Wait…How Much?

Film production tax incentives, also known as Film PTIs, are tax benefits offered to encourage in-state or in-country film production (Cambridge University Press, 2015). Louisiana served as the first state to offer Film PTIs in 1991. By 2009, 44 states had offered some form of Film PTIs (Luther, 2010). A 2013 Los Angeles Times article reported that there were, "$1.5 billion in film-related tax breaks, rebates, and grants that were paid out or approved by nearly 40 states last year" (Verrier, 2013). The magnitude of these Film PTIs reflects the magnitude of the film production industry. The Motion Picture Association of America reports that the film and television production and distribution industry employs 1.9 million workers, contributes $130 billion in sales to the U.S. economy, contributes $40 billion each year to more than 330,000 local businesses, pays $16 billion each year in federal and state taxes, and is responsible for 6% of the total U.S. private sector services trade surplus by exporting six times what it imports (MPAA, 2015). This trade surplus is "larger than each of the surpluses in advertising, mining, telecommunications, management consulting, legal, computer, health related and insurance services sectors" (MPAA, 2015, p. 1).

Film PTIs employed to attract the industry vary from state to state and are key selling points for film scouts searching for filming locations. Film Production Capital, a film industry tax credit brokerage and financing firm, provides ratings of states with respect to their Film PTI mix and attractiveness to film productions. Ratings range from one to five stars, with five stars being the highest ranking. Louisiana and Georgia are the only two states with a five star rating. Prior to 2015, North Carolina joined Louisiana and Georgia as the three highest ranked states. However, their Film PTIs expired, or "sunsetted," at the end of 2014. The current Film PTIs for North Carolina caused their ranking to plummet to only a one star rating. South Carolina earns a three star rating (Film Production Capital, 2015).

California, the home of Hollywood, earns the same three star rating as South Carolina (Film Production Capital, 2015). From 2004-2013, California lost 18,580 jobs to states and countries with more attractive Film PTIs. In contrast, Louisiana passed a new Film PTI bill in 2005. The state reported in December 2006 that the state's film industry grew by 13,445 jobs and $336.3 million when compared to the two years prior to the new Film PTIs (Potter, 2015). In an effort to compete, California is currently considering Film PTIs that will triple subsidies available to film production companies (Verrier, 2014). Table 1 provides a count of television and film productions in these key states for 2012 and 2013 (MPAA, 2015). Please note that the data provided for North Carolina are for years in which its highly rated Film PTIs were in effect.

Table 1
MOVIE AND TV PRODUCTION 2012-2013 FOR SELECTED STATES

State	2012 Movies	2012 TV Series	2013 Movies	2013 TV Series
California	270	359	318	347
Georgia	28	35	23	39
Louisiana	59	12	36	18
North Carolina	13	7	17	12
South Carolina	0	8	0	8

The State of the State

As mentioned earlier, South Carolina Film PTIs earn three stars from Film Production Capital, which is the same rating earned by California. Until the end of 2014 both of South Carolina's next door neighbors, Georgia and North Carolina, ranked higher in benefits than South Carolina. Now South Carolina surpasses North Carolina, but still lags behind Georgia (Film Production Capital, 2015). Cash rebates are employed by South Carolina for wages and qualified production expenditures. South Carolina offers a 25% wage rebate for resident employees, a 20% wage rebate for nonresident employees, and a 30% rebate for in-state qualified expenditures. Fee-free location shooting on public lands (e.g., parks, universities, etc.) is available, as are sales and use tax exemptions for qualified productions. Minimum spending thresholds include $1 million to qualify for the cash rebates, but only $250,000 to qualify for the state sales and use tax exemptions. South Carolina does not impose any per project cap, but it allocates $15 million per year for Film PTIs. If not all of the allocated funds are spent on qualified cash rebates in one year, the balance rolls over to the next year and is added to the annual replenishment of $15 million. Additionally, a $1 million per person cap applies to wage rebates. This prevents "above the line" employees (i.e., director, producer, screenwriter, principal actors) from claiming large cash rebates. South Carolina performs an audit at their own expense, and promises to issue the cash rebate check to productions within 30 days of the final audit (South Carolina Film Commission, 2015).

The state does limit the types of eligible productions in that reality television series are not eligible to qualify for any Film PTIs (South Carolina Film Commission, 2015). Surprisingly, half of the television series filmed in South Carolina is reality TV series – *Welcome to Myrtle Manor, Southern Charm, Party Down South, and The Week the Women Went* (MPAA, 2015). The producers of these series have the option of filming in other states, such as Louisiana, that provide Film PTIs to reality TV series. However, the producers have foregone these options in order to film in South Carolina (LED, 2015).

The Good, the Bad, "The Situation," and the Money

For film production companies and networks, reality TV shows provide a dual benefit. First, "unscripted" shows are cheaper to make than traditional "scripted" shows. The cost for a reality TV series ranges from $100,000 to $500,000 per episode. For scripted series the cost ranges from $500,000 to $1 million per episode (Jerpi, 2013). Reality TV is less expensive to make, but it is not necessarily less expensive for advertisers. For example, the final three episodes of *Survivor's* first season generated $50 million in advertising revenue for CBS Network (Hill, 2005). *Survivor's* $1 million grand prize is recouped in one minute of advertising (Deery, 2004).

Just as with *An American Family* in 1973, the question still remains regarding the realness of reality TV. Deery (2004), who defines the reality TV genre as advertainment, provides the following interpretation:

> *The 'reality' of Reality TV is usually translated as the experience of real or ordinary people (i.e. unknown non-actors) in an actual and unscripted environment. It does not require that the situation be ordinary, but that there be a particular kind of viewer access. Reality TV is, in fact, selling access as much as any particular subject matter. To declare that Reality TV is or displays reality is obviously too simplistic. But so is saying that it is all a sham. One can recognize raw or relatively unprocessed elements in Reality TV, while giving due credit to the skills of those who make the shows appetizing in ways that most people's experience of real life is not (Deery, 2004, pp.5-6).*

When considering Film PTIs, movie production, scripted TV series, and unscripted reality TV series, one issue that quickly arises is that of jobs. Proponents of the industry assert that it brings skilled jobs into a local economy, provides training for local residents to increase their skill set (be "upskilled"), and provide internship opportunities for students enrolled at local high schools, colleges, and universities. The Motion Picture Association of America (2015) estimates that the industry creates direct jobs of 302,000 with an average salary of $84,000, which is 69% higher than the average salary in the U.S. This number of jobs exceeds the direct jobs within the utilities, crop production, and plastic manufacturing industries. When indirect but related jobs are included, the MPAA estimates the industry supports 1.9 million jobs with corresponding wages of $113 billion (MPAA, 2015).

Opponents view in-state production jobs as temporary, and usually taken by nonresident workers. Productions are attracted to a state by its industry infrastructure and its Film PTI incentive package. If these are inconsistent over time, the jobs will be inconsistent as well. No Film PTIs, no jobs. Opponents contend that this transfers the production risk to the state, since they must honor cash rebates and/or tax credits regardless of a film's commercial success (Parker, 2012). In a supply chain study of North Carolina's film production industry, Handfield (2014) predicted that allowing the incentives to expire, or "sunset," at the end of 2014 would lead to unemployment for 4,406 out of the 4,259 in-state, industry employees that earn more than $60,000 per year. He also predicted that 3,400 of these unemployed workers would leave North Carolina to find production jobs elsewhere, while those that stayed would earn significantly less. This led to a predicted loss of $164 million in revenue for 1,000 small businesses in North Carolina (Handfield, 2014).

Another point of contention among proponents and opponents is a reality TV show's effect on a location's Destination Image. Destination Marketing Organizations (DMOs) work to transmit a specific image to the market, which will often influence a tourist's choice of travel destination (Lopes, 2011). DMOs include departments of tourism, chambers of commerce, or convention and visitor bureaus. They serve as representatives of the destination as they contribute to long-term community development by encouraging travel and tourism (DMAI, 2015). For large budget feature films, some DMOs craft a destination image that works in conjunction with the film. For example, New Zealand Tourism actively leverages the popularity of the *Lord of the Rings* trilogy and invites potential travelers to Discover Middle Earth (New Zealand Tourism, 2015).

In most cases, DMOs have no control of the Destination Image portrayed by a movie or TV show. This gives them no control over the target audience and how it sees the destination (Heitmann, 2010). DMOs fear the reality TV show will ruin the carefully crafted Destination Image. For example, even before the first episode of MTV's *Jersey Shore* debuted in 2009, Italian-American organizations such as the National Italian American Foundation objected to the use of the terms "Guidos" and "Guidettes" because they promoted ethnic stereotyping. The organization feared that the audience would equate the behavior of the *Jersey Shore* cast with the Italian-American identity (Troyani, 2013). In 2011, *Jersey Shore's* production company legally applied for and was approved to receive a $420,000 tax credit from New Jersey's Economic Development Authority to help cover costs of filming the 2009 season. Governor Chris Christie blocked the tax credit, saying New Jersey taxpayers were "not footing a $420,000 bill for a project which does nothing more than perpetuate misconceptions about the state and its citizens" (Barron, 2011).

In response to these concerns, Farleigh Dickinson University in northern New Jersey conducted research via its PublicMind center. The mission of PublicMind is to conduct and publicize data and analyses to advance public discussion of the issues (FDU, 2015). PublicMind conducted a national poll to understand Americans' perception of New Jersey. Surprisingly, respondents who had seen *Jersey Shore* had a more positive view of New Jersey than respondents who had not seen the show. In addition, when asked what comes to mind when they think of New Jersey, *Jersey Shore* viewers were more likely to list the shore, the ocean, the boardwalk, and similar concepts (FDU, 2010). Professor Dan Cassino commented on the reality TV show's favorable impact on Destination Image: "New Jersey has been using ad campaigns to build awareness of the shore for years. Legislators may not be happy with how the state is being portrayed, but the show links New Jersey to its beaches, which is a much better focus than the turnpike" (FDU, 2010, p. 1). PublicMind repeated the poll in 2011, and again found that *Jersey Shore* was not damaging the Destination Image of New Jersey (FDU, 2011). Peter Woolley, who directed the poll, commented that "These measures alone suggest the show isn't hurting the nation's view of the state. In fact, it may be promoting one of the state's best features – not Snooki, but the shore itself" (FDU, 2011, p. 1).

The State of Georgia conducted research and found similar results, that the tone of the movie or TV show does not have a negative effect on Destination Image. For example, the 1972 movie *Deliverance* still draws visitors to its filming location for whitewater rafting trips. Created by stuntmen for the movie, the Nantahala Outdoor Center conducts tours down the rivers filmed in *Deliverance.* The Center reports an annual income of $15 million and employs 600 part time employees who receive 200,000 visitors per year (Thomas, 2015). The State of Texas still capitalizes on the popularity of the TV show *Dallas*. The series ran from 1978-1991 in the U.S. and 95 other countries. Southfork Ranch – the setting for *Dallas* – is Dallas' top tourist attraction, welcoming 400,000 visitors per year (Southfork Ranch, 2015).

These results suggest that a location's Destination Image can benefit from both official and unofficial media (Thomas, 2015). DMOs have control over official destination imaging media. Examples include brochures, websites, and travel magazines. DMOs have the opportunity to craft a positive image and avoid any negative imagery. However, DMOs are restricted by their budget, and by the perception of readers that their media is biased. Unofficial media includes destination images portrayed in movies, books, scripted series, and unscripted reality TV. DMOs have no control over this media. However, these images reach a much larger audience (Rewtrakunphaiboon, 2009). In addition, the images are not perceived to be biased advertising (Hellemans, 2014). This suggests that movie and TV productions can contribute positively to Destination Image, which can then lead to film-induced tourism.

Beeton (2005) defines film-induced tourism (FIT) as "visitation to sites where movies and TV programmes have been filmed as well as to tours to production studios, including film-related theme parks" (Beeton, 2005, p. 11). Characteristics of FIT and film-induced tourists have been researched by multiple parties (Hudson and Ritchie, 2006; Beeton, 2005; Busby and Klug, 2001; Riley, Baker, and Van Doren, 1998). When conducting economic impact studies of FIT, most studies include the description put forth by Macionis (2004). Macionis describes three types of film tourists – Serendipitous, General, and Specific. Serendipitous Film Tourists are "those who just happen to be in a destination portrayed in a film" (Macionis, 2004, p. 87). General Film Tourists are "those who are not specifically drawn to a film location, but who will participate in film tourism activities while at a destination" (Macionis, 2004, p. 87). Specific Film Tourists are "those who actively seek out places that they have seen in a film" (Macionis, 2004, p. 87).

Research suggests the effect of FIT is enduring. Tooke and Baker (1996) found an increase in visitors of up to 93% one year after the release of the movie or TV series. Riley, Baker, and Van Doren (1998) found an increase in visitors of up to 96% in a film location up to five years after the release date. The Bull and Finch Pub in Boston, the inspiration for the TV series *Cheers*, receives 500,000 visitors per year, who consume \$6 million in beer and \$7 million in merchandise (Beeton, 2005). One of the longest time horizons in FIT research involves the British Tourist Authority, who sells a movie map of film and TV locations since the 1940s. Strauss (2003) reported that for every British Pound spent on the map, 17 British Pounds were spent at one of the map locations. In addition, Strauss (2003) found that the greater the exposure a location gets in the film, the greater the increase in tourism revenue.

The New Zealand Institute of Economic Research (NZIER, 2002) built upon this concept in its evaluation of the lasting effects of the *Lord of the Rings* trilogy. The authors treated the first film as a promotional piece. In other words, footage of New Zealand in the *Lord of the Rings* first film was treated as the equivalent of media controlled by DMOs such as the New Zealand Tourism Board. NZIER then calculated what this exposure would have cost the New Zealand Tourism Board to reach the audience by commercial means. NZIER found that for the New Zealand Tourism Board to reach U.S. moviegoers on only the first ten days of the movie's release, equivalent exposure would cost more than \$41 million (NZIER, 2002).

METHODOLOGY

In U.S. Generally Accepted Accounting Principles, the Conservatism Principle – also known as the Convention of Conservatism or the Doctrine of Prudence – states that when choosing between two solutions, the one which has the less favorable outcome is the solution which should be chosen (Averkamp, 2015). All of the data analysis in this paper adheres to this doctrine. First, third-party economic measures are used in order to create objective analyses in both fact and appearance. Second, when multiple economic measures exist, all are presented. Finally, when choosing which data to include in the financial impact analyses, the less favorable outcome is the chosen solution. In addition to conservatism, consistency of impact factors is emphasized when results are aggregated.

In traditional economic impact analysis, the research is conducted to provide a quantitative analysis of the economic benefits resulting from a particular event or industry (Plumstead, 2012). A useful tool is the input-output model and the use of economic multipliers. For the financial activity under study, the model considers direct, indirect, and induced effects. Direct effects include the initial spending or employment that can be attributed to the TV series production. Indirect effects include the change in spending or employment by suppliers of the TV series production company. Induced effects include the change in spending by employees working in the direct or indirect industries for the TV production (HR&A Advisors, Inc., 2013). To calculate the total economic impacts, all three types of effects are totaled. In addition, multiplier effects are provided. In statewide analyses of economic impacts, most states choose the IMPLAN model. For example, states utilizing IMPLAN for their economic impact analysis include Florida, Georgia, Louisiana, Maryland, Massachusetts, and South Carolina (IMPLAN Group LLC, 2015).

When considering the exposure that *Trailer Park: Welcome to Myrtle Manor* provides, the Advertising Value Equivalency (AVE) method of calculation will also be used. It is important to note that AVE and evaluative metrics serve as a measure of cost, not a measure of value (Roy, 2015). It provides an estimate of the equivalent cost to reach the viewing audience by commercial means.

Direct production costs have been graciously provided by Jupiter Entertainment. Jupiter pays for the lodging of their production team. All production employees are paid as independent contractors via IRS Form 1099 (IRS, 2015). Given that the rules for declaring this income differ by state, uncertainty exists as to the residency of the production employees. Following the Conservatism Principle, with the choice of categorizing employees as South Carolina residents or nonresidents, the latter option is chosen. Therefore, salary data will not be incorporated into the economic analysis modeling. This will provide a more conservative estimate of the production's economic impact. Alternative third-party indicators are used to estimate the impact of these employees living in the Grand Strand during production.

Independent third-party measures are publicly available indicators provided by the Myrtle Beach Area Chamber of Commerce; the South Carolina Film Commission; the South Carolina Department of Parks, Recreation, & Tourism; the Division of Research, Moore School of Business, University of South Carolina; and the nonprofit organization TVB, which serves as the trade association for America's commercial broadcast television industry.

RESULTS

The South Carolina Department of Parks, Recreation, & Tourism (SCPRT, 2015) reports that for the 2013-2014 fiscal year, film productions in the state made 2,686 hires, spent 20,239 film-related hotel nights, and spent $19,018,257 in South Carolina. These numbers include both productions that qualify for tax incentives and those that do not (SCPRT, 2015).

Direct Production Impact (Excluding Salaries)

Trailer Park

Welcome to Myrtle Manor direct production data for the first three seasons was provided by Jupiter Entertainment and Myrtle Manor CFO Dana Painter, and are presented in Table 2 below. This data is referred to by film production companies and government officials as the "in-state spend." This clarifies that any pre-production, production, and post-production activities that are not performed in the state are not included in the economic impact analysis for that state (SCPRT, 2015).

Table 2
***TRAILER PARK: WELCOME TO MYRTLE MANOR* -- DIRECT PRODUCTION DATA SEASONS 1-3**

	Season One	Season Two	Season Three
Number of Staff Living in Rentals	19	19	15
No. of Condos/Apartments	9	11	8
No. of Vehicles	56	24	26
Condos/Apartments	$71,700	$181,000	$51,000
Utilities	$24,000	$19,000	$13,300
Ground Transportation (Incl. Fuel & Taxis)	$65,000	$36,000	$62,000
Hotels	$45,000	$19,000	$6,500
Location Fees	$32,500	$23,790	$19,866
Rents	$45,000	$64,820	$46,790
Total	**$238,200**	**$343,610**	**$199,456**
Total Seasons 1-3			**$781,266**

The direct economic impact of the production of *Trailer Park: Welcome to Myrtle Manor* for Season One is $238,200, for Season Two is $343,610, and for Season Three is $199,456. Over the three seasons, the total direct economic impact of the reality TV series (excluding wages) is $781,266, with an average of more than $260,000 per season.

Incorporating Indirect and Induced Production Impact (Excluding Salaries)

In order to calculate the indirect and induced effects of this production activity, IMPLAN economic multipliers are needed (IMPLAN Group LLC, 2015). Three research projects have provided IMPLAN economic impact factors for the film production industry in South Carolina. The first was completed by the Moore School of Business at the University of South Carolina in 2008 (Woodward, et al). The second was completed in 2011by AECOM, Inc. as an economic impact study performed for the South Carolina Film Commission (SCFC) and its parent organization, the South Carolina Department of Parks, Recreation, & Tourism (AECOM, 2011). The third is the economic impact factor currently used by the South Carolina Department of Parks, Recreation & Tourism (SCPRT, 2015). All three studies concluded that the film production industry has a positive economic impact on South Carolina,

The earliest study (Woodward, et al. 2008) found a multiplier effect of $1.36, which implies that for every direct production dollar spent in South Carolina (i.e. “in-state spend”), this generated a total economic effect of $1.36. The second study by AECOM for the SCFC and SCPRT (2011) resulted in a multiplier effect of $1.62. This suggests that for every dollar of South Carolina in-state spend, there is a total economic effect of $1.62. The last economic impact multiplier is the one currently used by the SCFC and SCPRT. They use an economic impact factor of $1.90, which suggests that for every dollar spent by a film or TV series in South Carolina, the overall economic benefit to the state is $1.90 (SCFC, 2015).

Given the Myrtle Manor direct production costs listed in Table 2 and these three, third-party economic impact factors, the range of economic impact of these production costs are presented in Table 3.

Table 3
ESTIMATES OF TOTAL ECONOMIC IMPACT OF DIRECT PRODUCTION COSTS

	Economic Impact 2008 USC Study Impact Factor = $1.36	**Economic Impact 2011 AECOM Study Impact Factor = $1.62**	**Economic Impact Current SCFC Impact Factor = $1.90**
Season One	$323,952	$385,884	$452,580
Season Two	$467,310	$556,648	$652,859
Season Three	$271,260	$323,119	$378,966
Total	**$1,062,522**	**$1,265,651**	**$1,484,405**

These results suggest that the total economic impact of the direct production (excluding salaries) after three seasons of *Trailer Park: Welcome to Myrtle Manor* ranges from $1,062,522 to $1,484,405, with the South Carolina Film Commission estimating the reality TV series impact at the top of this range.

Gross Economic Impact of Production Staff

Choosing the conservative option earlier removed production employees' salaries from the IMPLAN economic impact modeling. Using publicly available data provided by the Myrtle Beach Area Chamber of Commerce (MBACC) and the SCFC, two estimates of impact can be calculated. First, in the 24th edition of the MBACC Statistical Abstract (2015), two financial measures of visitor characteristics are provided. First, travelers spend an average of $117 per person per day when traveling for leisure. This is compared to group business travelers, who spend $277 per person per day. Each season of the reality TV show takes between four and five months to complete. Using the MBACC metric for group business travelers for the staff members brought into the area and listed in Table 1, Table 4 provides a range for the estimated financial impact of these staff members staying on the Grand Strand. It also provides the leisure traveler equivalent for both the low and high estimates.

Table 4
ESTIMATE OF FINANCIAL IMPACT OF VISITING PRODUCTION STAFF – SEASONS 1-3

	Season One Staff = 19	**Season Two Staff = 19**	**Season 3 Staff = 15**
Business Traveler Days Four Month Stay (120 days)	2,280 days	2,280 days	1,800 days
Business Traveler Spending Four Month Stay (120 days) $277pp/pd	$631,560	$631,560	$498,600
Leisure Traveler Equivalent Days $117pp/pd	5,398 days	5,398 days	4,262 days
Business Traveler Days Five Month Stay (150 days)	2,850 days	2,850 days	2,250 days
Business Traveler Spending Five Month Stay (150 days) $277pp/pd	$789,450	$789,450	$623,250
Leisure Traveler Equivalent Days $117pp/pd	6,747 days	6,747 days	5,327 days
Range of Staff Financial Impact	$631,560-$789,450	$631,560-$789,450	$498,600-$623,250
Range of Leisure Traveler Equivalent Days	5,398-6,747 days	5,398-6,747 days	4,262-5,327 days
Season 1-3 Total Ranges			**$1,761,720-$2,202,150 15,058-18,821 days**

When evaluating the financial impact of the *Trailer Park: Welcome to Myrtle Manor* production staff that stays on the Grand Strand during production, the financial impact estimates range from a three season total of $1,761,720-$2,202,150. If this financial impact was to be replaced by leisure travelers, it would take between 15,058-18,821 days for the financial impact of the production staff to be equaled. This equates to one leisure traveler staying on the Grand Strand for a vacation that lasts from 41 to 52 years.

Incremental Economic Impact of Production Staff

Given that Jupiter Entertainment pays for the production staff's lodging and transportation, the financial impact in Table 4 cannot be added to Table 3. This is because the MBACC estimate includes travelers' cost of lodging and transportation, so these should not be double counted. However, the AECOM (2011) report prepared for the SCFC and SCPRT offers a useful metric. AECOM calculated a per diem for nonresidents. They define the per diem as "what the cast and crew spent in addition to what the production company paid for housing, transportation and meals. On average, non-residents spent approximately $83 per production day for things such as living expenses, entertainment, household expenses, health care, souvenirs, etc." (AECOM, 2011, p. 23). Table 5 presents the per diem spending estimates based upon the per diem rate, number of production staff, and length of stay.

Table 5
ESTIMATE OF PER DIEM FINANCIAL IMPACT OF VISITING PRODUCTION STAFF – SEASONS 1-3

	Season One Staff = 19	Season Two Staff = 19	Season 3 Staff = 15
Business Traveler Days Four Month Stay (120 days)	2,280 days	2,280 days	1,800 days
Business Traveler Spending Four Month Stay (120 days) $83pp/pd	$189,240	$189,240	$149,400
Leisure Traveler Equivalent Days $117pp/pd	1,617 days	1,617 days	1,277 days
Business Traveler Days Five Month Stay (150 days)	2,850 days	2,850 days	2,250 days
Business Traveler Spending Five Month Stay (150 days) $83pp/pd	$236,550	$236,550	$186,750
Leisure Traveler Equivalent Days $117pp/pd	2,022 days	2,022 days	1,596 days
Range of Staff Per Diem Financial Impact	$189,240-$236,550	$189,240-$236,550	$149,400-$186,750
Range of Leisure Traveler Equivalent Days	1,617-2,022 days	1,617-2,022 days	1,277-1,596 days
Season 1-3 Total Ranges			**$527,880-$659,850 4,511-5,640 days**

When evaluating the per diem financial impact of the *Trailer Park: Welcome to Myrtle Manor* production staff that stays on the Grand Strand during production, the financial impact estimates range from a three season total of $527,880-$659,850. If this per diem financial impact was to be replaced by the total daily spending for leisure travelers, it would take between 4,511-5,640 days for the per diem financial impact of the production staff to be equaled. This equates to one leisure traveler staying on the Grand Strand for a vacation that lasts from 12 to 16 years.

Combined Economic Impact of Production

Using the midpoint of ranges estimated above, the per diem financial impacts can be combined with the economic impacts of production. The latter provides an estimate in which the staff lodging, transportation, and meals are incorporated in the IMPLAN input-output model, and their per diem spending – which is all spending other than lodging, transportation, and meals – is incorporated in the per diem estimates (AECOM, 2011). Conservatism is emphasized in this study, but consistency of measures is crucial as well. For consistency, the current economic impact factor employed by the SCFC and SCPRT of 1.9 will be used, as will the $83 per diem rate calculated by AECOM for the SCFC and SCPRT (AECOM, 2011). The results are presented in Table 6 below.

Table 6
ESTIMATES OF COMBINED ECONOMIC IMPACT OF DIRECT PRODUCTION AND STAFF SPENDING

	Season One	**Season Two**	**Season Three**
Economic Impact Current SCFC Impact Factor = $1.90	$452,580	$652,859	378,966
Per diem midpoint of estimated range	$212,895	$212,895	$168,075
Season Total	**$665,475**	**$865,754**	**$547,041**
Three Season Total			**$2,078,270**

These results suggest that by using current financial and economic measures employed by state agencies within South Carolina (SCFC, 2015; AECOM, 2011), the activities associated with film production for the first three seasons of *Trailer Park: Welcome to Myrtle Manor* provided an estimated $2,078,270 of financial impact for the Grand Strand of South Carolina.

Merchandise Impact

As discussed earlier, all of the Myrtle Manor merchandise is made in America by a Texas manufacturer. The merchandise is sold via the merchandise trailer stationed inside the entrance to Myrtle Manor. Select financial data for 2013, 2014, and the first quarter of 2015 are presented below. Please note the all tips and donations are given to the nonprofit organizations Backpack Buddies and Help 4 Kids.

Table 7 MERCHANDISE TRAILER SELECT FINANCIAL DATA				
	2013	**2014**	**2015**	**Total**
Net Store Sales	$381,998	$351,590	$56,554	**$790,142**
Sales Tax Paid	$33,822	$29,229	$4,515	**$67,566**
Tip Donations	$1,237	$1,819	$409	**$3,465**
Donations Given to Date				**$5,948**
Payroll Expense	$47,116	$61,236	$8,215	**$116,567**

Film-Induced Tourism Impact

When estimating the effect of film-induced tourism (FIT), states attempt to estimate what percentage of travelers have been influenced by film and TV series in their decision to travel. An Oxford Economics (2012) study found that 10% of all overseas tourism revenues can be attributed to FIT. These FIT travelers contribute one billion British Pounds to the UK economy. In a study of the Florida film and entertainment industry (MNP, 2013), researchers surveyed tourism industry representatives regarding FIT. Most representatives estimated that between 10% and 20% of Florida tourist are influenced by film and TV, with an average result of 11% of tourists. To make conservative estimates of the financial impact of FIT in Florida, researchers chose 5% for their calculations since it was less than half the average (MNP, 2013). Other states chose 1% to make an even more conservative estimate (MPAA, 2015). Following the Conservatism Principle, this study uses the more conservative estimate of 1% of tourism revenue and associated taxes attributable to FIT. Using data publicly available and presented in the MBACC (2015) statistical abstract, Table 8 provides estimates of the effects of FIT on the Grand Strand for the most recent fiscal year presented, 2012-2013.

Table 8 ESTIMATE OF FIT FINANCIAL CONTRIBUTION TO GRAND STRAND ECONOMY				
	Horry County SC Total	**Horry County 1% FIT Estimate**	Georgetown County SC Total	**Georgetown County 1% FIT Estimate**
Gross Retail Sales	$8,808,316,387	**$88,083,164**	$1,324,894,962	**$13,248,950**
Accommodations Tax Collections	$16,969,171	**$169,692**	$1,691,601	**$16,916**
Admissions Tax Collections	$9,196,521	**$91,965**	$827,109	**$8,271**

These results suggest that if only 1% of Grand Strand visitors were influenced by seeing the Grand Strand in movies or TV shows, then those FIT travelers contributed over $101 million in gross retail sales, $186,608 in accommodations tax collections, and $100,236 in admissions tax collections.

Advertising Value Equivalency

As discussed earlier, the tone of the film or TV show does not deter from or diminish the destination image of the filming location. The New Zealand Institute of Economic Research (2002) estimated that the first 10 days of release of the first *Lord of the Rings* movie in the U.S. provided an advertising value equivalency (AVE) of $41 million. AVE is the equivalent cost a Destination Marketing Organization would have to incur to access this audience commercially. Recall that it is a measure of the cost of equivalent advertising (Roy, 2015). The Greater Miami Convention and Visitors Bureau conducted an AVE analysis of the TV shows filmed in the Miami area during the 2011-2012 season. The Bureau found that the TV shows provided an AVE of $405 million (MNP, 2013).

As the results above suggest, TV shows have a higher AVE because of their ability to repeatedly emphasize a destination with each episode. These studies track the total time that any local scenery is shown in the film or TV show, then calculate the AVE based upon that amount of time (NZIER, 2002). In the continuing effort to be both conservative and consistent, the AVE calculations here treat each full, hour long episode of *Trailer Park: Welcome to Myrtle Manor* as the equivalent of one 30 second nationwide primetime commercial. The nonprofit TVB (2015) has tracked the average cost of a 30 second nationwide primetime commercial since 1965 as reported by The Nielsen Company. TVB reports that the average cost of a 30 second nationwide primetime commercial for the last three years was $111,500, $110,200, and $112,100 (TVB, 2015). Table 9 presents the results below.

Table 9
ESTIMATED ADVERTISING VALUE EQUIVALENCY OF *TRAILER PARK: WELCOME TO MYRTLE MANOR* SEASONS 1-3

	Season One	Season Two	Season Three
Number of Episodes (1 episode = 1 30sec primetime commercial)	10	10	10
Price per 30 second primetime commercial	$111,500	$110,200	$112,100
AVE per season	$1,115,000	$1,102,000	$1,121,000
Total AVE Seasons 1-3			**$3,338,000**

These results demonstrate that if a full one hour episode has an advertising value equivalency of only one 30 second nationwide primetime commercial, then the AVE of three seasons of *Trailer Park: Welcome to Myrtle Manor* is estimated at $3,338,000. This suggests that the Myrtle Beach Area Chamber of Commerce and the South Carolina Department of Parks, Recreation, & Tourism would need to together spend an additional $3,338,000 to reach the same audience commercially reached by the reality TV series. To put this another way, the Myrtle Beach Area Chamber of Commerce and the South Carolina Department of Parks, Recreation, & Tourism is receiving $3,338,000 of free TV advertising promoting Myrtle Beach and the Grand Strand

CONCLUSION

This study demonstrates that the reality TV series *Trailer Park: Welcome to Myrtle Manor* has a positive financial impact on the Grand Strand economy of South Carolina, and does so in multiple ways. The results of the financial impact analysis include the following:

- The total direct production spending within the Grand Strand, excluding salaries, for Seasons 1-3 total $781,266.
- Using the economic impact factor currently employed by the South Carolina Film Commission and the South Carolina Department of Parks, Recreation, & Tourism, the total economic impact of production, excluding salaries, is $1,484,405 for the three seasons of filming.
- When considering the total estimated range of spending by visiting production staff, one leisure traveler would have to vacation in the Grand Strand for 41-52 years in order to create an equivalent financial impact.
- When considering the total estimated employee spending other than lodging, transportation, and meals – which is paid for by the production company – one leisure traveler would have to vacation in the Grand Strand for 12-16 years in order to create an equivalent financial impact.
- Utilizing current economic impact indicators and measures employed by the South Carolina Film Commission and the South Carolina Department of Parks, Recreation, & Tourism, the estimated financial impact of the production and staff is $2,078,270.
- Merchandise sales have totaled almost $800,000 and generated sales taxes paid to the state of $67,566.
- If only 1% of the visitors to the Grand Strand based their travel choice on images of the area seen in movies or TV shows, these film-induced tourists contribute over $101 million in gross retail sales, $186,608 in accommodations taxes paid, and $100,236 in admissions taxes paid.
- If each episode of the reality TV series *Trailer Park: Welcome to Myrtle Manor* is treated as the equivalent of only one 30 second nationwide primetime commercial, the three seasons of the show provided an Advertising Value Equivalency of $3,338,000.

These results provide strong evidence that the reality TV series *Trailer Park: Welcome to Myrtle* Manor and its producers, Jupiter Entertainment and The Weinstein Company, are providing positive and multifaceted financial impacts to the Grand Strand of South Carolina.

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A JOURNEY FROM A SERVICE LEARNING PROJECT TO AN ACADEMIC-COMMUNITY COLLABORATION EFFORT

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ABSTRACT

The primary goal of this paper is to share our experience in coordinating a service learning project for our classes that later it turned into an academic-community collaboration effort. In this paper, we describe the background of the project and its progression from a student-centered design work to faculty-led development and implementation of a database application for a local food pantry. The project culminates in the delivery of a fully-functional multiuser database application that has been successfully deployed and used at the front-end operation of the local food pantry. In the conclusion, we offer our reflection in this journey and its meanings to all who involved in the project.

INTRODUCTION

As educators are moving into the 21st century, there is a push for extending classroom learning opportunity beyond the boundary of a college campus. One of the approaches is the effort to bridge concepts learned in a classroom setting to practices in a real-world context. The ultimate goal is perhaps to prepare our students as real-world ready as possible. Real-world ready (RWR) implies that students would understand and acquire the global skill set necessary to compete in the careers they will enter after graduation regardless of their discipline (Real-World Ready QEP, 2015). Recognizing this important goal, our university has chosen the Real-World Ready initiative as the topic for the Quality Enhancement Plan (QEP) in the next five years. QEP is a mandatory component of the Southern Association of Colleges and Schools (SACS) reaffirmation process. It describes a course of actions for enhancing student learning at our university. As a result, the RWR activities/practices have been encouraged across our campus. Under our QEP, some of the resources, supports, and incentives have been set aside exclusively for initiating, undertaking, monitoring, and assessing these RWR activities. Faculty, students, administrators, and the local community partners have worked together to build and sustain the culture of RWR at our university. One of the requirements for the launch of our QEP is that it has to be from the bottom up. The faculty members as well as students have to be vested in the whole process. Naturally, we as educators must practice what we preach. This is one of the motivations for us to write this paper and to share our experience in the journey from leading a service learning project to engaging in academic-community collaboration.

In the field of Information Systems (IS), educators are often frustrated in their attempts to demonstrate the power and relevance of their discipline in a classroom setting (Resier and Bruce, 2008). Increasingly, educators in particular those in business disciplines have tried in different ways to connect their academic courses to the real-world experiences (Andrews, 2007). Several in the field of IS (Chuang and Chen, 2013; Reiser and Bruce, 2008; Hoxmeier and Lenk, 2003; Petkova, 2012) have done this via service learning projects. All of these articles focused on the work done by students in their carefully designed service learning projects. Almost all of these articles reported on the success of these projects. In this paper, we also intended to report our experience in coordinating a two semester service learning project for students in our IS classes, but along with the success were some of the challenges and limitations that we encountered. Eventually, we had to lead the project ourselves in an academic-community collaboration effort so that we could deliver a fully functional database application for a local non-profit organization.

In sum, this paper is aimed at sharing our journey going from a service learning project to an academic-community collaboration effort. In it, we describe two main phases. The 1st phase involved the student-focused service learning project and the 2nd phase centered on the faculty-led collaboration effort that ended with the solution to meet a specific need of a local non-profit organization. The first section introduces the context of the project. Next, we discuss the 1st phase of the project. The discussion includes the following parts: conducting the site visit and observation, identifying the bottlenecks and issues, documenting the manual processes, conceptualizing the need and proposing a solution. It is then followed with the description of the work done by students, the class activities, and the deliverables at the end of the 1st phase. The next section deals with the 2nd phase of the project. Here, we highlight the challenges as well as the limitations inherent in a service learning project that led us to engage in an academic-community collaboration effort. This section includes the discussion of our development work for the multiuser client-server database application. The final section concludes the paper with our reflection on the work that had been accomplished and its meaning to all who had involved in the project.

PROJECT BACKGROUND

The Project Site

The site of this project is the local food pantry that was established in 1987. The motto of this food pantry is to reach out to the hungry in the local community. Its mission is to alleviate hunger for the people and families that it serves throughout the local parish. The staff is passionate in providing their clients with the basic necessity of food and in giving them a helping hand in their time of crisis. This food pantry is a local, volunteer, non-profit organization that provides free groceries to over 40,000 members of the local community every year. The clients are those in desperate need of food assistance. Its warehouse and distribution site is located in a convenient business complex about two miles from our university. Its operation hours are from 1 pm - 4 pm on Tuesday and Thursday. The food pantry's focus is to distribute a nutritional balance of food as well as implement nutritional education through the food that it distributes. It does this by distributing groceries once a month to applicants who qualify based on the poverty guideline from the federal government. Each individual or family who qualifies receives a variety of food items such as canned goods, tomato sauce, pasta, macaroni and cheese, cereal, grits, and other items when available. In the recent years, the food pantry has been able to handout cookies, meat, soup, tuna, fruit and other nutritious items.

The Request for Help and the Launch of a Service Learning Project

One of the staff at the pantry was an alumnus from our College of Business. She worked as the office manager at the pantry. She came to us with a request for help to improve the pantry's operation. Specifically relevant to us was her request to help with the client application process. She asked us whether we could do something to help improve the efficiency and accuracy of the clients' information. The clients are the food recipients who come to the pantry for food once a month. For years, the pantry had relied on the paper-based file system to handle its clients. Although the paper application had worked in the past, as the number of clients grew, it became a challenge to handle and process many applications given a limited number of staff.

After the initial meeting with the office manager, we saw that this request for assistance could be a good opportunity for coordinating a service learning project. We identified two IS courses that were particularly matched well with the nature of the request. One was the system analysis and design (SAD) course and the other the database management course. As a result, we decided to accept the request for help and turn it into a two semester long service learning project. As shown in the literature, we found that service-learning pedagogy extends traditional classroom learning into the field by integrating meaningful community service with in-classroom activities (Cauley, et al., 2001; Rhoads, 1998). By integrating the service learning component into the project, we allowed our students the opportunity to work with a local organization to provide services related to the academic content and at the same time to apply concepts and techniques learned in a real-world context. This has been an effective pedagogy as demonstrated in Tan and Phillips' (2005) work on incorporating service learning into computer science courses.

1ST PHASE: THE SERVICE LEARNING PROJECT

Conducting Site Visits, Interviews and Observations

Upon receiving the request to help, we mapped the needed work to two of the IS courses with the focus on the database development and management. In the first semester, we engaged our students in the SAD course and in the second semester our students in the database management course. We divided our students into teams. They took turn to visit the local food pantry and to observe the working process there in order to gain an in-depth understanding of what need to be done. We allowed them to talk to staff and obtain necessary artifacts in order to do the analysis. We asked them to take note on what they observed at the site. At the end of the site visit, we would sit down and debrief. Table 1 below was the summary of our plan for the major activities that we used as an overall guide for the entire project.

Table 1 PLAN FOR MAJOR ACTIVITIES
1. Conduct site visit: Observe the process Interview with staff at the local food pantry Collect data and maintain field notes
2. Conduct the system analysis: Understand the current process Identify the operational issues Come up with requirement specification
3. Provide the system specification
4. Perform conceptual design: Formulate database design requirement Develop preliminary database design. Draw entity-relationship diagram, normalize database
5. Document the design and development process
6. Develop the prototype
7. Present to the staff at the local food pantry

Identifying the Bottlenecks and Issues

During the site visit, students observed the working process and interviewed with staff, they quickly learned of several bottlenecks and issues with this paper-based system. One, staff had to fill out the application for the client again and again every year even though most of the time the information remained the same. Two, the process of filling out the application by hand was time-consuming. Hence, it caused a long line of people waiting in the queue. Often, there was not enough space for everyone to be inside so the clients had to wait outside. This was not desirable especially during the heat of the mid-summer. Three, some of the writing was scripted quickly and consequently they were often incomprehensible. In such a case, it was difficult to read what was on these applications. Therefore, staff had to guess the information and sometime their guess was not accurate. Four, it was very tedious to create any reports when all the information was stored on the paper. The pantry staff had a hard time to tabulate the data to provide the required reports to the government agencies, its funding agencies, and its food suppliers. Five, the paper applications might get misplaced or lost. All the information had to be recaptured. Finally, it was very difficult to prevent and detect abusers/fraud. For instance, the husband and wife could fill out two different applications or same person might be claimed in multiple households. Those were among the major inefficiencies and bottlenecks that students were able to identify.

Documenting the Manual Processes

There were two core processes that were the focus of our study. The first one was the annual re-certification process that takes places once a year in July and the other was the process of handling clients who come to the site to pick up food once a month. For many years, the pantry had relied on the paper-based process to capture and manage its client information. The bottleneck was especially keen during the month of July when clients need to be re-qualified. The reason is because clients have to bring in their documents and proof of income to be recertified for eligibility to receive food. This re-certification occurred once a year. During this time, the line was particularly long and the staff was often under stress to do multiple tasks at once. As the clients bring in their proof of income and identification for recertification, staff at the front desk would fill out the application by hand for them. Then, they would verify the information with the documents provided by the clients. Next, they would issue the food and have the client sign the sheet. The whole manual sequence was a time-consuming and arduous process for both the staff and the clients.

After the re-certification in July, the application was filed in a cabinet. In the following months, when the clients came back to pick up food, staff would search and retrieve the application from the file cabinet and would have the clients check the information, sign and date it to affirm that they had picked up the food for the month. The application was then put back in the cabinet according to the alphabetical order. When next month came, the same process started all over again. Occasionally, the applications were misplaced; therefore, staff had to rewrite another application for clients. This created duplicate applications.

Conceptualizing the Need and Proposing a Possible Solution

From the data collected from the site visit and the interview with staff, students were able to apply the first step in system analysis. That was to understand the existing process, identify the bottlenecks, and engaged in the process of requirement analysis. As observed by students, one of the urgent needs was to deal with the manual process in which staff had to fill out the client's application, then store it in a cabinet, and retrieve it when clients come pick up their food. The identified need was essentially to build a database application to handle and process the client applications with the hope of overcoming some of the bottlenecks and issues that the staff encountered in the manual process.

They further understood that this system would be used by volunteers who come only once a month. One of the challenges was that most of the volunteers were retired individual and were not computer savvy. This means the system would have to be user-friendly, easy to learn, fairly simple to use, and relatively stable.

Students' Work on the Specification, Conceptual Design, Documentation, and Prototype

Students from the SAD class brought back with them samples of actual applications and some other related documents for study. They started using the artifacts collected and drawing on their field notes and observation from the site visit to put together the basic system specification. In the first semester, students were able to deliver the conceptual design of the database and the documentation of the process. In the second semester, students in the Database Management class began to develop the database prototype based on the conceptual design from the previous semester. Students applied their knowledge in Entity-Relationship diagram (ERD) to turn the conceptual design into a prototype. Students chose Microsoft Access as their platform to develop a functional prototype. The prototype as being developed could perform basic tasks such as capturing the information using forms and displaying the information in forms and generating few simple reports. This first database prototype however was not ready to be used by the food pantry because it still lacked the functionalities and did not have the real data to work with.

Deliverables

After two semesters of work, students were able to develop the prototype and provide technical documentations for the database application design and development. This service learning project was no doubt a good learning opportunity for students. The work was definitely rooted in the context of the real world. Being able to apply what they learned in class and applied the knowledge to help a local non-profit organization was one of the major benefits in doing a service learning project. In this particular project, students in both classes were exposed to the real world setting. From such a setting, they identified a problem and proposed a solution. More impressive was that they were able to develop and deliver a functional prototype.

It was not an easy process because of the complex and messy nature in the real-world setting as well as the constraints in time, resources, and knowledge. Students did learn a great deal not only about the system analysis and the database design aspects but also about servicing a real need and giving back to the community. In this sense, our service learning provided what Furco (1996) described as a "balanced pedagogy". That is service learning helps students develop a sense of personal responsibility while serving the needs of a local community. In this respect, the benefits from our service learning project were in alignment with the literature. More importantly, the real world setting helps to expose students to the uncertainty and complexity of managing daily business operations that were difficult to experience from reading the textbook and listening to a lecture (Govekar and Meenakshi, 2007; Weis, 2000). Again, the observed benefits of service learning in our project appeared to connect to those identified in the literature. They include personal gains such as greater civic engagement, confidence, and student satisfaction, and increased academic performance as reflected by increased grade-point average, retention and degree completion rates, and the development of professional skills such as leadership, communications, critical thinking, and conflict resolution (Astin and Sax, 1998; Berson and Younkin, 1998; and Toncar et al., 2006).

Challenges Encountered

Although the prototype worked and it proved the concepts, it did not have all the features needed in order to be deployed in the actual operation at the local food pantry. To turn the prototype into a fully functional database, further work was needed. However, the complexity of such work was beyond the course level. Furthermore, the work required in the testing, implementation, and maintenance phases would be much more extensive than one semester database class could handle. Finally, the process of getting the real data into the database was a real challenge. It only took time but also had to deal with the legibility issue as well as privacy issues. Therefore, the constraints in time, knowledge, and resources make it difficult for students in a normal IS class to actually turn the prototype database application into an actual system to be used at the food pantry. As a result, we decided to end the service learning project after two semesters and initiated the 2nd phase of the project. Despite all the challenges, we recognized that this work opened up a unique opportunity for faculty to get involved and to make contribution.

Therefore, we decided to transition the project up from the service learning to an academic-community collaboration effort. That was the beginning of the 2nd phase of our journey.

2ND PHASE: THE ACADEMIC-COMMUNITY COLLABORATION EFFORT

Limitations in a Service Learning Project

As described earlier, the service learning project work laid the foundation for the development of the database at the local food pantry, but it needed substantial work in order for the database application to be deployed in the actual operation. To turn the prototype into a fully functional application would require much more intensive and advanced work. More specifically, knowledge of programming in Visual Basics was necessary to provide capabilities to the user interface. The incorporation of advanced features in forms and reports were needed so that they could deliver more functionality. More sophisticated queries had to be constructed in order to obtain needed information for the required reports. The actual database should also support multiuser. This would require the knowledge of server, SQL, as well as the understanding of client-server architecture. All of these knowledge and expertise were beyond the scope of our students in the IS classes. As a result, it was our turn to lead the effort and actually practice what we teach.

The Academic–Community Collaboration Effort

This idea of an academic-community collaboration project is inspired by the philosophical underpinning of community-engaged research that entails a collaborative partnership between academic researchers and the community (Ross, et al., 2010). Collaborations between academic researchers and community groups are not new. A wide range of research projects has been carried out based on such collaborations (Huynh, et al., 2012). Academic-community collaborations are becoming popular as evidenced in a number of publications in academic journals (e.g. Lennett and Colton, 1999; Viswanathan et al., 2004; Hillier and Koppisch, 2005; Peterson et al., 2006). All of the work was voluntary-based. Like students in a service learning project, the faculty members also wanted to give back to the community and to provide technical expertise to help a local community in need. We followed the strategy for academic-community collaboration as proposed in the paper entitled "Strategy for academic-community collaboration: Enabled and Supported by the Development of an Open-source web service" by Huynh, et al. (2012). This strategy was drawn from the two conceptual frameworks: the asset-based community development (Kretzmann and McKnight, 1997) and the value chain analysis (Porter and Millar, 1985). In the following section, we are going to share our experience in this academic-community collaboration project that involved a team consisted of faculty and selected students as well as staff at the local food pantry.

Motivated and guided by these conceptual frameworks, one of the faculty members took the leading role. He organized a small team of people who were willing to help and to learn. A few capable students were recruited to work closely with him. He became the main person to work with the local food pantry staff. At this point, the service learning project had essentially transitioned into an academic-community collaboration project. The project at this point was driven by the need of a local organization and was taken on and led by a faculty member to achieve the goal of bringing the database application into reality. Therefore, the main focus in this 2nd phase was to redesign the prototype and develop it into a fully functional database application so that the database application could actually be used at the local food pantry.

Developing a Fully Functional Standalone Database Application

Based on the service learning project, we analyzed more in-depth on the requirements to make the database application deployable at the local food pantry. Here were what we came up with the requirements.

- We needed to have an Add form that was structured similar to the paper form. This would be familiar to the staff so they could enter the data correctly.
- We needed the ability to print the form so that staff does not need to use the pre-printed form. Our printed form had to include everything on the pre-printed form and should look closely similar to the pre-printed form.
- We needed to provide a View form where the staff could retrieve an application and the display should have all the information required for verification.
- We needed to allow the staff to update the client's information.
- We needed to handle record duplication by building in the integrity rule and condition.
- We needed ways to pull the data and create the reports for the local food pantry.

All of these required more advanced knowledge and skill in Microsoft Access. Furthermore, we needed to use more advanced features in form and report and learned about Visual Basic programming in order to do those requirements above. As a result, we were able to embed the Visual Basic codes inside our forms to handle the needed operations. We also created more complicated queries to pull data, aggregate them, and organize them into needed reports and extract information that the local food pantry need. At the end, we were able to deliver a fully functional database application.

More technical details on this development of the fully functional database application were presented in the appendix A and B of this paper. In the Appendix A, we displayed the following:

- The ERD for the database that we used to create our tables in the database;
- The Add form that we designed to add new client to our database;
- The printed form that we generated based on the information in the database;
- A sample of the distribution report that we used to allow clients to sign when they come to pick up their food;
- A sample of the Visual Basic code that we embedded in the form to support the pantry's operation;
- The advance queries that we designed to pull data and generate reports as required.

Transitioning from a standalone application to a multiuser client-server database application

In the previous section, we described the work involved in taking the prototype and turning it into a fully functional database application. Although it worked, the application was still limited because it was standalone. This meant the database could not be shared. Each of the PC would house its own database and application. Therefore, it was difficult to operate when there was more than one person to input data or process the clients' applications. This was a problem especially in July of each year when the pantry went through the process of re-certifying its clients. With the standalone database application, each of the computers had its own database. Whatever was added and updated was stored in that specific database on a respective computer.

At the end, we would have to merge all these different databases into one master database. This merging process was not simple to do. Therefore, we realized that we needed to have a multiuser database. It had to be in sync so that multiple users could use the database application concurrently. This need led us into the next step of turning the standalone database application into a multiuser client-server database application. This was much more challenging to do because we would have to bring in a server and set up a local area network.

Therefore, our project team set out to redesign/enhance/develop the standalone database application and turned it a multiuser application based on client-server architecture. In this process, we chose to set up our own network. Within this local network were a server, a wireless router, printers, and other laptops as shown in Figure 1. Since we were familiar with Ubuntu, we installed Ubuntu server operating system on a server laptop. Along with Ubuntu, we also installed mySQL, which is the database engine on the server. We also used phpmyadmin to manage the database and the tables. In the set up, we had to modify our tables on Microsoft Access accordingly so that they were compatible when we imported them into my SQL on the server. Figure 1 depicts the setup of the multiuser environment at the local food pantry.

Figure 1
THE SETUP OF THE CLIENT SERVER DATABASE SYSTEM AT THE FOOD PANTRY

Setting up the Open Database Connectivity on the Client PCs

Once, we had all the tables in the database on the server. The next thing we did was to modify the Access database on the client laptops. We downloaded the ODBC (Open Database Connectivity) driver on each of the laptops and set up the ODBC to connect to the database on the server. Once, the ODBC connection was established, we ran the Microsoft database application and linked to the tables on the server. All the tables were no longer local but actually were linked to those tables on the server. Since the tables were on the server, they were supported in a multiuser environment. This meant multiple users could access the tables, manipulate, update, and operate at the same time. This greatly enhanced the operation of the database application. Highlights on the multiuser set up were presented in the Appendix B. There, we displayed the basic set up of a multiuser client-server database application. Appendix B includes the screen captures of the following:

Set up ODBC (Open Database Connectivity) on a client PC;
Add system DSN and configure it;
Connect from MS Access to database on a server via ODBC;
Set Machine Data Source and select a database.

Current Implementation and Usage of the Database Application

At the presence, we are still using the system. In particular, during July, when the local food pantry is set up to recertify its clients, we would come in and set up four laptop stations to handle four clients separately but concurrently. If the client is an existing client, then all we need to do is to pull their record up from the database, update the information, and print out the application. If the client is the first-time applicant, then we would enter his/her information into the database and print out the application. Over the years, most of the clients were already in the database; hence, the recertification process has gone very smoothly with the use of the multiuser database application. It has been a big relief because gone are the line that extended outside of the distribution site, the long wait that the clients had to go through, and the stress that the staff had to face in the manual re-qualifying process.

For months other than July, we set up two laptops with the database applications. One is used for entering new client information and the other is for viewing and printing existing clients. At the end of the month, we would come on site and gather these databases and merge them for use in the next month. We also run reports for the local food pantry and generate the list of households for sign in. Prior to the computer database, each client had to write his/her household information including name, gender, number of people in the household, and sign. Now, we provide the list and the client just looks for his/her name in alphabetical order and then sign at the designated space next to their name. The process is much more efficient. At the end of the month, the office manager also uses the information on the list to tabulate how many people had been served breaking down by gender, race, age, etc.

Discussion

Although teaching the technical skills required of Information Systems (IS) graduates is a straightforward process, it is far more difficult to prepare students in a normal classroom environment for the challenges after they graduate and start working in a real world context (Hall and Johnson, 2012). This is the reason for us to launch the multi-semester project for our students to work on. As described, the project was based on a real need of the local food pantry. Students had worked closely with the pantry. They also had to learn the techniques and methodologies needed to do the project. The emphasis was placed on the application of these concepts learned in meeting the need of the local food pantry. As a result, students had to follow systematically the steps involved from doing the analysis to design and development of a prototype. When the service needed and the course content could be matched, service learning is appropriate because service performed was a direct application of content and skills learned in the classroom as shown in this case.

At the end of the two semesters, students were able to finish their required work. However, while their finished work satisfied the course requirements, it could not fully function to support the actual operation at the food pantry. The project could have been stopped at this point, but it did not in this case. A faculty saw this as an opportunity to make contribution and give back to the community. The faculty led the initiative and had turned the service learning project into an academic-community collaboration effort. The goal was to further develop the prototype into a fully functional database application for a local food pantry to use. In the paper, we have recounted the details of the journey from our first response to the need of a local community organization to the initiating and launching of a service learning project and eventually to the undertaking of the development and implementation of a fully functional database for use. From our account, we hope to encourage more educators to take on the opportunities such as service learning projects and academic-community collaboration work. Although they require time, effort, and extra work, they are meaningful to everyone who involve. We have learned much from this journey and would like to offer our reflection on what all these mean to us.

CONCLUSION

Technology constantly advances at an amazing rate. As new technology emerges, it also brings upon new capabilities. This is particularly evident in the area of information technology (IT). As we all have seen, the landscape of computer has moved from PC to laptop, to netbook, then tablets, smartphone, and now wearable gadgets in a relatively short span of time. The good news is that despite all these changes, technology nowadays is becoming smaller, faster, more prevalent and powerful, but most importantly it is much more affordable to everyday users. As we look around, it is hard not to notice that advance in IT has been the key driver for so many changes in our life and at work. This is why in a typical IS class; we tend to focus much attention on the newest and latest technology and its impacts. We would spend time to study and analyze cases where trends such as cloud computing, mobile platform, virtualization, artificial intelligence, and social media technology help shape our businesses. We try to demonstrate the power of IT by showing our students how systems like transaction processing systems (TPS), management information systems (MIS), decision support systems (DSS), and even executive information systems (ESS) have been used by successful businesses such as Walmart, Bank of America, GM, etc. Ironically, we tend to neglect those who are not at the bleeding edge. The question that we should ask ourselves is “What about those small local non-profit organizations?” These organizations are often underfunded and neglected in terms of using technology. In the context of the digital divide, these organizations represent the ones being left behind the technology trend.

Looking at the technology from the digital divide perspective helps us to become more balanced and sensitive to needs of those have-nots. Indeed, there are many of such have-not organizations like the local food pantry in this paper who are in desperate need of assistance. They provide real services to the needy in the community, but at the same time they also need a lot of help. There are many ways to map and match the resources in the community to the local needs. Service learning projects and academic-community collaboration effort are two of the examples where the local resources can be mapped and matched with the needs in a local community. More importantly, these works are now counted and valued as indicated in the guideline and expectation set forward by the accreditation bodies such as AACSB and SACS.

In recent years, both AACSB and SACS have emphasized on relevance and impact in higher education. A journey from a service learning project to an academic community collaboration effort such as the one described here is based on real world setting. It involves experiential learning in which students as well as faculties have opportunities to learn, apply, and practice in a setting authentic to their discipline. Such an initiative could offer a practical approach to address and meet the requirements for relevance and impact as recommended by the higher education accreditation bodies. Moreover, it could serve as an effective pedagogical approach that connects academic course work with real-world experiences. Series of extensive activities could be designed and integrated so that students could see the relevance in their learning and apply their knowledge appropriately in an authentic setting, and at the same time make a positive impact on a community.

Reflection

It is such a refreshing experience and a great opportunity for students, faculty, as well as a local organization to engage in a carefully match up service learning projects and academic-community collaboration work. As described in this paper, this is one of the most rewarding and meaningful ways for those participants to demonstrate the power and relevance of IT in a classroom setting and at the same time to meet a real need of a local community. First of all, for students, they learned about the system analysis and design. They understood the concepts in database design and development. The service learning project provided a real world context in which they had the opportunity to apply their knowledge and skills. This connection is crucial in bringing the real world relevance to the classroom learning. Secondly, the faculty members were able to teach their subject in a meaningful way. They not only taught just IT related concepts but also exposed their students to the real world needs and gave them the opportunity to give back to the community. Going beyond the service learning project, the faculty member himself engaged in a more advanced level through the academic-community collaboration. He took on the role of a practitioner as he played the leading role in the collaboration effort. The work made real contribution and created positive impacts in the community. Such academic-community collaboration was equivalent to a professional development where he could learn new skills, apply his expertise, share his knowledge with students, and contribute his work to the needs of a community. The experience helped enriching classroom teaching and stimulates student learning. At the same time, the faculty was also practicing what he teaches. He was in their field where he could actually help solving a problem or meeting a need of a local community. Essentially, it was a unique opportunity for him to serve and to give back to the community. Although this required time and commitment, at the end, the reward was a feeling of accomplishment for doing something valuable, meaningful, and making a positive impact on a local community. Finally, for the local community such as the food pantry in this case, they had their needs met. As a result of the collaboration with students and faculty member, they received a fully functional database application. Their work could be done much more efficient and accurate with the computer-based system. At the end, they could focus more on fulfilling their mission -- That is “to alleviate hunger for the people and families that it serves throughout the local Parish”. Indeed, this initiative created a win-win situation for all who had involved in the work.

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APPENDIX A

The following figures provide the core elements in the database application including: the Entity-Relationship Diagram, the interface of the input form, samples of the application and report, examples of codes and queries.

Figure A1

ENTITY-RELATIONSHIP DIAGRAM FOR THE LOCAL FOOD PANTRY DATABASE

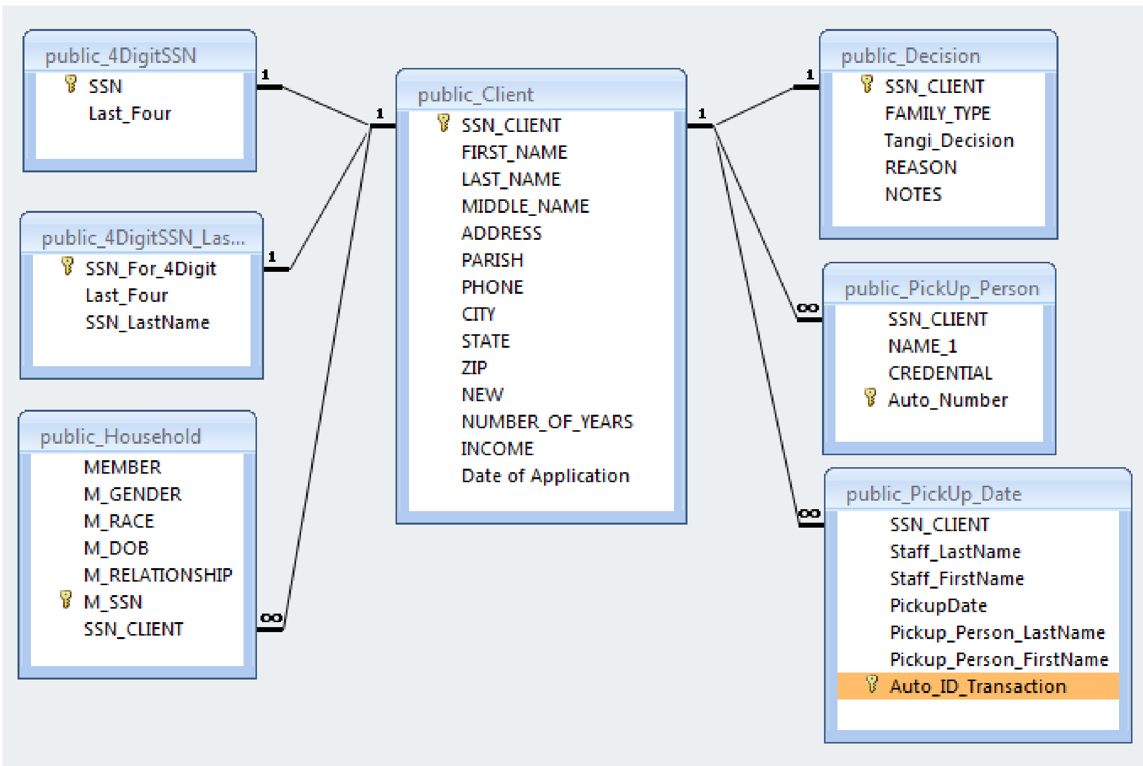
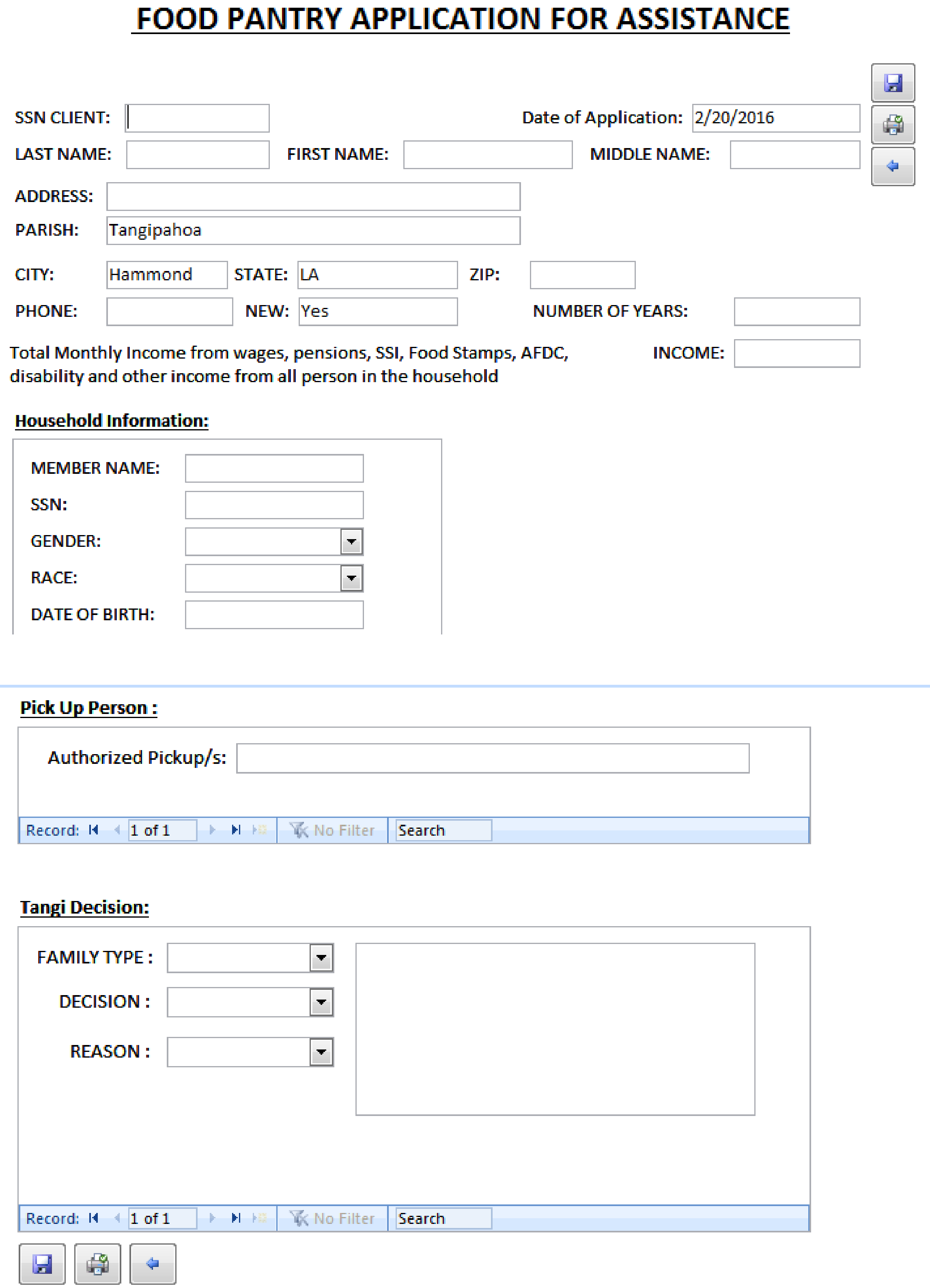


Figure A2

THE INTERFACE OF THE INPUT FORM



FOOD PANTRY APPLICATION FOR ASSISTANCE

SSN CLIENT: Date of Application: 2/20/2016

LAST NAME: FIRST NAME: MIDDLE NAME:

ADDRESS:

PARISH: Tangipahoa

CITY: Hammond STATE: LA ZIP:

PHONE: NEW: Yes NUMBER OF YEARS:

Total Monthly Income from wages, pensions, SSI, Food Stamps, AFDC, disability and other income from all person in the household INCOME:

Household Information:

MEMBER NAME:

SSN:

GENDER:

RACE:

DATE OF BIRTH:

Pick Up Person :

Authorized Pickup/s:

Record: 1 of 1 No Filter Search

Tangi Decision:

FAMILY TYPE :

DECISION :

REASON :

Record: 1 of 1 No Filter Search

Figure A3
A PRINT-OUT SAMPLE OF THE APPLICATION

FOOD PANTRY APPLICATION FOR ASSISTANCE

LAST NAME	McDonald	FIRST NAME	Mike	NEW	Yes	# YRS	0
ADDRESS	79 Old McDonald Rd			ADDRESS VERIFIED BY TFP			
CITY	Springfield	STATE	LA	ZIP	70466	Date:	
PARISH	Tangipahoa	PHONE	222-555-5555				
SSN	000-00-1111						

Total Monthly Income from wages, pensions, SSI, Food Stamps, AFDC, disability and other income from all persons in the household $

Household Information

NAME	RELATIONSHIP	M/F	RACE*	DOB	SSN
Mike McDonald	Self	M	C	01/01/1981	000-00-1111

Figure A4A
SAMPLE OF A REPORT

Food Pantry
LA

Department of Agricuture and Forestry
Food Distribution List
Second Havest Food Bank

Feb 2016

LAST_NAME	FIRST_NAME	ADDRESS	PARISH	NEW	TotalHH	F	M	M_RACE	Adult	Children	Senior	Signature Of Application	Today's Date
[redacted]	[redacted]		Tangipahoa	Yes	1		1	C	1				
[redacted]	Sharron	13(Quick Blvd apt 1C	Tangipahoa	Yes	1	1		C			1		
[redacted]	Earice	15! W. Club Deluxe	Tangipahoa	No	1			AA	1				

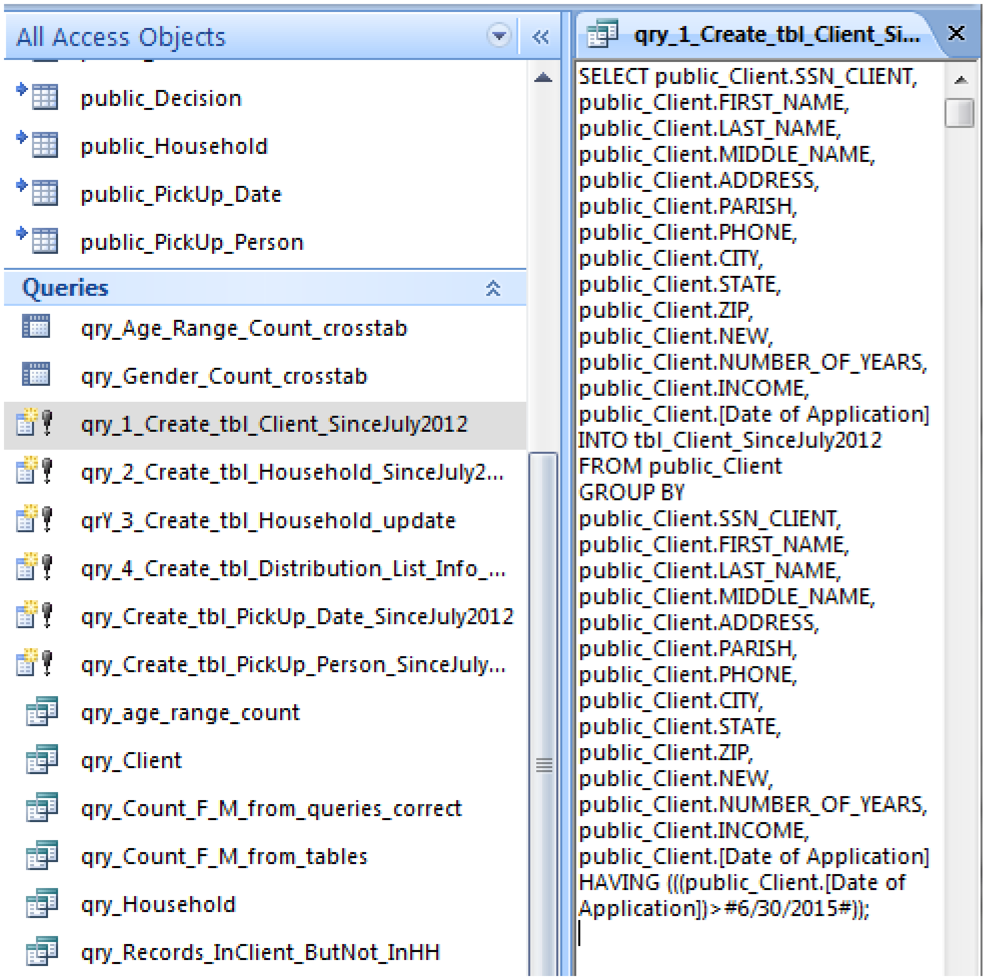
Figure A5
EXAMPLE OF VISUAL BASIC CODES

Add-DB-laptop2-160108 - Form_Edit by SSN Form (Code)

(General) (Declarations)

```
Option Compare Database

Private Sub Form_Load()

Dim mgs As String

If IsNull(Me.SSN_CLIENT.Value) Then

msg = MsgBox("Record not found. Do you want to add new record?", vbYesNo, Message)

If (msg = vbYes) Then

DoCmd.OpenForm "Add Form", acNormal
DoCmd.Close acForm, "Edit by SSN Form"

Else

DoCmd.Close acForm, "Edit by SSN Form"
DoCmd.OpenForm "Switchboard"

End If
End If
End Sub

Private Sub LAST_NAME_LostFocus()

Me.Last_Four.Value = Right(Me.SSN_CLIENT.Value, 4)
Me.SSN_LastName = Me.Last_Four.Value & Me.LAST_NAME.Value

End Sub
```

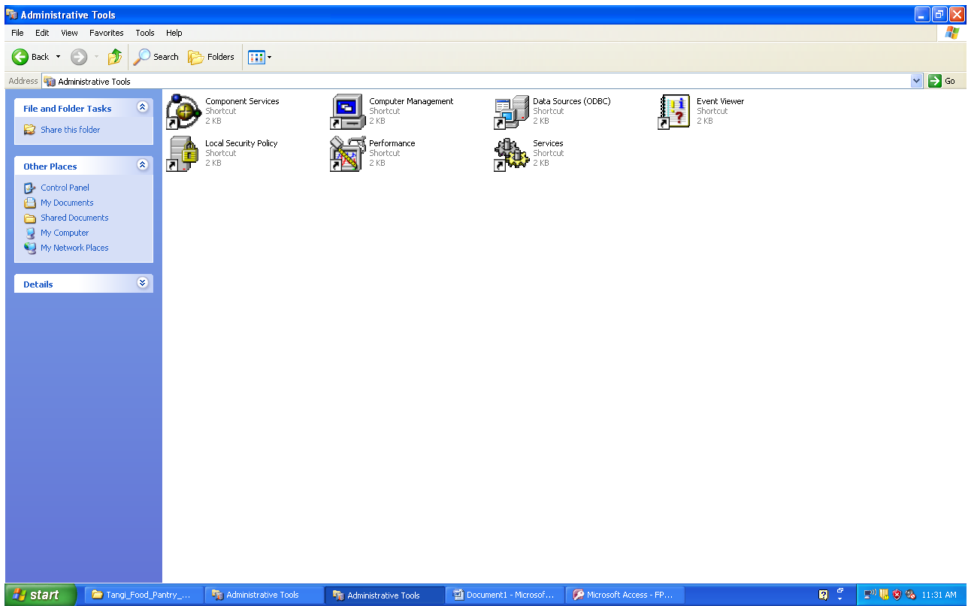
Figure A6
EXAMPLE OF QUERIES



APPENDIX B

The following figures illustrate how to set up the ODBC to allow connection from Microsoft Access to the database on the server.

Figure B1
SET UP ODBC ON THE CLIENT PC



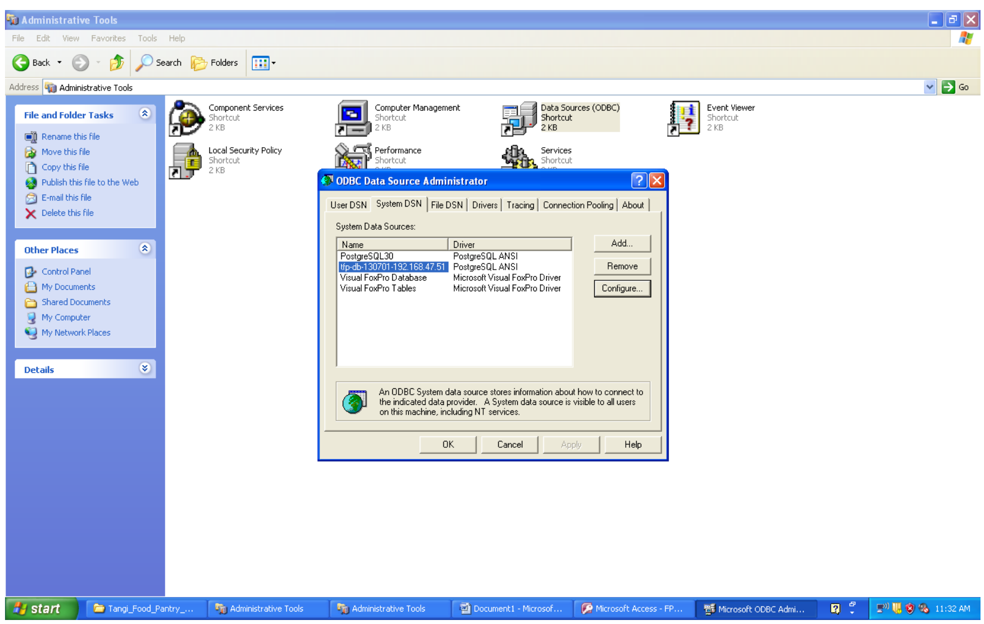


Figure B2
ADD SYSTEM DSN AND CONFIGURE IT

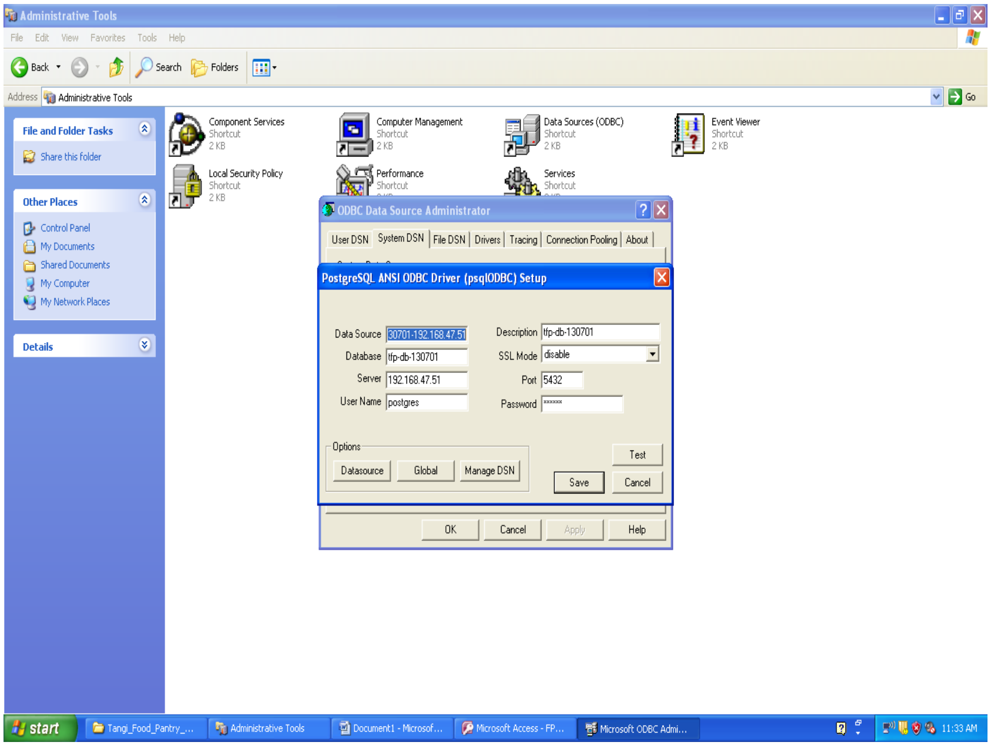
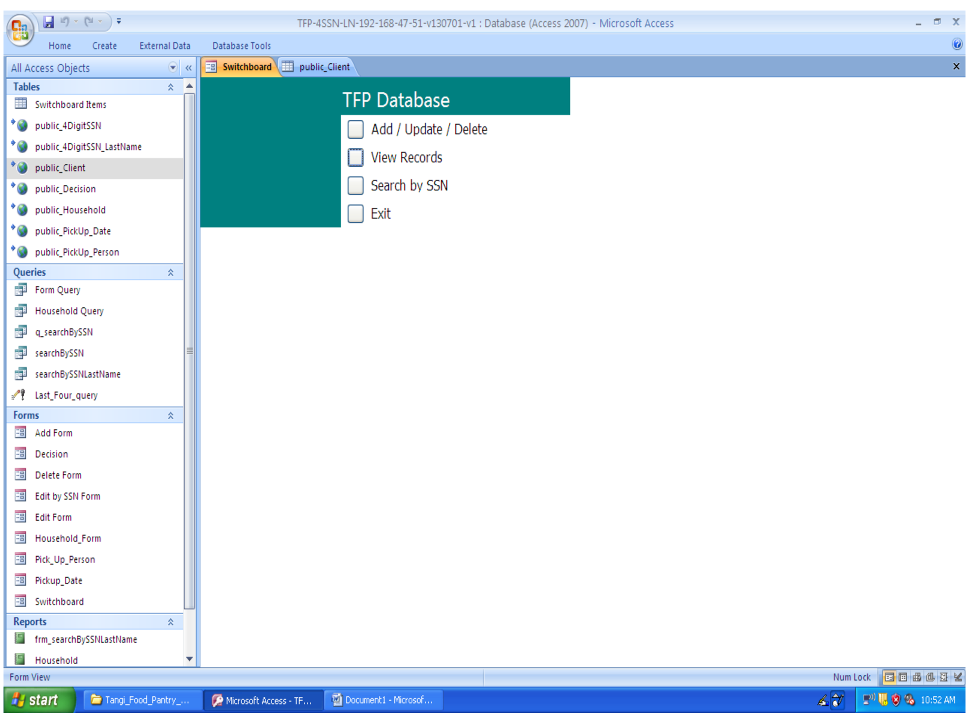
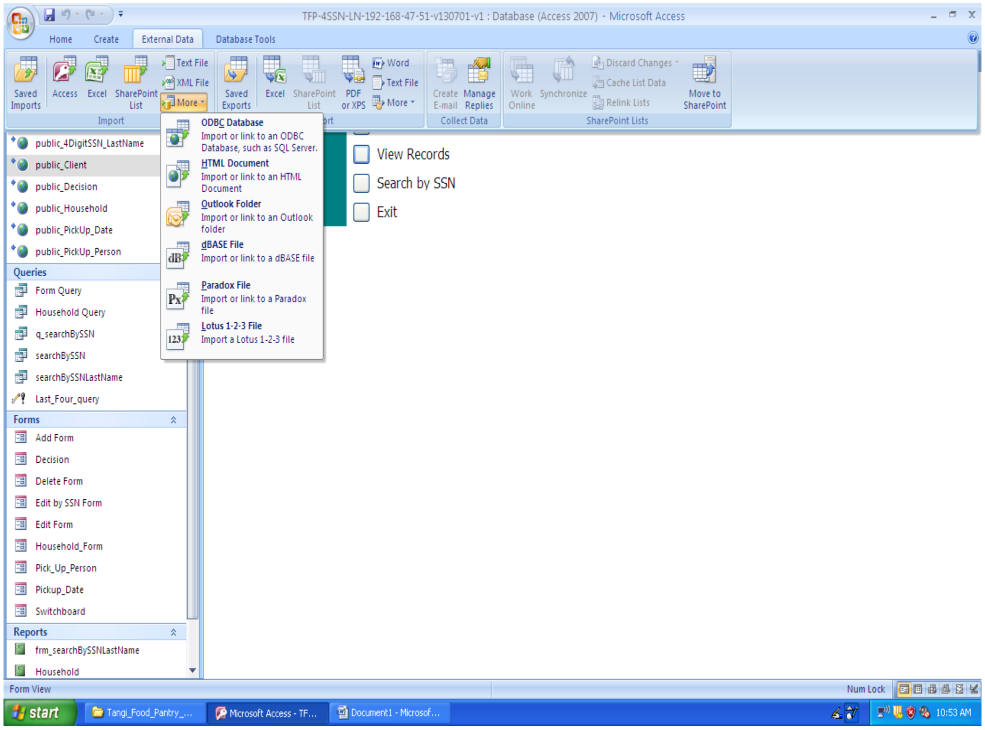


Figure B3
CONNECT FROM MS ACCESS TO DATABASE ON THE SERVER VIA ODBC





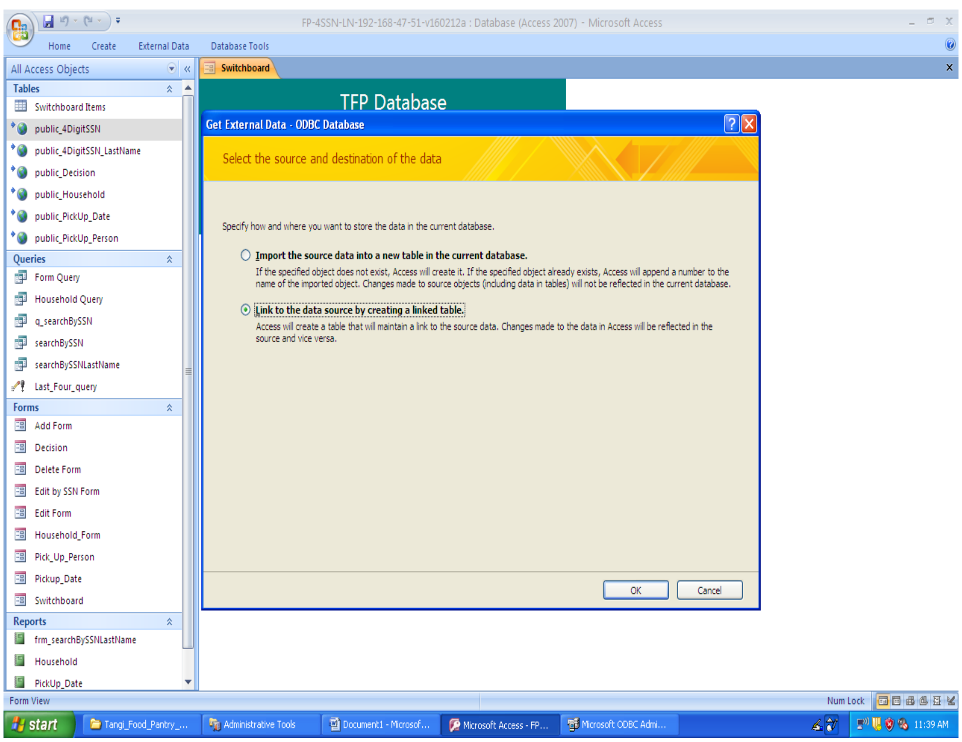
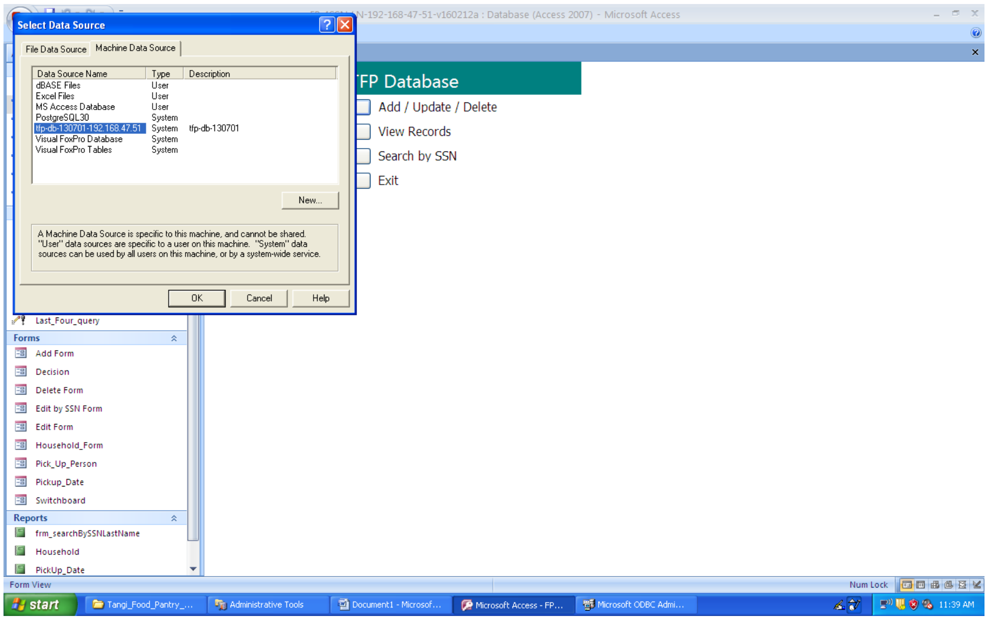
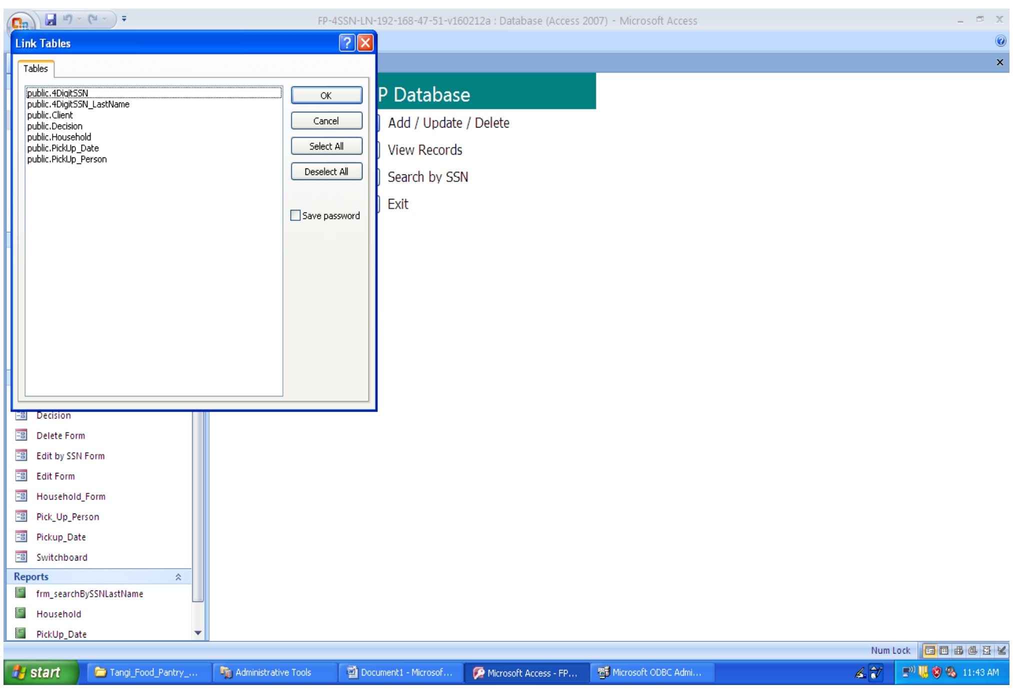


Figure B4
TAB MACHINE DATA SOURCE AND SELECT THE DATABASE





DOES TRANSFORMATION LEADERSHIP PROMTE INNOVATION PRACTICES IN E-COMMERCE?

Dr. Joe Ilsever, University of the Fraser Valley
Omar Ilsever, Our Lady of the Lake University

ABSTRACT

Organizations face many challenges in today's dynamic business environment (Gumusluoglu & Ilsev, 2009). Rapid technological changes, shortened product life cycles and globalization have made it necessary for organizations to be more creative and innovative to survive, compete, grow and lead (Gumusluoglu & Ilsev, 2009). Therefore, innovation is a key factor in organizations' ability to create a sustainable competitive advantage as well as for the success of strong economies in the 21st century (Eisenbeiss, Boerner & Knippenberg, 2008). Evidently, it has been suggested that leadership is among the most important factors affecting innovation (Gumusluoglu & Ilsev, 2009). A number of studies have shown that transformational leadership positively influences organizational innovation (Gumusluoglu & Ilsev, 2009). However, limited studies have discussed how other leadership styles such as transactional and laissez-faire leadership may be utilized and may be more beneficial for organizations to adapt for innovative practices. Without such initiatives, companies could fall into product dormancy and loss of market share.

INTRODUCTION

This paper will critically assess the three leadership styles and determine if transformational leadership does indeed promote innovation practices or if other leadership styles such as transactional leaders or laissez faire leaders would be more beneficial for organizations to implement, for future success in innovation. In the following sections, a critical assessment of both transformational and transactional leadership, as well as laissez faire leadership will be conducted. The last section will determine which style would be more appropriate for organizations to adapt and whether transformational leadership is a better fit for innovation.

CRITICAL REVIEW: TRANSFORMATIONAL LEADERSHIP ON ORGANIZATIONAL INNOVATION

Transformational leadership defined by Gumusluoglu & Ilsev (2009) are leaders who "transform followers" personal values and self-concepts, move them to higher levels of needs and aspirations and raise the performance expectations of their followers." This leadership style has four main components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, Jung, Avolio & Berson, 2003). Tichy & Devanna (1990) highlight the transforming effect these leaders can have on organizations as well as on individuals. By defining the need for change, creating new visions and mobilizing commitment to these visions, leaders can ultimately transform the organization (Ticky & Devanna, 1990). Gumusluoglu & Ilsev (2009) further state that transformational leadership is an important determinant of organizational innovation and should be implemented by managers to promote strong innovation practices in organizations. Those in favor of transformational leadership in organizations argue that these types of leaders effectively increase commitment from employees and elevate higher level needs such as self-actualization and self-esteem (Bass, 1990). As a result, employees are highly motivated, which can be an important driver of both employee creativity and firm innovation (Gumusluoglu & Ilsev, 2009). Essentially, transformational leaders encourage their employees to identify new approaches to problem solving as well as looking at old problems in new ways (Gumusluoglu & Ilsev, 2009). Under these positive environments, employees are more likely to be engaged in innovative ideas (Oke, Munshi, & Walumbwa, 2009). Overall, researchers tend to agree on the role of transformational leadership of top management in enhancing quality management (Berson & Linton, 2005). However, there is little agreement regarding the role of transformational leadership at lower levels of the organization (Berson & Linton, 2005). For example, Dean and Bowen (1994) suggest that quality management practices could be seen as substitutes to leadership. In other words, instituting effective quality management practices diminishes the need for transformational leadership at lower levels of a firm (Sousa and Voss, 2002).

TRANSACTIONAL LEADERSHIP ON ORGANIZATION INNOVATION

Transactional leadership is the style of leadership that is most often seen in businesses and organizations today (Humphreys, 2001). Transactional leadership is usually characterized by the factors of "contingent reward and management-by-exception" (Bass, 1990). The key to transactional leadership is the exchange between the leader and the follower (Humphreys, 2001). They influence each other in ways that both receive something of value. They are said to be mutually dependent upon one another (Humphreys, 2001). Transactional leadership theories are all founded on the idea that leader-follower relations are based on a series of exchanges or implicit bargains between leaders and followers (Hartog, Muijen & Koopman, 1997).

Oke et al., 2009 suggest that "transactional leaders are likely to contribute to innovative processes and activities by clarifying what performance standards are required and how needs would be satisfied." Essentially, transactional leaders contribute to the innovation process by encouraging people to perform in a desired way by motivating them through rewards and punishment (Gumusluoglu & Ilsev, 2009). The transactional leader has clear performance expectations, goals, and paths that link achievement of the goals to rewards (Hartog et al, 1997).

However, Bass et al. (2003) & Humphreys (2001) also discuss how a transactional leader can have a negative impact on organizational innovation if they are constant reprimanding or disapproving of actions taken by employees. Contingent reprimand has a negative impact on employee performance, meaning they are less likely to want to achieve the desired result by its leaders. (Bass et al., 2003, Humphreys, 2001.)

LAISSEZ-FAIRE LEADERSHIP ON ORGANIZATIONAL INNOVATION

Both transformational and transactional leaders are active leaders. They actively intervene and try to prevent problems. When researching these two active forms of leadership, they are often contrasted with extremely passive laissez-faire leadership (Hartog et al, 1997). Laissez faire leadership describes passive leaders who are reluctant to influence subordinates or give direction (Deluga, 1990). They generally refrain from participating in-group or individual decision-making and to a large extent, abdicate their leadership role (Deluga, 1990). Subordinates are given considerable freedom of action and, therefore, seem likely to maximize their power and influence (Gumusluoglu & Ilsev, 2009). This is a leader who is “relatively inattentive, indifferent, frequently absent, and un-influential” (Gumusluoglu & Ilsev, 2009). As stated by Hartog et al., (1997) laissez-faire leadership is an inappropriate way to lead. However, Hartog et al., (1997) also states, “one could probably define situations in which highly active leadership is not necessary and may not even be desirable.” For instance, in their substitutes for leadership theory Kerr & Jermier (1978) propose several subordinate, task, and, organization characteristics that could reduce the importance of leadership (Hartog et al, 1997). A less active role of leaders could also lead to 'empowerment' of followers (Hartog et al, 2007). However, in the long run this type of leadership would not be beneficial. Thus, this leadership style is ineffective in organizations that are wanting to be innovative in their ideas and approaches. In addition, laissez-faire leadership has shown strong negative relationships with various leadership criteria (Hinkin & Schriesheim, 2008).

TRANSFORMATIONAL, TRANSACTIONAL, LAISSEZ-FAIRE LEADERSHIP: WHAT LEADERSHIP STYLE WORKS?

Although transformational and transactional leadership are distinct leadership styles, contrasting transactional and transformational leadership does not imply that the models are unrelated (Hartog et al., 1997). Burns (1978) thought of the two types of leadership as being at opposite ends of a continuum (Hartog et al., 1997). Bass (1985) however viewed them as separate dimensions, this means a leader can be both transactional and transformational (Hartog et al., 1997). In fact, both are necessary for organizational performance, and the best leaders are both transformational and transactional (Oke et al., 2009). However as both work in different ways to motivate employees, and neither are substitutable, Bass et al., (2003) suggest that transformational leadership is more likely to reflect social values and to emerge in times of distress and change while transactional leadership are more likely to be observed in a well-ordered society.

Hartog et al., (1997) states that while transactional leadership motivates subordinates to perform as expected, the transformational leader typically inspires followers to do more than originally expected (Hartog et al., 1997). Bass (1990) further argues that the leadership continuum ranges from complete non-leadership, which he believes to be laissez-faire at one extreme end to the very active leader, which he views as transformational leadership. Other transformational leadership theorists (e.g., Burns, 1978; Bass, 1985; Bass and Avolio, 1994) have argued the same, stating that leadership styles can be placed on a continuum in terms of leader pro-activity and effectiveness (Berson & Linton, 2005). At the bottom end of this continuum or range is laissez-faire leadership (Berson & Linton, 2005). In the middle range is transactional leadership behavior and at the top is transformational (Berson & Linton, 2005). This range implies that transformational leadership is more proactive and ultimately more effective than transactional and laissez faire leadership in terms of motivating followers to achieve higher performance (Berson & Linton, 2005).

Organizational innovation in Gumusluoglu & Ilsev (2009) study is defined as the “tendency of the organization to develop new or improved products and services and its success in bringing those products and services to the market.” Therefore, leaders must display attributes that promote innovation and innovation practices in order to be both successful in product development and marketing. Overall, transactional leaders tend to get results by thinking more about specific goals, work skills, work assignments and various reward relationships and offering reward relationships to employees (Oke et al. 2009). Alternatively, transformational leaders place greater emphasis upon intellectual capability and creativity by providing the emotional support that encourages employees to excel (Oke et al. 2009).

Furthermore, Oke et al. (2009) suggest that the "transactional form of leadership, through its focus on management, clear structures, formal systems, reward and discipline is likely to be more effective in the implementation stage of innovation than transformational leadership." Transformational leadership style is more appropriate to foster the creative innovation process than the transactional leadership style, since the creative endeavor requires risk-taking, experimentation, change and challenges to the status quo (Oke et al., 2009).

In regards to laissez-faire leadership, subordinates compete for the power and influence abdicated by the laissez faire leader, meaning there is a lack of leadership, resentment, intense competition and manipulation between employees and management, which in turn does not foster innovation practices or growth, especially for organizations in today's technology driven work environment (Deluga, 1990). Therefore, organizations that want to be successful in innovation implementation must consider alternate leadership styles such as transformational leadership to have a positive influence and strong impact on organizational innovation (Gumusluoglu & Ilsev, 2009).

IS TRANSFORMATIONLAL LEADERSHIP A BETTER FIT FOR INNOVATION?

Humphreys (2001), states that there is little question that advancing technologies will impact the traditional view of leadership and that emerging technologies will have greater implications on effective leadership behaviors and leadership paradigms. Therefore, it makes sense that organizations should implement transformational leaders, as they promote innovation practices and utilize the most appropriate leadership qualities for this day and age; where continual change is driven by escalating technological advancement (Humphreys, 2001). Furthermore, Bass (1990) indicates that transformational leadership can lead to substantial organizational rewards. Transformational leadership has also been positively correlated to leader effectiveness ratings, leader and follower satisfaction, follower efforts, and overall organizational performance (Humphreys, 2008).

Transformational leadership is evidently the better leadership style that enhances innovation within an organization. Using charisma, transformational leaders instill admiration, respect, and loyalty and emphasize a sense of mission (Gumusluoglu & Ilsev, 2009). They also build a one-to-one relationship with his or her followers and understand their individual needs, skills and aspirations (Gumusluoglu & Ilsev, 2009). Thus, transformational leaders meet the emotional needs of each employee (Bass, 1990). By inspirational motivation, the leader articulates an exciting vision of the future, shows the followers the ways to achieve the goals, and expresses his or her belief that they can do it (Gumusluoglu & Ilsev, 2009). In addition to its effect on the tendency of organizations to innovate, transformational leadership also has a positive impact on the market success of the innovations (Gumusluoglu & Ilsev, 2009). By articulating a strong vision of innovation and displaying a sense of power and confidence, this leader will strive to ensure the market success of the innovation (Gumusluoglu & Ilsev, 2009) Furthermore, in addition to the internal roles, transformational leadership has been suggested to be effective in playing external roles such as boundary spanning, entrepreneuring and championing, which might be important both for understanding the needs of the market and marketing the innovation successfully (Gumusluoglu & Ilsev, 2009).

CONCLUSION

To remain competitive in today's rapidly changing work environment, organizations must continually develop leaders who will support innovation and emerging technology (Humphreys, 2001). Transformational leaders promote higher performance in organizational units that are open to change and are flexible, in other words, in an innovative climate (Gumusluoglu & Ilsev, 2009). Therefore, transformational leadership is ideal in organizations that want to innovate successfully. Transformational leaders do not settle for current states but articulate an appealing and challenging future vision (Eisenbeiss et al, 2008). Transformational leaders also display unconventional and creative behavior and serve as role models for innovation (Eisenbeiss et al, 2008). Overall, transactional and laissez-faire leadership do not articulate the qualities needed for a good leader in innovative organizations. Although a transactional leader may be useful in the implementation stage of innovation, it is apparent that the transformational leader's style is more catered to that of innovation. Additionally, for organizations to be successful in their innovation practices, strong and dedicated leadership is key, therefore laissez faire leadership would not be acceptable in innovative organizations. Transformational leaders promote innovative practices and are essential in organizational innovation (Gumusluoglu & Ilsev, 2009). Therefore, the presence of transformational leaders will strongly assist in an organizations ability to successfully innovate in today's changing business environment.

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Oke, A., Munshi, N., & Walumbwa, F. (2009). The Influence of Leadership on Innovation Processes and Activities. *Organizational Dynamics*, *38*(1), 64-72. Retrieved June 14, 2009, from Business Source Premier database.

Topalian, A. (2000). The Role of Innovation Leaders in Developing Long-Term Products. *International Journal of Innovation Management*, *4*(2), 149. Retrieved June 8, 2009, from Business Source Premier database.

Vecchio, R., Justin, J., & Pearce, C. (2008). The utility of transactional and transformational leadership for predicting performance and satisfaction within a path-goal theory framework. *Journal of Occupational & Organizational Psychology*, *81*(1), 71-82. Retrieved June 15, 2009, from Master FILE Premier database.

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WHAT IS WRONG WITH INDIAN CORPORATE GOVERNANCE? : A CASE STUDY OF FAILURE OF KINGFISHER AIRLINES

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ABSTRACT

Corporate Governance failures and corporate frauds have become a recurring phenomenon in India. While greed and dishonesty of individuals are at the heart of the corporate frauds, major part of the blame must also go to the inadequate policy implementation and corruption. India has emerged as the fourth largest economy in the world in terms of Purchase Power Parity in the world and Indian corporate sector is growing at a faster rate. Foreign Direct Investment inflows into India are on the raise during last two years. However the weakest link in India's efforts to become an 'Economic superpower' appears to be the poor corporate governance practices in India. On paper, India has one of the best legal frameworks for corporate governance in the world. But on ground the reality is somewhat different. The latest to join the already long list of corporate governance failures and frauds is Kingfisher Airlines (KFA). This paper analyses the failure of Kingfisher airlines and subsequent events from the corporate governance perspective.

Key words: *Corporate Governance, Economic Super Power, Kingfisher Airlines, Frauds, Legal framework*

INTRODUCTION

Corporate Governance failures are not new to India. No month passes without a minor or major corporate scandal. In fact poor corporate governance has become the hallmark of many Indian corporations. The list of corporate governance failures in the recent past is too long, Satyam Computers, Sahara, Reebok India, Vodafone, Diageo, Axis bank, Saradha Chit funds, Ranbaxy (NUJS, 2015; Bhattacharya, 2013) to name a few and now Kingfisher airlines. The irony of the matter is India on paper has a legal frame work that can be compared with Sarbanes – Oxley act of US. In fact Indian law on Corporate Governance has drawn very heavily from Sarbanes – Oxley act and has been continuously improved by committees chaired by eminent people from industry, Rahul Bajaj (1997), Kumar Mangalam Birla (2000), Naresh Chandra Committee (2002), Narayan Murthy Committee (2003) and Naresh Chandra Committee (2009). The question that arises then is, why corporate governance failures occur in India with an unending regularity? This paper is an attempt to answer this question by analyzing the latest failure of corporate governance at the Kingfisher Airlines.

The rest of the paper is structured as follows. The second section explains the methodology, the third section discusses what corporate governance is?, the fourth section describes the brief history if Indian corporate governance, fifth section discusses the case of Kingfisher Airlines, the sixth section is discussion and findings as to why the corporate governance mechanisms failed in case of KFA, the sixth section concludes the paper.

METHODOLOGY

This study is based on the case study approach. Corporate governance failures have many factors that are mostly qualitative in Nature. Kingfisher airlines failure is a complicated case that cannot be analysed by a few quantitative factors. Case study approach allows researchers to deal multiple factors and stakeholders in a comprehensive manner (Lee, 1989), in areas like Corporate Governance. Case study research can be used in theory testing (Darke and Shanks, 1997). The present study analyzed the failure of Kingfisher Airlines from the lens of Corporate Governance.

CORPORATE GOVERNANCE

Corporations have come into existence as a novel way of pooling financial resources to undertake capital intensive endeavors and enterprises, which were beyond the reach of an individual or few individuals. In the present-day context, corporations world over have become the engines of economic growth. According to Hansmann et al. (2004) all corporations have five common characteristics, they are ownership by shareholders (investors), limited liability, transferrable shares, separate legal personality of the corporation and delegated management by board of directors. The distinguishing characteristic of corporations is separation of ownership and control. In a modern corporation, large number of owners known as shareholders contribute the capital but do not manage the business. Owners (shareholders), employ professional managers (CEO and top management), who are experts in different functional areas of business, to manage the business activities on their behalf. Thus a relationship of principal and agent comes into existence between the shareholders (Principals) and Managers (agents). The managers are compensated for their skills with salaries, bonuses and stock options etc. The agents have a fiduciary responsibility to the principals and are expected to work in their best interests and create wealth for the owners. However this does not always happen. As managers take all the decisions, they are in apposition to take decisions in their own interest and not for the benefit of the owners, which often is referred to as ‘Managerial opportunism’. To prevent managerial opportunism, corporations establish mechanisms, which are collectively called as ‘corporate governance mechanisms’. According to Mayer, corporate governance has been traditionally associated with principal - agent relationship problem, caused by separation of ownership and management. Corporate governance brings in line the interests of the investors and mangers and ensures that the companies are run for the benefit of investors (Mayer, 1997). Three internal corporate governance mechanisms, namely concentration of shareholders, board of directors, and managerial compensation, and one external corporate governance mechanism mechanisms namely market for corporate control have evolved over time, to control the opportunistic behavior of mangers (Hitt et. al.).

According to Schapiro (2009), chairperson, Securities and Exchange Commission (SEC), USA "Corporate governance is about maintaining an appropriate balance of accountability between three key players: the corporation's owners, the directors whom the owners elect, and the managers whom the directors select”. According to Sir Adrian Cadbury, corporate governance is “the system by which business corporations are directed and controlled”. According to OECD “The corporate governance structure specifies the distribution of rights and responsibilities among different participants in the corporation, such as the board, managers, shareholders and other stakeholders, and spells out the rules and procedures for making decisions on corporate affairs. By doing this, it also provides the structure through which the company objectives are set, and the means of attaining those objectives and monitoring performance. (OECD, 2004)." Securities and Exchange Board of India (SEBI) defines corporate governance as the "acceptance by management of the inalienable rights of shareholders as the true owners of the corporation and of their own role as trustees on behalf of the shareholders. It is about commitment to values, about ethical business conduct and about making a distinction between personal & corporate funds in the management of a company." According to Thompson (2009), corporate governance refers to all the policies, procedures, systems and controls used for setting and controlling the direction of corporations and managing the relationships between all the stakeholders of a corporation. Stakeholders include shareholders, managers, board of directors, employees, customers, and also the society.

The importance of corporate governance can be gauged from the findings of a Harvard Business School study, that 'The Economist' did not publish any editorials on Corporate governance till 1998, but published more than 20 each year starting from the year 2002 and 2003, and this number is increasing with each passing year (Coglianese, 2004).

INDIAN CORPORATE GOVERNANCE

Corporate governance in India has evolved in three different phases. The first phase is during the British colonial rule, the second one is after independence till the start of economic reforms in 1990, and the last phase is after 1990s. During the colonial days, the corporate governance was not really heard off. In the second phase, 1947-1990, the shareholders other than promoters of the company, had no say in management of the company. Government's control over corporations is complete and for companies with government protection, there were virtually no threats of takeover. Public financial institutions that normally held a large chunk of shares in majority of the corporations and nominated their officers to the boards, but did not show any interest in management or corporate governance. All this resulted in a very week form of corporate governance and political influence on corporations.

The third phase of the corporate governance in India coincides with the economic reforms initiated by Indian Government in 1990s. The capital market and corporate governance reforms started with the revision of age old Indian Company Act, followed by establishing Securities and Exchange Board of India (SEBI), modeled on SEC of US, in 1992 and dismantling many government controls known as license – permit raj. The most important reform was facilitating the foreign direct investment, by replacing the draconian Foreign Exchange Regulation Act (FERA) with Foreign Exchange Mechanism Act (FEMA). The Indian rupee was made convertible on the current account resulting in the exchange rate being determined by the market, subject to intervention by the apex bank, if needed. These reforms have brought the Indian corporate governance model close to Anglo American Model (Reed, 2002).

CORPORATE GOVERNANCE FAILURE - CASE OF KING FISHER AIRLINES (KFA)

Notwithstanding the improvements made in corporate governance law and framework in India as result of the recommendations of all these committees, corporate governance failures have become pretty common in India. The latest and one of the largest corporate frauds is Kingfisher Airlines.

Vijay Mallya, became the Chairman of United Breweries Limited (UB Ltd), a successful company producing alcoholic beverages started by his father, at a very young age of 28 years in

1983. Over years Mallya was very successful and acquired a number of companies in diverse industries that included Berger paints, Best and Crompton, Mangalore Chemicals and Fertilizers and Asian Age, a newspaper group apart from many companies in liquor industry. The group under the leadership of Mallya has grown into a multinational conglomerate of 60 companies, with an annual turnover of US $ 11 Billion during 1998-1999. United Spirits, most profitable company of the group that produces alcoholic beverages, has made history with 18 of their brands selling more than one million cases each year and four of their brands selling more than 10 million cases. It has become the largest alcoholic beverage company in India and the second largest company in the world (United Spirits, 2016). King Fisher beer, undoubtedly the most popular beer, has 50% market share of the Indian beer market. Mallya has also been chairman of a number of other companies including multinational companies like Sanofi India (Formerly Hoechst AG) and Bayer CropScience. Apart from his companies, Mallya co-owns Sahara Force India, a Formula One team, owns Indian Premier League Cricket Team Royal Challengers, I-League soccer teams Mohun Bagan AC and East Bengal FC (The Guardian, 2009). He is also an independent politician, elected as Member of Parliament to Rajya Sabha, the Indian upper house of Parliament, since 2002. He is well known for his successful bids at some prominent auctions worldwide, in which he acquired the sword of Tippu Sultan the famous ruler of Mysore, from his home province of Karnataka, who died fighting British forces for £ 175, 000 and also another 30 items belonging to him. He also acquired wire rimmed spectacles, pocket watch and other items of Mahatma Gandhi, Father of Indian Nation, for $ 1.8 million, from an auction in US. (Mallyainparliment, 2011). Mallya was known as ‘King of Good Times’ for his flamboyant lifestyle.

Kingfisher Airlines (KFA), an Indian airline company was promoted by Mallya in 2003 and made its maiden flight on May 09, 2005 from Mumbai to Delhi. As part of the economic liberalization initiated in 1991, Government of India liberalized the government controlled aviation sector and opened it to private sector with its ‘open skies policy’. This attracted many companies like Damania Airways, East-West (1991-1996), Jet Airways, Air Deccan and Modiluft, a joint venture between Modis and Lufthansa of Germany. Most of these airlines were operating in the domestic routes, due to restrictions placed by Government of India. KFA’s headquarters was located at Andheri, Mumbai, India. UB Ltd, the holding company, is an Indian conglomerate with operations in alcoholic beverages, real estate, chemicals and fertilizers among others. KFA’s strategy was to offer premium, high quality service to Indian passengers and was not intended to compete with low cost airliners that have come up. Their philosophy was reflected by the statement made by Mallya, “This is a world class experience, all at an affordable price. We are not a low-cost carrier and we do not be intended to be one”. KFA started its operations with four Airbus A- 320-200 aircrafts in 2005 that were wet leased. Wet lease implies that the lessor provides aircraft, complete crew, maintenance and Insurance (CMAI) to the lessee.

Mallya was the Chairman and Managing Director, since its incorporation. The board members included Ravindra Nath Nedungadi, Diwan Arun Nanda, GN Bajpai, Naresh Trehan, Piyush Mankad, Subhash Gupte (Vice Chairman)),Arun Ganguly, MS Kapur (since 2012), and Srinivasulu Reddy. Gopinath of Air Deccan and Tennis player Vijaya AritRaj joined the borad after 2007. V Bharat has served as the secretary of the company since 2102. However Vijay Amritraj and Ganguly resigned from the board in 2012. The capital structure of the airliner from 2002 to 2013 was as follows. Subhash Gupte was a former Chairman and managing director of

AIR India, MS Kapur was the former chairman of Vijya Bank. They came on to KFA board in 2012 and resigned from the board in 2014.

Table 1
CAPITAL STRUCTURE OF KING FISHER AIRLINES 2002 -2013

Period		Instrument	Authorized Capital	Issued Capital	- P A I D U P -		
From	To		₹ (Rs. cr)	₹ (Rs. cr)	Shares (nos)	Face Value	Capital in ₹ (Rs) crores
2012	2013	Equity Share	1650	808.72	808722990	10	808.72
2011	2012	Equity Share	1650	577.65	577647274	10	577.65
2010	2011	Equity Share	1650	497.78	497779223	10	497.78
2009	2010	Equity Share	900	265.91	265908883	10	265.91
2008	2009	Equity Share	400	265.91	265908883	10	265.91
2007	2008	Equity Share	400	135.8	135798503	10	135.8
2006	2007	Equity Share	150	135.47	135470118	10	135.47
2005	2006	Equity Share	125	98.18	98182007	10	98.18
2004	2005	Equity Share	60	31.06	1501298	1	0.15
2003	2004	Equity Share	32	30.39	1537160	100	15.37
2002	2003	Equity Share	10	10	200000	100	2

Source: Dian Global Solutions Limited, 2016, www.moneycontro.com,2016; Economic Times, 2016; and Bombay Stock Exchange, 2016.

KFA, by offering premium services, eye catching promotions using Bollywood movie actresses, was able to attract a number of air passengers and by 2006 has become the second largest carrier in India, in terms of numbers. The quality of service satisfied many customers who were unhappy with airlines operated by government and also the other low cost airliners. As a full service airliner, KFA served quality food and beverages on all routes and was the only airliner in India at that time that offered first class service on domestic routes. Trained and helpful ground and air crew helped in developing a good reputation. KFA could create a distinct identity of its own with their differentiation strategy in Indian market. KFA soon became synonymous with ‘five star’ air travel, in India and also has become the first airliner to provide live in-flight entertainment on domestic routes. By 2007, KFA was flying to 255 destinations with 41 aircrafts and carried 17.5 million passengers.

Mallya considered Jet Airways as his major competitor. Jet Airways has been promoted by Mr. Goyal, who had a lot of industry experience having worked with many major airlines in Europe. Jet airways has been operating profitably for few years and then it made a bid and acquired the ailing Air Sahara in 2006 and later renamed it as JetLite. Mallya too made an unsuccessful bid for Air Sahara. In order to take away the market share from Jet, KFA offered many upgrades vouchers to corporate clients and others if they switched to KFA and for some time it appeared that this strategy is working (Livemint.com, 2016). Jet airways has international operations too. That is one area KFA could not get into due to the government policy.

As on September 2007, KFA was serving 34 destinations with 37 aircrafts that included four A-319, twelve A-320, six A-321 and 12 ATR 72. KFA needed additional aircrafts as they wanted to increase the number of routes. The company had ambitious expansion plans and placed orders for 35 ATR aircraft for delivery by 2010, 51 A-320 aircrafts to be delivered by 2014 and 50 wide bodied aircraft for delivery between 2008 and 2018. The carrier also wanted to fly international. But to go international, as per Government of India policy, Indian airline companies needed to be operating for a minimum period of 5 years and also required to own more than 20 aircrafts. Towards the end of 2007, KFA in order to meet this requirement decided to acquire 46% of ‘Air Deccan’ another low cost airliner, to compete with other low cost carriers and most importantly to be able to open international operations.

Air Deccan was in existence for more than five years and this acquisition would allow KFA to fly on international routes. To facilitate this, a reverse merger was engineered, first Air Deccan acquiring KFA and few months later the merged airline becoming KFA again. KFA also hoped that the acquisition would save ₹ 300 crore ($60 million) annually and also increase the fleet strength to 71. This acquisition was financed with ₹ 550 crore ($110 million) from the group’s holding company UB Ltd. This move surprised many industry watchers as both these airlines are operating at different ends of the spectrum, KFA with differentiation strategy and Air Deccan with cost leadership strategy. However, this acquisition helped KFA become a large airliner with 77 aircrafts, operating 412 domestic flights daily and carrying 10.9 million passengers annually. Captain Gopinath, the founder of Air Deccan and Vijay Amritraj, a well-known international tennis player joined the Board of Directors of the new KFA. In 2008 KFA got permission to fly international and their first international flight was from Bangalore to London in September 2008.

Unfortunately, increasing passenger numbers however did not translate into profits for KFA. In fact, KFA’s troubles started right from the start of its operations in 2005. It is also a well-known fact that the fixed costs for airlines are very high. Fuel expenditure accounted for 50% of aviation firm’s operating costs. In 2005, the oil prices were soaring at nearly $75 per barrel. In 2006 KFA approached IDBI Bank with a proposal for a loan of ₹ 900 crore (US $180 million) for purchasing new aircrafts for the carrier. However the credit committee of the IDBI bank, decided not to approve the loan considering the fact that the airline industry is capital intensive, highly competitive and that KFA is a new company. For 2005, KFA had a revenue of ₹ 305.55 crore ($ 61 million), Interest on borrowed funds was ₹ 10.21 crores ($ 2 million) and the net loss was ₹ 19.53 crores ($ 4 million). In 2006 the revenue increased three fold to ₹ 989.12 crores ($197.8 million), but interest payment grew to ₹ 25.57 ($ 5.11 Million) crores and net loss has grown to an alarming ₹ 272.44 crores ($54.4 million). Though the acquisition of Air Deccan helped the fledging airliner starting its international operations, it has created an operational problem in domestic market, that of managing two different entities in the same corporation, one with a premium service and the second one an economy service.

In the years that followed, the interest and debt of the KFA have skyrocketed. By March 2008, the debt stood at ₹ 934 crore ($186.8 million). By 2008, the crude oil prices world over rose to nearly $140 a barrel and according to the estimate of International Air Transport

Association, the world airline industry collectively suffered a loss of $ 5.2 billion. The industry was going through one of the most difficult period and it was not different for India or KFA. The main competitor of KFA, Jet Airways also suffered a loss during these years, but could overcome the crisis as it had been operating profitably in the previous few years.

KFA published its combined financial statements in 2009, which reflected a phenomenal growth in sales to the tune of $1.1 billion, but unfortunately the losses too followed in same proportion, to the tune of $0.8 billion. In 2009 KFA board of directors approved a resolution to raise ₹ 500 crore (US $ 100 Million) by using Global Deposit Receipts (GDRs) and also other means. Further they approved raising another ₹ 500 Crore ($100 Million) by issuing rights shares to existing shareholders. But, by end of 2009 the net-worth of the company has become negative. KFA has started a restructuring program and laid off 100 pilots. They also increased the fuel surcharge. However these measures could not stop the downward slide of the KFA.

Surprisingly, in 2009, IDBI approved a loan of ₹ 950 crore ($190 million) in spite of turning down the same request in 2006. During the ensuing period the airliner has managed to get massive loans from different banks for its operations as follows. IDBI loan is particularly interesting, as it comes to light that the huge loan was sanctioned at lightning speed, within one month, after Mallya had a meeting with IDBI Chief Yogesh Aggarwal. One of the conditions of the loan requires Kingfisher Airlines to deposit the tax deducted from employees to the tune of Rs 100 crore with authorities. KFA did not comply with this requirement but still managed to get the loan (NDTV, 2016). Mallya approached a number of other banks between 2008 and 2010 and managed to get huge amount of loans from a number of banks. Surprisingly these banks provided the loans to KFA by taking the company's 'brand value' into consideration and seven trademarks as collateral. They included Fly Kingfisher (Label Mark and Word), Flying Models of Kingfisher, Fly the Good Times, Funliner and Kingfisher, which were valued by global consultancy firm Grant & Thronton. In 2012, Director General Civil Aviation (DCGA) of India valued these trademarks at ₹ 3,008 crores ($601 million). Many market watchers speculated that this reversal of decision has more to do with political and other influences, read as corruption, rather than sound business case. The brand value is dependent on the firm performance and growth and by 2014, the value of these assets have come down and currently the value is estimated at paltry Rs 6 crore ($1.2 million).

According information provided by Government of India, Minister of Finance (in 2011), KFA pledged its brand to the banks for ₹ 4100 crore ($820 million). Apart from this Mallya was supposed to have given personal guarantee of ₹ 248.07 crores ($49.5 million) and the holding company UB Ltd provided a corporate guarantee for ₹ 1601.43 crores ($320 million). According to the minister's statement made in Indian parliament, Mallya had also provided collateral security to the tune of ₹ 5,238.59 crore ($1.4 billion) in the form of real estate, Kingfisher House in Mumbai and Kingfisher villa in Goa, ground support equipment, computers, office furniture and aircrafts of the company and all assets owned by Mallya, valued at nearly ₹ Rs 277 crores ($55.4 million).

Table 2
BANK LOANS TO KFA 2008 TO 2010

Ser#	Bank	Amount in Indian Rupees (₹) Crores	Amount in US $	Year	Collateral Security
1	State Bank of India	1,600	$212 million	2010	Trademarks and Goodwill
2	IDBI Bank	800	$106 million	2009	Trademarks
3	Punjab National Bank	800	$106 million	2010	Trademarks
4	Bank of India	650	$130 million	2010	Trademarks
5	Bank of Baroda	550	$110 million	2010	Trademarks
6	United bank of India	430	$86 million	2010	Trade marks
7	Central Bank	410	$82 million	2010	Sales proceeds and lease rents to be deposited an escrow account
8	UCO Bank	320	$64 million	2010	Trade marks
9	Corporation Bank	310	$62 million		Trade marks
10	State Bank of Mysore	150	$30 million		Trade marks
11	Indian Overseas Bank	140	$28 million	2008	Two Helicopters
12	Federal Bank	90	$18 million		Trade marks
13	Punjab and Sindh Bank	60	$12 million	2010	Kingfisher House, Mumbai
14	Axis Bank	60	$12 million	2010	Trade marks
15	Three other banks (Vijaya Bank and others)	603	$120 million	2010	Trade marks

Source: Compiled from different sources

By the end of year 2010 KFA had an accumulated debt of ₹ 7000 crores ($1.4 billion) and suffered a loss of ₹ 1608 crores ($320 million). For the lending banks the loans to KFA have become nonperforming assets. Notwithstanding this KFA announced new flights to Europe. In September, 2010, Mallya appointed Sanjay Aggarwal as new CEO of the beleaguered airline. According to the audit report for 2010-11 the accumulated losses of the company was more than 50% of the net worth of the company. The airliner approached the lending banks to restructure the debt. In spite of KFA piling up losses wiping out all its assets, Mallya drew salaries of ₹ s 33.46 crore ($6.5 million) for years 2010 and 2011. The share prices of the company from 2006 to 2015 are as follows:

Table 3
SHARE PRICES OF KFA

Ser #	Year	High	Low
1	2006	140.70 (28 Dec 2006)	68.00 (19 July 2006)
2	2007	316.60 (18 Dec 2007)	91.30 (05 April 2007)
3	2008	284.50 (01 Jan 2008)	29.10 (17 Dec 2008)
4	2009	68.75 (02 Jun 2009)	49.60 (06 Nov 2009)
5	2010	86.80 (10 Nov 2010)	41.55(20 May 2010)
6	2011	66.85 (03 Jan 2010)	19.65 (11 Nov 2010)
7	2012	29.15 (07 Feb 2012)	7.40 (10 Aug 2012)
8	2013	15.16 (02 Jan 2013)	3.88 (16 Dec2013)
9	2014	3.46 (02 Jun 2012)	1.28 (27 Nov 2014)
10		1.34 (01 Dec 2014)	No transactions after 1 Dec 2014.

Source: Compiled from Yahoo Finance

In November 2010 consortium of banks led by State Bank of India, the largest lender restructured the KFA debt for the first time. According to the agreement reached the banks converted ₹ 1355 crores ($271 million) into equity at a premium of 61% to the market price of around ₹ 80 ($14). Further they extended the period of repayment to nine years and also offered a moratorium of two years on loans, cut interest rates and also sanctioned fresh loans. Prior to this the market regulator SEBI had two restrictions on such conversions. First, only 10% or less of debt could be converted into equity by banks. The second is that the price of conversion must be an average market price of previous 30 days or six months. During 2010 SEBI relaxed these provisions and the banks were able to convert a large part of their loans to KFA into equity at a premium. On November 25, the KFA board approved the recast package.

Finally on September 28, 2011 KFA decided to exit the low-cost part of their business in India. But by this time, the troubles for KFA started mounting. By December 2011, KFA had outstanding dues of ₹ 93 Crore ($18.5 million) to Mumbai International Airport Pvt. Ltd. Meanwhile Service Tax department froze 11 bank accounts of KFA for nonpayment of ₹ 70 Crore ($14 million), which was partially lifted after KFA made partial payments. Income Tax department froze some of KFA’s accounts resulting in cancellation of many flights, for want of working capital. The airliner started operating on a truncated schedule, losing a number of profitable routes. KFA could not settle it dues with private operators and suffered another blow when IATA asked its members not to book KFA tickets from March 08, 2012.

Finally, in 2012 King Fisher airlines was grounded. The Income Tax department attached KFA’s (International Air Transport association) IATA collection bank account in March and after that KFA could not and did not make any payments to employees including salaries. KFA employees protested delays in salary payment. Vijay Amritraj, respected tennis player and independent director on the board resigned, followed by Anil Kumar Ganguly another independent director leaving KFA with only three board members. On March 20, 2012, KFA suspended all its international operations. On March 27, the airline suspended operations from Hyderabad, Kolkata, Bhubaneshwar, patina and Lucknow, bringing the number of flights to 120 from 400. Employees including pilots, were not paid salaries for many months and after many protests, they received partial salary dues for few months in April 2012. In May and June the same year again, pilots went on strike for non-receipt of salaries, resulting cancellation of further flights. Mallya tried hard to get some form of intervention by Government but the minister for civil aviation ruled out any bailout by Government. Again in October 2012, employees went on go on strike for non-payment of salaries and KFA declares partial lockout. In October, 2012, Director General Civil Aviation (DGCA) issued show-cause notice to KFA asking why its license should not be cancelled and finally on October 20, 2012 the license of KFA was suspended. In December 2012 the company’s license got cancelled. In 2013 the KFA’s flying permits were withdrawn. The company suffered a loss of ₹ 4000 crore ($ 800 million) in 2012-13 taking accumulated losses to ₹ 16, 023 crore ($3.2 billion) and by 2013 the net worth of the company has fallen to negative (– ₹ 12, 919 crore (2.54 billion)).

Resignation of independent directors Amritraj and Ganguly in 2012, have left the board without independent director, which is in violation of the government norms for listed companies. In order to meet the requirements of listing norms, the company appointed MS Kapur, a banker, Lalit Bashin, reputed corporate lawyer and Shrikant Ruparel, former MD of Kolhapur Sugar Mills, as independent directors on March 28, 2012. Mr. Subhah Gupte was the vice chairman of KFA and earlier he was the former Chairman and Managing Director of Air India, MS Kapur was the former Chairman and managing Director of Vijaya Bank, one of the lenders. Ravi had a long association with UB Ltd from 1990. Three directors Ravi Nedungadi, Subhas Gupte and MS Kapur Resigned from the board on 01 April 2014.

The consortium of banks have approached UB Ltd, the holding company and guarantor to banks, to repay the loans of ₹ 6.493 crore ($1.2 billion). Mallya promised to repay the loans, once he completed the sale of 35% of his stake in United Spirits limited, one of the UB Ltd companies to Diageo Plc, for nearly ₹ 5000 crore ($1 billion). At the same time Mallya continued his efforts to revive the airline by meeting banks and civil aviation authorities, without success. State Bank chairman felt that KFA needed ₹ 2000 crores ($400 million) to revive but no bank or international investor was willing to invest. Director General Civil Aviation asked the company to clear all dues including salaries of employees, before making any application for revival of the license. Three senior executives resigned from KFA in June 2013.

Finally, convinced that all their efforts are going in vain, in 2014, United Bank of India declared Mallya as ‘willful defaulter’, followed by State Bank of India and Punjab National Bank. Mallya has challenged these declarations in various courts. Banks also started acting on his collateral securities. In 2015, the consortium of banks has taken over the prestigious Kingfisher House in Mumbai valued at Rs 100 crores. CEO Sanjay Aggarwal resigned his position on February 2014.

Mallya has been accused of Money laundering. He is reported to have acquired a large number of properties in all continents of the world. However Mallya reportedly did not have any major properties in India, according his declaration to Rajya Sabha, the upper house of the parliament. As of November 2015, the principle amount due was ₹ 5000 crores ($1 billion) and the interest on loans amounted to ₹ 4,091 crores ($800 million). Mallya lobbied with the banks for waiver of interest or lowering interest rate without success. The banks asked Mallya to pay all principal and put the interest in an escrow account. Banks were not willing to take any chances with Mallya and also as Mallya has assets in excess of this amount all over the world. Bank officials are also wary of the onetime settlement due to the irregularities noticed in the books of accounts of other Mallya companies. At the end of 2015 Mallya is fighting 27 cases in courts and 22 of them pertain to KFA. According the union finance minister, Government of India, the loan amount owned by KFA stood at ₹ 9,091.40 crore ($ 1.85 billion) at the end of November 2015. Meanwhile Diageo Plc, alleged that Mallya diverted his funds from United Spirits Ltd to other businesses and he was made to resign his position as Chairman of United Spirits Limited. Mallya was reported to have got a golden parachute of $ 75 million, to be paid over next 5 years by Diageo Plc, for a non-competing agreement he signed with them. Market observers felt that Mallya got out of United Spirits limited on very good terms, but more than two million shareholders of the company are not so lucky and are still stuck in KFA. In December 2015, CBI, the premier investigating agency of government of India questioned Mallya about his role in the suspected conspiracy between him and some of IDBI bank officials. The consortium of banks have taken over possession of more than nine trademarks of KFA in 2016 including “ Kingfisher” Label, “Flying Models” and “Fly the Good Times”. However experts feel that there will be no takers for these trademarks, of a defunct company.

KFA could not pay its suppliers and airport authorities. Mumbai International Airport auctioned Mallya’s private jet for ₹ 22 lakhs ($42000), to recover some of the dues. DGCA after KFA default asked all airlines to disclose the dues they owe to suppliers like oil companies and also to the government. These details are not available publicly. KFA as on March 07, 2012 has outstanding dues over ₹ 425 crore ($85million) To Hindustan petroleum Corporation (HPCL). Yogesh Agarwal, the then Chairman and four members BK Batra, OV Bundelu, R Bansal and

SKV Srinivasan of credit committee are being investigated by CBI for their role in sanctioning loan to KFA. The CEO Sanjay Aggarwal has submitted his resignation on February 14, 2014 but it was finally approved by the board on 12 Feb 2015.

As it stands today KFA has a total debt of $1.3 Billion. State Bank of India managed to get Rs 155 crore ($31 million) out of the loaned amount ₹ 1,623 Crore ($324 million). The value of KFA assets pledged to various banks for ₹ 4000 crore ($800 million) is only ₹ 6 crore ($1.2 million) as of now. There are no takers for the 'Kingfisher' trademarks, the SBI accepted as security for the loans. This is only a tiny fraction of the amount Mallya owned to the banks. CBI asked the banks to lodge a FIR about the fraud, but no bank has come forward so far to file the complaint with the investigation agency. The investigation agency says, it cannot proceed if banks do not file a complaint of fraud with them.

In March 2016, banks apprehending that Mallya might fly out of the country, were preparing to approach Supreme Court to attach his passport. But Mallya flew out of country to UK on March 02, 2016. Surprisingly the Central Bureau of Investigation (CBI), Government of India which had earlier issued an arrest warrant if he tried to leave country on October 16, 2015, changed it on November 24, 2015 asking immigration authorities merely to report, if Mallya is travelling abroad. This facilitated his leaving the country, fueling allegations that some powerful persons in corridors of power facilitated his leaving the country. CBI tried to justify the change by saying that the first order was issued 'erroneously'. The head office of the organization said that their Mumbai office made a mistake by ticking a wrong box in the form initially, a mistake which they said was corrected in the second notice. CBI further clarified that Mallya went abroad at least 6 times between November 2015 and February 2016 and always returned and according them Mallya also made himself available to questioning by CBI on December 9, 10 and 12, 2015, hence they did not find it necessary to arrest him (Indian Express, 2016).

Industry watchers and legal experts feel that Banks may never be able to recover the loans (Manish, 2015). Further according to CBI and banks, Mallya has laundered a large portion of the loans he received from banks by transferring them to the other firms owned by him and recording the transactions as 'repayments of inter corporate deposits', which Mallya vehemently denied.

Could KFA have been saved? Undoubtedly Kingfisher Airlines was dream child of Flamboyant Mallya. In fact the inauguration of the airliner coincided with birth day of Mallya's son Siddarth. Many industry analysts feel that Mallya had great dreams for this airliner, which he thought would catapult him into world's richest list. However that did not happen for many reasons. To begin with like everything he did, Mallya wanted a business that is highly visible, but did not understand the intricacies of running a complicated business like airlines. The next important issue is lack of a clear vision and a supporting business strategy. KFA's business strategy was clouded. Mallya wanted to emulate successful airlines like South West of US but did not follow their strategy. He always wanted to offer differentiated service and succeeded to a great extent initially though at great cost, but his acquisition of Air Deccan defies all the logic in the context of his strategy to make KFA different. Offering first class and inflight entertainment on domestic routes was not a wise business move. The longest routes in India are less than three hours duration and many industry experts are skeptical about the benefits of inflight entertainment to the fledging airline.

Mallya also wanted to vanquish KFA's main competitor, Jet airways at any cost. This single point obsession according to industry experts resulted in many questionable decisions. Mallya could have tried to save the company by taking in an experienced partner. But he did not want to lose the control of KFA, it is believed. At one point another Industrial power house of India the TATAs were supposed to have made an offer to buy majority stake at ₹ 30 during 2011, which was not accepted. Mallya it is believed has approached Mukesh Ambani of Reliance group, but had not been able to evoke any interest. Subrato Roy of Sahara group also was supposed to have expressed interest. But none of these materialized and according to reports and analysts, Mallya's ego, unwillingness to lose control or being a minority stakeholder were the main reasons (Bazmi & Nayyar, 2011).

DISCUSSION AND FINDINGS ON CORPORATE GOVERNANCE ISSUES

Board of Directors

Indian Company act and legal framework requires that at least half the directors must be outside directors. The board of directors KFA comprised of insiders and outside independent directors on paper, as stipulated by SEBI guidelines. However the board was dominated by the Chairman and Managing director Mallya all along. It is clear that the board did not have any say in the control of the airliner and Mallya was controlling all activities. It is clear that the composition of board was to meet the requirements of SEBI and related legal framework in letter but not in spirit. Indian corporate governance law has many stringent requirements like Sarbanes – Oxley Act. Clause 49, was introduced into the Indian corporate law in order to provide transparency in financial reporting. Surprisingly for a company of this size there are only four directors at many times and one associate director including Mallya. Obviously the board has clearly failed to exercise their oversight on the actions of executives and in their fiduciary duty to the shareholders. This clearly shows in matters of corporate governance, implementation of the law in spirit is more important than having a robust legal framework. Surprisingly the Board members may or may not hold any shares in KFA as per the company policy on shareholding policy.

Effect on Employees

All employees including pilots lost their jobs. They were not paid salaries for months in spite of going on strike many times. As of 2012, KFA owed ₹ 300 Crores ($60 million) in salaries to 3000 employees (Chowdhury, 2016). Employee's provident fund was deducted but not deposited with the Provident fund organization, as legally required. Employee Income Tax deducted at source has not been deposited with Income Tax authorities and adding insult to injury. Employees of KFA started getting notices from Income Tax department to pay taxes. Employees are protesting and have appealed to the government and Supreme Court of India to help them in getting their dues. Employees are now demanding that Diageo Plc. which acquired 53.4% stake in United Spirits pay their dues before they settle their $ 75 million deal with Mallya. On 07 March 2016, Debt recovery tribunal barred Mallya from accessing $75 million due from Diageo, until loan default cases are settled. But legal experts doubt the enforceability of this order (NDTV, 2016). Employees Provident Fund Organization (EPFO), formed an investigation team to look into the related issues on March 15, 2016, again a knee jerk reaction, and a case of too late and too little. EPFO's argument that none of the employee unions have filed a complaint is seen as an attempt to cover-up their failure, since employees are agitating on salaries and PF from 2012 onwards. Except for salaries, all other issues were avoidable, if the authorities in Provident Fund and Income Tax acted in right time, which again leads to the problem of implementation of laws of land by government officials.

Executive Compensation

Executives, CEO and top Management team are paid huge salaries and perks to motivate them to create wealth through firm performance and in the best interest of shareholders, who are the owners. As Managing Director Mallya, has rewarded himself with salaries of ₹ 25 crore ($ 5million) per year from 2008 to 2011. By Indian standards it a princely pay, as many well performing company CEOs do not make one tenth of this amount. This executive compensation is all the more difficult to explain, considering the fact that the employees of KFA have not been paid their salaries and other dues for a number of months starting from 2012. Independent director responsible for audit should have disclosed such irregularities but there is no evidence that it was done.

Effect on Shareholders

In all such failures the most affected group of stakeholders are shareholders. Shareholders of KFA lost everything. The share price of KFA has come from a high of ₹ 307 ($60.5) during 2007 to a low of ₹ 1.5 in 2012. The trading of the shares of this company on the Bombay stock Exchange has ceased from 2012 and there is no liquidity for KFA's share anymore. Small shareholders are the worst affected. Under the present circumstances there is no light seen at the end of the tunnel or even the end of the tunnel. Even the shareholders of parent company UB Ltd lost 75% of their share value. In 2011 the share price of UB Ltd moved from a high of ₹ 315($63) to a low of ₹ 82 ($14). Apart from this banks converted a substantial part of debt into equity at a substantially higher premium then the market price. As large block shareholders after this conversion, instead of being in control, they are at a disadvantage and loss. As it stands the whole equity holding of banks have to be written off as loss (Bamzai & Nayyar, 2011).

Role of Banks

The role of the banks in granting the loans to KFA seems questionable in many cases. For example banks provided loans, accepting trademarks (Kingfisher airlines) as security, in spite of the opposition from some of their own (bank's) board members. The estimated value of these trademarks now are ₹ 6 Crores ($1.2 million). Accepting trademarks as security may be an accepted practice for banks in developed countries, but not common in India. None of the banks reflect capitalized brand value in their balance sheets. Indian Banks are normally considered very conservative. Bank of India, another bank provided ₹ 308 crores ($61 million) loan, by accepting air conditioners in the offices, tractors, boarding pass printers and even folding chairs. The way the loans have been provided clearly indicates that the banks did not carry out a thorough 'due diligence' check and calling to question their risk assessment practices, lending credence that corruption and political influence could have played a major role. As usual the Indian government reacted to the situation now on March 15, 2016, giving directions to banks that in future, promoters taking loans will be personally responsible for the corporate loans. It is doubtful, if such a measure will stand the legal tests.

The Brand Issue

Kingfisher airlines brand that has been provided as a security to the banks was registered as a separate trade mark, though derived from mother brand Kingfisher beer. Kingfisher brand is owned by UB Ltd, registered as a brand pertaining to alcoholic beverages. UB Ltd maintains that this brand has not been hypothecated to any one of the lenders. Kingfisher airlines brand is a separate entity. It is unlikely that this issue will be settled any time soon. However under the present circumstances it is unlikely that anyone will be interested in buying Kingfisher airline bank. SBICAP Trustee Co. Ltd, a subsidiary of SBI sought an ‘expression of interest’ from parties interested in acquiring these assets failed to get any response. Experts in brand management are of the opinion that banks may never be able to monetize Kingfisher airline brand, as the mother brand represents a totally different product. Many experts also feel that a brands value is dependent on the performance of the company and going by that yardstick, Kingfisher airlines brand is unlikely to attract any buyers (Indian Express, 2016).

Property as Bank Guarantee

Mallya according to reports provided ‘personal’ guarantee to SBI and Punjab National Bank by mortgaging Kingfisher Villa in Goa, his family home and Kingfisher House in Mumbai, which houses his corporate offices of UB Ltd. But the value of the properties is so merger that one wonders how commercial banks have extended such huge loans on such properties. Kingfisher house has become an irrecoverable property, as it is owned by UB Ltd and not by Mallya. The bank has now approached the court. Indian Overseas bank was given two helicopters as guarantee for ₹ 108 crores (21 million). It is believed that these two helicopters are not in flying condition. Central Bank of India provided ₹ 410 crores ($81 million) with a guarantee by KFA that the sales proceeds will be deposited with them in an escrow account but soon after KFA ceased operations.

Conversion of Debt into Equity

This is another debatable issue. In the case of KFA banks paid 61% premium on the share price of November 2010. The share price was dropping and the banks were aware of that. Though this allows the banks to convert their nonperforming assets into a performing asset, it is fraught with danger as in the case of KFA. Banks may get the shareholding, but there is no guarantee that it will lead to a turnaround in a badly managed firm. Banks in most cases may not have the required expertise to be active on the management side of the business. The more important challenge that comes up is if the banks decide to sell away their shares. This may destabilize the management of the company and if the present management is not willing to play by rules, they may approach courts. Indian courts are clogged with cases and the matters may drag on for a long time. Meanwhile if the company performance goes down, the banks will be badly hit. SEBI has since modified their policy and formula about conversion of debt into equity after the KFA experience, asking banks to negotiate the price with management. This again is a knee jerk reaction many market watchers suspect that this may not work either in the Indian context. Certainly SEBI cannot make policies on such important issues on trial and error basis (Business Standard., 2015).

Effect on Suppliers

KFA owed a lot of amount to Mumbai Airport towards service charges. Mumbai International Airport auctioned Mallya's private jet to recover their dues, but could get only ₹ 22 lakhs ($44, 000), a meager amount compared to the dues. KFA as on March 07, 2012 has outstanding dues over ₹ 425 crore ($85 million) to Hindustan petroleum Corporation (HPCL). DGCA after KFA default asked all airlines to disclose the dues they owe to suppliers like oil companies and also to the government. These details are not available publicly. Again this action by the regulator is too late and of no consequence at this stage.

Market for Corporate Control

India does not have a great market for corporate control. No other company has shown interest in acquiring or reviving the failed airliner. Aviation sector is high risk sector and not many takers will be there to venture into an airline which has net worth in negative and brand value in taters and is also facing a number of court cases. The airline has taken most of its aircrafts on wet lease. Without fixed assets (aircrafts) of their own airlines will not be able attract buyers. In a country like India, where bureaucratic processes, nexus between business houses and politicians rule the roost, in the best of times, it is difficult to takeover other companies. In a case like KFA, it is safe to imagine that no other company will come forward and if anyone would come forward, expect government to provide a bailout. Under the present circumstances, that is not a possibility.

Ethics in Business

In spite of all this Mallya is reported to have spent a fortune on his birthday party on December 18, 2015. He was also reportedly spent ₹ 76.39 crore ($15.5 million) on acquiring players for his IPL team Royal Challengers from 2013 to 2016, while the KFA employees were not paid salaries for months amounting to ₹ 350 crore ($t0 million). His excesses also include purchase of a race horse called 'Air support', for ₹ 4 crore ($0.8 million), for his stable. The other acquisitions by Mallya include, Indian Empress, a yacht with a helipad for $98 million from a Qatari Shaik in 2006, Spycar F1 team for € 90 million in 2007. He also owns another vintage yacht built in 1906, three planes, a Boeing 727, Gulfstream and a Halker 700. He is also reported to have acquired one island in Lakshdweep and an Island in Europe of coast of Monte Carlo for 750 crores ($150 million) in 2009. These extravagances call for ethical and moral questions apart from legal questions.

CONCLUSION

KFA is a case of collective failure of the system in India. Such recurring failures can have a serious effect on the efforts of Indian Economy and may seriously dent the aspirations of India to become an economic super power. India on paper has corporate legal framework that is as good as US Sarbanes – Oxley Act. They have created organizations like SEBI modelled on SEC of US. But unlike in US, the problem is with implementation. This case brings into question the Banking practices of India. Collectively the nonproductive assets of Indian public banks have been estimated at $120 billion in 2016. This is not possible in developed countries and many developing countries. Host of factors like political nepotism, outright corruption facilitate the many questionable practices of Indian Banking sector. In all recent corporate governance failures in India, the only end result and common theme is blame game. In KFA case also the blame game has begun between ruling party and opposition parties. Banks blame political influence and politicians blame the banks for lack of due diligence. The issue is complicated by the fact that many CEO appointments in banks are normally political appointments. Market watch dogs keep changing the policies, for example SEBI's change of policy of conversion of debt to equity by banks at premium resulted in lending banks paying 61% premium to KFA. The investigating agencies like CBI are hampered by politicians and loopholes in the legal system. For example CBI says its investigations in KFA case are hampered by the fact that none of the banks have registered official complaints, which they say is prerequisite for continuing with investigation. All the players knew that there is a good chance that Mallya may leave the country, but nobody took the initial step of approaching the court. By the time they decided to move the court, Mallya already left the country. Not many people are convinced by the explanation given by CBI as to why the arrest warrant at airports to arrest Mallya has been withdrawn and changed to only providing immigration, in case he left. The Indian judiciary is independent, effective and respected but they are drowned in the number of pending cases which runs into millions. Even presuming that the banks indeed file cases I courts, it may take years or even decades before the cases are decided. The case KFA is so complicated and considering the fact that on paper Mallya does not own any property of his own India, as per the records available with Rajya Sabha of Indian Parliament, it may be impossible that the banks will be able to achieve anything.

The only solution to this recurring problem in India is to provide teeth to the watch dog organizations like SEBI, grant more powers to investigating agencies like CBI, ensuring more accountability from public banks, strengthen the other supervisor institutions, and decongest courts and bringing culprits to swift justice. The corporations must be made to follow the corporate governance practices both in letter and spirit.

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THE KEY INDICATORS OF GOODWILL IMPAIRMENT WRITE-OFFS

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ABSTRACT

When a firm acquires another firm it generally pays more than the fair value of the target firm. This is due to the expectation of synergies being obtained from the acquisition. Simply put, the combination of firm A and firm B is expected to be greater than the value of firm A plus the value of firm B.

From an accounting perspective this amount paid above the fair value is called goodwill and is considered an asset on the balance sheet. Since 2001, goodwill is considered a perpetual asset meaning that, theoretically it can continue to have value for perpetuity. However, the goodwill is required to be assessed on an annual basis to determine if the asset still has value, in other words if the synergies of the acquisition are being realized.

If it is deemed to have lost value a goodwill impairment write-off must be taken. This impacts the firm's earnings from an accounting position. It is not a change in cash flows. However, investors view a goodwill impairment write-off as a short term negative event, thus if an investor could determine which firms that have goodwill will be taking an impairment in the near future, they can short the stock and generate a positive return.

This paper examines which factors contribute to the probability that a firm will be required to take an impaired goodwill write-off. The paper uses a Probit regression model to estimate the marginal effect of nineteen variables thought to be key determinants of the likelihood for the need of a goodwill impairment write-off. These variables are comprised of firm performance factors, firm specific characteristics, and an indicator of the general business cycle.

This analysis finds that momentum, book-to-market equity, goodwill age, and a lengthy prior economic state of contraction are the key predictors of an impending goodwill impairment write-off.

INTRODUCTION

Goodwill impairment write-offs have been shown to have a significant negative impact on stock prices in the short term (Hirschey and Richardson, 2003; Bens and Heltzer, 2005; Li and Meeks, 2006) however, in the long term there is a positive impact on stock prices after goodwill impairments (Cheng, Peterson, and Sherrill, 2015). Thus it would be helpful to understand the likelihood of a company taking a goodwill impairment write-off in order to develop trading strategies based on this likelihood and subsequent expected stock price decline. This paper examines firm performance factors, firm characteristic variables, and general economic data to determine the impact different factors have on the probability that a goodwill impairment write-off is forthcoming.

This impairment write-off impact can be substantial, as in the case of e-Bay in 2007. E-Bay acquired Skype in 2005 for $2.6B. In 2007 a goodwill impairment write-off of $1.39B was taken. Due to this, the total operating expenses increased considerably. Consequently, the net income was only $348M vs. the previous year's net income of $1.1B. E-Bay's earnings per share were 25 cents compared with 79 cents the previous year. Without the impairment charge of

$1.39B, the earnings per share would have been close to $1.25. In early December of 2007, e-Bay's stock price was $33.19. In January of 2008, after the goodwill impairment write-off was announced in the results, the stock price dropped to $26.89. This was a 19% decline in the stock price in one month.

Goodwill is an intangible asset that represents the difference between what an acquiring firm pays for a target company during an acquisition and the book value of the target firm. Simply put, this is the premium a company pays for a firm during an acquisition. This goodwill can be a substantial portion of the acquisition price. The mean goodwill to purchase price ratio is 55 percent (Shalev, 2009; Lys, Vincent, and Yehuda, 2011). With the adoption of rule SFAS 141 in 2001, a firm that acquires another firm, regardless of whether the target firm is public or private, is required to list this goodwill as an intangible asset on the balance sheet. Thus, almost all acquisitions result in goodwill being brought onto the balance sheet. Consequently, in 2011 67% of U.S. based public firms listed on a major exchange, excluding financial firms and utilities, carried a positive goodwill balance.

Since the accounting rule changes implemented in 2001, goodwill is no longer considered a wasting asset. Theoretically goodwill could remain on a balance sheet forever. Accordingly it is no longer depreciated or amortized over time. Instead, companies are required to assess their balance sheet goodwill on an annual basis and determine if the goodwill is still adding value or if it has become an impaired asset. If it is deemed impaired it must be written-off immediately. Since the decision is now binary, impaired or not impaired, I am using a limited dependent variable model, specifically a Probit regression model, to assess the probability that a company will be taking a goodwill impairment write-off. This model uses the marginal effects of each variable to analyze the amount that each factor contributes to the overall probability of a goodwill impairment write-off.

This model examines eight factors that can impact a firm's decision of whether an impairment write-off is required. Variables are constructed to proxy for these eight factors. One of the factors is examined categorically, thus separating it into 12 separate variables and expanding the number of variables to 19. Only firms with a positive goodwill amount on the balance sheet are included in this analysis.

DISCUSSION OF MODEL

The Model

Given the new accounting guidelines a firm is required to examine any balance sheet goodwill once a year and assess whether the goodwill is impaired, if so the amount of goodwill deemed impaired must be written off. If it is not deemed impaired then no action need be taken. The goodwill that is not impaired remains on the balance sheet. Accordingly, I use a binary variable, IMPAIR to indicate if an impairment write-off occurred in year y. It takes a value of one if a write-off occurred and a value of zero if a write-off was not required.

The purpose of the model is to determine which factors contribute to the likelihood of an impairment being required and the level of impact of each of the factors. Thus a Probit binary choice model is employed with IMPAIR being the dependent variable. The independent variables are the factors that are being analyzed to determine if they have statistically significant and economically relevant impact on the likelihood of the firm taking a goodwill impairment write-off.

Specifically the following regression model is estimated:

$$P(IMPAIR=1) = \Phi\,(\alpha + \beta_1 GA + \beta_2 Cont_1 + \beta_3 Cont_2 + \beta_4 Cont_3 + \beta_5 Cont_4 + \beta_6 ont_5 + \beta_7 Cont_6 + \beta_8 Cont_7 + \beta_9 Cont_8 + \beta_{10} Cont_9 + \beta_{11} Cont_{10} + \beta_{12} Cont_{11} + \beta_{13} Cont_{12} + \beta_{14} mom + \beta_{15} chrev + \beta_{16} chebit + \beta_{17} lnsize + \beta_{18} lbtm + \beta_{19} age + \varepsilon) \quad (1)$$

The Data

The data for goodwill, assets, book equity, impairment write-offs, income, and revenue are from Compustat via WRDS. The data for individual firms' stock returns and the data for computing market equity are from the Center for Research in Security Prices, (CRSP) again via WRDS. The National Bureau of Economic Research data is used to determine whether the economy is in a state of contraction or expansion.

All data is for U.S. based firms only. Only public firms listed on the New York Stock exchange, the American Stock exchange, or the NASDAQ are included. Utilities and financial institutions are excluded from this model. Utilities are highly regulated and therefore acquisitions follow different rules. Financial firms manage their balance sheets differently so they are excluded as well. I exclude these firms based on their Standard Industrial Classification, (SIC) codes. SIC codes 6000-6999 (financials) and SIC codes 4900-4999 (utilities) are excluded.

The timeframe of data is from the beginning of fiscal year 2002 to the end of fiscal year 2011 and all years are measured by the firm's fiscal year start and end dates. The new accounting rules regarding the recording and handling of goodwill were implemented with a start date of fiscal year 2002, so this ensures that all data used in this model is reflective of the new accounting standards. Firms must have a positive amount of goodwill on their balance sheet to be included in this study. If a firm's goodwill balance changes, only the firm years where there is a positive goodwill balance is included in the study. This provides 15,590 firm year observations.

The Regressors

Regressors are one of three types; firm performance indicators, firm characteristic variables, and general economic indicators. The firm characteristic variables are size, book-to-market equity, level of goodwill, and age of goodwill. The firm performance indicators are change in revenue, change in earnings, and momentum. The general economic indicator is the number of months of contraction.

Size is included in this model to determine if the smaller firms are more likely to have impairment write-offs than larger firms. The size, or market capitalization is measured as the number of shares outstanding of common stock at the end of fiscal year y times the price per share on the last day of the month of the last month in the fiscal year of year y. Closing price is used if available, if it is not available an average of the bid and ask prices is used. The size is scaled by taking the natural log of size.

Similarly book-to-market equity is used to determine if growth firms are more likely to have impairment write-offs than value firms, or vice versa. Book equity is calculated as the total assets minus the total liabilities plus the balance sheet deferred taxes and income tax credit minus the preferred stock liquidating value. This is consistent with previous literature, (Fama and French, 2008). The book equity is divided by the size variable to obtain the book-to-market equity ratio. All values are obtained at the end of the fiscal year. Again the book-to-market value is scaled by taking the natural log of the ratio.

The goodwill characteristics used are the age and amount of the balance sheet goodwill. Goodwill is not a wasting asset, in other words it stays on the balance sheet until it is deemed impaired and then it is expensed. Theoretically goodwill could remain on the balance sheet forever if the expected synergies of the acquisition are recognized. Thus the goodwill balance generally remains constant over time unless it is deemed impaired and is written off, or if further acquisitions are undertaken. This model attempts to determine if the risk of impairment increases as the goodwill ages. To determine the age of the goodwill, the difference between goodwill at the end of fiscal year y is compared to the goodwill at the end of fiscal year y-1, if at least 95% of the goodwill is still on the balance sheet it is given an age of one year. This is done for subsequent years. As long as at least 95% of the previous year's goodwill remains on the balance sheet the age is incremented. When an impairment write-off occurs, the age in the year of the write-off is set to the last calculated age and then the age counter is reset to zero. Therefore the age variable will be an integer between zero and ten years. No impairments can occur in year zero.

This study only includes firms that carry some positive amount of goodwill on the balance sheet as there cannot be goodwill impairment if there is no goodwill. Another goal of the model is to determine if a greater amount of goodwill results in a greater likelihood that it will be deemed impaired. The amount of goodwill is scaled by the firm's assets to create a relative measure for comparison. Both the goodwill level and the level of assets are measured at the end of the fiscal year.

The firm performance variables are change in revenue, change in earnings, and momentum, which is the previous twelve month's stock price performance. With an acquisition a firm generally expects to increase their revenue by the additional revenue of the acquired firm and by any revenue synergies from the new combined entity. Thus intuitively, an increase in revenue indicates a successful merger and would make an impairment write-off less likely. Revenue is measured at the end of the fiscal year and the change in revenue is determined by subtracting revenue of year y-1 from year y. Therefore an increase in revenue will be seen as a positive number.

Likewise earnings are measured at the end of the fiscal year and changes in earnings are calculated as earnings in year y minus earnings in year y-1 so that an increase in earnings shows as a positive number. Earnings are measured before income taxes, (EBIT). And again, earnings are expected to increase post-merger as cost synergies are realized, therefore intuitively an increase in year over year EBIT would be expected to have a negative impact on the probability of an impairment.

The third performance indicator is the momentum or the overall stock return for the firm in the prior twelve months. The cumulative compound return is calculated for the twelve months prior to the end of fiscal year y.

The final factor is a variable used to indicate the general economic condition or business cycle. The economy is either expanding or contracting. Intuitively, in a contracting economy it would be expected that more firms would find they needed to take an impairment write-off. To test this, the variable CONT is created. This takes a value of zero to twelve. Each month of the twelve months prior to the end of fiscal year y gets a value of one or zero, one if the economy is in a state of contraction and zero if it is expanding. These values are summed at the end of the twelve month period. For example, if each of the twelve months prior to end of fiscal year y were in a state of contraction, the value for the variable CONT would be 12. The higher the value of CONT, the longer the economy has been in a contraction. Consequently the higher the number for CONT, the greater the likelihood of the need for an impairment. This variable is treated as a categorical variable, making 12 separate values for CONT. This allows for examination of each economic state individually.

The variables total return, total market return, goodwill/assets, change in revenue, change in earnings, size, and book-to-market equity are all Winsorized at the 1% level on both the upper and lower ends. The observations are not truncated, but any values greater than the 99^{th} percentile or less than the 1st percentile are set to the closet value within the accepted range. This removes the most extreme outliers. The mean and standard deviation of each of the regressors is included in Table 1. These are shown separately for the two cases of IMPAIR; IMPAIR = 1 and IMPAIR =0.

Table 1
KEY VARIABLE SAMPLE MOMENTS

	No Goodwill Impairment		Goodwill Impairment Write-off	
	(*n* = 13,888)		(*n* =1,702)	
Variable	Mean	SD	Mean	SD
Firm Characteristics				
Log of Size	13.26	1.91	13.23	1.93
Log of Book-to-market ratio	-7.84	.87	-7.72	.88
Goodwill scaled by assets	.57	.78	.69	.85
Age of goodwill	3.07	2.25	4.82	2.36
Performance Characteristics				
Year on year revenue change	238.17	830.78	107.65	737.85
Year on year earnings change	36.83	172.85	2.04	171.36
Momentum	.19	.55	-.10	.54
Business Cycle				
Contraction	1.66	3.55	3.69	4.82

ECONOMETRIC RESULTS

After running the Probit regression model, equation (1), I first test the joint significance of the regressors using the log-likelihood ratio test to ensure that the model does provide some explanatory power for the probability of IMPAIR being one. The hypothesis is as follows:

H_O: $\beta_1 GA = \beta_2 Cont_1 = ... = \beta_{19} age = 0$
$H_{A:}$ at least one $\beta_i \neq 0$

The log likelihood value of the complete model is -4619.725. The log likelihood value of the constrained model, where the regressors are set to zero, is -5375.1489. The equation for the log-likelihood ratio test is as follows:

$$-2\left[ln\ L(\tilde{\delta}) - \ln L\left(\hat{\delta}\right)\right] \overset{A}{\sim} x^2_{k-1} \quad (2)$$

where $(\tilde{\delta})$ is the value of the constrained likelihood function, and $(\hat{\delta})$ is the value of the unconstrained likelihood function. In this case, the likelihood ratio value is 1510.85. The critical value for chi-squared with k =19 is 36.19. Clearly, 1510.85 is greater than 36.19, so the null hypothesis is rejected. Thus, the regressors are jointly significant at the 99% confidence level.

The coefficient estimates from the regression are listed in Table 2, along with the standard errors, the t-statistics and the p-values. Eight of the regressors are individually significant at the 99% confidence level. The categorical variable CONT is only individually significant for three levels of contraction, 7 months, 11 months, and 12 months. A Probit regression was estimated with the same variables as equation (1) with the exception that CONT was not a categorical variable, but was treated as a continuous variable. In this case, CONT offered virtually no explanatory power for the likelihood of an impairment. By treating it as a categorical variable, certain levels of contraction do indeed show a high statistical and economic significance for predicting an impairment write-off. Thus the variable is kept as a categorical variable in this study even though many of the categories provide no statistically significant results.

Table 2
MODEL ESTIMATION

Regressor	Coefficient	Std. Error	t-stat	Probability >|t
Intercept	-.079	.151	-0.52	.601
GA	.098	.018	5.50	.000
Cont -1	-.185	.175	-1.05	.292
Cont-2	-.281	.177	-1.59	.112
Cont-3	.121	.210	.58	.565
Cont-4	-.203	.185	-1.10	.273
Cont-5	-.153	.156	-0.98	.327
Cont-6	-.067	.202	-0.33	.742
Cont-7	.232	.054	4.26	.000
Cont-8	-.063	.147	-0.43	.670
Cont-9	.234	.165	1.41	.158
Cont-10	.011	.134	0.08	.937
Cont-11	.301	.050	6.02	.000
Cont-12	.237	.082	2.89	.004
mom	-.613	.036	-16.98	.000
chrev	-.000	.000	-3.57	.000
chebit	-.000	.000	-1.95	.051
lnsize	.010	.009	1.13	.258
lbtm	.245	.020	12.16	.000
age	.149	.006	23.99	.000

In a Probit model a marginal effects analysis is used to standardize the coefficients in order to more easily interpret the impact of each individual regressor. The marginal effects results as well as the standard errors, t-statistics, and p-value for the marginal effects are listed in Table 3. The marginal effect column is interpreted as a one unit change in the variable has an impact on the probability of impairment by the value listed. For example, a one unit change in the goodwill scaled by assets, GA impacts the probability that impairment will be taken by 1.6%. Seven of the variables have a statistically significant impact on the probability of impairment at the 99% confidence level and an economically relevant impact on the probability of impairment. Change in revenue, CHREV, has a statistically significant coefficient estimate and marginal effect, but it has an economically insignificant change, .02%, in the probability of impairment.

Table 3
MARGINAL EFFECTS

Regressor	Marginal Effect	Std. Error	t-stat	Probability >|t|
GA	.016	.003	5.50	.000
Cont -1	-.026	.022	-1.18	.238
Cont-2	.037	.019	-1.90	.057
Cont-3	.020	.037	0.54	.589
Cont-4	-.028	.023	-1.24	.214
Cont-5	-.022	.020	-1.07	.283
Cont-6	-.010	.029	-0.34	.732
Cont-7	.041	.011	3.87	.000
Cont-8	-.009	.021	-0.44	.658
Cont-9	.041	.033	1.26	.208
Cont-10	.002	.021	0.08	.938
Cont-11	.055	.010	5.35	.000
Cont-12	.042	.016	2.59	.009
mom	-.100	.006	-16.87	.000
chrev	-.000	.000	-3.57	.000
chebit	-.000	.000	-1.95	.051
lnsize	.002	.001	1.13	.258
lbtm	.040	.003	12.16	.000
age	.024	.001	24.25	.000

CONCLUSION

The intent of this model is to determine which factors have the greatest impact on the likelihood that a firm will take an impairment write-off of their goodwill. The results are quite interesting and not completely intuitive. For example, neither changes in revenue nor changes in earnings have a relevant impact. Theoretically goodwill is deemed impaired when it is no longer contributing to the firm's success in the amount that it was intended. Having year on year increases in revenue or earnings, (or both) would be an intuitive indication that the acquisition was successful and that the premium paid, i.e. the goodwill, continues to be a productive asset. This model shows no evidence that changes in revenue or earnings, (neither positive nor negative changes), impact the probability of the need for impairment. The only performance indicator examined that has an impact is the firm's stock price momentum. Momentum has a marginal effect of -10%. This is interpreted as, for every one unit increase in momentum, the likelihood of an impairment write-off drops by 10%. This is both statistically significant and economically relevant. Of all the regressors analyzed, momentum is the factor with the biggest impact on the likelihood of impairment.

The variables with the next largest impact on the need for impairment are the CONT11 and CONT12 variables. These represent a period of 11 months and 12 months of contraction for the prior twelve month period. They impact the likelihood of impairment by 5.5% and 4.2% respectively. Again these are both statistically significant and economically relevant results. This implies that some of the key components of the need for an impairment write-off are outside the control of the firm. A contraction of 7 months is also relevant and significant, with a 4.1% impact. Since this variable was categorized into 12 unique variables it can be seen that the contraction period length is not statistically significant until the longer periods. This is an intuitive result as the goodwill impairment assessment requires that the fair value of the reporting unit be used in the assessment along with the book value of the goodwill. Thus, the assessment includes a relative measure for the reporting unit value and an absolute measure for the goodwill value. Consequently, a lengthy contraction period would be expected to negatively impact the fair value of the reporting unit, yet it would have no impact on the absolute value of the goodwill, making impairment more likely.

Of the firm characteristic variables the most impactful is the book-to-market equity value, lBTM. A one unit increase in lBTM drives a 4% increase in the probability of impairment. This suggests that value firms, (firms with high book-to-market equity) are more likely to take impairment than growth firms. Yet the size of the firm has no statistically significant impact on the probability of impairment.

For the firm characteristics related to the goodwill itself, the age of the goodwill is more impactful to the likelihood of it being written down than the amount. The age of the goodwill, AGE, has a 2.4% impact on the probability while the amount of goodwill, GA, has only a 1.6% impact.

This model suggests that firms with the highest potential of an impending goodwill impairment write-off are value firms that have negative momentum in their stock price and have goodwill that has been on the balance sheet for the largest number of years. The model also suggests that the likelihood of impairment increases as the length of the economic contraction increases. Thus investors may want to consider short strategies for value firms with aged goodwill when making investment choices in a contracting economic state.

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FOUR PROOFS IN OPTION PRICING

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ABSTRACT

Many very good finance students will get to graduate school unprepared to read a logical proof, and yet logical proof is the essential tool that is required to produce finance theory. This paper is designed to help these students to learn how to read and understand logical proofs. To this end, four original proofs in option pricing theory are presented. Much attention is given to the logic of the material conditional: what it means to say, if A is true then B must be true. Four different proof techniques are studied: direct proof, contrapositive proof, proof by contradiction (reductio ad absurdum), and proof by cases. An appendix is also provided that sketches out the historical development of attitudes toward theorem and proof work.

Were one to only count the number of finance journal articles published, one would conclude that finance is in large part an empirical discipline. Nevertheless, the large, important ideas in finance do not come from empirical studies. They come instead from theorem and proof work. Moreover, it also true that empirical work is not often successful in speaking to the quality of finance theory. Consider the famous case of the Sharpe (1964), Lintner (1965) Capital Asset Pricing Model, the CAPM, a theory produced by methods of theorem and proof that has been the subject of many, many empirical tests, yet none of these tests have been decisive.

Empirical testing of financial pricing models is often justified because some of the economic assumptions on which the logical derivations of asset pricing models depend are unrealistic: economic assumptions nominated only in the hopes that empirical, testable results could be obtained, not for any other reason. Freidman (1953) champions such a positive approach to model building, maintaining that what matters is the empirical tests of model predictions, not the realism of the economic assumptions. But decisive empirical testing of financial models is difficult to come by. As a case in point, the empirical testing of CAPM results that had been counted upon to sit as judge and jury concerning the validity of theory is itself called into serious question.

So perhaps Friedman (1953) is wrong. Perhaps the understanding that we seek as to why security prices in financial markets behave as they do can only come from logically derived models, like the CAPM and like the Black Scholes (1973) Option Pricing Model. If so, what is needed by those who study finance is not better econometrics but a closer attention to the logical derivation of theoretical results. To this end, this paper is about logical foundations of proof. The study of the propositions and the proofs that follow are motivated by the earlier work of Merton (1973) and of Jarrow & Turnbull (2000).

ARBITRAGE AND OPTION PRICING

Underlying assets (stocks, bonds, commodities, and so forth) trade in financial markets. The price of each underlying fluctuates as supply and demand conditions dictate. Investors who purchase these underlying are said to take a long position in the underlying. In this paper the symbol S(t) designates the market value of a long position in an underlying as of time period t. If an investor purchases one share of General Electric common stock (GE) today for \$30 per share, one could use the notation of this paper and write an equation: S(t) = \$30 in order to describe this transaction. This notation is capable of being more specific in regard to time. If the time period of this purchase were today, then in a timeline one might describe the time of purchase as $t = 0$. In the notation of this paper one puts these ideas of time and dollar size together and writes: S(0) = \$30. The future is unknown by investors, but perhaps it will be true that one period from now ($T = 1$) that the investor who today ($t = 0$) had purchased one share of GE for \$30 sees one period from now that the market price of GE has increased to \$40 per share. One could write this future value of a long position in GE as S(T) = \$40. In the logical proofs of this paper, the results are not specific to any specific underlying or any specific future time period, so the symbol S(0) refers to the market value of a long position in some quantity of some underlying today where $t = 0$, and the symbol S(T) refers to the market value of a long position in that same underlying as of some point on a timeline T periods from now.

Contracts for the delivery of underlying also trade in financial markets. These too have market prices and these contract prices also fluctuate as market conditions change. The future value of these contracts are each a function of the future value of their corresponding underlying asset. There are different kinds of contracts for delivery that reference an underlying: futures contracts, forward contracts, swap contracts, and option contracts. No matter the kind of contract, terms of delivery always include a future delivery time, a delivery place, a delivery price, and whether or not delivery is to be done at the option of the party who purchased the contract. Futures contracts, forward contracts, and most kinds of swap contracts have no option feature.

In this paper the problem at hand is that of option pricing. In this regard, there are four kinds of options relevant to the proofs of this paper: European call options, American call options, European put options and American put options. Surprisingly to the uninitiated, the modifying terms American and European do not refer to geography in any way. These modifying terms instead define contractual provisions in option contracts. More about this is found below.

A European call option gives any purchaser of the contract, a right, but not an obligation, to call for delivery of the underlying on the expiry date = T and pay K dollars to the seller of the European call option at expiry for this underlying. Should the purchaser of a call option choose to compel delivery then that purchaser is said to exercise the option. This future date T, the expiry day of the contract, and the delivery price K, commonly called the exercise price, are both known by both buyer and seller of the call option at time $t = 0$, the day this call option is sold by the seller of the call to the buyer of the call.

A purchaser of a European call option is said to have the long position. The long position on the expiry day of the European call option must make a decision whether or not to exercise the option to command delivery of the underlying. Exercise is not required: the long position is not required to command delivery of the underlying and pay to the seller the exercise price K. But, if the long position does not exercise, then the call option expires worthless. Even so, the seller of the call option, the short position, keeps the money that was paid by the long position for the call option.

The price paid by the long position for the European call option is written c(0). The future value at expiry for the long position is c(T). The future value at expiry of the long position in a European call option is: $c(T) = \text{Max} [S(T) - K, 0]$. The price received by the short position for the sale of the European call option is symbolized with a negative - c(0) and the corresponding future value is written with a negative: $- c(T) = - \text{Max} [S(T) - K, 0]$.

Consider a specific example to see how a European call option works. Suppose that the long position buys a call option today $t = 0$ on an underlying, one share of GE common stock. Currently, at the time of purchase, the underlying, GE common stock is worth \$30 per share.

Therefore, given this as an assumption for this example, $S(0) = \$30$. In this example assume as a given that the exercise price K which is agreed to under the terms of the contract is equal to \$34 per share and also assume as given that the expiry date of the contract is one period from today. So by these assumptions $T = 1$ and $K = \$34$.

The future price of GE common stock at $T = 1$ is unknown at present, so $S(T) = ?$ But, if at expiry, one period from now, GE is worth more than K, then the long position should choose to exercise their option which then would compel the seller of the call option to deliver the underlying and accept in payment the exercise price $K = \$34$, thereby producing a payoff at expiry equal to $\$6 = \$40 - \$34 = S(T) - K$. On the other hand, if a year from now at expiry the underlying GE trades at a price equal to or less than K, say $S(T) = \$32$ instead of $S(T) = \$40$, then the long position should permit the option contract to expire worthless and no payoff at expiry will be generated. The seller of the call option, the short position, keeps the price paid for the European call option, $c(0)$, no matter what, even when the option contract expires worthless.

The delivery terms of American call option contracts differ from European call option contracts in only one respect: the long position in the American call may choose to exercise at any time after the American call is purchased up until the expiry day is over ($0 < t \leq T$). The price paid by the long position for the American call option is symbolized $C(0)$. The future value of the long position in a American call option is designated: $C(t) = \text{Max} [S (t) - K, 0]$. The price received by the short position for the sale of the American call option is symbolized $- C(0)$ and the corresponding future value: $- C(t) = - \text{Max} [S(t) - K, 0]$.

Put option contracts are different from call option contracts. A European put option for the delivery of an underlying gives the purchaser of the put (the long position), a right, but not an obligation, to sell the underlying asset at expiry in for K dollars. Should the long position of a European put choose to compel the sale of the underlying then that option is said to be exercised. This future date T, the expiry day of the contract, and the delivery price K, commonly called the exercise price, are both known by both buyer and seller of the put option contract at time $t = 0$, the day a put option is sold.

On the expiry day of the European put option contract, the long position must make a decision whether or not to exercise the option. Exercise is not required: the long position is not required to make delivery of the underlying and receive from the seller of the put option the exercise price K. But, if the long position does not exercise the option at expiry, day T, then the contract expires and becomes worthless. Even so, the seller of the put option, the short position keeps the money that was paid by the long position for the put.

The price paid by the long position for the European put option contract is written $p (0)$. The future value at expiry for the long position is $p(T)$. The future value at expiry of the long position in a European put option is: $p(T) = \text{Max} [K - S(T), 0]$. The price received by the short position for the sale of a European put option is symbolized with a negative sign $- p(0)$. The corresponding future value is also written as a negative number: $- p(T) = - \text{Max} [K - S(T), 0]$.

Consider a specific example to see how a European put option works. Suppose that the long position buys a put option today $t = 0$ on an underlying, one share of GE common stock. The price of this European put option is equal to $p(0)$ at $t = 0$. Currently, at the time of purchase of this put, the underlying, GE common stock is worth \$30 per share. Therefore, for this example, $S(0) = \$30$. In this example assume as a given that the exercise price K is equal to \$34 per share and also assume as given that the expiry date of the contract is one period from today. So $T = 1$ and $K = \$34$.

The future price of GE common stock at T = 1 is unknown at present. But, if at expiry, one period from now, GE is worth less than K, say for the sake of this example S(T) = $25 then the long position will choose to exercise their option which compels the seller of the option to purchase the underlying for the exercise price K. Should this state of the world obtain, the long position produces a payoff at expiry: $9 = $34 - $25 = K - S(T). On the other hand, if one period from now at expiry GE trades at a price equal to or greater than K, then the long position will permit the put to expire worthless. The short position keeps the price paid for the European put option, p(0) no matter what, even if this put expires worthless.

The delivery terms of American put option contracts differ from European put option contracts in only one respect: the long position in the American put may choose to exercise at any time after the put is purchased until the expiry day is past ($0 < t \leq T$). The price paid by the long position for the American put option is symbolized P(0). The future value of the long position in a American put option is designated: P(t) = Max [K - S(t), 0]. The price received by the short position for the sale of the American put option is written as a negative: - P(0) and the corresponding future value is also negative: - P(t) = - Max [K - S(t), 0].

The proofs of this paper, in addition to the notions of call and put options discussed above, make use of four additional concepts from finance: portfolios, synthetic positions, the Law of One Price, and arbitrage. A portfolio is a collection of assets owned by an investor. Some portfolios contain only a single asset, but portfolios can and often do contain many assets. Some assets are held by investors as long positions: for example, underlying assets purchased in the hope that they will produce income and/or capital gains, purchased call options, and purchased put options. Ceteris paribus, the long position in the call option desires the underlying to increase in value, while the owner of the put option desires the underlying decline. Other assets may be held within a portfolio as short positions. For example, an investor known as a short-seller borrows an underlying asset, sells it, and then later repurchases it in hopes that the underlying asset declines in value. Other short positions include selling a call option or selling a put option. The short position in the call option benefits from a decline in the value of the underlying, but the short position in the put option benefits from an increase in the value of the underlying. To understand the content of an investor’s portfolio, one must know the market value of each asset contained by the portfolio and which assets are held as long positions and which are held as short positions.

Portfolios can also contain synthetic positions. A synthetic position is a portfolio of long and short positions that produces future values that are equal to the future value of another asset in every possible future state of the world. Consider an investor who wishes to create a synthetic position that will produce a future value on some expiry date equal to the future value of an underlying asset on that same date. If this underlying produces no income prior to expiry, then this investor can solve this problem of replicating the future value of an underlying by taking positions in three assets: purchase a European call on the underlying, sell a European put on the same underlying with the same exercise price and the same expiry as the call, and purchase a risk free asset with future value equal to the exercise price of the call and the put at expiry. This portfolio thus created by the investor is a synthetic position. It produces the same future value of the underlying at expiry in every possible state of the world.

The Law of One Price holds that assets and portfolios which have identical future values in every possible state of the world must also have identical price. Take two assets, say General Electric common stock and Wal-Mart common stock, if these two assets were to produce the same future values in every possible state of the world, then, by the Law of One Price, they both must sell for the same price. Since they do not produce identical future values, they sell for different prices. Now consider the example above, the investor who creates a synthetic position in an underlying. Since this synthetic position (a long position in a call, a short position in a put, and a long position in a risk free asset) replicates the future values of the underlying, the Law of One Price holds that the price of the synthetic position must equal the price of the underlying.

In markets where investors are permitted to trade at no cost, the Law of One Price should hold. To see why, consider the opposite case. What if the Law of One Price does not hold true? Consider two assets, both with identical future values in every possible state of the world. Yet one of the assets has a higher price than the other. If this were true, then two things happen: first, investors simultaneously buy the cheaper of the two and take a short position in the more expensive, and then second, at some future point in time, close both positions -- sell the long position and use the proceeds of this sale to cover the short position. This first action of buying low and selling high produces a positive cash flow to the investor. This second action of selling the long position and covering the short produces a zero cash flow. This investment strategy is ended with the investor making a risk free profit in the first step and getting out of the market in the second step at no cost. With no investment the investor has generated a risk free profit, and has done so with no risk. No matter which way the market moves before the investor exits in step two, the future values of the long and short positions offset each other, so the net result is zero gain or loss. That is why there is no risk. So if the Law of One Price fails, investors make money with no net investment and no risk. If markets are working properly, in equilibrium, the Law of One Price holds true. In properly functioning markets, investors will compete with one another to buy the cheaper asset, thereby driving its price up; and sell the higher priced, thereby driving its price down. This continues until equilibrium is reached: assets with identical future values in every possible state trade at the same price.

Consider an investor who creates a synthetic position that mimics an underlying. (The underlying of this example produces no income prior to expiry.) This synthetic position is constructed so that it produces a future value at expiry exactly equal to the future value of an underlying. The synthetic position is itself a portfolio containing three assets: a long position in a European call option for the delivery of an underlying, a short position in a European put option for delivery of the same underlying and with equal an exercise price equal to that of the call, and a risk free investment large enough to produce a future value equal to this common exercise price. The left-hand side of the equation below describes this future value of the synthetic position at expiry and the right-hand side describes the future value of expiry of the underlying. The first term of the left-hand side is the future value of the long-position in the European call, the second, the future value of the short-position in the European put, and the third term is the future value of the risk free investment:

$$\text{Max}\,[S(T) - K, 0\,] - \text{Max}\,[\,K - S(T), 0\,] + K = S(T)$$

No matter the value of $S(T)$ or K the synthetic position produces a future value equal to the future value of the underlying. To see this let the exercise price $K = \$34$ and let $S(T)$ vary from \$1 to \$100. In every case the left-hand side of the equation above equals the right-hand side: in every case, at expiry, the future value of the synthetic position equals the future value of the underlying.

Now consider the consequences of the illustration of the previous paragraph for equilibrium in capital markets. There are only two possible cases to be considered. Case one: if the price of the synthetic position is equal to the price of the underlying, then there is no incentive to prefer one over another because all of the possible the future values at expiry for the synthetic position are equal to those of the underlying. So the risk and the possible returns for both investments are exactly the same. Case two: if the price of the synthetic position is not equal to the price of the underlying, then investors should prefer a long position in the cheaper alternative and also prefer a short position in the more expensive choice. In equilibrium prices adjust such that the price of the synthetic position equals the price of the underlying.

The ability of investors to create synthetic positions using call and put options and risk free investments is closely related to the concept of arbitrage. Arbitrage has three essential properties. If an investor can construct a portfolio that costs nothing, has no risk, and yet produces a profit, then this investor has successfully executed an arbitrage strategy, and the profits of this strategy are known as arbitrage profits. Synthetic positions are created by investors in order to generate arbitrage profits. If the price of the synthetic position is not equal to the price of the underlying, then arbitrage profits are available. On the other hand, if the price of the synthetic position is equal to the price of the underlying, then no arbitrage profits are available.

Although investors have a personal interest in arbitrage, academicians look at the consequences of the ability of investors to generate arbitrage profits in order to explain how and why prices for call and put options behave as they do. Black and Scholes (1973) in work later recognized with a Nobel Prize in economics devised a logical argument connecting synthetic positions and arbitrage to option pricing. They show that calls and puts are priced such that no opportunities for arbitrage profits exist. Their argument remains influential in the later proofs of other scholars who work in option pricing. The proofs of this paper continue in that tradition.

SOME LOGICAL BACKGROUND

Theorem and proof work answers the question why one should believe that something is true, even in the absence of empirical data analysis. A logical proof is always concerned with how the truth of one statement affects the truth of another statement. A proof argument is a collection of statements where the proposition to be proven is the conclusion. The statements that justify the conclusion are called premises. Given the truth of the premises, a proof is a guarantee of the truth of the conclusion. Clear thinking in a logical proof first lays bare the justification for a conclusion, the premise statements that describe what is known or what is assumed to be true about reality. If each of the premise statements leading up to the conclusion is true, then the conclusion must also be true. On the other hand, if one or more than one of these premise statements are false, then the conclusion may be true or it may be false.

Some statements that can be used in proof arguments are necessarily true, true in every possible state of the world. Aristotle distinguishes between *de dicto* necessity and *de re* necessity. Statements that are necessarily true *de re* are true by virtue of definition. Consider the balance sheet equation as a first example, total assets equal total debt plus total equity. Consider now *de re* necessity. As a second example, the statement – the market portfolio contains all risky assets – is true as a matter of *de re* necessity. Why is this so? One of the essential properties of the market portfolio is that it contains all risky assets, essential in the sense that if this property is removed from this concept, the market portfolio, then its meaning is destroyed. (Whatever might remain after this portfolio is reduced can be something else, but it is no longer possible for this something else to be the market portfolio.) Statements which are true as a matter of *de re* necessity are immune to any empirical efforts which might be mounted to disprove them. So, one can say that whether or not the value of the market portfolio can be measured with empirical means, there is, both as a matter of concept and as a matter of fact, such a thing called the market portfolio. The same kinds of things can be said of the efficient set, systematic and unsystematic risk. These proof-generated concepts found in CAPM theory all are defined by their essential properties which obtain in every possible state of the world, including those of the real world. In this way it can be said that these theoretical objects exist both in theory and in reality as a matter of *de re* necessity.

By contrast, the matter of *de dicto* necessity is concerned with logical entailment, the relationship of the conclusion of an argument to the premises of that argument. As a second example of *de dicto* necessity, consider a logical consequence of the CAPM made famous by Roll (1977): given that the CAPM is true, the market portfolio is mean-variance efficient. This statement is true *de dicto*, for if the assumptions under which the CAPM is logically derived are all true, then it must be the case that the market portfolio is mean-variance efficient. The only legitimate way to deny the mean-variance efficiency of the market portfolio is to also deny the truth of one or more of the assumptions underlying the CAPM. Denial of the *dictum*, the conclusion, always entails denial of one (or more than one) of the premise statements used in order to justify the conclusion.

These two notions *de re* and *de dicto* necessity do not exhaust the concept of necessity. There are statements which are necessarily true that are not true as a matter of definition and not true in the same way that a conclusion which follows of necessity from its premises is true. Consider the following statement as an example – at present, human beings command limited economic resources. One would be hard put to posit a state of the world where this statement is false. If one claims that this statement is true in every possible state of the world, then one claims that this statement is necessarily true.

Some arguments produce conclusions that rest on assumptions contained within the premises that make sense in the real world, but some do not. Unrealistic assumptions put the conclusion in question. Belief is a matter of choice. This choice to believe or to refuse to believe is described in modern philosophy in connection with the notion of a warranted belief. Plantinga (1993) describes three essential properties of what is meant by this concept, a warranted belief. First, for a belief that a statement is true to be warranted this statement must be true. Second, the person considering this statement must believe that it is true. And third, this person must be justified in believing it to be true. This first requirement is a matter of truth or falsehood, the second a matter of opinion, the third a matter of evidence. The strength of an individual's opinion concerning the truthfulness of some statement varies with the quantity and quality of evidence available and their interpretation of that evidence.

PROOFS IN OPTION PRICING

Consider the proof below, a direct proof which moves from an assumption, step-by-step, to a conclusion. The first statement, labeled Result I, is the proposition to be proven true by the proof argument which follows it. Thus it is claimed that the proposition is true *de dicto*, which means that it must be true in the same states of the world where all of the premises contained in the proof argument justifying this conclusion are first true.

This Result I is a specific kind of statement, a material conditional. Material conditional statements are of the form if A is true, then B must be true. The A part is called the hypothesis of the material conditional, and the B part is called the consequent of the material conditional. The hypothesis of Result I below is a conjunction that has two parts, first that the price of an underlying is equal to zero and second that no arbitrage profits are possible. And the consequent of the proposition below is also a conjunction of two parts, first that the price of an American call option written on that underlying asset is equal to zero and second that the future value of the underlying is equal also equal to zero.

Result I: If $S(0) = 0$ and if there are no arbitrage profits, then $C(0) = 0$ and $S(0 < t \leq T) = 0$.

Proof

By hypothesis we are only considering circumstances where two things are both true: $S(0) = 0$ and there are no arbitrage profits. The truth of these two sentences require that $C(0) = 0$. Why? Investors in their desire to create arbitrage profits, create a two asset portfolio purchasing $S(0)$ and selling $C(0)$. Recall, by hypothesis we are considering only cases where $S(0)$ is equal to zero. Should it also be true that $C(0)$ is equal to zero, then there are no arbitrage profits. At $t = 0$ this two asset portfolio neither produces cash inflows nor requires cash outlays. By construction in every future time period until expiry the potential payoff of this two asset portfolio is equal to $S(t) - \text{Max}\ [\ S(t) - K, 0\ ]$. By definition, when no arbitrage profits are available to a portfolio which initially costs nothing, the potential payoffs in every possible state of the world of that same portfolio must also equal zero. This is only the case when $S(0 < t \leq 0) = 0$ and $C(0) = 0$.
QED.

Does it matter that we do not know the exact nature of underlying and the American call option that are bought and sold by an investor? No it does not. The proof argument is very general; it applies to anyone. Does it matter that we do not know who this investor is? Again, the proof argument is very general, it applies to anyone. Does it matter that investors can buy and sell without hindrance? Yes. The proof argument is driven by the assumption that there is no hindrance to buying and selling that would stop investors from taking advantage of arbitrage opportunities. If this is not so then the proof argument falls apart.

Below one finds an explanation of a second proof, another proposition of option pricing theory. In this next proof the student is invited to see the connections between a finance concept, arbitrage, and two additional logical concepts: logical equivalence and the contrapositive statement of a material conditional. Before going on to the next proof, the concept of arbitrage is reconsidered.

Arbitrage occurs if the Law of One Price is violated. Consider this Law of One Price which says that if two investments produce identical future cash flows in every possible state-of-the-world, then these two investments must have the same prices. If this law is violated, then investors will by the cheap asset and short the expensive asset thereby creating arbitrage profits. Arbitrage profits a risk free and without any net investment cost. It is easy to see that if arbitrage profits could frequently be generated then traders could become immensely wealthy without taking any risk and without investing any money. One of the major themes of modern finance theory is that prices in capital markets will move so that arbitrage profits become nonexistent. After all when traders buy the cheap asset of the arbitrage and short the expensive asset they are driving up the price of the cheap asset and down the price of the expensive one, so arbitrage opportunities should be fleeting.

In the proof below the main idea is that the prices of call options and the underlying assets on which these call options are written must move in such a way as to eliminate any opportunities for arbitrage. In this proof there exists a call option written on an underlying asset. The purchaser of this call option, prior to contract expiration, has the right to purchase the underlying asset referred to in the contract for a price equal to K. The price of this American call option today is equal to C(0), the contractual exercise price is equal to K, and the price of the underlying asset today is equal to S(0). Prior to the expiration of the option contract, the writer of the call option will pay the purchaser on demand an amount equal to max [0, S(0) - K] which is the maximum of two numbers, zero or the current value of the underlying asset less the exercise price.

As with the proof above, this proposition below is a material conditional. As you remember, material conditional statements are of the form: if A is true, then B must be true. The A part is called the hypothesis of the material conditional, and the B part is called the consequent of the material conditional. The hypothesis of the proposition below is: there are no arbitrage opportunities. The consequent is: $C(0) \geq \text{Max} [S(0) – K, 0]$. This proposition is rewritten as the contrapositive statement of this material conditional statement.

Result II: If there are no arbitrage opportunities, then $C(0) \geq \text{Max} [S(0) – K, 0]$.

Proof

Rewrite the proposition above in the contrapositive: If $C(0) < \text{Max} [S(0) – K, 0]$ then there are arbitrage opportunities. By hypothesis of the contrapositive statement one may say that we are only considering cases where it is true that: $C (0) < \text{Max} [S(0) – K,0]$. See if arbitrage exists in these circumstances by trying to create arbitrage profits:

(1) Immediately borrow an amount of money = C(0).
(2) Immediately buy C(0) with the borrowed money. Net investment is equal to zero.
(3) Exercise immediately and receive S(0) - K.
(4) Sell S(0) - K.
(5) Immediately repay loan. Investment positions are closed – thus there is no risk.

Profit is equal to S(0) - K - C(0) which is positive when $C(0) < S(0) - K$. An arbitrage profit has been created in these circumstances. Why? Net investment of zero produces a risk free profit. This is what is meant by arbitrage. The contrapositive has been shown to be a true statement. By logical equivalence it must also be that the original proposition is also a true statement.
QED.

The contrapositive of the material conditional has the form: IF the negation of B is true, then the negation of A must be true. B is written: $C(0) \geq \text{Max} [S(0) – K, 0]$. The negation of B is what must be true when B itself is false. So the negation of B is written: $C(0) < \text{Max} [S(0) – K, 0]$. Now consider A: there are no arbitrage opportunities. The negation of A is what must be true when A itself is false. So, the negation of A: there are arbitrage opportunities. Putting all this together for the proof work below, one may write the contrapositive of the proposition statement like this: If $C(0) < \text{Max} [S(0) – K, 0]$ then there are arbitrage opportunities.

When two statements are logically equivalent to one another they each have identical meanings, even though they may appear to not mean the same thing at all. The material conditional statement, IF A is true, then B must be true, is logically equivalent to its corresponding contrapositive statement, If not B is true, then not A must be true. This means that the two statements (IF A is true, then B must be true) and (If not B is true, then not A must be true) have identical meanings in every possible circumstance. Why is this important? If one proves that the contrapositive is true, then one has also proven that the other is true too. The application here to this proof above is straightforward. In the proof above, the proposition: If there are no arbitrage opportunities, then $C(0) \geq \text{Max}\ [\ S(0) - K, 0\ ]$ is logically equivalent to If $C(0) < \text{Max}\ [\ S(0) - K, 0\ ]$ then there are arbitrage opportunities. Since the contrapositive is proven true then so is the original proposition proven to be true.

A proof by contradiction (*reductio ad absurdum*) works on the negation of a proposition that one wishes to prove to be true. If one can prove that the negation is false then it must also be that the original proposition is true. In this way, Result III below works on the negation of a material conditional (if A is true, then B is true). The negation of a material conditional can be written is several ways. The proof below writes the negation of if A is true then B is true as a conjunction: A is true and B is false. Specifically, consider the negation of the proposition: there are no arbitrage opportunities and $c(0) \neq S(0) + p(0) - B(0,T)\ K$. This proposition and its negation cannot both be true, and yet one must be true. If the negation is true then the original proposition above must be false. On the other hand, if the negation is false, then the original proposition above must be true. The task at hand is to show that this original proposition is true. This will be accomplished in the proof below by showing that the negation of this original proposition is false. This approach to proof is known as proof by contradiction.

Result III: If there are no arbitrage opportunities then $c(0) = S(0) + p(0) - B(0,T)\ K$.

Proof

The negation: there are no arbitrage opportunities and $c(0) \neq S(0) + p(0) - B(0,T)\ K$. This is proven to be false if one could show that either there are arbitrage opportunities and either $c(0) > S\ (0) + p(0) - B(0,T)\ K$ or that there are arbitrage opportunities and $c(0) < S(0) + p(0) - B(0,T)\ K$. If $c(0) > S\ (0) + p(0) - B(0,T)\ K$, then one can create an arbitrage portfolio, one which produces a positive cash inflow initially at $t = 0$ and a zero cash outflow at expiry, $t = T$. That is to say this portfolio requires no net investment and yet produces an immediate risk free cash inflow and no cash outflows, ever. It is now our task to prove that we can create this arbitrage. To do this we have to demonstrate how a portfolio can be created which will require no net investment and produce a net cash inflow with no risk. We create this arbitrage by doing the following. Initially, at $t = 0$, sell $c(0)$ and buy $[\ S(0) + p(0) - B(0,T)\ K\ ]$. This gives us a positive cash inflow when $c(0) > S(0) + p(0) - B(0,T)\ K$. So when we sell the call and buy the synthetic position there is then no net investment required and a risk free positive cash flow is generated. At expiry, $t = T$, one of only two things can happen. It will either be true that $S(T) > K$ or that $S(T) \leq K$. First, let's evaluate the future values of our portfolio that is created at time period zero under the assumption that $S(T) > K$.

Case I

If $S(T) > K$, then the portfolio that we created will produce the following future values at expiry, $t = T$. The equation of future values written below is ordered in the following manner: the future value of the short position in the call, the future value of the long position in the underlying, the future value of the long position in the put, and the last term on the left-hand side of the equation below is the future value of the short position in a risk free asset.

$$[-\ S\ (T) + K\ ] + S\ (T) + 0 - K = 0.$$

So, If $S(T) > K$, then the portfolio that we created will produce on net a zero future value. And at expiry, $t = T$, we, the owners of this portfolio, will no longer be obligated in anyway, we will no longer have any investment positions open. As a result the profits generated at $t = 0$ are kept safe.

Case II

If $S(T) \leq K$, then the same portfolio that we created initially at $t = 0$ will produce the following (different) future values at expiry, $t = T$. Again, the equation of future values written below is ordered in the following manner: the future value of the short position in the call, the future value of the long position in the underlying, the future value of the long position in the put, and the last term on the left-hand side of the equation below is the future value of the short position in a risk free asset.

$$0 + S(T) + [\ K - S(T)\ ] - K = 0.$$

So, If $S(T) \leq K$, the future value of the portfolio is equal to zero in Case II. As a result the profits generated at $t = 0$ are kept safe. Either Case I or II must obtain. In both cases arbitrage profits are kept safe. Therefore, the negation statement: there are no arbitrage opportunities and $c(0) \neq S(0) + p(0) - B(0,T)\ K$ is shown to be false. Clearly, there are arbitrage opportunities when $c(0) \neq S(0) + p(0) - B(0,T)\ K$. Since the negation is shown to be false, the original proposition is proven true.
QED.

Result IV below is a direct proof that uses the proof by cases technique. The cases that are employed to drive a proof are mutually exclusive of one another, and any listing of these cases is exhaustive. Too see how this approach might work, consider the sentence x is not equal to y. Such consideration would likely focus on two separate cases. In the first case x is less than y and in the second case x is greater than y. There is no third case because the first two are mutually exclusive of one another and, taken together, exhaustive.

Result IV: If there are no arbitrage opportunities then $c(0) = S(0) + p(0) - B(0,T)\ K$

Proof

The concept of "no arbitrage" admits to an essential property: portfolios that have zero present values produce zero future values in every future state of the world. The portfolio that we choose to consider is a short position in a European call, a long position in the underlying, a long position in a European put, and a short position in a risk free asset:

$$-c(0) + S(0) + p(0) - B(0,T)\ K$$

This portfolio produces a zero future value in every future state. To see this consider Cases I and II below.

Case I: Consider future states of the world where $S(T) > K$.

If $S(T) > K$, then the portfolio that we created will produce the following future values at expiry, $t = T$. The equation of future values written below is ordered in the following manner:

the future value of the short position in the call, the future value of the long position in the underlying, the future value of the long position in the put, and the last term on the left-hand side of the equation below is the future value of the short position in a risk free asset.

$$[\ -S(T) + K\ ] + S(T) + 0 - K = 0.$$

So, If $S(T) > K$, the future value of the portfolio is equal to zero in Case I.

Case II: Consider future states of the world where $S(T) \leq K$.

If $S(T) \leq K$, then the same portfolio that we created initially at $t = 0$ will produce the following (different) future values at expiry, $t = T$. Again, the equation of future values written below is ordered in the following manner: the future value of the short position in the call, the future value of the long position in the underlying, the future value of the long position in the put, and the last term on the left-hand side of the equation below is the future value of the short position in a risk free asset.

$$0 + S(T) + [\ K - S(T)\ ] - K = 0.$$

So, If $S(T) \leq K$, the future value of the portfolio is equal to zero in Case II. Either Case I or II must obtain. In both cases the future values are equal to zero. Given that there are no arbitrage opportunities it is also the case that the present value of the portfolio under consideration is equal to zero.

$$-c(0) + S(0) + p(0) - B(0,T)\ K = 0$$

If there are no arbitrage opportunities then $c(0) = S(0) + p(0) - B(0,T)\ K$.
QED.

CONCLUSION

Theorem and proof work answers the question why one should believe that something is true. A logical proof is an argument that justifies belief in a proposition. There are different kinds of logical proof. A direct proof moves from an assumption step-by-step to a conclusion that must be true if the initial premises are first true. A proof by contradiction (*reductio ad absurdum*) works on the negation of a proposition that one wishes to prove to be true. If one can prove that the negation is false then it must also be that the original proposition is true. A proof of a material conditional by the proof of its contrapositive equivalent is used when direct proof is difficult. A proof by cases approach divides a difficult proposition into separate, mutually exclusive parts so that the proof of this difficult proposition can also be divided.

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APPENDIX

Ancient Greek philosophers preferred (and some insisted) that each step in an argument be verified by way of empirical data analysis. In this connection both English words theorem and theater are derived from the same ancient Greek word *theoros*. This word from the classical Greek refers to a showing or to a demonstration. This word *theoros* was borrowed by Greek geometers of Euclid's day, who insisted that logical proofs of geometric propositions must begin and end with a demonstration, a showing of the equivalence between logical results and physical reality. The foundation of every acceptable logical proof for these geometers was an axiom structure thought to be nothing more than an accurate description of physical reality, the truth of which is beyond dispute. Authors of geometric proof of the time of Euclid named their conclusion a *theoros* only if two standards were met. First, the logical steps in the reasoning process must have been shown to be without defect; and second, the concluding statement of the proof must have been verified by empirical measurement. Such a practice of demanding a demonstration in the real-world of theoretical propositions was to these ancients a safeguard against error.

Even apart from geometry, a poor connection between logic and empirical reality in either the premises of an argument or in its conclusion rendered the reputation of that argument tenuous. Even before Aristotle began a systematic study of logic, scholars knew that meaningless results could be achieved with an application of a flawless logic to a foundation of flawed first principles. Plato, among the first of the western philosophers to know that the method of an argument can be known and studied separately from its contents, did not approve of sophists – those who entertained in ancient Athens by creating seemingly logical arguments which produced absurd results, which were contradicted by real-world experience. Sophists were able to produce these entertaining arguments because they built them atop an axiom set which contained a contradiction.

To defend logical argument from the manipulation of sophists, Plato and his contemporaries classified arguments into two categories. Demonstration proofs were those based in premises well-connected to physical reality. Dialectic proofs were not constrained by empirically verifiable premises. Plato insisted that neither demonstration proofs nor dialectic proofs contain a contradiction.

Demonstration proofs because of their strong connections to empirical reality were thought by the great philosophers of ancient Athens to be superior to dialectical proofs. Demonstration proofs were declared to be true always, immune from fallacy with regard to both form and content. By contrast, dialectical arguments were considered to be provisionally true and not immune from a contradiction which might come from a later discovery.

Euclid was very much concerned about the missing empirical connections for two of his ten axioms used to create plane geometry. To mitigate the possible mistakes associated with employing these two questionable axioms in theorem and proof work, Euclid was driven to derive as many theorems as he could without relying upon either the parallel line axiom or the axiom which states that a line segment can be extended to any length. The reluctance of Euclid to employ these two axioms was caused by an inability to demonstrate in the real-world that they are in fact true statements.

In fact, it was the replacement of these same two axioms which troubled Euclid and the willingness to interpret the notion of the line of Euclid's work as something other than a straight-line in a plane that produced Non-Euclidian geometries, initially the separate work of three mathematicians – Gauss, Lobatchevsky, and Bolyai. Scholars, including Gottlob Frege, Bertrand Russell, and Alfred North Whitehead, responded to the creation of these Non-Euclidian geometries by doubting the ability of anyone to devise a single, unique axiom structure capable of adequately describing reality. Thus the advent of Non-Euclidian geometry caused many scholars to permit the divorce of mathematical space from physical space. If these two spaces are separate concepts, then the knowing of physical space is beyond the reach of pure mathematicians and at the same time irrelevant to their explanations of mathematical spaces. It was left to the mathematician Kurt Gödel to cast doubt upon the mathematician's ability to adequately describe the workings of mathematical spaces alone.

Prior to these mathematical advances, during the Enlightenment, David Hume and James Stuart Mill a rebelled against the notion that methods of theorem and proof could produce a coherent theory capable of describing a physical-material world. Hume held that there could be no such thing as logical proof. He believed that no proof argument could be understood in the same way by different individuals and he also doubted the ability of anyone to reason by way of a valid logical argument from an axiom structure to conclusions that could actually explain how the real world works. So Hume opposed the work of Euclid, and he also opposed the latter works of Galileo and of Newton, both famous during the Enlightenment for describing the workings of the physical universe as they reasoned from an axiom structure consisting of natural laws. It was Hume's position that they were mistaken: there could be no such thing as causal necessity used to explain the consistent behavior of a solar system nor could there be any such thing as logical necessity used to explain the working of a geometric argument and the connection of that argument to the real world.

Immanuel Kant reacted to Hume's work. Kant's position was that there are necessary truths and that theorem and proof work could be useful approach in scientific research. However, in Kant's view, there were limits to what theorem and proof work could accomplish. In these limits Kant sought to deny the medieval rationalism of St. Thomas Aquinas and of St.

Anselm of Canterbury, both of whom claimed to have proven with the methods of theorem and proof alone the existence of God. It was Kant's view that rationalism, a belief that reason alone is capable of accurately describing what is beyond the reach of our senses, was flawed. Kant believed that the ability of human beings to accurately describe reality with theorem and proof was limited to matters that are understood in reference to a possible experience which someone might have in the real world.

However, Kant did not go on to heap praise on empirical data analysis. It was his view that empirical reality could not be understood as it really is by human experience. Instead, those who analyze data, perceive it and organize it according to the dictates of basic preexisting categories of the human mind. Because this process of analysis is both involuntary and subjective, it is not within the power of anyone to see clearly empirical reality. If Kant is right about this, then the practice of science is very difficult indeed.

Right or not, one of the vital contributions of Kant to the problem of knowing is in terminology. Kant used two broad categories to identify statements. In describing what is analytic, Kant followed after the work of Leibniz, who held that a valid definition of a concept may be had by a complete listing of its essential properties t. Kant agreed that theorem and proof methods may employ analytic statements (definitions) even though these statements are immune to experimental investigation. Knowledge of analytic statements is always *a priori*.

Kant classified all statements that are not analytic as synthetic. A synthetic statement is a description of a concept in its relation to empirical reality. Kant accepted that some synthetic statements are knowable in the absence of experience – knowable *a priori*, but knowledge of others - the synthetic *a posteriori* - are not understood without real world experience.

By contrast, those who are Logical positivists demand that all statements which describe reality be justified *a posteriori* – be justified only after the empirical evidence is evaluated. Logical positivism admits belief in necessary truths only in regard to language that defines or refers to empirical objects. Beyond this limited admission, experience remains a prerequisite for knowing the real world.

A foundational belief of logical positivism is that only a theoretical conclusion which is connected to what can be observed in the real world could have any meaning. Therefore, theoretical conclusions which are not referenced to physical reality should be out-of-bounds, not worthy of scientific consideration. This is the famous verification principle of logical positivism, attributed by Malcom (1967) to Wittgenstein, a twentieth-century philosopher who studied the connection of language to reality.

Such a demand for verification could be a mistake. Sir Karl Popper (1959) argued that this demand for empirical verification can never be met. Popper's position was that verification is an unworkable plan in any scientific program, for to verify theory with real-world data is a matter of comparing every possible observed value to its corresponding predicted value, clearly an impossible task when the number of possible outcomes and corresponding predictions is large.

Popper proposed an alternative to the verification principle that would yet permit the evaluation of theoretical predictions against real-world data. Popper's alternative is known as falsification, a search for empirical counterexamples in an attempt to prove a theory wrong. Unlike the demand for verification, a search for counter-examples need not go on forever. It can end when a sufficient number of counterexamples to theoretical predictions are found. At this point the theory is falsified and then abandoned.

Popper's doctrine of falsification also imposed requirements upon a theory. Popper held that in scientific work it must be the case that theoretical predictions can be measured and compared against actual outcomes. Much of the current discussion in philosophy of science is concerned with how old theories are adjusted to accommodate the finding of counter-examples, and how much evidence against a theory is to be tolerated before it is considered obsolete and overthrown in its entirety. In any case, the existence of these empirical counter-examples are only made possible when actual outcomes can be compared to the predictions of a theory. But not all theories are subject to being analyzed in this way. If theoretical predictions cannot be well-measured empirically, then they cannot be compared to actual outcomes. These theories then have no empirical content. They cannot be verified, they cannot be falsified, and such is arguably the case with the asset pricing models of financial economics.

THE LECTURE/LAB COMBINATION COURSE: AN INNOVATIVE WAY TO TEACH A LARGE WRITING COURSE

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ABSTRACT

The lecture/lab combination class as an alternative to teaching a large section format of a writing-intensive class, however this format has its own special challenges. This paper will present a multiple case study of two courses and how the lecture/lab format is administered. Findings can be used to inform administrators and instructors when offering a large section class that involves an extensive amount of interaction between instructor and students. Examining the unique course delivered at this university enabled the researcher to identify some significant areas of practice beneficial for other instructors to utilize in their own course designs. Instructors must be able to maintain a relationship with their students so that they can best deliver course material effectively. Each class and each student is different and it is important that the instructor is able to identify the needs and abilities of the students enrolled in their classes. The use of TAs can be beneficial, but it is important that the instructor be involved in the class assignments to accurately assess learning.

It is likely that universities will continue to offer large classes at various levels, but there must be a balance between budget allocations and student learning. As the class size increases, the chances of the class being taught as a lecture style course will increase and cause the instructors to lose their ability to connect with students. Students are more likely to feel detached from the subject matter if they have fewer opportunities to interact with the material being presented.

INTRODUCTION

Change is good, or so the saying goes. Using the excuse that this is the way it has always been done, will not hold up in an argument. Sometimes changing the way a course is delivered is beneficial, and sometimes this change is necessitated because of budget cuts. The budget is often a popular issue at educational institutions because administrators are worried about what the next legislative session will decide about governmental support. Colleges have become creative in how they have approached budget shortages by offering more online classes, cutting back staff, eliminating programs, and teaching more students in each class.

One solution, teaching more students in a class, creates a unique environment for teachers and students. It might not be an ideal situation, but if an educational institutional is forced to increase class size, the lecture/lab combination class may be a suitable alternative.

Moshiri and Cardon (2014) experienced problems with class sizes at their own institution. From 2008 to 2013, the actual class size in the business communications courses more than doubled because the university experienced a 20% reduction in its state funding. The possibility of other institutions facing similar budget cuts could cause other classes to increase in size. Based on this possibility, administrators and instructors of all classes should be informed about approaches to increased class sizes.

Purpose Statement

The purpose of this paper is to present the lecture/lab combination class as an innovative alternative to teaching a large section format of a writing-intensive class. Specifically, it will look at instructor and student perceptions of how the course functions at one particular university. Information gained from the study can be used to inform others who may be considering a unique approach to teaching a larger class that involves an extensive amount of interaction between instructor and students.

Significance of the Research

When universities promote their small classes, parents think the students receive more attention, students feel more engaged, and instructors believe the classes are more manageable. Yet, monetary issues have always been a consideration in scheduling classes and may cause some institutions to consider increasing their class sizes. When a university struggles with its budget, more classes are likely to be offered in the large lecture format. However, larger classes deter establishing relationships between teacher and student, and among students, which is one component to building critical thinking skills (Tierney, 2011). Not all courses may be suitable for a lecture delivery method.

Institutions of higher education must weigh the possible effects of larger classes as Tierney (2011) warns that “distance learning begins in the fifth row” (p. 64) which causes instructors to strive to make connections in the larger classes. If more classes are offered in the large lecture format, research needs to address the issues involved.

ATTRIBUTES OF LARGE CLASSES

Traditionally, college classes have been taught by the lecture method. In this way, students are passive because they are dependent on the teacher to transmit knowledge (McKeachie, 1969), and there is little interaction between students and teachers when the instructor is viewed as the so-called sage on the stage. However, as classes begin to increase in size, simply preparing a test can become time-consuming because photocopying and physical distribution are more complex. In addition, because of close seating arrangements, extra care must be taking to deter cheating (McKeachie, 1969). Some of the concerns cited by students included excessive noise in the classroom, difficulty concentrating during class time, and a feeling of being neglected by the instructor (Leufer, 2007). Kryder (2002) also noted that preparing for her large-section course meant there was more rigor in the course causing her to prepare her material sooner which created fewer opportunities for spontaneity during the class.

Examples of Large Classes at the University Level

Several studies have been published reporting on experiences teaching larger classes but few have been conducted at the post-secondary level. Chapman and Ludlow (2010) completed a longitudinal study of student evaluations and noted a negative relationship between larger classes and student perception about learning. They found that increasing class sizes created a burden to learning for both students and instructors. Additionally, another five-year study of undergraduate students found that students in large classes were less likely to pass exams (De Paola & Scoppa, 2011). Specifically, the researchers noted that "an increase of 50 students in a class size reduces the probability of passing an exam by about 9 percentage points" (p. 1064).

Examples of Large Classes in Business Communication Courses

Rieber (2004) studied an innovative way Business Communication courses were delivered. Facing budget constraints, the department hired professional teaching assistants (TAs) to help evaluate, grade, and comment on student papers. Similarly, Kryder's (2002) institution increased its enrollment one year to 100 students with one teacher and two professional TAs for each class. The class time was extended to add a 50-minute discussion class taught by a TA. Consequently, this additional discussion class only had 25 students per class, simulating the smaller class format. The study found that more than 90% of the students liked the model for their large lecture classes. Although the new format was successful, Kryder warned, "I do not recommend this as a preferred format for teaching, nor does my program" (2002, p. 89).

Cockburn-Wootten and Cockburn (2011) experimented with a large lecture class with 75 and 300 students in a course. Students were put into peer groups called Lecture Learning Groups, which allowed the larger class to be diminished to smaller groups to encourage the sharing of ideas. The activities during the semester were designed to apply communication skills that promoted lifelong learning skills and critical thinking.

RESEARCH METHOD

The research sites included two classes from a mid-sized university who offered Business Communication courses in a large section format. A case study was used to produce an in-depth interpretation of the unique situation of offering a writing intensive course in a large-section format. This course was offered in the large section format as a lecture course with a required additional lab course for the writing component. Under the assumption that larger class sizes will cause the course to morph, these cases were considered innovative in their offerings.

Each case was studied in its own environment as the researcher visited each case study location to interview participants, collect artifacts, and observe classroom interactions. The two different classes were studied independently, then compared as a multiple-case study to produce more reliable and generalizable results. Interview participants consisted of the business communication instructors of the course and a focus group of three to five students taking the class. In addition, the courses were observed during an actual classroom meeting to examine both instructor and students' behaviors and the actual delivery of the course. Artifacts, in the form of papers distributed in class and course syllabi, were used to verify information to aid in triangulation.

FINDINGS

A study of business communication courses in the United States found that almost 58% of courses were offered with 21-30 students per course section (Russ, 2009). Russ noted that instructors of business communication courses preferred smaller class sizes than what they were actually assigned: 17.3% of instructors actually taught courses with more than 31 students, but only 2.4% preferred doing so. Most instructors (70%) preferred less than 20 students in a course. Similarly, the study by Moshiri and Cardon (2014) found that 98% of instructors believed the class size should be less than 30 students.

This business communication course under study was a junior level course that met once-a-week in a traditional face-to-face format with enrollment over 140 students. Students were required to also enroll in a lab section of the course at also met once a week and enrolled 26 to 30 students. Instruction for the course was done in the large lecture course, but writing and other hands-on activities were completed in the lab section. The course consisted of the two-hour lecture class in the large section and a 1-hour lab in the smaller section.

Case 1 – Professor Mary

In some ways, Mary believed that the larger classes were beneficial because she felt the business communication curriculum could be tedious when teaching writing. She believed having more students in the classroom introduced more perspectives when students were able to share their experiences during classroom discussion. When asked about advantages of the larger class, one member of the focus group seemed to understand the value of having other students to ask questions to help in understanding.

Mary saw the main disadvantage of larger classes as their impersonal nature. She stated that because of the larger class, students were less likely to ask questions in the larger lecture course and would save their questions for the smaller lab class. The students acknowledged that they often would not ask questions during the large class. However, the lab instructors were often unable to answer the questions because they did not attend the lecture class.

Both Mary and the students agreed that smaller classes were better. Mary stated, “I seem like I have a more positive experience from an instructor’s standpoint.” One student agreed that the relationship formed in the smaller classes helped in understanding the material; “I think I am more likely to get an A in small classes because I actually form a relationship with the professor.”

Case 2 – Professor Cathy

Cathy did not see an advantage to the instructor to teach the class in a larger section format, instead believed that money dictated the larger classes. She was very comfortable speaking to large groups, but felt the students needed the attention that the smaller lab provided. Cathy added that students often had the misperception that they only needed to attend their lab class, so she struggled with attendance in the large lecture course.

Although she admitted she had no facts to support her opinion, Cathy believed that students performed better in the smaller sections. Cathy said, “I know this is a model that we probably have to do, but I really prefer the small class.” Previously, the class had about 35 students in each section and Cathy taught and graded everything herself. Six years earlier, the university changed to the lecture-lab combination format. Now, Cathy still taught the lecture course, and a teaching assistant graded for her lecture course. She added, “When you look at it, I have a wonderful job. All I do is I go in and say a few words, and the lab instructors grade everything.” But she laments, “Again, I don’t know the students very well.” Students in the focus group stated that their upper level courses were usually smaller, so it was unusual to have a class so large at this level.

Cathy said the biggest disadvantage to the larger class was that she did not know the students. This is contrary to the reason she began teaching, which was the enjoyment she got from student interaction. On providing feedback, students stated that the lab instructors provided extensive feedback to improve, but some students noted that some instructors were not as strict.

The students believed there was consistency between what Cathy said and the lab instructors did, however their complaints seemed to be inconsistency between lab instructors. Apparently, some lab instructors were stricter in their grading requirements. Cathy informed students that grading was left to the lab instructors' discretions, so she avoided intervening.

One obstacle that she had to overcome was test administration, because Cathy had to be careful about handing out the exact amount of tests resorting to handing out tests as students walk in the door. Cathy said there were some coordination issues to consider when the lecture and lab were different courses. She joked she had to "make sure I have covered the chapter before their assignment is due" in the lab.

DISCUSSION

The two courses studied were three-hour courses that were split between a 2-hour lecture and 1-hour lab. The lecture courses were offered as late afternoon courses that met once a week, and students also enrolled for a once-a-week individual lab course.

Both instructors believed that smaller classes were better for students and the larger format was not ideal. They acknowledged that budget constraints were what forced the larger classes, so they understood the need. Students also viewed smaller classes as more beneficial. Both instructors cited the impersonal nature of the larger class as the main disadvantage of the large section format. Students acknowledged that they were less likely to talk in the larger class; instead saving their questions for their smaller lab class.

Both Cathy and Mary relied heavily on their lab instructors for writing instruction. Although both provided instruction on writing in the lecture, they deferred grading and remedial instruction to their lab instructors. Grading in the labs was stringent, and students seemed to begrudge the heavy emphasis on grammar and felt that grading was not always consistent across lab instructors.

Whether the time spent in lab was beneficial seemed to differ. The focus groups for Cathy' class felt that the lab time was rushed. They stated that the oral presentations were very time consuming. The focus group from Mary's class said they did not spend their entire scheduled class time in the lab, and students knew they would be dismissed early if they did not ask questions. Mary knew classes were not meeting their required times and addressed this with instructors, but the issue continued.

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The teaching of undergraduate Business Communications courses in the large section format is not common as shown in Russ' (2009) study and Moshiri and Cardon's (2014) studies that 98% of classes have fewer than 50 students. The delivery of this course was unique because it was delivered in the lecture-lab combination format with over 140 students.

Not surprising, the instructor was influential in class presentation. Both Cathy and Mary believed that students learned more in the smaller classes, although they did not have research to support their statements. However, they believed that there was value in keeping the lab sections smaller. Instructors and student focus groups all commented that getting to know students was harder in the larger classes, and students acknowledged that they were less likely to ask questions in the large class. Larger classes were also more likely to be noisy and distracting for the learning environment as discussed by Leufer (2007), and Mary and Cathy' classes also had a lot of noise and movement within the room. Students could easily be distracted from the lesson in these classes.

Although each of the instructors had the ability to alter the class if needed, with so many students in a class, it would be difficult to stop and remediate each time a students expressed difficulty with a subject. Cathy admitted that care had to be taken to ensure material was covered in the lecture class to prepare the students for the lab class. These increases in course rigor supported the findings by Kryder (2002). In congruence with McKeachie (1969), Cathy also said that test administration was difficult with so many students in the room.

The instructors studied provided examples as what may be the more successful practice to teach writing. The students appeared to be visual learners and liked to be given clear instructions on what is expected of them. Providing the examples with clear instructions helped with writing because it provided guidelines to follow.

TAs can be helpful in managing the larger classes, and both instructors used TAs to some extent. Cathy seemed to rely heavily on TAs to answer questions and grade assignments, so she was less familiar with students' individual strengths and weaknesses. Mary was able to stay connected with her students because she still taught a smaller lab class.

Instructors attempted to foster a dialog during classroom presentation, and some students interacted in class. However, all students in the focus groups expressed reluctance to ask questions in the larger classes, and students with lab courses were more likely to save their questions for their lab instructor.

The teaching of the lecture/lab combination course at this university followed McKeachie's (1969) suggestion of teaching the large class in the large format some of the time (lecture), then in smaller sections at other times (labs). McKeachie also discussed the budget constraints acknowledged during the interviews of participants was likely the reason for teaching courses in the larger sections.

Following Tierney's (2011) stance that, "distance learning begins in the fifth row" (p. 64), the University adapted to larger classes by offering the lab classes, which allowed increased opportunities for interactions. Similarly, Kryder's (2002) study reviewed a Business Communication course that was forced to increase its enrollment because of high demand. As a part of this increased enrollment, it added the lab course and used TAs to support the instructor. The course had positive feedback from students, but Kryder maintained that neither she nor her department recommended the larger class as more beneficial. The lecture-lab design was instituted because of budget constraints, but the instructors acknowledged that it was not an ideal learning situation.

Both instructors viewed the large classes as necessary but not necessarily as effective, which is similar to Russ' (2009) study and Moshiri and Cardon's (2014) study. This lecture/lab combination course delivery does not appear to be common to other universities as it was not addressed in either of the studies.

Implications

Examining the unique course delivered at this university enabled the researcher to identify some significant areas of practice beneficial for other instructors to utilize in their own course designs. Instructors must be able to maintain a relationship with their students so that they can best deliver course material effectively. Each class and each student is different and it is important that the instructor is able to identify the needs and abilities of the students enrolled in their classes. The use of TAs can be beneficial, but it is important that the instructor be involved in the class assignments to accurately assess learning.

It is likely that universities will continue to offer large classes at various levels, but there must be a balance between budget allocations and student learning. As the class size increases, the chances of the class being taught as a lecture style course will increase and cause the instructors to lose their ability to connect with students. Students are more likely to feel detached from the subject matter if they have fewer opportunities to interact with the material being presented.

The lecture-lab course allowed for mass-delivery of content in the lecture course, but it provided the small-class atmosphere from the lab course and provided the students opportunities to interact with their instructors and receive the feedback necessary to improve their learning experiences. Students acknowledged that their lecture classes were large and intimidating, but the lab class provided a comfortable atmosphere to seek feedback.

Recommendations for Further Study

Expanding the study to include other types of schools in other states would provide additional situations that would provide more insight into teaching large classes. Studying more classes would further strengthen the generalizations that can be made from the study. A longitudinal study over several semesters could provide a more detailed description of course deliveries as changes are likely to occur between terms. This would show how instructors adapted their courses based on feedback provided from students in course evaluations.

Recommendations for Practice

The recommendations for practice propose that administrators try to offer courses in as small a class size as economically possible. Most instructors realize the importance of the interactions necessary for effective learning and, as found by Tierney (2011), building relationships between student and instructor helps to build critical thinking skills. Most students are more comfortable in classroom discussions when the class is smaller; therefore these relationships are more likely in the smaller classes. Smaller classes also allow more flexibility in course delivery and provide more opportunity for instructor feedback.

The use of TAs can aid in classroom management, but they must be used strategically to ensure that the instructor stays informed on students' needs and abilities. Limiting TAs to marking assignments, entering grades, and taking attendance can relieve instructors of tedious duties. Even if a TA is allowed to grade assignments, the instructor should still review each paper before a final grade is entered.

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COMMUNITY INVOLVEMENT AND THE HOMETOWN EFFECT: A FACTOR IN FAMILY BUSINESS EXPANSION PATTERNS

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ABSTRACT

The purpose of this study was to examine community involvement among family businesses as related to their growth and expansion. One success factor may be their strong community relationships and reputation, since owners believe that the local hometown is part of their success and want to "give back." The family businesses interviewed were very active in their communities and had a strong sense of community values. These activities include donations, sponsorships, serving on boards of directors, and others. It is possible that family businesses involved in the local community will become dependent on the hometown and, therefore, not venture outside the local geographic area. These firms may perceive that their success is centered in a single geographical area and still remaining successful. We propose that family business involvement and close community ties could ultimately affect their growth and expansion efforts. This qualitative study is based upon interviews with seven small businesses.

INTRODUCTION

Family businesses tend to be involved in their local communities, which include memberships in civic groups, churches, schools, and other nonprofit organizations. Past studies have shown that family business success factors include having quality products and services, product differentiation strategies, and the founder's intent and vision. However, another success factor may be the strong ties to the hometown and the local reputation of the firm. Therefore, the purpose of this study is to examine community involvement among family businesses and its effect on growth patterns and expansion.

It is often said that many small businesses and family-owned firms tend to be close to their communities. These strong ties include involvement in nonprofit organizations and memberships in civic groups, such as Rotary International, Chambers of Commerce, and Better Business Bureaus. Other participation and support include religious, educational, civic, and other institutions.

The primary focus of this study was to examine the importance of the "hometown" effect as it relates to social responsibility and growth strategies. Although much research has been conducted regarding social responsibility and business strategies, this study examines community involvement as an important aspect of family business success. This research effort consists of personal interviews with firms that represent a variety of businesses. These firms were selected from the following industries: general retail, furniture, auto repair, restaurant, health foods, convenience, and auto parts.

Specifically, this research asked the following questions:

1. What types of community activities do family businesses support and participate?
2. How important is local community involvement to the family businesses and what types of community values exist.
3. Are these strong ties to the hometown and local area related to business expansion and growth?

SURVEY OF LITERATURE

The literature supports the idea that family businesses desire to be involved their communities. Also, much of the literature shows how family businesses are involved in the community in terms of "giving back," the importance of social responsibility, and motives for community support. However, no studies have related family firms that remain in the local area and choose not to expand due to their ties to the local community culture, values, and relationships.

Community Relationships

One study examined several factors involved in business and community involvement. The research was a qualitative study of 52 small- to medium-sized enterprises (SMEs) in Australia and examined motives, methods, and obstacles toward community participation (Madden, Schaife, & Crissman, 2006).

The SMEs preferred to avoid cash gifts but desired to support local causes. A major motive was a genuine belief that business organizations should support community causes. By the same token, the community expected that the enterprises would play an active part in the community. In addition, the firms indicated that this community participation would benefit their businesses. (Madden, Schaife, & Crissman, 2006).

A recent study examined small businesses and their interests in nonprofit collaboration (Zatepillina-Monacell, 2015). In utilizing interviews and focus groups, the researcher concluded that small businesses were interested in serving on nonprofit boards. Specifically, these small businesses wanted to support those nonprofit organizations that helped and provided assistance to the needs of the community. Moreover, the small businesses were interested in long-term partnerships with nonprofit organizations that focused on local community issues.

Family Business Growth

Factors affecting growth and strategic planning in the small business literature are widespread**.** Eddleston et al**.** (2013) analyzed factors in strategic planning and argued the importance of analyzing strategic planning efforts in light of different generations. They suggested that growth, strategic planning, and succession planning are affected by the management of first, second, or generations beyond (Eddleston, Kellermanns, Floyd, Crittenden, & Crittenden, 2013). However, research studies on success factors and growth strategies are limited when community involvement is involved.

Hamelin (2013) suggested that financing capacity might be explained in growth patterns between family and non-family businesses. Further, he indicated that family involvement could intentionally limit their growth. It is possible that this involvement could lead to atypical behavior, and thus these businesses may implement conservative growth patterns. In addition, he pointed out that firm financing capacity, as well as and other factors, could limit growth (Hamlin, 2013).

Community Culture

Astrachan (1988) recognized early on the importance of the community related to small business success while examining a family firm case study. He reported that when small businesses are in harmony and/or compatible with the local culture, a higher level of morale and long-term productivity may follow. Ideally, family firms tend to be more congruent with the community culture. The family firms may have a strong sense of community and, therefore, encourage employees to be involved in local committees. The owner in the study believed that the company would be a substantial asset to the city and the community and pointed out that the community should even own and control the stock in the local institution (Astrachan, 1988).

After interviewing a successful four-generation family business, Karofsky (2001) suggested that public service involvement was important and deeply engrained in the family culture. In his interview, Grossman of Massachusetts further indicated that a challenge existed for individuals while balancing a family, career, and community participation.

Small Businesses and Support of Community

The enlightened self-interest model of business and social responsibility suggests that businesses can realize significant benefits through socially responsible behavior (Besser & Miller, 2004). They stated the roles of small businesses in the community have received limited attention in the business social responsibility literature. Yet, they found that supporting the community was an important strategy for business success. In other words, a good public image was perceived to be important for business success. This finding was true for both non-risky and risky support.

Community Influence on Family Business Involvement

Family businesses appear to have significant ties to the community which, therefore, could explain their lack of expansion (Fitzgerald, Haynes, Schrank, & Danes, 2010). In surveying family businesses, researchers found that social and economic factors affecting the community may contribute to business performance and responsible actions. The National Family Business Survey reported that family businesses with positive attitudes toward local communities were more likely to serve in leadership positions and contribute to the community. Further, they found that family businesses were willing to accept leadership positions and contribute in the form of technical expertise and financial assistance when the economy was at risk.

Success and Social Responsibility

Besser (1999) examined the relationship between the success of small businesses and social responsibility of firms in Iowa. He found that small businesses in small towns reported high levels of commitment and support for the community. He defined social responsibility as a commitment and support for the community. In using multiple regression analysis, he showed that helpful corporate citizenship was also good for the businesses. He concluded, “As a result of their positive net association with business success, commitment to the community and providing support for the community may be considered strategies for business success" (Bessler, 1999, p. 27). In addition, his findings showed an interdependency between businesses and their local communities.

In addition, Bessler (2012) examined motivations of small business regarding their contribution to the community. In analyzing the consequences for their involvement in the community, he stated, "The town where they do business is their home. Their personal well-being, and, often, the success of their business are inextricably linked to the overall welfare of the community" (Bessler (2012, p. 131).

Another study gave credence to the fact that small businesses are motivated to be socially responsible. Udayaskankar (2008) reported that small- and medium-sized firms comprise 90% of the worldwide business population. Although it has been suggested that given their smaller scale, access to resources and lower visibility, smaller firms were less likely to participate in social responsible initiatives. While examining different motivations of firms, he found that both very small and very large firms were equally motivated. Moreover, medium-sized firms were the least motivated, which illustrates that a U-shaped relationship between firm size and social responsibility participation occurs. However, he pointed out that when broad categories of businesses are sampled, caution should be taken.

Reciprocated Community Support

In a study of 800 small businesses in small towns in Iowa, researchers reported findings regarding reciprocity between small businesses and the community. In particular, entrepreneurs who made contributions to their community perceived themselves to be successful. In addition, the study showed that the interaction effect of an entrepreneur's service to the community and reciprocated by community support of the business was the single most significant determinant of business success among many variables and respondent characteristics. Moreover, an important finding was the belief that individuals who felt successful expect to expand (Kilkenny, Nalbarte, & Besser, 1999).

Regional Influences on Startups

Bird (2014) investigated how regional factors impacted family and non-family startups. The study was based on longitudinal data and showed economic factors, such as population and regional growth, to be primarily associated with the number of non-family start-up businesses. However, factors related to regional embeddedness, such as pre-existing small family businesses and favorable community attitudes toward small businesses, were more strongly associated with the number of family start-ups. They suggested that this regional factor was an important area for family business and start-up research.

Survival of Family Firms

Santarelli and Lotti (2015) found problems of growth and succession to be a major cause in family firm closures. In addition, they reported small family firms that had reached 30 years in existence had a very high risk of sudden exit. Likewise, this potential risk increased with the age of the firm.

METHODS OF RESEARCH

This research effort consisted of personal interviews with seven family businesses to examine their perceptions on many factors. For this study, we focused, in particular, on the understanding of family businesses and their relationships and partnerships with local community activities. The questionnaire was carefully developed with input from other studies. The questionnaire was designed to obtain open-ended answers and organized into the following general categories: Firm history and description, challenges, family dynamics, expansion patterns, and succession plans. Initially, interviewing was conducted with one of the owner during the spring, 2015; however, interviews were repeated with different family members in order to obtain more in-depth experiences.

This research was designed to be cross sectional in nature and a representative sample of family businesses in the local area with different industry classifications. The participants came from a variety of industries, including general retail, furniture, auto repair, restaurant, health foods, convenience, and auto parts. Table 1 below shows demographic characteristics of the responding firms according to age of firm, number of employees, sales volume, and level of family generation.

Table 1
CHARACTERISTICS OF RESPONDING FAMILY BUSINESSES

Industry	Age of Firm (Years)	Number of Employees	Estimated Yearly Sales $ Million (2014)	Generation Level of Owners/ Managers
General retail	104	80	$12	2nd, 3rd
Furniture	119	30	$8	3rd, 4th
Auto repair	53	38	$6	3rd
Restaurant	17	83	$5	1st, 2nd, 3rd
Health foods	23	33	$6	1st and 2nd
Convenience	33	300	$250	2nd and 3rd
Auto parts	46	400	$60	2nd and 3rd

These family firms represented a variety of small businesses. The age of the firms ranged from 23 to 119 years with an average age of 58 years in existence. The number of employees in the family businesses ranged from 30 to 400 with an average of 94 employees. Also, estimated sales revenue varied from $5 million to $250 million with an average yearly sales volume of $47 million.

FINDINGS

The family businesses interviewed were very active in their communities and had a strong sense of community values. In addition, they were concerned with quality products and services and were actively involved in the community in numerous activities. Examples of community involvement included assisting charities, school systems, city services, and other ways of "giving back." This section of the paper shows specific examples of community service participation by family businesses in their hometown. These finding led to the following proposition:

> *Family business involvement with their close community relationships and hometown could ultimately affect their growth and expansion efforts.*

Community Involvement

One major community involvement activity was the association with religious institutions. One restaurant owner stated, “We are very involved in church activities. Many people come in after church, since the restaurant is next door. We have done a lot of business with them for years and know the pastors.”

Also, these businesses have a close relationship with educational institutions, since many were raised in their local communities and went to area schools. Also, companies mentioned that their friends and relatives also went to the hometown schools. In fact, many owners started they started working in the family businesses after school.

Community Awareness

Another example of community involvement was having local community leaders serve on their boards of directors. One individual indicated that a hometown doctor was on the boards of directors of his organization. Another owner stated, “This community is our home, and our customers are our neighbors. We want to give quality service to our customers.”

Customer Care

An auto repair shop owner wanted their hometown customers to feel comfortable and, therefore, created an atmosphere that does not resemble a “typical auto repair shop.” For example, the shop is very clean and professional. The owners wanted the waiting room to have the feel of a doctor’s office or car dealership. Therefore, in caring for the customers, the waiting room now has a television set and coffee bar. The owners believed that they are indeed a credit to the community. In particular, they perceived their success to be a prime example of diligence, hard work, and strong family values.

Giving Back

The importance of the hometown and community involvement is illustrated by one family business owner who believes in the “generosity to the community.” For instance, this business has made major strides toward creating hometown values by sending underprivileged kids to camp and donating property to a church.

Community Values and Success

One firm indicated that hometown people expect more from their businesses. He indicated that people from the hometown believe their service is “great.” The family business owners instilled in all family members community values and defined such values as “doing what is right for the community.”

Another family business supported a volunteer fire department in the hometown and later raised money for a new fire truck. According to family members, the founder instilled family values and believed that the family has a responsibility to the community. Similarly, the next generation of family members also indicated they are instilling these same community values in their children. In fact, the second generation donated land near the local school to the fire department.

DISCUSSION

This research focuses on reasons why some family firms grow and add multiple outlets across a geographic area, while others remain in one location with little change or growth. It is often said that family firms have strong ties to their communities. The research found the family business involvement in a variety of community service activities, including participation in nonprofit organizations and memberships, civic groups, and others.

Factors that may affect family firm growth include the desire of founder(s) and the propensity to take a risk. In addition, quality products and service, differentiation strategies, and others are important. However, family firm leaders believe that the local community is part of their success and thus desire to give back to the local community with donations, sponsorships, and other activities. In conclusion, a success factor of the family businesses is the local reputation and involvement with the hometown.

This research suggests that family firms with strong ties to the community values may not venture outside the city. They may perceive that their success is geographically centered and thus remain successful in their hometown. The literature and personal interviews show that local owners believe that the local communities are part of their success and want to “give back.”

This study contributes to the literature regarding entrepreneurial expansion. Many small business have grown across the U.S. while other operations never progressed beyond their hometowns. The hometown proposition is based on established literature regarding the nature of community involvement and is an important step in understanding growth strategies in family firms and small businesses. It is possible that these close relationships are an important factor in the decision to stay in the local community and, therefore, not to expand.

A decision to expand may depend on many factors, such as the type of business entity, community involvement, and the founder’s mission and vision. Also, family dynamics may be a factor in this proposition which would include size of family and number of family members in the firm. Other factors affecting expansion include geographic location, including the neighboring states, economic factors, and population growth.

LIMITATIONS AND FUTURE RESEARCH

The study suggests that further analysis is warranted. In addition, several questions have emerged from this study. Since the research was designed to be exploratory in nature and based on a sample of seven small businesses, future research would do well to assess the nature of community involvement with other industrial classifications. Future research could examine other limiting factors affecting growth patterns, since this research focuses only one factor related to expansion.

These factors could include generation level, education of family leaders, and the nature of the industry. A more comprehensive survey of family businesses would give credence to the proposition that community involvement in the hometown may be a factor in lack of expansion.

As a final point, it would be interesting to connect growth patterns with family dynamics and level of generations.

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STORYTELLING AS A CRISIS COMMUNICATION STRATEGY

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ABSTRACT

Research shows that companies use storytelling and narratives as a form of marketing, chiefly because the narratives make the customer want to experience the story the product represents. This paper describes how Blue Bell, known as "the little creamery in the heart of Texas," has a long history of brand storytelling that has resulted in its customer base remaining fiercely loyal despite its recent crisis.

BACKGROUND

Even though its products are available in only 30% of supermarkets in the United States, Blue Bell Creameries is ranked among the top three bestselling ice cream brands in America. Blue Bell frozen products are sold in 23 states, most prominently in the south (Blue Bell History, 2015). Over the past nine years, Blue Bell has consistently increased its revenues as it continues to expand in the ice cream market (Blue Bell Creameries, 2015). Blue Bell Creameries is a privately held, independent manufacturer of ice cream, frozen yogurt, and other frozen dairy foods. It was started in 1907 in Brenham, Texas, USA. Over the past 109 years, it built a strong reputation based on superior products, a folksy brand image, and a family-centric corporate culture. The Kruse family has managed and operated the company since 1919 (MacInerney & Blue Bell Creameries, 2007, pp. 9-15) The Kruse family has always had ties to the Brenham community and has encouraged its employees to be involved in their local communities as well.

On March 13, 2015, the Center for Disease Control announced a link between five Kansas cases of Listeriosis (including three deaths) and certain Blue Bell products. Blue Bell Creameries immediately began a limited recall of products made on the same Brenham production line. On April 7, the CDC expanded the outbreak case count to include an additional three cases in Texas, one in Arizona, and one in Oklahoma, all tracing back to Blue Bell products. By April 20, all products had been officially recalled – more than 8 million gallons of ice cream -- and all three production facilities had been shut down. Blue Bell Creameries had to lay off and furlough almost 70% of its workforce (Collette, 2015).

PURPOSE

This paper explores the steps that Blue Bell took to weather the Listeria crisis and maintain its customer base. Loyal customers stood behind the brand and rallied to support the company during the crisis. Throughout the American states where Blue Bell products are sold, customers wrote hopeful thoughts on the recall signs in stores, declared that they would never switch to another brand, erected "God Bless Blue Bell" signs in their yards (Hernandez, 2015), donned "I Get Cranky Without My Blue Bell" t-shirts (Associated Press, 2015), and took to social media to express their grief over the loss of the products. Families publicly declared that, rather than disposing of the Blue Bell ice cream that remained in their freezers, they were hoarding and savoring it despite the risk of death from Listeriosis (Seward, 2015).

Blue Bell production resumed in August 2015 in Sylacauga, Alabama. Over several months' time, twelve flavors were released in nineteen states. The return to market was celebrated by consumers as well as public officials.

This paper analyzes the communications issued by the company during the crisis in an attempt to identify threads of its corporate narrative or storytelling strategies that were used to strengthen the brand image and shore up its reputation. In particular, our analysis focuses on Paul Kruse, the current CEO and President of Blue Bell Creameries, who has been the chief spokesperson. He promptly and regularly released videos and press releases, detailing the incident, describing the steps taken to fix the problems, and reassuring the public that the company's products would return, better than ever.

From a communication standpoint, Blue Bell appears to have followed an effective crisis management plan. Despite the scandal about safety and sanitation violations and hazardous production practices that stretched back over five years, the company successfully maintained its romantic image as a folksy, family-centered country store in an idyllic rural setting. Blue Bell emerged from the crisis with its narrative intact. Grocery chains posted signs in their frozen food aisles, heralding the availability of Blue Bell products. One sign in a Kroger in a suburb of Houston reinforced the corporate theme by saying, "Welcome Back! You're more than just Ice Cream. *You're family*" (Fig. 1).

Figure 1
KROGER AD

COMPANY OVERVIEW

Blue Bell Creameries started out as The Brenham Creamery in 1907 in Brenham, Texas, USA making butter by using excess cream from area farmers. In 1911, it produced ice cream for the first time in wooden tubs filled with ice. A few gallons were made each day and only lasted a few hours before melting. During World War 1, the creamery produced butter mainly for the military troops overseas. E.F. Kruse took over as manager of the creamery in 1919. The Kruse family has always had ties to the Brenham community and has encouraged its employees to be involved in their local communities as well (MacInerney & Blue Bell Creameries, 2007, pp 9-15).

The company's name was changed to Blue Bell Creameries in 1930. As of 1958, the creamery discontinued the butter line to focus solely on ice cream production. As the company continued to expand in Texas and into other southern U.S. states, it realized more production facilities were needed. In the 1990s, it opened the Broken Arrow, Oklahoma and Sylacauga, Alabama, facilities (MacInerney & Blue Bell Creameries, 2007, pp 3-5).

THE CRISIS

Listeriosis can be a life-threatening infection caused by eating food contaminated by Listeria monocytogenes. It mainly affects older adults, pregnant women, newborns, and anyone with a weakened immune system. The primary symptoms include fever, muscle aches, headache, stiff neck, loss of balance, diarrhea, and other gastrointestinal problems. The most common treatment is a regimen of antibiotics. Listeriosis can result in death among the elderly and others with serious health issues (Center for Disease Control and Prevention, 2015).

On March 13, 2015, the Center for Disease Control and Prevention (CDC) announced a link between five Kansas cases of Listeriosis (including three deaths) and certain Blue Bell products. Blue Bell Creameries immediately began a limited recall of products made on the same Brenham production line. On April 7, the CDC expanded the outbreak case count to include an additional three cases in Texas, one in Arizona, and one in Oklahoma, all tracing back to Blue Bell products. By April 20, all products had been officially recalled and all three production facilities had been shut down (Blue Bell Press Releases, 2015). Blue Bell had to destroy 64 million gallons (8 million pounds) of product after the recall and shutting down the three production facilities (Collette, September 13 2015). On May 15, 2015, Blue Bell Creameries had to lay off and furlough almost 70% of its workforce (Collette, May 2015). Mr. Kruse expressed distress and concern over the decision to lay off and furlough employees stating, "our employees are part of our family, and we did everything we could to keep people on our payroll for as long as possible" (Blue Bell Press Releases, 2015).

The *Houston Chronicle* interviewed former employees. Several of the former employees discussed situations where they had tried to report unsanitary and unsafe working conditions to supervisors without any of the issues being resolved. OSHA investigated Blue Bell Creameries in 2011 and fined it $20,000 for hazardous work conditions related to the cleaning process of equipment. Despite the hazardous work conditions, employees continued to work for Blue Bell until being laid off or furloughed. The company is known to take care of its employees and help them out with family emergencies and financial issues. Last year, Blue Bell gave its employees bonuses, access to 401k plans, company paid pensions and stock ownership plans (Collette, September 13, 2015).

THE CORPORATE RESPONSE

From a communication standpoint, Blue Bell appears to be following an effective crisis management plan. The company reopened the facility in Alabama in early July, 2015. It began testing its products at that facility to make sure they are free of Listeria. A prominent Texas business investor named Sid Bass invested $125 million in Blue Bell Creameries on July 14, 2015 and became a partner (Blue Bell Press Releases, 2015). CEO Paul Kruse stated "the additional capital will ensure the successful return of our ice cream to the market and our loyal customers" (Blue Bell Press Releases, 2015). Blue Bell returned to the market and stocked limited quantities of product on shelves in select markets in Texas and Alabama beginning on

August 31, 2015 (Newman & Gasparro, 2015). It reopened the Oklahoma facility on September 1, 2015 (Blue Bell Press Releases, 2015). Blue Bell announced they would reopen the Brenham, Texas, facility and commence tours again soon afterward (Collette, September 1, 2015).

CRISIS MANAGEMENT AND COMMUNICATION STRATEGY

According to Scott Galloway, a New York University Marketing Professor, there are three steps to successful crisis management (Gorenstein, 2015):

1. Acknowledge the problem
2. Get the CEO to be the face of the crisis
3. Over-correct

Blue Bell Creameries has done exceptionally well at weathering the Listeria crisis in all three areas listed above. Since the outbreaks of Listeria were first linked back to Blue Bell Creameries, the current CEO, Paul Kruse, has been the chief spokesperson and face of the company. First, he issued several press releases and posted videos on Vimeo acknowledging the crisis. On April 23, 2015, Mr. Kruse stated that Blue Bell has "always worked to make the very highest quality ice cream. We intend to make a fresh start that begins with intensive cleaning and enhanced training" (Blue Bell Press Releases, 2015).

Second, he outlined steps to fix the problem, reassuring the public that Blue Bell products will return. On May 7, 2015 Blue Bell outlined the steps it would take to get the production facilities running again (Blue Bell Press Releases, 2015). Mr. Kruse stated that Blue Bell wanted to "thank all [their] customers for their support and patience as [they] work to create the cleanest, safest environment possible to produce the high-quality, great-tasting ice cream people expect from Blue Bell" (Blue Bell Press Releases, 2015). A brief description of the steps the company took is:

1. Evaluating and making facility repairs
2. Conducting thorough cleaning and sanitizing
3. Working with a team of microbiologists to revise cleaning and sanitization procedures
4. Eliminating possible contamination pathways
5. Establishing revised protocols and quality assurance requirements for product testing
6. Destroying existing containers that could provide a pathway for contamination
7. Continuing employee training related to cleaning and sanitizing

Third, Blue Bell "overcorrected." On May 14 and June 1, 2015, Mr. Kruse announced voluntary agreements Blue Bell had made with State Health Departments for Alabama, Oklahoma, and Texas (Blue Bell Press Releases, 2015). He stated that Blue Bell "[appreciated] the tremendous public support [they] have received, and [they] look forward to working with [their] regulatory agencies and returning to making ice cream as soon as possible" (Blue Bell Press Releases, 2015).

All three agreements contained the following basic provisions related to the Listeria crisis:

- Conduct analyses to identify potential and actual sources of contamination
- Retain an independent microbiology expert to establish and review controls to prevent future contamination and "for ongoing evaluation of our procedures and facilities"
- Promptly notify state agencies of any positive test results for Listeria
- Ensure the company's Pathogen Monitoring Program outlines response to positive tests
- Institute a "test and hold" program to ensure product safety before shipment

In summary, company statements during the crisis focused on production process upgrades and training enhancements rather than on past mistakes.

EFFECTS OF THE CRISIS MANAGEMENT STRATEGY

On August 17, 2015 Blue Bell announced its plan to return to production (Blue Bell Press Releases, 2015). The ice cream initially would be released for public consumption in five phases. That plan is outlined below:

Phase One: Reenter the market in select areas of Alabama as well as Brenham, Houston and Austin Texas
Phase Two: Reenter the market in areas of North central Texas and Southern Oklahoma
Phase Three: Reenter the market in areas of Southwest Texas and Central Oklahoma
Phase Four: Reenter the market in most of Texas and Southern Louisiana
Phase Five: Reenter the market in what is left of Alabama, Oklahoma, and Texas. Reenter other select areas of the Southern United States region.

Blue Bell production resumed in August 2015; over the next seven months, select products and flavors were released in nineteen states amid much fanfare. Publicity regarding the rollout highlighted the celebrations by consumers. One customer's statement exemplifies consumers' persistent belief in the quality of Blue Bell products. Albert Hernandez was interviewed outside an H-E-B grocery in suburban Austin after he had purchased the maximum amount of four half-gallons. He said, "I'm glad it's back….They told us it's safe. I believe them" (Blanchard, 2015).

Blue Bell's return to market was heralded by public officials, as well. For example, a photo of a joyful Greg Abbott, the governor of Texas, was published in the *Dallas Morning News* as well as on Facebook, surrounded by seven containers of Blue Bell ice cream. "Texans can rejoice today as Blue Bell ice cream makes its long-awaited comeback in freezer aisles across the state," Abbott said in the news release (Blanchard, 2015).

There has been some legal fallout from the crisis. For instance, a lawsuit seeking refunds for all customers who bought Blue Bell ice cream was filed in Louisiana. A second suit was filed on behalf of a Florida man who claimed that he contracted Listeriosis after eating Blue Bell ice cream, although his physicians did not test for Listeria. A third lawsuit was filed in Texas by a man claiming he was left with permanent brain damage because he ate Blue Bell ice cream. Although the company has not commented publicly about the suits, two attorneys who are experts on food recalls predicted that the suits will fail (Collette, 2015, August 17).

Additionally, health officials for the state of Texas penalized Blue Bell $175,000 in July 2016. Fines are rare in the food safety world, though the amount is small compared to the company's total net revenues. The settlement also requires the company to continue safety practices for the next 18 months. The Texas Department of State Health Services indicated that they will continue its oversight and threatened to assess additional fines of up to $675,000 if it falters (Collette, 2016, July 29).

On the positive side, Blue Bell appears to have reclaimed its position in the industry. For instance, to celebrate National Ice Cream Month in the summer of 2016, Blue Bell announced the release of a new flavor, "Cookie Two Step." It is described by Ricky Dickson, vice president of sales and marketing, as "a beautiful mixture of chocolate chip cookie dough, chocolate sandwich cookies and vanilla ice cream…. Yum!" (DiNapoli, 2016, July 15). Furthermore, after less than a year since the crisis, all of its furloughed workers have returned and many laid off employees have been rehired (Collette, 2016, July 29).

MAINTAINING BLUE BELL'S IMAGE THROUGH STORYTELLING

Storytelling is a powerful tool for promoting a corporate image. Stories present a vision that is free from the constraints of experience and facts, offering windows into different versions of the past, present, and future (Petrick, 2014). The theme of this case study is that, throughout the Listeria crisis, Blue Bell Creameries successfully maintained an image of the corporation as a homegrown rural family business.

The Dragonfly Effect model (Kurultay & Peksevgen, 2016; Aaker & Smith 2010) describes four main steps necessary to any storytelling campaign: focus, grab attention, engage and take action. Blue Bell Creameries has used these steps to encourage their customer base to personally identify with the company and remain loyal to its products.

The first step is to develop a focus or a goal for the campaign. Blue Bell's focus has always been providing its customers with high quality products that will keep them coming back for more. Blue Bell has accomplished this by designing flavors and recipes that produce a unique product line that represents its "country" image. Ranker.com, a ranking website for consumers of a wide variety of products, lists the following Blue Bell ice cream flavors as fan favorites:

- Homemade Vanilla
- Southern Blackberry Cobbler
- Moo-llennium Crunch
- Banana Pudding
- Southern Hospitality
- Homemade in the Shade
- Malt Shoppe
- Southern Peach Cobbler

It is interesting to note the consistent "rural" appeal of the flavors' names. Blue Bell posts consumer fan mail on its own website that reinforces the perception that Blue Bell products have an old-fashioned richness of flavor and authentic creamy taste that other brands cannot duplicate. Several loyal customers have used social media to express similar views over the months while the ice cream was missing from shelves.

The second step in Aaker and Smith's model (2010) is to grab the attention of your audience or customers that the campaign is targeting. Blue Bell does this by embracing and incorporating their history into the company culture and day-to-day business duties. As noted earlier in this paper, Blue Bell Creameries has been in business for over a century. The iconic image of a girl leading a dairy cow is prominently displayed on packaging for Blue Bell products. This logo sums up the humble beginnings of the little creamery in Brenham, Texas.

Figure 2
BLUE BELL CREAMERIES LOGO

The choice of colors and fonts also helps bring the old-time folksy image of the logo to life. The chosen color scheme gives off an antique impression. These same colors and fonts are used on the company website. The layout of the website resembles an old-fashioned bookshelf with old luggage, file drawers, picture frames, ice cream equipment, and film reels on the shelves.

Figure 3
WEBSITE LAYOUT

The third step is to engage the audience or customers by creating empathy and a personal connection. Tours of the facilities allow customers to experience the history of the company firsthand. Visitors hear about the history, see some of the original equipment, watch some of the ice cream making process, and taste the finished product (Baker, n.d.).

Blue Bell's website provides an easy way to interact with customers. It provides information on product offerings, outlines a brief history of the company, highlights recipes from fans that include ice cream as the main ingredient and shares customer letters and opinions on product. The most remarkable element of the website is the "Blue Bell Country Club." It is free to join. It gives the customers access to a company blog, bulletin board to post stories and photos, coupons page for select products and a monthly newsletter, and opportunities to buy t-shirts and other apparel.

The fourth step of the Dragonfly Effect (2010) is take action, take the cause viral. Blue Bell started connecting to its customers through social media outlets like Facebook, Twitter and Instagram. Loyal customers expressed their concern and hope for the return of the products through Twitter and Facebook. Fans of the ice cream posted photos of signs and t-shirts supporting Blue Bell and messages hoping for its return (Monson, 2015). Brenham residents organized a prayer vigil for the company that gathered the attention of local news media both through television and online outlets (Lozano, 2015). Well known Houston businessman, Jim "Mattress Mack" McIngvale, posted on his Gallery Furniture blog about an event he held at the stores to support Blue Bell on April 25, 2015. He announced that he was giving away free yard signs, showing his support for the small Texas creamery (McIngvale, 2015).

Figure 4
MATTRESS MACK AND HIS BLUE BELL SIGNS

A few diehard fans took a more direct approach in dealing with the recall of the ice cream products. In local Kroger stores, customers wrote love notes to Blue Bell on the recall notices (Rouner, 2015). Some fans even hoarded the ice cream in freezers and continued to eat it despite the risk that they might get sick (Seward, 2015). When Blue Bell finally put product back on shelves, loyal fans kept it flying off the shelves. Deliverymen in Houston and Brenham were "greeted with long lines of customers waiting to get their Blue Bell fix" on the day the ice cream returned (Boyd, 2015). "Mattress Mack" even held an ice cream social event at all his Gallery Furniture locations, showing his continued support of the iconic Texas brand (Wray, 2015).

CONCLUSION

Despite the fact that ten cases of Listeria, three fatal, were linked to Blue Bell Creameries in March of 2015, the company has weathered the crisis and appears to have emerged stronger than before. Although Blue Bell has not, at the time of this writing, released any sales figures since its return to the market, the steps it has taken to improve sanitation and safety testing may be enough to satisfy its cult following.

In summary, it appears that Blue Bell has successfully returned to the market based on the following strategies:

- Excellent crisis communication practices
- Superior storytelling promoting an old timey image
- Positive feedback from public reaction and news coverage

CEO Paul Kruse was the face of Blue Bell Creameries during the Listeria crisis. He acknowledged the issues, promptly communicated with the public, and proactively dealt with state regulators to get Blue Bell's products back on shelves in a timely manner. Early signs are that these actions, combined with brand loyalty from years of storytelling and promoting a folksy country image, have helped Blue Bell weather this Listeria crisis.

This case analysis shows that stories have emotional appeal that can guide our thinking and beliefs. Stories ask us to ignore facts and experiences, providing an alternative reality that is readily believed. Thus, a company can weather a crisis by telling good stories and encouraging their customers to repeat them.

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