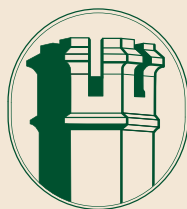


REGIONAL BUSINESS REVIEW

Booth College of Business and Professional Studies



CONTENTS

ARTICLES:

An Unbiased Look at Automotive Quality *Stephen L. Allen, Daniel L. Tracy*

Revisiting the Determinants of Small Business Formation
Christopher S. Decker, Angela Kuhlmann, Mark E. Wohar

Combating the Dislocation Effects of International Trade Through Worker Retraining Programs: A Preliminary Examination of Displaced Workers in the Midwest
William Kariker, Tyler Frasch, Tara Duckworth, Dan G. Cox

Why Management Education Should Embrace Applied Learning *Larry L. Lawson*

Making Workers More Effective *R. Henry Migliore, Angela Wall, Melissa Lay*

Revisiting When Firms Learn from their Acquisition Experience: Evidence From 1996–2006
Marcel C. Minutolo

Adoption of Sustainable Business Practices in Small to Medium-Sized Organizations
Liz Thatch, Robert Girling, Denis Svarcev

Safety and Workers' Compensation Considerations in Telework *C. W. Von Bergen*

BOOK REVIEWS:

Supercapitalism: The Transformation of Business, Democracy, and Everyday Life, by Robert Reich *Steven B. Gilbert*

How Starbucks Saved My Life—A Son of Privilege Learns to Live Like Everyone Else, by Michael Gates Gill *Brenda Jones*

Quality or Else: The Revolution in World Business, by Lloyd Dobyns and Clare Crawford-Mason *Chi Lo Lim*

Little Red Book of Selling: 12.5 Principles of Sales Greatness, by Jeffrey Gitomer *Doug Russell*

Microtrends: The Small Forces Behind Tomorrow's Big Changes, by Mark J. Penn, with E. Kinney Zalesne *Deborah Toomey*

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Available online at www.nwmissouri.edu

Regional Business Review

Volume 27 May 2008

ISSN 8755-1977

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CONTENTS

Articles:

- An Unbiased Look at Automotive Quality 1
Stephen L. Allen, Daniel L. Tracy
- Revisiting the Determinants of Small Business Formation 13
Christopher S. Decker, Angela Kuhlmann, Mark E. Wohar
- Combating the Dislocation Effects of International Trade Through Worker Retraining
Programs: A Preliminary Examination of Displaced Workers in the Midwest 38
William Kariker, Tyler Frasch, Tara Duckworth, Dan G. Cox
- Why Management Education Should Embrace Applied Learning 67
Larry L. Lawson
- Making Workers More Effective 80
R. Henry Migliore, Angela Wall, Melissa Lay
- Revisiting When Firms Learn from their Acquisition Experience:
Evidence From 1996–2006 94
Marcel C. Minutolo
- Adoption of Sustainable Business Practices in
Small to Medium-Sized Organizations 112
Liz Thatch, Robert Girling, Denis Svarcev
- Safety and Workers' Compensation Considerations in Telework 131
C. W. Von Bergen

Book Reviews:

- Supercapitalism: The Transformation of Business, Democracy,
and Everyday Life, by Robert Reich 153
Steven B. Gilbert
- How Starbucks Saved My Life—A Son of Privilege Learns to
Live Like Everyone Else, by Michael Gates Gill 155
Brenda Jones
- Quality or Else: The Revolution in World Business,
by Lloyd Dobyns and Clare Crawford-Mason 157
Chi Lo Lim
- Little Red Book of Selling: 12.5 Principles of Sales Greatness, by Jeffrey Gitomer 159
Doug Russell
- Microtrends: The Small Forces Behind Tomorrow's Big Changes, 161
by Mark J. Penn, with E. Kinney Zalesne
Deborah Toomey

An Unbiased Look at Automotive Quality

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INTRODUCTION

Consumers purchase vehicles for many reasons: style, quality, safety, price, basic transportation, luxury, status, etc. Whatever the reason, nothing is more frustrating to a consumer than when a vehicle fails to perform as expected. Even though consumer vehicle purchases deal with a sample size of one, the underlying quality level may ultimately determine the vehicle's overall successful service life to the consumer, with potentially serious effects on their positive or negative brand association. OEMs (original equipment manufacturers) claim that quality is essential to long-term relationships with consumers. Here is a sample of some major vehicle manufacturer's comments on quality: *Quality is our Number One Priority* (Ford); *Quality from the start Quality you can feel, Quality that lasts* (General Motors), *The Relentless Pursuit of Perfection* (Lexus). Chrysler has begun a series of "Development Systems' Quality Gates." Vehicle manufacturers must believe that quality is important, if not essential, for the long-term viability of their products and of their companies.

Quality is emerging as the top criterion for manufacturers, suppliers, and ultimately, the consumer in the new global economy (Barney 2002; Clements et al 1995). The flat global world is creating a competitive market for many products—in particular the automobile. Common sense economics dictate that a company will not enter a market unless management believes their product line can secure a profitable market share. If the current market is well populated with high quality products, it will be difficult for an additional producer to make

any market headway. Perhaps this market analysis explains one reason why the domestic auto industry is in the doldrums, with recent layoffs of auto workers in the United States.

Many factors enter into a consumer's decision criteria when considering a vehicle purchase, including design, quality, comfort, and affordability. Overall, automobile quality has greatly improved over the past decades, yet consumers are demanding ever higher product quality. Manufacturers have responded with an abundant supply of quality programs intended to reduce defects and improve product quality. A major supplier revitalization effort was the institutionalization of QS-9000 for the "Big Three"—Chrysler, Ford and GM. Supplier conformance to quality standards, as specified and designed by these companies, was verified by an external audit registrar. The audit included performance in Statistical Process Control (SPC), Failure Mode Effect Analysis (FMEA), Quality Systems Audit (QSA), etc. QS-9000's total focus is supplier input/output quality (Bandyopadhyay 2001). One downfall of the QS-9000 program was the failure to audit the total integrated package—that is, the assembled automobile put into service in the United States. Another research work in automobile quality spent a greater effort toward auditing the quality of the supply chain and ensuring conformance of the lowest level supplier to and through the OEMs' participation in production (Sila 2006). Again the focus on auditing the quality of the supply chain was important, but the effort missed the real target: auditing the integrative quality of the final assembly of the vehicle.

Another research stream investigated supply chain quality from the points of view of Six Sigma participation, ERP (enterprise resource planning)-based firms, and supplier partnership firms. Their work was very useful in assessing supply chain competence and quality (Kuei 2005), yet this stream also failed to attest to the final output quality of the integrated supply chain system or the final build of the vehicle. The investigation of Six Sigma practices on supply chain effectiveness was extended to automobile manufacturers (Bandyopadhyay 2007); however, the focus was on the supplier side of production and failed to comment on overall quality or effectiveness of the final product. In yet another study of the quality of global supply chain assurance, the research assessed the supply chain effectiveness from the global point of view. An important effort to be sure, but the work still missed the point of assessing the effectiveness of the final automobile assembly (Bandyopadhyay 2005). Great research efforts have been focused on the quality of the input side of automobile manufacturing practices—and rightfully so. It only makes sense that high quality on the input

side is a necessity to having any chance of quality on the output or production side. Given the intense scrutiny of research on the input side of production, it may look as though manufacturers have targeted suppliers as the quality problem to solve. Certainly ensuring high quality on the input side is important, but are the implemented quality programs working? Are all the efforts of assessing and monitoring quality actually improving automobile quality? Who or what is measuring quality from the user side?

Background

Today's automobiles are, for all practical purposes, no longer produced by a single manufacturer, but by an integrated supply chain. Vehicle build sheets often indicate the percentage of parts created by various countries. For a manufacturer to achieve a low- or zero-defect product, the manufacturer's suppliers must also be achieving zero-defect production goals (Keenan 1996). The manufacturer must insist on zero-defect production from its suppliers to have even a glimmer of a chance of producing a zero-defect automobile.

When competition was minimal in the automobile industry, many manufacturers introduced entirely new model designs every year. Over time, as a consequence of the high cost of design, automobile manufacturers no longer produced significant model changes from year to year. Rather, a model was expected to be maintained for several years within the generation of the model. Typically subtle changes were made to the model year to year, with a minor revision typically occurring sometime near the midlife of the generation. In many cases, a manufacturer used a single line for various sister models within its product group. The common use of a generation of a model provided the manufacturer with an opportunity to improve product quality from one year to the next, as changes to the model were subtle

So how good is the quality of an automobile manufactured for service in the United States? What is the benchmark? Consumers believe they know quality. They are surveyed by a variety of interested parties—dealerships, JD Power and Associates, and *Consumer Reports* are major gatherers of automobile quality data for a vehicle in service. A very visible automobile quality assessment is done continuously by JD Power and Associates (JD Power), which performs an Initial Quality Survey, a Vehicle Performance Survey, a Sales Satisfaction Survey, a Customer Satisfaction Survey, and a Vehicle Dependability Survey. These surveys assess consumer impressions of quality initially, three years after the sale, and after many years of service, as well as the overall purchase process.

Based on the impression of consumers, the data supports the claim that there is little or no difference in the quality of U.S. domestic producers and international producers (JD Power). But is this consumer impression really the true quality situation? If so, what drives consumer preferences? Or are the consumer survey results simply misleading? *Consumer Reports* provides independent testing of automobiles, often sampling only one automobile. A sample size of one likely may not provide reliable information in assessing quality. They also survey consumers on many facets of automobile quality. The common thread of both JD Power and *Consumer Reports* is that the survey is likely biased by consumers wanting to have a voice regarding their automobile—they may choose to sing their automobile's praise or they may have an unfair axe to grind about any aspect of their automobile experience. So which manufacturers today are producing a high quality product? Are there manufacturers resting on their past quality laurels?

Despite the goal of perfect production for suppliers and the goal of perfect assembly for the manufacturer, the assessment and benchmarking of the integrative quality of an automobile is simply not available. What is available is biased by consumer influences. As previously cited, current efforts toward quality assessment are limited to the input side of vehicle production. These measures fail to assess independently the integrated quality of the completed automobile. We propose a multifactor measure of automobiles in-service quality. We then apply the multifactor measure to current late-model automobile production.

METHODOLOGY

One of the most competitive market segments of the U.S. automobile market is the four-door sedan. For illustration, our focus will be on recall and TSB (technical service bulletin) data from the National Highway Traffic Safety Administration (NHTSA) collected for the entry level, four-door, six-cylinder non-luxury sedan segment with an MSRP less than \$25,000. Models meeting the criteria also had to have a minimum of three years of service within their generational life to be considered. The models meeting these criteria included: Buick LaCrosse, Chevrolet Malibu, Chrysler 300, Dodge Stratus, Ford Taurus, Honda Accord, Mazda Mazda6, Mercury Montego, Nissan Altima, Pontiac G6 and Grand Prix, and Toyota Camry. The Appendix indicates the model years analyzed as model generations begin in offsetting time slots. The selection criteria were limited to each model's standard trim level, six-cylinder power plant, and automatic transmission.

Data Acquisition

To offer products for sale in the United States, manufacturers must meet and comply with U.S. safety standards enforced by the National Highway Traffic Safety Administration (NHTSA-1). The NHTSA collects and maintains safety and compliance data on all manufacturers selling automobiles in the United States. When a manufacturer has determined that an automobile has a safety defect or the automobile is not in compliance, the issue must be reported to the NHTSA within five days of discovery (NHTSA-2). The NHTSA then assesses the issue and determines its level of seriousness. The outcome will be designated as a unit recall or the less severe TSB.

Measures of manufacturer quality may be related to both recall and TSB data (Riches 2007). An automotive recall highlights a serious quality defect potentially threatening to the safety of the automobile's occupants or a serious defect related to meeting environmental emission mandates. In either case, a service campaign is initiated to contact all present owners for repair or replacement, as needed, at the manufacturer's expense. Naturally, a manufacturer would prefer to have zero recalls on any production model in any year, as a recall casts a significantly negative image on the manufacturers' product. On the other hand, TSBs are typically treated as a manufacturer advisory to address recurring automobile quality defects that are not safety- or emission-related. These actions may be addressed to correct comprehensive issues. Examples of TSBs include correction to the engine and its cooling system, structure, electrical system and components, power train, visibility, suspension, brakes and tires. Recall and TSB totals are compiled for the previously listed automobile models based on model generations and years of production.

Recall and TSB Data

The recall and TSB data collected by the NHTSA are unbiased to the point that individual manufacturers are required to self-report when an issue is identified. Failure to report serious issues is a significant risk to the manufacturer. The existence of a single recall data record for an automobile model alone is a significant and serious detriment to the production quality of the automobile. Multiple recalls for a single model indicate tremendous production quality problems for the production of that particular model. TSB data, on the other hand, are less serious in comparison, but may prove to be a significant quality matter in the eyes of the consumer. Continually recurring recalls and TSBs from one year to the next in the same model year within the same generation indicate a lack of quality improvement on the part of the manufacturer. From a continuous quality

improvement point of view, manufacturers would be expected to continually reduce the total number of recalls and TSBs as the model progresses through its generational life, with the expectation that neither recall rates nor TSB levels would grow.

Multifactor Quality Measure Development

Consumers need an unbiased quality measure to make comparative buying decisions based on vehicle quality. Having an unbiased public quality measure would enable manufacturers to better and more objectively assess their own production performance. Additionally, a manufacturer may be able to identify a competitive advantage based on vehicle production quality and their quality improvement rate.

A multifactor quality measure is proposed to assess overall vehicle quality by a manufacturer for any particular automobile model. Three quality measures are included. Two existing quality measures include the Average Recall Rate and Technical Service Bulletin volume for a particular vehicle model. A Quality Improvement Measure (QIM) is created to assess the decline rate of TSB volume over time. Naturally, all manufacturers desire to achieve a fast response to production quality issues. A zero-defect manufacturer would never be able to show any improvement, but in the current state of automobile quality, manufacturers are far from claiming perfection. Ideally, a zero-defect producer of automobiles would achieve zero recalls and zero TSBs for any automobile model. Achieving the zero recall/zero TSB defect level would be the ultimate production achievement for any manufacturer. Since current manufacturers are unable to achieve zero defects in the final end product, an unbiased measure is needed for consumers to compare the thoroughness and speed with which manufacturers address known product quality issues.

It would be expected to see an overall decline in the rate of recalls and TSBs over time within a model's generation. To quantify a manufacturer's quality improvement rate, a QIM is defined as the least squares fit slope of TSB data versus model year time. The theoretical perfect manufacturer would achieve zero TSB defects for their product, which equates to a $QIM_{TSB} = 0.00$ for an automobile model produced over its generation. For a $QIM_{TSB} = 0.00$, the TSB data plotted versus time would indicate a horizontal line of QIM equal to zero. In the initial year of production for a new model, the year's TSB data provide a quality benchmark. Manufacturing and supply chain improvements in subsequent model years would cause manufacturers to expect a reduction in the

quantity of TSB volume. A fast response to quality problems would hopefully drive the TSB volume to a level of zero. With the TSB data plotted versus model year time, manufacturers correcting quality problems would expect to see a sharp decrease or steep negative slope of TSB volume reduction. A least squares fit of TSB data versus model year time calculates the speed of manufacturer defect reduction. The speed or slope of reduction represents a quantitative value of quality improvement or QIM. The QIM would have a negative slope for a model whose quality issues addressed over the model year's life resulted in a significant reduction in TSB data for forthcoming model years. A positive QIM would represent serious and growing quality defects and problems over time. A negative QIM over time is expected of all automobile manufacturers. One cautionary note: the QIM changes over time, as new recall and TSB data accumulate. For example, an automobile currently in production may not yet have had all of its recall and TSB data identified. The NHTSA does not have any time expiration on the identification of recall data, because of the potential of life-threatening situations.

Data Collection and Analysis

The data was collected for the Buick LaCrosse, Chevrolet Malibu, Chrysler 300, Dodge Stratus, Ford Taurus, Honda Accord, Mazda Mazda6, Mercury Montego, Nissan Altima, Pontiac G6 and Grand Prix, and the Toyota Camry. These models are competitive in the United States segment for entry level, four-door six-cylinder non-luxury sedans with an MSRP under \$25,000 and an automatic transmission. A model must be in at least the third year of its generation for QIM calculations. In the case where a current model's new generation was recently introduced, data from the prior model generation was used to assess quality performance for that model. Models were then ranked by average recall, average TSB value, and QIM for each model (shown in Figure 1). Figure 2 indicates each manufacturer's quality performance rank.

Overall quality rank is computed as the sum of the multifactor quality measures. The best rank is position one with increasing total rank indicating comparatively lower quality. Since there were twelve models that met the evaluation criteria and were evaluated with three quality measures, a model with a total rank of three would be the quality leader, while a total rank of 36 would be the lower limit. Figure 3 shows the models sorted by total multifactor measure.

Figure 1

OEM	Make	Model	Avg. Recall	Avg. TSB	QIM TSB
GM	Buick	LaCrosse	1.3	33.0	-22.50
GM	Chevrolet	Malibu	1.3	101.0	-68.20
Chrysler	Chrysler	300	2.7	38.0	-25.00
Chrysler	Dodge	Stratus	3.2	45.3	-14.34
Ford	Ford	Taurus	3.7	72.4	-25.39
Honda	Honda	Accord	6.8	124.4	-78.40
Mazda	Mazda	Mazda 6	0.8	25.6	-13.10
Ford	Mercury	Montego	0.7	21.3	-21.00
Nissan	Nissan	Altima	4.2	49.2	-21.00
GM	Pontiac	Grand Prix	1.3	64.0	-44.20
GM	Pontiac	G6	1.0	48.7	-22.00
Toyota	Toyota	Camry	1.6	44.2	-17.70

Figure 2

OEM	Make	Model	Recall Rank	TSB Rank	QIM TSB Rank
GM	Buick	LaCrosse	4	3	6
GM	Chevrolet	Malibu	4	11	2
Chrysler	Chrysler	300	8	4	5
Chrysler	Dodge	Stratus	9	6	11
Ford	Ford	Taurus	10	10	4
Honda	Honda	Accord	12	12	1
Mazda	Mazda	Mazda 6	2	2	12
Ford	Mercury	Montego	1	1	8
Nissan	Nissan	Altima	11	8	9
GM	Pontiac	Grand Prix	4	9	3
GM	Pontiac	G6	3	7	7
Toyota	Toyota	Camry	7	5	10

Since some manufacturers have multiple models in the four-door segment, the overall recall and TSB volume averages were also computed. Average recall rates and TSB volumes were also computed for the analyzed models. Manufacturers were then identified as being above or below the industry average with respect to recall rate and TSB volume data. The results were tabulated in Figure 4.

Only Chrysler and Mazda garnered better than average results for both the average recall and TSB rates. GM and Nissan were worse than average on both mea-

Figure 3

OEM	Make	Model	Total Rank	Position
Ford	Mercury	Montego	10	1
GM	Buick	LaCrosse	13	2
Mazda	Mazda	Mazda 6	16	3
GM	Pontiac	Grand Prix	16	3
GM	Chevrolet	Malibu	17	5
Chrysler	Chrysler	300	17	5
GM	Pontiac	G6	17	5
Toyota	Toyota	Camry	22	8
Ford	Ford	Taurus	24	9
Honda	Honda	Accord	25	10
Chrysler	Dodge	Stratus	26	11
Nissan	Nissan	Altima	28	12

Figure 4

	Average Recall	Above/Below Average	Average TSB	Above/Below Average
GM	3.3	above	57.0	above
Chrysler	1.0	below	44.8	below
Ford	1.4	below	72.6	above
Honda	2.7	above	38.0	below
Mazda	1.0	below	48.7	below
Nissan	3.7	above	72.4	above
Toyota	4.2	above	49.2	below
Industry	2.4		55.6	

tures. Examining the industry averages and the individual averages, it is clear that no manufacturer is close to zero-defect quality in this four-door segment.

RESULTS

The multifactor quality measure provided an unbiased look at automotive quality for the United States market. Despite ever-improving quality gains in automobile production, no manufacturer was close to achieving zero quality defects as measured by recall rank, TSB volume rank, and QIM measure and rank. The average recall rate for the four-door segment was the best for the Montego (0.7 per model year) and the worst for the Honda Accord (6.8 per model year). The TSB average volume per model year varied from a low of 21.3 for the Mercury

Montego to a high of 124.4 for the Honda Accord. The QIM varied from -78.4 for the Honda Accord to -13.1 for the Mazda6. The QIM measures how fast a manufacturer responds to correcting the TSB volume. While the Accord had the worst total TSB volume, Honda managed to reduce the TSB volume greatly over time, indicating a significant correction response. The Mazda6 TSB reduction was achieved at a slower correction rate, despite starting with significantly lower TSB volume levels (closer to defect-free production). It was expected that the QIM would be negative, indicating a reduction in the TSB volume over time, because of manufacturers addressing quality issues during the model's production years. This hypothesis held true for all analyzed manufacturers.

CONCLUSIONS

Consumer automobile quality surveys are biased very likely toward the benefit of the automobile manufacturer. Consumers are often "helped" with survey responses by dealership personnel. The proposed data-driven multifactor quality model provides a viable, unbiased measure of overall quality to compare automobile models from differing manufacturers' ongoing quality efforts. The recall rates and TSB volumes vary greatly from manufacturer to manufacturer and from model to model. Ranking by the Quality Improvement Measure (QIM) is a new comparative index by which to compare the quality improvement rates of automobile manufacturer's quality level within the same market segment. The QIM is a dynamic improvement measure over time. Year-to-year measures are updated on a continuous basis. The QIM is unbiased, because reporting recalls is a federal requirement in the U.S. and not subject to the whims of self-selecting, self-reporting consumers. Overall manufacturing quality efforts may also be analyzed by a comparison of individual manufacturer performance to a calculated industry average.

Using consumer opinion-based automobile quality surveys may not give an accurate reflection of the true quality level achieved by a manufacturer. Conflicting impressions and consumer behaviors, such as brand loyalty, may blur perceived quality levels. Consumers continue to hold product biases. With a quantitative unbiased multifactor quality measure, high quality manufacturers may use quality and quality improvement evidence to better design manufacturer/consumer interactions and education, to overcome incorrect beliefs or biases about product quality.

APPENDIX

OEM	Manufacturer	Model	Generation
GM	Buick	LaCrosse	1st
GM	Chevrolet	Malibu	5th
Chrysler	Chrysler	300	1st modern
Chrysler	Dodge	Stratus	2nd
Ford	Ford	Taurus	4th
Honda	Honda	Accord	7th
Mazda	Mazda	Mazda 6	1st
Ford	Mercury	Montego	1st modern
Nissan	Nissan	Altima	3rd
GM	Pontiac	Grand Prix	7th
GM	Pontiac	G6	1st
Toyota	Toyota	Camry	5th

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Revisiting the Determinants of Small Business Formation

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Acknowledgements: We thank Kim Sosin, Cathy Co, and Chuck Gildersleeve for their very helpful comments on earlier drafts. The usual disclaimer applies.

INTRODUCTION

There have been two notable and important shifts in public policy regarding business over the last decade or so. From a federal perspective, government has become more concerned with promoting the startup of small firms and less pre-occupied with constraining the large existing corporations (Gilbert, Audretsch, and McDougall 2004). From the state perspective, policies are now more commonly aimed at fostering small businesses as a source of job growth rather than attracting new branch plants from established businesses (Henderson 2002). Regardless of the level of government, the use of such policies is growing and it would seem important to gain a better understanding of exactly which factors most influence the creation of small businesses and how and to what extent these small businesses contribute to the climate of a state's economy.

Numerous studies and statistics show that a majority of new jobs are created by new startups (e.g. Armstrong and Taylor 2000). New small firms add to both employment and output to boost a state's or region's economic performance.

They also contribute to a more flexible and diversified labor market. Moreover, evidence shows that new small firms stimulate competition with existing businesses and, even more importantly, they stimulate innovation. While innovation-based new small firms may represent a small proportion of startups, they often generate entirely new industries based on their innovations in products or processes, further challenging established businesses to grow and improve. While the magnitude of the contribution has not been established, it is clear that small business activities are important for economic performance. Audretsch and Keilbach (2004), for instance, find that new business creation has a statistically significant positive causal relation in explaining state variation in output in the U.S.

Based on the premise that small businesses contribute to state economic growth, it seems only natural to want to establish the factors that contribute most to the establishment of small businesses within a state. Given the future prospects that states face in terms of tightening budgets, lower federal government assistance, and changing demographics, an analysis of the above factors is of significant importance to all state governments. In this paper we investigate the factors that contribute to small firm startups.

Based on our estimated model of small firm formation rates in 49 states in 2001, we find that five determinants exert significant influence on the rate of new firm formation. Greater industrial diversity, more readily available financing, and larger mean existing establishment sizes are associated with higher rates of firm formation, while higher education levels and larger numbers of hazardous waste sites are associated with lower rates of new firm formation. These relationships are very similar regardless of whether the model uses small- or medium-sized startups as the dependent variable. The most notable result relative to previous studies is the influence of hazardous waste sites on new firm formation. Section 2 provides a review of the literature in this area and how we build upon it. Section 3 presents both the model we employ in our estimation section and a description of the variables. Section 4 presents our estimation results and section 5 provides a conclusion and offers some policy implications.

LITERATURE REVIEW

A wide body of literature from various disciplines provides valuable insight into the determinants of success for small business owners, such as personality characteristics, organizational structures, and management practices. While much of this is not measurable, this has not deterred economists from testing

broader measures of small firm formation. For instance, over the past several years, researchers have been increasingly interested in the regional determinants of new small firm growth. Yet there seems to be little consensus on which factors are most important. This lack of consistent results likely stems from the fact that there are numerous possible independent variables, adding to the difficulty of drawing comparisons between results.

There is one strand of literature, particularly studies on British data, that focuses on self-employment as the measure of small business growth. Georgellis and Wall's 2000 study is an example. They examine self-employment rates across regions in Britain from 1983 to 1993, using numerous explanatory variables to capture four main influences: labor market conditions, labor force characteristics, industry composition, and region-specific effects. They conclude that all four have a significant impact on self-employment rates, especially the labor force characteristics like age, gender, and education level. Johnson (2004) examines regional differences in recent business formation activities in the UK over the period 1994–2001. He considers the extent to which regional differences can be accounted for by variation in industrial structure, with some regions having a larger or small share of sectors where the formation rates tend to be high. He also considers variation across regions in the formation rate in the same sector. He shows that there are wide variations across regions and over time in the relative importance of these two factors.

Another larger thread of literature relies on actual firm birth rates, sometimes weighted by the population or labor force. Armington and Acs (2002) and Lee, Florida, and Acs (2004) use actual firm births per 1,000 residents for 394 Labor Market Areas in the U.S. between 1994 and 1996. Both studies find population growth, income growth, industry density, and human capital to be positively associated with new firm formation, while mean establishment size is negatively related. Sutaria and Hicks (2004) focus on only Texas metropolitan areas and some of their results contradict those of the previous two papers mentioned. They find that population growth and income growth have no significant effect, while mean existing establishment size is positively associated with new firm formation. Sutaria and Hicks also find that greater availability of financial capital is positively associated with new firm formation.

Reynolds, Storey, and Westhead (1995) use actual firm births but they expand the scope of their study to include cross-national comparisons. They examine new firm formation in six countries during the 1980s and conclude that regional

variations within countries are roughly similar. For the United States in particular, they examine 382 regions and find that the statistically significant positive determinants of firm births include population growth, GDP growth, percentage of managers in the work force, unemployment level, dwelling prices, and industry specialization. Local government expenditures and the percentage of workers with higher education were negatively associated with new firm formation.

Many of the studies referenced above employ primarily cross-sectional data in their analysis. This is largely due to the fact that in many instances, new firm formation data and the associated independent variables are not necessarily available over time. While cross-sectional studies still provide valuable insights, some potentially valuable time-series dimensions are lost. Two recent studies employ unique panel datasets that shed light on a number of time-dimensional issues. For instance, in an investigation of Taiwanese new firm formation, Wang (2006) employed a panel dataset covering the period 1986–2001 to test, among other things, the recession-push versus prosperity-pull hypotheses of new firm formation. Using regional unemployment rates as a measure of recession/prosperity, Wang finds a positive relationship between unemployment and new firm formation, supporting the recession-push hypothesis.

Investigating new business formation in West Germany between 1983 and 1997, Fritsch and Falck (2007) find compelling evidence that a region's innovation activities strongly influence new firm formation. Indeed, these authors find a statistically significant, positive relationship between the number of patents issued in a region and subsequent new business ventures.

Our study is similar to those that employ firm births instead of self-employed, because small firm birth data is readily available for the United States. The empirical model (discussed in more detail below) developed in this paper is an attempt to synthesize the strong points of this literature, such as the recession-push versus prosperity-pull hypotheses, and to build upon them. Yet, our study differs from previous ones in two main ways.

First, it includes some notable variables that have not previously been included in the literature on small business start-ups, but which might be expected to affect business start-up decisions. Such determinants are proximity to and size of environmental health hazards, information transmission infrastructure (such as reliable Internet access), and the regional composition of industrial activity and the broader business environment.

Second, this paper updates those studies that focus on the United States' experience, using a cross-section of 2001 data. The popularity of studying new firm formation peaked during the 1980s and has only recently begun to attract significant attention again from economists (Armington and Acs 2002). Therefore, the data in most regional models of new firm formation cover the 1980s and early 1990s. Arguably, the rapid economic expansion and technology boom of the late 1990s changed underlying trends in the national economy, warranting a fresh look at business start-up behavior.

DEVELOPMENT OF ESTIMATED MODEL AND DATA DESCRIPTION

Models of new firm formation rates in the previous literature have used a wide variety of factors to explain differences in small firm formation among regions. Storey (1994), in particular, provides a useful outline of eight general factors that influence the start-up of new firms and the selection of our independent variables is largely consistent with that analysis. We will build upon these factors in developing the estimating equation for this paper. The proposed model expressed in implicit form is given as:

$$\text{NEW}_t = f(\text{POPCH}_{t-1}, \text{MES}_{t-1}, \text{DIV}_{t-1}, \text{RPICH}_{t-1}, \text{FIN}_{t-1}, \text{EDUC}_{t-1}, \text{U}_{t-1}, \text{CLIM}_{t-1}, \text{WEB}_{t-1}, \text{ENV}_{t-1})$$

These variables are defined and described in more detail below and summarized in Table 2.

The Dependent Variable

The dependent variable, NEW, is the annual total number of new establishments in each state in 2001. These data were collected and reported by the Statistics of U.S. Business (SUSB), a subdivision of the U.S. Census Bureau. At the time of this writing, 2001 was the most recent year for which data were available. We estimate two versions of the model, using two different size categories: small firms (those with fewer than 20 employees in their first year of business) and medium firms (those with 20–99 employees in their first year). The respective variable names used to designate these categories are NEW_SM and NEW_MD. Of the total new firm establishments in 2001, 77.3% were small firms, according to the categories used for this paper, and an additional 4.3% fell into the medium category.

Table 1
New Firm Formation Rates in 2001

	Total New Firms (small+medium)	New Firms/ 1,000 Employed	New Firms/ 100 Establishments	% Change in Establishments Due to New Firms
California	77,458	6.01	11.00	13.5
Florida	45,218	7.28	12.10	15.1
New York	42,513	5.78	9.80	11.6
Texas	42,218	5.26	9.98	13.0
Illinois	22,196	4.04	8.07	10.1
Pennsylvania	19,876	3.91	7.40	9.4
New Jersey	19,822	5.59	9.60	11.5
Georgia	18,812	5.40	10.61	13.9
North Carolina	17,547	5.18	9.59	12.3
Ohio	17,374	3.47	7.04	9.1
Michigan	17,307	4.25	8.20	10.3
Washington	15,150	6.68	10.54	12.8
Virginia	14,234	4.90	9.02	11.8
Colorado	14,036	7.34	11.88	14.6
Massachusetts	13,812	4.47	8.78	10.8
Arizona	11,264	5.87	11.20	14.6
Missouri	10,788	4.50	8.24	10.4
Minnesota	10,643	4.44	8.72	10.8
Maryland	10,624	5.16	9.31	11.8
Indiana	10,254	3.87	7.70	10.0
Tennessee	9,910	4.15	8.31	11.1
Wisconsin	9,475	3.92	7.49	9.3
Oregon	9,097	6.71	10.25	12.5
South Carolina	8,148	5.09	9.32	12.0
Louisiana	7,781	4.89	8.46	10.8
Alabama	7,684	4.65	8.43	10.9
Oklahoma	7,118	5.93	9.29	11.6
Kentucky	6,637	4.39	8.10	10.5
Connecticut	6,206	4.01	7.45	9.1
Utah	5,974	6.52	12.52	15.9
Kansas	5,780	5.12	8.57	10.8
Nevada	5,450	6.04	13.13	17.1
Arkansas	5,329	5.38	9.42	11.8

(continued on following page)

	Total New Firms (small+medium)	New Firms/ 1,000 Employed	New Firms/ 100 Establishments	% Change in Establishments Due to New Firms
Iowa	5,109	4.04	6.96	8.7
Mississippi	4,730	4.94	8.72	11.2
Nebraska	3,737	4.98	8.40	10.4
New Mexico	3,721	6.78	9.72	12.3
Idaho	3,720	8.25	11.48	13.8
Maine	3,204	6.52	9.36	11.2
Montana	2,903	9.80	10.55	12.3
New Hampshire	2,884	5.28	8.65	10.6
West Virginia	2,721	4.88	7.23	9.2
Hawaii	2,380	5.51	8.77	11.0
Delaware	2,091	5.54	9.94	12.9
Rhode Island	2,050	4.94	8.05	9.6
South Dakota	1,885	6.15	8.92	10.7
Wyoming	1,669	9.57	10.51	12.4
Alaska	1,545	7.55	10.10	12.1
Vermont	1,516	5.98	7.91	9.2
North Dakota	1,319	5.17	7.26	8.8

Source: Statistics of U.S. Business

Table 1 lists the fifty states in order by total new firms in 2001 (after summing the small and medium totals). For comparison, Table 1 also lists two proportions: new firms per 1,000 people employed and new firms per 100 existing establishments. The final column in Table 1 shows the percentage increase in small and medium establishments due to new firm births in 2001 (this does not take firm deaths into account).

Noting the differences between the total new firms and the proportions of new firms, the question may arise here as to why the total was used instead of a proportion. There are several reasons. For one, there does not seem to be a general consensus in the literature on which is the more appropriate measure to use; however, the more recent studies utilize the total rather than a proportion (Sutaria and Hicks 2004; Wall 2004). Secondly, imposing a constant and unitary elasticity between the dependent variable and a scale variable may be too restrictive. The inclusion of mean existing establishment size and hazardous waste sites per person, explained below, already controls for scale indirectly. Finally, using the total new establishments more precisely links to the overall purpose

of this paper; that is, to target the behavior of new start-ups. Policymakers most commonly seek to increase the total number of establishments, not a proportion based on the number employed or the number of existing establishments.

Independent Variables

The potential determinants of new firm creation are numerous and often intangible, as Malecki (1994) explains. Storey (1994) also points out that the list of factors can be very long, but he summarizes them into the eight general influences listed in Table 2. This list of eight guided the selection of independent variables for this model, to account for all the general influences based on previous research. At least one variable was chosen to represent each category from Storey’s list. Table 2 lists the proxy variable(s) used in this analysis next to its corresponding category. The ninth row is added to capture the network effects and knowledge access that have become more important and better understood in recent years. As Armington and Acs (2002) mention, there have been new theoretical developments regarding spatial perspectives, agglomeration, localization, and economic growth that have affected our modeling of new firm formation rates. See Table A.1 in the Appendix for a complete definition of each variable and its source.

Table 2
Potential Determinants of Small Firm Formation Rates

Determinant Group (based on Storey 1994)	Proxy Variable	Expected Sign
(1) Population and its Characteristics	POPCH	positive
(2) Industrial Structure	MES DIV	indeterminate negative
(3) Wealth/Income	RPICH	positive
(4) Owner-Occupied Housing (proxy for finance)	FIN	positive
(5) Occupational/Educational Characteristics	EDUC	positive
(6) Unemployment	U	indeterminate
(7,8) Government and Policy Initiatives	ENV CLIM	negative negative
[9] Network Effects/ Access to Knowledge	WEB	positive

Population growth, represented by the variable POPCH, is calculated as the log difference in state population from 1999 to 2000, based on population data available from the Regional Economic Information System (REIS), a subdivision of the Bureau of Economic Analysis. The a priori expectation is that population growth is positively associated with new firm formation, because it is thought that growth stimulates business start-ups (Armstrong and Taylor 2000). An increase in population leads to both an increase in demand for goods and services and an increase in the pool of labor, both of which should encourage the formation of new firms.

Two variables capture the industrial structural characteristics in each state. MES is the mean establishment size in each state in 2000, calculated from SUSB data. Studies have found mixed results for this factor, as mentioned earlier. It is commonly hypothesized that new firm formation is higher in areas where many small firms already exist, because a lower MES indicates an area that has already restructured away from large manufacturing dominance (Armington and Acs 2002). So a higher MES indicates a greater dominance by large firms and therefore may be negatively associated with the dependent variable. Alternatively, large firms may actually play a positive role by purchasing inputs from, and outsourcing work to, small neighboring firms, suggesting a positive relationship between MES and new firm formation (Sutaria and Hicks 2004).

The other variable representing industrial structure in the model is the industrial diversity factor, which has not been examined much in earlier literature. Industry diversity, DIV, is calculated as the Herfindahl index for each state in 2000, defined as $\sum (E_{is}/E_s)^2$, where E_{is}/E_s is the employment share of industry i in state s . These indexes were calculated from the employment shares for each industry by state over time and the data was provided by County Business Patterns, the Census Bureau's annual report on business activity. A higher Herfindahl index indicates a less industrially diverse state, while a lower index indicates greater industrial diversity. The sign on this variable depends on whether new firms can more easily compete when there is a wider variety of industries amongst which to fill niche markets or whether new firms can more easily compete when they are supporting and benefiting from a few large growth industries. Friedman (1995) is one study that has investigated this relationship. She finds that greater industrial diversity is positively associated with the presence of high-growth small start-ups, but she measures diversity as the standard deviation of the percentages employed within each industry rather than using the Herfindahl index.

RPICH, real per capita income growth, is included to account for the change in wealth and income in each state. It is calculated as the log difference in real per capita income from 1999 to 2000, and it is based on income data from REIS. RPICH is expected to be positively associated with new firm formation. States with higher growth in disposable income have more income available to be spent on the output from new firms, thus increasing demand in a way similar to population growth.

The fourth category in Table 2, owner-occupied housing, represents an earlier trend in this line of research: using the percentage of owner-occupied housing as a determinant of new firm formation. This idea was based on the assumption that the key method of funding a new business is for the small business owner to use his or her home as collateral. Essentially, this category is measuring the availability or access to financing. Instead of using owner-occupied housing, this model relies on the total dollar amount of venture capital financing provided in each state, which we designate by the abbreviation FIN. This data came from the PricewaterhouseCoopers Moneytree Survey, which began collecting data on a quarterly basis in 1995. It is the only industry-endorsed research effort on venture capital investment activity in the U.S. The a priori expectation for this variable is positive, because greater availability of venture capital financing should encourage a higher rate of new business creation. Specifically, FIN is the average dollar amount of venture capital provided in each state over the three-year period prior to 2001. Focusing on venture capital in particular, as opposed to including local funding sources, captures an additional aspect of working with venture capital firms. That is, venture capitalists tend to provide management advice and information sources to the small businesses they finance, an advantage that local banks do not typically provide.

EDUC is included to represent the skill and education level of the labor force in each state. It is measured as the percentage of the state population that has at least a bachelor's degree; these figures come from the U.S. Statistical Abstracts. EDUC is expected to be positively related to new firm formation, as it is generally thought that a state with a higher education level fosters more entrepreneurial growth.

To address the recession-push versus prosperity-pull hypotheses, the state unemployment rate, U, is added as an explanatory variable. Unemployment varies considerably across states and regions so it is important to capture its influence on new firm formation. These data came from the Bureau of Labor Statistics

website. The expectation, consistent with Wang's (2006) findings, is that a high unemployment rate is associated with a high rate of new firm formation, but, of course, it is possible that the prosperity associated with an expansion and low unemployment may foster new business startups to take advantage of market opportunities.

A measure of the environmental conditions in each state, ENV, was added to the model and indirectly reflects the multifaceted role government plays in promoting new business. This variable is an innovation relative to previous literature, so its resulting influence is especially interesting. ENV is the log of the number of hazardous waste sites located in each state in 2000 divided by the 2000 population. These hazardous waste sites are those included on the National Priority List of the Federal Superfund program and the list of sites per state is provided by the Statistical Abstract of the United States. While hazardous waste sites mostly influence the actual location decision, they can also influence the business start-up decision in a couple of ways. For one, a small business owner may think of the long-term future and is less likely to locate their new business, and therefore their family, near hazardous waste sites. Amenities, or "disamenities" in the case of hazardous waste sites, also influence a new firm's ability to attract and retain employees, a key issue for a new start-up's early success (Friedman 1995). In addition, some business owners may view a high number of hazardous waste sites as a potential spillover cost to them in terms of state taxes. Cebula (2005) finds that the number of hazardous waste sites has a highly significant and negative impact on state in-migration rates, further motivating the inclusion of this variable in the model for this paper. It has been documented that potential small business owners do not commonly migrate in order to start their new businesses (see Reynolds 1988), but they are, as Friedman (1995) points out, affected by the migration of potential employees and therefore the presence of environmental hazards may indirectly influence start-up decisions. To our knowledge, a measure of environmental conditions has not been included in any previous literature on new firm formation.

As mentioned, state governments play a multifaceted role in promoting business and one of the most difficult concepts to measure and incorporate into this type of analysis is the policy environment for new business start-ups. Yet this aspect is very important, as certain policy initiatives may be the deciding factor when choosing whether to begin a new venture. It would be very time-consuming to research and compile the various policies for each state, so a published index will be used to measure the business climate for new firms. This variable, CLIM,

is a ranking from 1 to 50 of the public policy environment in each state, with 1 being the most positive toward small business start-ups and 50 being the most hostile or restrictive. This index is compiled annually by the Small Business and Entrepreneurship Council and published on their website each year. It is based on seventeen major government-related or government imposed costs:

- personal income tax
- corporate income tax
- sales tax
- unemployment tax
- electricity costs
- crime rates
- number of bureaucrats
- internet tax
- state minimum wage
- capital gains tax
- property tax
- death tax
- health insurance tax
- workers' compensation costs
- right to work status
- tax limitation status
- gas tax

Table A.2 in the Appendix lists the rankings for 2000. CLIM is expected to be negatively associated with the dependent variable; that is, a low ranking will be associated with a higher rate of new firm creation.

Finally, WEB is included in the model both as a literal measure of Internet access in each state and as a proxy for the availability and application of new technology in general. It is specifically measured as the percentage of zip codes in each state that had at least one provider of high-speed Internet access in 2000. The Federal Communication Commission began reporting this statistic in 1999. This variable has not been analyzed in much of the previous literature on firm formation, but it is of increasing importance to small businesses, as e-commerce continues its rapid growth. High-speed internet access greatly increases the markets available for purchasing inputs and selling outputs. It is also seen as a way to share and gain industry knowledge and expertise, thus allowing for agglomeration effects despite a lack of geographical proximity. Therefore, a higher value of WEB should be positively associated with a higher firm birth rate. Descriptive statistics for these variables are provided in Table 3. More detailed descriptions of the data sources are listed in Table A.1 of the Appendix.

ESTIMATION RESULTS

Consistent with previous literature, ordinary least squares regression analysis is used to model the results for the two size categories. While new firm formation

Table 3
Descriptive Statistics

Variable	Mean	Std. Deviation	Minimum	Maximum
NEW_SM	8.89	0.94	7.28	11.20
NEW_MD	6.00	1.01	4.14	8.45
CLIM	25.59	14.72	1.00	50.00
DIV	947.81	120.60	785.86	1390.57
EDUC	24.98	4.34	15.30	34.60
FIN	17.40	3.43	0.00	22.59
MES	16.88	2.33	10.62	21.23
POPCH	0.01	0.01	0.00	0.04
RPICH	0.03	0.01	0.00	0.07
U	3.91	0.95	2.20	6.69
WEB	74.82	17.63	22.00	100.00
ENV	-12.27	0.70	-14.52	-10.74
<i>N</i>	49			

data is for the year 2001, as noted in the variable descriptions, each independent variable is lagged one year to reflect the reality that business decisions take time and are likely based on the conditions present in the year prior to the actual start-up of the new business. The sample size for all of the models is 49 states due to the fact that North Dakota had zero hazardous waste sites and thus the log of ENV yielded a missing value for that state.

The results are presented in Tables 4 and 5 for small and medium-sized new business establishments respectively. Again, small-sized businesses are those with fewer than 20 employees and medium-sized businesses are those with 20 to 99 employees. Model 1 in Tables 4 and 5 represents the initial analysis.

Before continuing with a discussion of the results, two important econometric issues, multicollinearity and heteroskedasticity, must be addressed. First, analysis revealed a 64% correlation between FIN and MES. When both variables are included in the model, MES is not significant, suggesting that multicollinearity may be an issue. There are a couple of ways to address this problem. The most common is to estimate two additional regressions, dropping FIN as one of the regressors in one equation while keeping MES, and then dropping MES as one of the regressors while keeping FIN. Models 2 and 3 (as reported in Tables 4 and 5) illustrate these results. They indicate that when entered individually both

FIN and MES are statistically significant determinants of both MED_SM and MED_MD.

A second means of addressing this issue is to construct an instrument for one of the two variables by employing the following procedure. First, since it is logical to expect that states with larger businesses on average are more likely to attract the attention of venture capital investors, a simple bivariate regression was estimated using FIN as the dependent variable and MES as the explanatory variable. The residuals from this analysis then capture, called RESID_FIN, by construction, the variation in FIN that is unexplained by MES. So RESID_FIN was substituted for FIN in the original model, and then both MES and RESID_FIN turn out to be statistically significant, positive determinants of small and medium-sized firm births (see Model 4 in Tables 4 and 5).

Second, based on the White residual test, all models, except Model 3, exhibit a heteroskedastic error process. Hence, the models were estimated using the White correction for heteroskedasticity.

Turning attention, then, to the statistical findings, the F-statistic for both models is statistically significant at the 1% level, indicating that the independent variables explain the variation in new small firm establishments reasonably well. The adjusted R-squared values of 63.7 and 71.0 indicate that approximately 60–70% of the variation in new small firm establishments is explained by the variation in the independent included in the estimated model. The percentage of explained variation in the previously mentioned literature ranged widely from 49 to 86%, with the majority falling in the 60% range. Thus, the adjusted R-squared values found here are very similar.

As expected, the number of hazardous waste sites, ENV, has a statistically significant negative impact on new firm formation, indicating a desire to avoid starting a business in locations with a greater number of hazardous waste sites. Focusing on Model 4 results, a 10% increase in the number of hazardous waste sites per person is associated with a 4.7% decrease in small firm formation. For medium-sized start-ups, a 10% increase in hazardous waste sites corresponds to a 5.7% decrease in firm formation.

The statistically significant positive coefficient on the venture capital finance variable, FIN, was also in line with expectations. One would expect that a higher dollar amount of financing would signal a greater availability of capital and therefore motivate more small business startups. Based on the coefficient for

Table 4
Regression Results: New Small Firms
as Dependent Variable (Fewer Than 20 Employees)

Independent Variable	Model 1	Model 2	Model 3	Model 4
CLIM	-0.005 (-0.809)	0.000 (0.037)	-0.005 (-0.847)	-0.005 (-0.809)
DIV	-0.003** (-2.645)	-0.004*** (-3.243)	-0.003*** (-2.759)	-0.003** (-2.645)
EDUC	-0.056** (-2.088)	-0.020 (-0.594)	-0.056** (-2.192)	-0.056** (-2.088)
FIN	0.174** (2.405)		0.178*** (3.380)	
RESID_FIN				0.174** (2.405)
MES	0.008 (0.109)	0.192*** (3.734)		0.200*** (3.543)
POPCH	-14.053 (-1.114)	-2.914 (-0.196)	-14.223 (-1.183)	-14.053 (-1.114)
RPICH	3.268 (0.378)	4.945 (0.480)	3.092 (0.366)	3.268 (0.378)
U	-0.029 (-0.321)	0.110 (0.890)	-0.034 (-0.401)	-0.029 (-0.321)
WEB	0.008 (1.278)	0.010 (1.461)	0.008 (1.285)	0.008 (1.278)
ENV	-0.473** (-2.258)	-0.353* (-1.997)	-0.481** (-2.674)	-0.473** (-2.258)
C	3.609 (1.182)	3.994 (1.378)	3.606 (1.207)	3.335 (1.079)
<hr/>				
<i>N = 49</i>				
<i>Adjusted R-squared</i>	0.64	0.50	0.65	0.64
<i>F-statistic</i>	9.42	6.29	10.73	9.42

*** indicates significance at the 1% level
** indicates significance at the 5% level
* indicates significance at the 10% level

FIN, a 10% increase in the dollar amount of venture capital financing provided is associated with a nearly 2% increase in both small and medium firm formation.

Table 5
Regression Results: New Medium Firms as
Dependent Variable (20 to 99 Employees)

Independent Variable	Model 1	Model 2	Model 3	Model 4
CLIM	-0.005 (-0.897)	0.000 (0.027)	-0.006 (-1.050)	-0.005 (-0.897)
DIV	-0.003*** (-3.005)	-0.004*** (-3.506)	-0.003*** (-2.988)	-0.003*** (-3.005)
EDUC	-0.072*** (-3.123)	-0.036 (-1.103)	-0.078*** (-3.441)	-0.072*** (-3.123)
FIN	0.176** (2.659)		0.205*** (3.955)	
RESID_FIN				0.176*** (2.659)
MES	0.058 (0.879)	0.244*** (4.904)		0.253*** (4.865)
POPCH	-22.143* (-1.943)	-10.837 (-0.750)	-23.421** (-2.188)	-22.143* (-1.943)
RPICH	4.549 (0.522)	6.251 (0.624)	3.223 (0.381)	4.549 (0.522)
U	-0.047 (-0.524)	0.094 (0.784)	-0.085 (-1.036)	-0.047 (-0.524)
WEB	0.005 (0.936)	0.008 (1.137)	0.006 (1.059)	0.005 (0.936)
ENV	-0.569*** (-2.756)	-0.447** (-2.603)	-0.625*** (-3.696)	-0.569*** (-2.756)
C	-0.464 (-0.154)	-0.074 (-0.026)	-0.484 (-0.170)	-0.743 (-0.243)
<i>N</i> = 49				
<i>Adjusted R-squared</i>	0.71	0.58	0.71	0.71
<i>F-statistic</i>	12.76	8.48	14.11	12.76

*** indicates significance at the 1% level

** indicates significance at the 5% level

* indicates significance at the 10% level

The significant negative coefficient for education level, EDUC, appears to be counterintuitive at first, but makes more sense when considering that certain industries, especially manufacturers, rely on a large, less-educated workforce

(Lee, Florida, and Acs 2004). The small business owner might need a college education to have the knowledge and expertise to form a new business, but the presence of lower-educated, and therefore cheaper, labor inputs may have more influence on the start-up decision. Reynolds, Storey, and Westhead (1995) also found that higher education levels were negatively associated with new firm formation.

Recall that the a priori expectation for industrial diversity, DIV, was ambiguous. Reynolds, Storey, and Westhead (1995) found higher firm formation rates to be associated with industry specialization, but Friedman (1995) found new firms to be associated with diversity rather than specialization. In this model, DIV turns out to be a statistically significant negative determinant of new firm formation. Noting that a higher Herfindahl index value indicates industrial specialization, which appears to be associated with lower firm formation rates. Greater diversity promotes new small firm formation and new medium firm formation according to the results of these models, and this is consistent with the findings of Friedman (1995). New small firms probably find it easier to compete when they can exploit niche markets and serve a wide variety of industries. In an industrially concentrated state, a new firm may be unable to either compete with a large number of existing businesses in the same industry or to overcome barriers to entry.

As with industrial diversity, recall that the a priori expectation for mean existing establishment size, MES, was indeterminate. This estimation indicates that MES has a statistically significant positive impact on new firm formation after adjusting the model for the multicollinearity between FIN and MES. This finding is consistent with Sutaria and Hicks (2004) and as they interpreted it, this means that new firms benefit in some way from the presence of larger firms in the area. In general, the presence of large firms likely offers a more stable environment in which new firms can prosper.

The above results describe the models for both size categories examined. The only difference in significant determinants between the two models is that population change, POPCH, is statistically significant and negative in the model of medium firm formation rates. Although this result is not common in the literature, only 4.3% of new firm births fall into the medium category, so it is possible that migrants to a state are moving there either to take a job with an existing business or they are starting a smaller business. Other than this variable, there was very little difference between the determinants of small and medium

firm formation rates, so it did not yield any insights. Because the vast majority of new firms are in the small category, more emphasis should be placed on those results.

It is interesting to examine why some of the variables actually turned out to be insignificant. Growth in real personal per capita income, RPICH, was insignificant; Armington and Acs (2002) suggest that this is because personal wealth is relatively less important today in starting new firms. Sutaria and Hicks (2004) further rationalize that supply chains, especially in the manufacturing industry, and markets in general are increasingly global, so it is understandable why local income is less important to new firms.

Contrary to Wang (2006), unemployment, U, was also insignificant, most likely because of countervailing influences (which are difficult to isolate in cross-sectional analysis) canceling each other out. While high unemployment may push some to start new ventures due to the ease of hiring labor, it may deter others who view it as a greater risk and a cause of lower demand for output. The insignificance of the business climate variable, CLIM, may also be a result of opposite influences. A state with a very friendly business climate may also have a very highly competitive environment, in which it would be difficult for new firms to compete. It is also possible that the measure of business climate used was too highly aggregated and a more narrow measure of the state tax structures might have yielded better results.

Finally, it was somewhat unexpected that high-speed internet access, WEB, did not have a significant impact on new firm formation rates, given all the talk about the “new economy” and how important technology and access to information are in business today. It is not easily explained why this measure of internet access failed to show an influence on business start-ups. Perhaps a different definition of internet access (other than high-speed only) would have yielded different results. Separate regressions for different industries might have provided more insight, since certain service industries may rely heavily on internet access while other manufacturing industries may not be affected by a lack of high-speed internet access.

CONCLUSIONS AND POLICY IMPLICATIONS

The objective of this paper is to learn which regional economic and socioeconomic characteristics most strongly influence new firm formation. Based on a

model of the small firm formation rates in 49 states in 2001, five characteristics are significantly associated with higher small firm formation rates: greater industrial diversity, lower education levels, greater availability of financing, larger average size of existing establishments, and fewer environmental hazardous waste sites.

As far as policy implications are concerned, the positive relationship between industrial diversity and small firm formation suggests that a state or region should be open to and encouraging of the development of all industries, not just their primary industry of expertise. This may seem to contradict the large literature on spatial agglomeration and spillover benefits among like industries, but it could be due to the larger geographic unit of observation. That is, while firms in the same industry and city may benefit from agglomeration and this contributes to growth, firms within the larger regional context may grow and prosper better when there is greater diversity and a wider variety of industries with which to do business. Basically, this relationship should be a caution to policymakers not to put all of their eggs in one basket, if they tend to believe that if their state has one particularly profitable industry, they should focus their efforts and resources on developing new firms within that industry. This research suggests that such industrial concentration may actually hinder the start-up of small firms.

Second, the negative relationship between education and new firm formation is also complex and certainly does not mean that states should stop encouraging higher education levels. One way to translate this result into policy might be to promote small business development at an earlier age and at lower education levels. For example, educational seminars on business formation for high school students may be more beneficial for overall growth than such seminars at the college level. In addition, the process of awarding state aid and grants to new businesses should not discriminate against those without college degrees. Literature from other disciplines on the personality characteristics of small business owners would tie in well with this discussion.

Third, the positive coefficient on the availability of venture capital financing is very logical and expected, and this result is the simplest to translate into policy. Small business owners are more likely to start up new businesses when they believe capital is more readily available. States can contribute their own resources, streamline application processes, or offer incentives to venture capital providers to increase the availability of financing.

Fourth, while mean existing establishment size is positively associated with new firm formation, it does not mean that a state must have a high number of very large businesses. Rather it indicates that the potentially beneficial relationships between the existing large businesses and the new start-ups should be fostered. Policymakers could increase awareness among larger businesses of the potential benefits of their interactions with small start-ups. For example, one such benefit may be that small start-ups are lower-cost suppliers of intermediate inputs (Sutaria and Hicks, 2004). A mentoring program of sorts could encourage small business formation and the larger businesses themselves would eventually benefit from the overall growth in their state's economy.

Finally, the negative relationship found between hazardous waste sites and new firm formation should further motivate policymakers to minimize the prevalence of environmental risks in their states. Besides the health and safety reasons, a cleaner environment is a signal of long-term viability for businesses and individuals. Cleaning up polluted neighborhoods and revitalizing old contaminated industrial areas provides new business locales for business start-ups. This trend is already popular and should be continued, according to the results of this research. As discussed at the beginning of this paper, small business contributes to regional economic growth in various important ways and therefore policies to encourage new firm formation are warranted.

The possibilities for future research on this topic are numerous and varied. The obvious direction for further research is to study panel data over time. The main limitation of this study is that it uses 2001 data only, for reasons mentioned earlier. This makes it difficult to compare it to studies that span different decades. Another appealing topic for future research would be an analysis of the cost-effectiveness of the various suggested policies for promoting new business start-ups. Also, further investigation as to the nature of the link between environmental (dis)amenities would be valuable. For instance, our analysis does not shed light on which types of new small business startups (for example, service versus manufacturing) are likely to be sensitive to environmental attributes. We leave these issues for future research.

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APPENDIX
Table A.1
Data Descriptions and Sources for Table 3

Variable	Description	Source
NEW_SM	Annual new firm establishments (log form).	Statistics of U.S. Businesses www.census.gov/csd/susb/susb.htm
NEW_MD	SM (small) = 1–19 employees MD (medium) = 20–99 employees	
CLIM	Annual rankings of state policy climate for small business and entrepreneurship (lag=1). Index based on 17 major government-related costs: personal income tax, capital gains tax, corporate income tax, property tax, sales tax, death tax, unemployment tax, health insurance tax, electricity costs, workers' compensation costs, crime rates, right to work status, number of bureaucrats, tax limitation status, Internet tax, gas tax, and state minimum wage.	Small Business and Entrepreneurship Council www.sbsc.org/LatestNews_Action.asp?FormMode=Releases&ID=195
DIV	Industrial diversity in a state (lag=1). Measured as the Herfindahl Index.	County Business Patterns www.census.gov/epcd/cbp/view/cbpview.html
EDUC	Percentage of state population with at least a bachelor's degree (lag=1).	U.S. Census Bureau, Statistical Abstract of the United States.
FIN	Dollar amount of venture capital financing provided in a state (average of lag=1, lag=2, and lag=3; log form). Sum of venture capital provided during "seed" stage (<18 months) and "early" stage (< 3 years).	PricewaterhouseCoopers Moneytree Survey www.pwcmoneytree.com/moneytree/index.jsp
MES	Mean establishment size (lag=1). Calculated as employment divided by total establishments.	Statistics of U.S. Businesses www.census.gov/csd/susb/susb.htm

Variable	Description	Source
POPCH	Rate of population growth in a state (lag=1). Change calculated as log difference in annual population.	Regional Economic Information System www.bea.doc.gov/bea/regional/reis/
RPICH	Change in state real per capita personal income (lag=1). Change calculated as log difference in real income. Real income calculated from nominal income using annual CPI based on All Urban Consumers.	Regional Economic Information System www.bea.doc.gov/bea/regional/reis/(income) Bureau of Labor Statistics www.bls.gov/cpi/home.htm (CPI)
U	State unemployment rate (lag=1).	Bureau of Labor Statistics www.bls.gov/sae/home.htm
WEB	Percentage of zip codes in a state with at least one provider of high-speed Internet access (lag=1).	Federal Communication Commission www.fcc.gov/web/iatd/comp.html
ENV	Number of hazardous waste sites on National Priority List in each state (lag=1). Calculated as number of sites divided by state population (log form).	U.S. Census Bureau, Statistical Abstract of the United States.

Table A.2
2000 Small Business Survival Index Rankings

Rank	State	Rank	State
1	South Dakota	26	Delaware
2	Nevada	27	Massachusetts
3	Wyoming	28	West Virginia
4	New Hampshire	29	Wisconsin
5	Texas	30	Nebraska
6	Florida	31	Oklahoma
7	Washington	32	Idaho
8	Alabama	33	Utah
9	Michigan	34	Arkansas
10	Mississippi	35	Connecticut
11	Tennessee	36	Kansas
12	Alaska	37	Vermont
13	Indiana	38	Iowa
14	Missouri	39	California
15	South Carolina	40	New York
16	Colorado	41	North Carolina
17	Virginia	42	Maine
18	Louisiana	43	New Jersey
19	Illinois	44	Oregon
20	North Dakota	45	Montana
21	Georgia	46	Ohio
22	Maryland	47	Minnesota
23	Arizona	48	New Mexico
24	Pennsylvania	49	Rhode Island
25	Kentucky	50	Hawaii

Source: Small Business and Entrepreneurship Council

Combating the Dislocation Effects of International Trade Through Worker Retraining Programs: A Preliminary Examination of Displaced Workers in the Midwest

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The authors wish to thank Justine McMullen, Darcy Groce, Ellen Kisker, Jackie Soptic, and Becky Steele and the entire *Northwest Workforce Investment Board* for their help and support throughout this project.

The authors also wish to thank Missouri Western State University and most especially Dr. Benjamin Caldwell and the Summer Research Institute for the grant we received to research displaced workers.

This paper was originally presented at the International Association—West, Las Vegas Nevada, 1 October 2004.

(Note: Authors are listed in reverse alphabetical order.)

(All survey data used for this paper are available on request.)

INTRODUCTION

International trade has accelerated job displacement in many industrialized economies. There is a growing debate regarding the overall damage outsourcing does to the U.S. economy, in general, and to U.S. workers, more specifically. Several scholars assert that dislocation effects are part of a normal rejuvenation cycle in advanced economies where low-end manufacturing jobs are replaced by high-end technological and service oriented jobs. Even if this thesis is true, it is not clear that displaced workers are attaining these new high-end jobs.

Regional trading blocs are often praised for their positive macro-level effects on all economies that participate in the lowering of trade barriers. But these same agreements often cause at least short-term displacement for many workers. For example, in 1994, the United States, Canada, and Mexico ratified the North American Free Trade Agreement (NAFTA) in an effort to “create new employment opportunities and improve working conditions and living standards in their respective territories” (Hufbauer, Jones, and Schott 2002, 1). This was not the only goal of NAFTA, however; the treaty was also an effort to make trade between these nations easier and fairer, by opening borders and allowing a higher level of economic self-determination. Lower tariff and nontariff barriers between nations was argued to lead to economic growth and increased employment opportunities for all involved (Jackson 2002).

Despite a preponderance of evidence suggesting that NAFTA has indeed achieved both the goal of creating new employment opportunities and increasing trade and wealth among signatory nations, workers have been displaced by the globalizing forces of NAFTA, since its inception. The overall macro-level numbers may be positive, meaning that NAFTA may not have caused an increase in aggregate worker displacement (Hufbauer, Jones, and Schott 2002); however, this does not mean that capital is prevented from moving more freely within the three signatory nations. Despite the fact that the overall number of workers displaced under NAFTA may be low when compared to aggregate job losses in the U.S., these workers should not be forgotten.

Further, NAFTA is only one example of international trade that has led to dislocation effects for U.S. workers. Current worker displacement pressures, more often than not, emanate from China or India rather than Mexico. This exemplifies the fluidity of international trade and should underscore the necessity of acting proactively and nimbly to new international pressures placed on American workers.

The purpose of this present study is to examine internationally displaced workers in a regional setting in the Midwest. Our main goal is to understand how international capitalism displaces these workers and to discern whether retraining benefits, as offered under the U.S. Trade Adjustment Act (TAA), are effective in reintegrating these workers into the American labor market. In order to achieve this goal, a survey was sent to displaced workers asking specific questions about their income and retraining experiences. Confidentiality issues limited our ability to directly access lists of displaced workers. And, as a result, convenience sampling was used. The findings from the survey responses indicate that retraining efforts sponsored by the U.S. government were effective in combating the displacement effects of international capitalism in the Midwestern region of the United States.

THE OUTSOURCING DEBATE IN THE UNITED STATES

Outsourcing has become an area of increasing political and public interest. Most recently, outsourcing has sparked reactionary fears that high quality jobs in America are being lost to cheap labor markets overseas. United States Federal Reserve Chairman, Alan Greenspan, gave some rhetorical credence to these fears in an 11 March 2004 speech before the U.S. House of Representatives. During his testimony, Mr. Greenspan acknowledged that U.S. manufacturing jobs are indeed being lost to cheaper labor markets in Asia and Latin America. He also raised new concerns that higher-end, white-collar service jobs are being lost to India and China. He even postulated that outsourcing trends can have significant ramifications for the long-term economic outlook of America, while causing a great deal of short-term pain for millions of American workers. Despite this, Chairman Greenspan does not think that protection is a prudent response. He has publicly decried anti-outsourcing bills that have recently been passed in over thirty states (Perry 2004).

Before dealing with the possible beneficial and detrimental effects of outsourcing, an adequate definition must be offered. One of the best and most parsimonious comes from a recent article by Daniel Drezner: "Outsourcing occurs when a firm subcontracts a business function to an outside supplier" (2004, 24). This is a good basic definition that sums up the key action being taken by U.S. companies, though we must note that outsourcing comes in both domestic and international forms. Domestic outsourcing could have very similar displacement effects on American workers, but it will be seen as less onerous as the jobs created will remain in the United States. For the purposes of this paper, we consider only

international outsourcing, because we are interested in examining how effective retraining programs under the TAA are in combating displacement.

There is a growing fear in the United States that international outsourcing will result in such a massive loss of jobs that the American economy will be adversely affected. This is a highly contentious claim, but it is instructive to examine some of the pros and cons revolving around international outsourcing fears. Drezner feels that the outsourcing fear is disproportional to the actual threat. One of the most persuasive arguments he makes is that there are only a limited number of jobs that can be outsourced. Drezner estimates that almost “90 percent of jobs in the United States require geographic proximity” (2004, 25). Jobs like retail, marketing and personal care services are locally consumed and, therefore, must be locally produced. The jobs that will go overseas are ones requiring low skill (Drezner 2004). Further, a recent estimate of future loss pegs jobs lost to outsourcing at 3.3 million over the next 15 years, while new job growth is expected to produce 22 million new jobs over the next six years (Drezner 2004). When viewed in this light, jobs lost to international outsourcing become largely insignificant. Hence, the first argument against overreacting to international outsourcing is that it is not as great a problem for the U.S. economy as people imagine or are led to believe.

The potential benefits of international outsourcing are numerous. At a basic level, international outsourcing allows comparative advantage to work. The most efficient and cheapest labor force produces the goods that they can produce competitively, translating into lower consumer costs for everyone (Canto 2004; Drezner 2004). Another benefit from outsourcing is that it helps to develop countries that have previously been underdeveloped. These countries can then become valuable trading partners offering new markets for American goods and, in the long run, create new domestic job opportunities in the U.S. (Perry 2004). The new demand could manifest itself in the form of demand for high-end computers and telecommunications equipment, making the new market demand even more beneficial to the U.S. economy (Drezner 2004). Companies anticipate deriving significant cost savings from outsourcing. A recent survey of information technology (IT) executives indicated they anticipate cost savings of between 10 and 20% (*Journal of Employee Assistance* 2004). On a broader level, less easily substantiated claims range from the fact that lowering labor barriers and increasing international trade with countries such as India and the Philippines can actually help develop allies in the war on terrorism (Drezner 2004) to a

claim by one Web technology mogul, Marc Andreessen, that outsourcing could contribute to world peace (Perry 2004).

But not everyone sees outsourcing as wholly benevolent or economically beneficial. Some new work areas have begun to outsource and some of this work can contain sensitive client information. For example, certified public accountants' (CPA) organizations note that state and local regulations hold American firms to certain standards, codes of conduct, and regulations regarding the confidentiality of client information. These organizations have become alarmed at the rapid outsourcing of tax return preparation to India and other countries, where these same regulations do not apply (Blackman, Freedman, and Levy 2004). Victor Canto notes that outsourcing has expanded to include jobs like accounting and now electrical engineering (2004). These higher-end service and electronics jobs cannot be so easily dismissed as expendable. Finally, the estimate used by Drezner and others of 3.3 million jobs lost to international outsourcing over the next decade may be dangerously low. One researcher estimates as many as 14 million jobs will be lost by 2015 (O'Sullivan and Durfee 2004). Further, it is hard to gauge how many internationally outsourced workers remain underemployed for the remainder of their work life. Many displaced workers never again achieve the salary level they had attained pre-displacement.

Despite these potential problems, international outsourcing is likely a phenomenon that is here to stay. Further, attempting to combat this problem with protectionist measures will probably have long-term adverse effects on the American economy. Ultimately, Drezner is right when he says the best way to combat international outsourcing is to "expand the criteria under which the TAA program applies to displaced workers" (2004, 33). Further, this paper shows that the benefits under TAA need to be expanded in order for it to become a more attractive and feasible option for displaced workers.

METHODOLOGY

The purpose of this study is to determine the effectiveness of U.S. retraining programs designed to combat worker displacement arising from international capitalist forces. In order to achieve this end, displaced workers were asked to respond to a survey (see Appendix A). One of the primary problems with choosing displaced workers as a target for study is that normal sampling techniques could not be applied to this group. Due to myriad confidentiality issues, displaced workers for this study were located through advertisement, word of mouth, and through cooperation with local and state retraining agencies. The

retraining agencies could not provide lists of displaced workers, as this would violate confidentiality. Instead, individuals in these agencies could only recommend this study to internationally displaced workers they encountered during the course of normal business. The above-mentioned method of seeking respondents (when a readily accessible population for sampling does not exist) is known as convenience sampling. The obvious downside to convenience sampling is that the sample population is not randomly drawn. Unfortunately, there appears to be no way to avoid this pitfall when attempting to obtain survey results from displaced workers.

Respondents for this survey were from three states in the Midwest: Kansas, Missouri, and Nebraska. Therefore, the results of this research project may only apply to the Midwest and might not represent the effects of retraining on the east and west coasts or in the southern states. The authors of this study hope to expand the scope of this examination of displaced workers in the near future.

The survey results produced two forms of data: anecdotal and statistical. The anecdotal data are derived from open-ended questions appearing in the opinion survey, while the statistical data are derived from scalable, multiple-choice questions in the opinion survey.

There are several expectations that we developed regarding our research that arose from previous examinations of displaced workers. There is evidence that all displaced workers suffer a significant reduction in income level after being displaced, and even after finding new jobs. In a 1993 study, Jacobson, LaLonde, and Sullivan found that even five years after displacement the average income for the sample of displaced workers was 25% less than their pre-displacement income. We expect that workers in this study will, on average, suffer a significant post-displacement income loss. We theorized that this loss, however, would be far less for retrained workers than for those who did not receive any retraining benefits. Therefore, our first hypothesis is:

H_1 : Workers receiving retraining should report higher post-displacement incomes on average than workers who do not receive retraining benefits.

There is also evidence that age is a critical variable for displaced workers. There is some evidence that older workers suffer more after being displaced. H. Hammerman (1964) found that displaced workers over the age of 45 were less likely

to find employment after being displaced, as they were likely to suffer from age discrimination and to resist retraining options. Therefore, age might be a key intervening variable for the purposes of this study, which results in three additional hypotheses:

H₂: Older workers (over the age of 45) will suffer more economic dislocation due to displacement.

H₃: Older workers (over the age of 45) will be less likely to engage in retraining programs.

H₄: Older workers (over the age of 45) will receive less economic advantage from retraining.

In order to control for the role of unions, a variable on the helpfulness of unions in finding post-displacement retraining was examined. Since there is a chance that unions may help their members achieve greater levels of post-displacement retraining and employment this variable must be examined, so we can be more confident in any positive results that appear to be attributable to retraining programs.

H₅: Union members will not achieve greater levels of success in post-displacement retraining and post-displacement employment than non-union members.

Operationalization of Key Variables

The key dependent variable for this study is a self-reported post-displacement income gauge. There are twelve separate response possibilities for the question, “Which of the following best describes your current level of income?” (Question 7 in Appendix A). The responses are arranged in roughly \$2,500 increments and are designed to be a reflection of a respondent’s current income as compared to the respondent’s pre-displacement income. This type of comparative income statistic is vitally important to this study, as one of the main goals is the explanation of the impact of federally-funded retraining programs on post-displacement income.

Some might question why we chose to use an income variable with \$2,500 increments. It can be argued that such a variable is imprecise. Why not simply ask respondents to report how much less, or how much more, they are making now as compared to their pre-displacement incomes? All of these problems were given due consideration before we chose to ask the income question in the man-

ner that we did. There were several key reasons guiding our final decision. First, we wanted to provide some anonymity in responses to such an indelicate income question. Despite the fact that all respondents' information is anonymous and the fact that we assured respondents of this anonymity, we believed respondents might feel it invasive to relate their precise post-displacement income gain or loss. Also, by forcing respondents into \$2,500 income increments, coding and comparison became easier.

Some will also correctly point out that self-reported income data tend to be imprecise. We expect, however, as in previous studies that use self-reported income, that exaggeration in self-reported income washes out in the aggregate. The numbers themselves might not be exact, but the trends tend to be reflective of the population as a whole. Despite shortcomings, self-reported income is often the only way to gauge income in a sample of displaced workers and this variable has been used with a good deal of success. For example, in a study conducted by Kusel et al. (2000), the researchers examined the effects of displacement on woods workers. The only way to examine economic displacement was through a self-reported income gauge derived from a survey they crafted (Kusel et al. 2000). Further, despite using a self-reported income variable, the authors still found several respondents who declined to answer the income question, "despite assurances of the confidentiality of the interviews" (Kusel et al. 2000, 120). This is part of the reason we decided to offer interval ranges instead of asking for exact pre- and post-displacement income levels.

The most important dependent variable for this study is the retraining variable. This question is asked twice in the opinion survey, in two distinct ways. First, the question is asked as follows:

Which of the following statements best describes your current situation?

Please circle one letter.

- A. I have completed retraining under NAFTA-TAA or the Trade Act.
- B. I am currently receiving retraining under NAFTA-TAA or the Trade Act.
- C. I have not received any retraining under NAFTA-TAA or the Trade Act.
- D. Unsure

(Question 3 in Appendix A).

While we thought this question was straightforward, it soon became clear that some respondents were confused. A few respondents who received only unemployment benefits marked that they had completed retraining. One respondent who received *only* retraining marked that she had received no retraining. Fortunately, we also asked respondents the following question:

As a result of NAFTA-TAA/Trade Act displacement, did you receive? *(please circle all that apply)*:

- A. Free retraining
- B. Extended unemployment benefits
- C. Relocation expenses
- D. Job application expenses
- E. Tool allowance
- F. Other (please list) _____
- G. None of the above (IF NONE OF THE ABOVE, SKIP AHEAD TO QUESTION #14).

(Question 8 in Appendix A).

This allowed us to discern exactly which displaced workers received federally funded retraining. We ultimately decided to create a dummy variable to measure retraining. Respondents were coded as “1” if they circled “A” for “free retraining” in response to Question 8. All other respondents were coded “0”.

Other important independent variables tended to follow a three-point scale. For example, personal growth was evaluated in the following manner:

Based on my experience, the retraining offered to me as a displaced worker was:

- A. Very beneficial personally
- B. Somewhat beneficial personally
- C. Not beneficial personally
- D. Unsure

(Question 10 in Appendix A)

The scale derived from this variable ranged from “1” to “3” with “3” representing the most benefit, on a personal level, from retraining opportunities.

We also asked standard demographic questions regarding age, gender, race, membership in a union, and education level. We used these demographics as control variables for study.

One demographic item, age, was recoded in order to test the assertions by Hammerman that led to our three hypotheses regarding respondents who were over the age of 45. In order to determine whether displaced workers over the age of 45 were indeed less likely to succeed after displacement and less likely to engage in retraining, we coded all respondents 46 and older as “1” and those 45 or younger as “0.”

The helpfulness of the union in finding post-displacement retraining was gauged in the following question:

How helpful was the union (if applicable) in helping you to obtain benefits as a displaced worker? *Please circle one letter.*

- A. Very helpful
- B. Somewhat helpful
- C. Unhelpful
- D. Unsure
- E. Not applicable

We also examined simple union membership to ensure that union members were not being helped more than non-union members to find post-displacement employment. This was reflected in the following survey question:

Were you a member of a union prior to displacement? YES NO

Analysis of the Anecdotal Data

Those who are displaced due to international economic forces are not lazy or inefficient workers. A vast majority of the survey respondents worked more than a decade at their jobs before being displaced. These valuable and loyal workers are often angry and confused upon hearing that their employer is relocating to another country. One worker wrote, “I know companies are in the business

to make a profit, but they need to realize that when they move jobs or plants to other countries to be able to compete in the global market they are lowering the U.S. standard of living.” Another respondent lamented, “Our country has endless amounts of money for overseas help. But what about the people of our country that are poverty stricken? I have lost my job due to NAFTA and now my husband is losing his job due to NAFTA. Somehow we will survive.”

Hopefully, all displaced workers will find a way to survive, as these are not the “hardcore unemployables” we hear elected officials complaining about when they call for welfare reform. We would like to apply a new term to such displaced workers: hardcore employables. These are the factory workers that provide so many necessary goods for America and the world. They are the service providers that dedicate their entire lives to one factory or company. They cannot be allowed to fall through the cracks in despair. One way to effectively reintegrate these workers into a level of employment and job satisfaction seems to be through retraining programs.

Unfortunately, several respondents indicated they wished to enter retraining programs but felt they could not do so for various reasons. One respondent noted that, “[The] main reason I couldn’t or didn’t try to obtain any new training was because my husband is self-employed so we didn’t have any medical insurance after mine ran out. COBRA would have cost around \$475–\$550 monthly for us. All training I checked into was at least two-year schooling. In our age bracket, I decided it was best just to find a job to get us medical insurance instead of taking the chance of nothing happening to us while I attended school.” Another respondent echoed these concerns saying that the retraining program did not pay enough to allow her to go to school and, at the same time, pay her monthly bills. Yet another worker stated that he felt he was “too old to get a good job.”

Given these responses, it became clear that more people desired to be retrained than were actually retrained. If we can show that retraining integrates displaced workers into higher-level, better-paying jobs, then there is some anecdotal evidence that the government could potentially help even more displaced workers if unemployment benefits, such as health insurance, were offered for a longer period. The written responses that we received suggest this would help to push more workers to a retraining option after being displaced. We would suggest unemployment benefits amounting to at least 80% of the displaced worker’s former wages, for up two years of retraining. We would also suggest that the govern-

ment (this could be accomplished nationally or state governments could fill these gaps) also provide medical insurance for this time period.

Despite shortcomings, there are some retraining-related descriptions of great success. One respondent wrote, “When I started retraining, I already had completed two years of college, but I got stuck working at Lee Jeans because I never made enough money to go back [to school as a result of retraining]. I was able to major in elementary education and I now teach.” Another respondent summed up the positive benefits of retraining even more forcefully, “I feel fortunate I have received the benefits that have allowed me to attend Missouri Western State College. I have also received [academic] scholarships from Missouri Western State College this year. The benefits are there if people take the time to apply and try to do the best they can with the training.”

Analysis of the Statistical Data

Our main goal is to examine the effects of retraining on displaced workers’ post-displacement income, but the literature led us to consider several other important factors that might affect post-displacement income. We wished to examine whether the age of the respondent, the gender of the respondent and the minority status of the respondent had any impact on post-displacement income. Unfortunately, one of the shortcomings of this study was the small response set. There are only 40 survey respondents, but we feel we can draw some preliminary conclusions regarding our theses. We cannot currently be overly confident in our findings, however, because of the small sample size. One of the casualties of the small sample size was the control variable for race. Because only two respondents were non-Caucasian, we cannot make any valid statistical inference about race.

Table 1 shows the results for a cross-tabulation examination of self-reported, post-displacement income and retraining. Eighteen respondents (65%), who did not retrain, reported incomes over \$10,000 less than their pre-displacement incomes. When we combine all displaced workers who fared worse after displacement and did not receive retraining, the number jumps to 23. Similarly, six respondents (40%) who completed retraining reported incomes over \$10,000 greater than their pre-displacement incomes. When we combine all respondents who completed retraining and whose incomes remained the same or increased, the number increases to 10 out of 15 (67%). The Pearson Chi-Square test for this cross-tabulation was statistically significant at .064. However, it must again be restated that the small sample size makes us a little wary of this finding.

Table 1
Cross-tabulation Comparing Displaced Workers Retraining Under the
Trade Act with Self-reported, Post-displacement Income

		INCOME							TOTAL	
		\$10,001 + less	\$7,501 to \$10,000 less	\$5,001 to \$7,500 less	\$2,501 to \$5,000 less	Same	\$2,501 to \$5,000 more	\$5,001 to \$7,500 more	\$7,500 to \$10,000 + more	
RETRAIN	No	18 (65%)	1 (4%)	2 (7%)	2 (7%)	1 (4%)	1 (4%)	1 (4%)	2 (7%)	2 (100%)
	Yes	3 (20%)			2 (13%)	1 (7%)	1 (7%)	2 (13%)	6 (40%)	1 (100%)
TOTAL										4

*Chi-Square test
The Pearson Chi-Square test is .064 with 7 degrees of freedom.*

Table 2
Cross-tabulation Comparing Displaced Workers Retraining Under Trade Act
Retraining with Self-reported, Post-displacement Income and Gender of Respondent

		INCOME										TOTAL
		\$10,001 + less	\$7,501 to \$10,000	\$5,001 to \$7,500	\$2,501 to \$5,000	Same	\$2,501 to \$5,000	\$5,001 to \$7,500	\$7,500 to \$10,000	\$10,001 +more		
Male	RETRAIN	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	
	No	11 (73%)	1 (7%)	2 (15%)	1 (8%)	1 (8%)	1 (7%)	1 (8%)	1 (8%)	1 (7%)	15 (100%)	
	Yes	3 (60%)					1 (20%)			1 (20%)	5 (100%)	
Female	RETRAIN	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	
	No	7 (54%)	2 (15%)	1 (8%)	1 (8%)	1 (10%)	1 (10%)	2 (10%)	1 (8%)	1 (8%)	13 (100%)	
	Yes			2 (20%)	1 (10%)	1 (10%)		2 (10%)		5 (50%)	10 (100%)	
TOTAL												43

Chi-Square Tests
 Pearson Chi-Square for males is .771 with 4 degrees of freedom.
 Pearson Chi-Square for females is .039 with 6 degrees of freedom.

It is difficult to gauge the exact dollar increase associated with retraining for several reasons. First, these are self-reported income statistics and they will, therefore, be imprecise. Second, we allowed a range of incomes in increments in order to increase the likelihood of responses of displaced workers. However, one can estimate a very rough number by following a consistent set of rules. We decided to use the midpoint in the individual categories, combine them and then divide by the number of respondents in each retraining category. This meant that respondents in the \$2,501 to \$5,000 category were assigned a value of \$3,750. At the ends of the scale another problem occurs, because respondents could either mark “\$10,001 or less” or “\$10,001 or greater”. We decided to treat this category as \$10,001 the lowest possible value for this category since there is no upper bond with which to average. Following these rules, respondents who did not retrain reported incomes of roughly \$5,893 less than their pre-displacement incomes, while respondents who retrained reported incomes on average of roughly \$1,042 greater than their pre-displacement incomes.

These findings were a bit better than we expected. We had initially thought that both groups would report lower post-displacement incomes, but that the re-trained workers would show a far lower loss. Therefore, we are very interested in expanding the number of participants in order to determine whether these are anomalous results arising from a small sample size.

Next we examined gender as a possible control variable by adding it as a layer to the previous cross-tabulation chart. Since we had gained some evidence that retraining had a positive economic impact on a displaced worker’s post-displacement income, we thought it would be wise to examine whether the relationship was gender-specific.

At first glance, the findings seem to indicate that the economic benefits derived from retraining apply only to women. The top half of the chart shows us that 40% of men involved in retraining reported large economic gains from retraining, while the other 60% reported large economic losses after retraining. One must note, however, that only five respondents received retraining, so there is no way we can conclude, with any degree of certainty, that men do not benefit economically from retraining. This is also reflected in the high Chi-Square value.

The evidence for women is a bit more convincing. Eight of the 10 women who retrained (80%) reported incomes the same or higher than their pre-displacement incomes. Most women who did not retrain (54%) reported incomes more than \$10,000 less than their pre-displacement levels. Although the Chi-Square is

significant and while most of the women who completed retraining showed significant post-displacement economic benefits, we again could be more confident in these results if the response set for retrained female workers was higher.

There were several possible effects that age could have on older displaced workers. First, older workers were argued to be less likely to participate in retraining programs. Second, older workers were argued to earn less after displacement, especially since older workers will have achieved a much higher pay rate through their years of service, making it harder for them to achieve the same or greater income after displacement.

Table 3
Cross-tabulation Comparing Displaced Workers Retraining Under the Trade Act with Age of Respondent

		RETRAIN E. NO	YES	TOTAL
Age	46 and over	25 (81%)	6 (19%)	31 (100%)
	45 and under	3 (25%)	9 (75%)	12 (100%)
	TOTAL			43

Chi-Square Test
 Pearson Chi-Square is .001 with 1 degree of freedom.

Table 3 is a simple cross-tabulation examination of age against retraining. The results were not surprising. Most respondents 45 years old or younger completed retraining. In fact, nine (75%) of the younger respondents retrained. Of the respondents who were 46 or older, only six of 31 (19%) retrained. This verifies previous literature on age and the willingness to retrain. The Chi-Square is not only significant but also robust (.001). However, with only 12 observations of retraining we still remain somewhat cautious about these results.

This could be a very important finding, as older workers may be missing out on retraining possibilities that could significantly increase their post-displacement income. Older displaced workers may have additional economic burdens such as pressure to feed a family that includes children, mortgage payments on a house,

multiple car payments, and family health benefits that make these workers feel pressured to find any job to fill the income gap. It may seem too risky to embark on a six-month to two-year retraining program when these pressures are bearing on the displaced individual.

We were intrigued by the initial results for age so we decided to delve a little deeper by examining age and income levels. Table 4 is a cross-tabulation of age and income. We expected that older respondents would report lower average incomes than younger ones. Again we were not surprised by our results. Nineteen (61%) of the respondents age 46 or older reported incomes \$10,000 less than their pre-displacement incomes. Seven (58%) of respondents age 45 or younger reported incomes \$10,000 greater than their pre-displacement incomes. This also appears to support conventional wisdom regarding age and post-displacement income and may serve as an indication that retraining programs, as they currently stand, are far more beneficial for younger applicants.

When unions are examined as an intervening variable, the evidence provided from this study supports the hypothesis that union members are neither experiencing any greater success in finding and obtaining retraining benefits nor achieving higher post-displacement incomes. Table 5 is a cross-tabulation of workers reporting on the helpfulness of unions by their post-displacement income.

Table 5 shows no correlation between the helpfulness of unions and post-displacement income. The Chi-Square is .767 indicating no correlation between these two variables. In fact, eight (50%) of the respondents who felt the union was “very helpful” reported post-displacement incomes of over \$10,000 less than their pre-displacement incomes. Of the respondents who reported that the union was “somewhat helpful” 5 out of 7 reported post-displacement incomes significantly below pre-displacement levels. Therefore, we can be more confident in the assertion that retraining programs are having a positive effect on post-displacement incomes.

For the sake of thoroughness, our study also sought to examine the relationship between simple union membership and post-displacement income. Again, we hypothesized that union membership would result in a post-displacement income that was either the same or higher than pre-displacement income. What is overwhelmingly evident in our data is that union membership does not provide union members with increased post-displacement income. To the contrary, of the 29 union members in our sample, 20 saw their incomes fall \$2,501 or more.

Table 4
Cross-tabulation Comparing Age of
Respondent with Post-displacement Income

		INCOME							Total	
		\$10,001 + less	\$7,501 to \$10,000 less	\$5,001 to \$7,500 less	\$2,501 to \$5,000 less	Same	\$2,501 to \$5,000 more	\$5,001 to \$7,500 more	\$7,500 to \$10,000 more	\$10,001 + more
AGE										
46	19	1	2	2	1	2	3	1	1	31
and	(61%)	(3%)	(7%)	(7%)	(3%)	(7%)	(7%)	(3%)	(3%)	(100%)
over										
45	2	2	1	1	7	12				
and	(17%)	(17%)	(8%)	(17%)	(58%)	(100%)				
under										
TOTAL										43

Chi-Square test
The Pearson Chi-Square test is .002 with 7 degrees of freedom.

Table 5
Cross-tabulation Comparing Displaced Workers Reporting That the Union Helped Them Find and Obtain Post-displacement Retraining with Self-reported, Post-displacement Income

UNION HELP	Very Helpful	Somewhat Helpful	Not Helpful	Not Sure/Not Applicable	INCOME							Total
					\$10,001 + less	\$7,501 to \$10,000 less	\$5,000 to \$7,500 less	\$2,501 to \$5,000 less	Same	\$2,501 to \$5,000 more	\$5,001 to \$7,500 more	
8	1	1	1	2	1	1	1	1	1	1	4	16
(50%)	(6%)	(6%)	(6%)	(25%)	(6%)	(6%)	(6%)	(6%)	(6%)	(6%)	(25%)	(100%)
3	1	1	1	1	1	1	1	1	1	1	1	7
(43%)	(14%)	(14%)	(14%)	(14%)	(14%)	(14%)	(14%)	(14%)	(14%)	(14%)	(14%)	(100%)
6	1	1	1	1	1	1	1	1	1	2	2	12
(50%)	(8%)	(8%)	(8%)	(8%)	(8%)	(8%)	(8%)	(8%)	(8%)	(17%)	(17%)	(100%)
4	2	1	1	1	1	1	1	1	1	1	1	8
(50%)	(25%)	(25%)	(25%)	(25%)	(13%)	(13%)	(13%)	(13%)	(13%)	(13%)	(13%)	(100%)

TOTAL

43

Chi-Square test
 The Pearson Chi-Square test is .767 with 21 degrees of freedom.

Table 6
Cross-tabulation Comparing Displaced Workers Reporting Union Membership
Prior to Displacement with Self-reported, Post-displacement Income

MEMBER OF A UNION	Retrain	INCOME										Total
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
MEMBER OF A UNION	Retrain	Yes	3 (25%)		2 (17%)		1 (8%)	2 (17%)		4 (33%)	12 (100%)	
		No	10 (59%)	1 (6%)	2 (12%)	2 (12%)			1 (6%)	1 (6%)	17 (100%)	
			Yes									
		NOT A UNION MEMBER	Retrain	Yes			1 (33%)			1 (33%)		3 (100%)
				No	8 (72%)		1 (9%)	1 (9%)			1 (9%)	11 (100%)
	NOT A UNION MEMBER		Retrain	Yes								
				No								
				TOTAL								

Chi-Square test
 The Pearson Chi-Square test for union members is .070 with 3 degrees of freedom.
 The Pearson Chi-Square test for non-union members is .156 with 6 degrees of freedom.

The stronger determinant among union members in finding post-displacement incomes was whether the individual opted for retraining benefits under the Trade Act. Of the 29 union members who responded to our survey, 12 took advantage of retraining, and seven (58%) saw an increase in their annual incomes. Further, the Chi-Square test for union members yielded a statistically significant .07. In this case, that meant that union members who did retrain fared far better than union members who did not retrain, again corroborating the assertion that it is retraining and not union membership that seems to lead to post-displacement success.

While we were primarily interested in economic benefits derived from worker retraining, we also had some interest in the potential for personal growth for those who are retrained. Table 7 is a basic cross-tabulation of the personal benefits of post-displacement income. We expected that even workers who did not improve monetarily would find retraining a worthwhile endeavor, as it expands personal growth.

Table 7 shows that 14 of 15 respondents who retrained (92%) stated that post-displacement training was somewhat or very “beneficial personally.” Eleven felt that post-displacement training was somewhat beneficial while two felt it was very beneficial. Of the 11 who felt retraining was beneficial personally, six made the same or showed an increase in income after retraining. Similarly, the two respondents who stated that post-displacement training was very beneficial personally showed an annual increase of \$10,000 or more after retraining.

The most impressive finding from table 7 is that the personal benefits of retraining do not necessarily stem from an increase in income. Of the nine respondents who stated that retraining was beneficial personally, five (44%) made less than their pre-displacement income. While the sample size is small, there is at least some evidence from this study that retraining has benefits for displaced workers that go beyond income.

CONCLUSION

It should be stated again that the findings from this study are based upon fewer observations than we feel are necessary to have complete confidence in the results. Having said that, we took every precaution possible to ensure that our small sample size was not the prime reason for our results.

Table 7
Cross-tabulation Comparing Displaced Workers Reporting that Retraining was Beneficial Personally, with Self-reported, Post-displacement Income

	INCOME \$10,001 + less		\$7,501 to \$10,000 less		\$5,001 to \$7,500 less		\$2,501 to \$5,000 less		Same	\$2,501 to \$5,000 more		\$5,001 to \$7,500 more		\$7,500 to \$10,000 more		Total
VERY BENEFICIAL														3 (25%)	3 (100%)	
SOMEWHAT BENEFICIAL	3 (27%)		2 (18%)		1 (9%)		2 (18%)			3 (27%)		1 (100%)				
NOT BENEFICIAL							1 (100%)								1 (100%)	
TOTAL																15

Chi-Square test
 The Pearson Chi-Square test for very beneficial is .172 with three degrees of freedom.
 The Pearson Chi-Square test for somewhat beneficial is .278 with four degrees of freedom.
 The Pearson Chi-Square test for not beneficial is .046 with one degree of freedom.

The main conclusion that can be drawn from our data conforms to our first hypothesis that retraining should increase post-displacement income. We found that, on average, post-displacement income was \$1,040 dollars greater for workers who completed retraining and \$5,893 less for displaced workers who failed to complete retraining or who were currently in retraining programs. This is a wide net gain for workers who retrain under the Trade Act; the retraining programs seem to be having the desired effect of reintegrating workers into society after they are globally displaced. Given these results, the U.S. government should probably enact programs to encourage more workers to engage in these programs.

However, success must be qualified. Unfortunately, these results fit in nicely with previous literature on age and retraining. It not only appears that older displaced workers fail to take advantage of retraining opportunities but they also seem to be hardest hit by displacement. This means that a large number of displaced workers are suffering long-term negative economic effects from outsourcing.

Our findings also seem to indicate that women fare far better after displacement. A lot of this success can be attributed to retraining programs since all of the women in this survey participated in retraining programs and all of the women reported the same or far higher post-displacement incomes. The reason for this finding is unclear, but it certainly should spark some intellectual curiosity and future research. One possible explanation may stem from the history of wage imbalances between men and women. Women tend to be relatively deprived when compared to men and make far less over the course of their careers due to being passed over for promotion. If women start at a lower wage level when they are displaced, they might benefit more from retraining when they are placed into a new job than men do.

Overall, there is a great deal of evidence, both anecdotal and statistical, that indicates that retraining programs are having the desired effect of combating international economic displacement forces. Further, many respondents felt that retraining helped them to expand their horizons and grow personally, regardless of any economic benefit.

Finally, it should be noted that outsourcing has a dramatic impact on all workers who are displaced by international trade. Unfortunately, many scholars who make assertions regarding outsourcing only cite unemployment statistics. This

leads to the false conclusion that once workers are re-employed, they are able to regain the level of economic attainment they enjoyed pre-displacement. This study shows that to be patently false. In fact, only the retrained workers show any possibility of achieving their previous income level and not all retrained workers fare well. The evidence for displaced workers that did not receive retraining is overwhelming. Most reported earning over \$10,000 less than their pre-displacement income. Such staggering income losses, despite re-employment, could lead to the loss of a car or even a family home. The problem is that research in this area is hard to conduct so it is far easier to focus on unemployment levels and the number of new high-end jobs created and draw the erroneous conclusion that international capitalism is not having much of an impact on the American worker. This type of reasoning is dangerous and may also be highly misleading.

APPENDIX A

Opinion Survey of Workers Displaced/Outsourced Because Their Company Moved Operations (Their Jobs) Outside of US Borders

For each of the following questions, please answer in the space provided.

1. Please list the city and state in which you *currently* reside:
 - 1b. Did you live in the same city/state *prior to* being displaced? YES NO
If **NO**, please list the city and state in which you resided at the time of displacement:
2. Please list the name of your employer at the time of displacement:
 - 2b. Prior to being displaced, for how many years did you work at the above employer? Please include both the total number of years and dates—
for example: 8 years, 1982–1991.
 - 2c. Please describe your occupation at the time of displacement (include job title and a brief description of responsibilities).
3. Which of the following statements best describes your current situation?
Please circle one letter.
 - A. I have completed retraining under TAA or the Trade Act.
 - B. I am currently receiving retraining under TAA or the Trade Act.
 - C. I have not received any retraining under TAA or the Trade Act.
 - D. Unsure
4. If you circled either A. or B. for Question 3, in what cities/states did you receive any retraining after being displaced? *Please list below.*

<u>City</u>	<u>State</u>	<u>Dates of Retraining</u>
		<i>(e.g., Jan.–Feb. 2000)</i>
5. What type of work are you currently engaging in? (If you are currently in the process of retraining, what type of work do you plan to do upon completion of your training?)
6. Have you changed jobs since completing retraining?
YES NO NOT APPLICABLE
 - 6b. If **YES**, please list the occupation/employer for all positions held between the completion of retraining and the present time.

<u>Occupation</u>	<u>Employer</u>	<u>Dates</u>
		<i>(e.g., Jan.–Feb. 2000)</i>
7. Which of the following best describes your current level of income?
Please circle one letter.
 - A. \$10,000+ per year GREATER THAN my pre-displacement income.
 - B. \$7,501 to \$9,999 per year GREATER THAN my pre-displacement income.
 - C. \$5,001 to \$7,500 per year GREATER THAN my pre-displacement income.

- D. \$2,501 to \$5,000 per year GREATER THAN my pre-displacement income.
 - E. \$1,000 to \$2,500 per year GREATER THAN my pre-displacement income.
 - F. Roughly the same as my pre-displacement income.
 - G. \$1,000 to \$2,500 per year LESS THAN my pre-displacement income.
 - H. \$2,501 to \$5,000 per year LESS THAN my pre-displacement income.
 - I. \$5,001 to \$7,500 per year LESS THAN my pre-displacement income.
 - J. \$7,501 to \$9,999 per year LESS THAN my pre-displacement income.
 - K. \$10,000+ per year LESS THAN my pre-displacement income.
 - L. Unsure
8. As a result of TAA/Trade Act displacement, did you receive
(please circle all that apply):
- A. Free retraining
 - B. Extended unemployment benefits
 - C. Relocation expenses
 - D. Job application expenses
 - E. Tool allowance
 - F. Other (please list) _____
 - G. None of the above
- (IF NONE OF THE ABOVE, SKIP AHEAD TO QUESTION #14).
9. Based on my experience, the retraining offered to me as a displaced worker was:
- A. Very beneficial financially
 - B. Somewhat beneficial financially
 - C. Not beneficial financially
 - D. Unsure
10. Based on my experience, retraining offered to me as a displaced worker was:
- A. Very beneficial personally
 - B. Somewhat beneficial personally
 - C. Not beneficial personally
 - D. Unsure
11. If you received any of the assistance listed above, do you feel this assistance was:
- A. Easily obtainable
 - B. Obtainable
 - C. Difficult to obtain
 - D. Unsure
12. In the space provided below, please briefly describe the steps you took to obtain benefits from TAA or the Trade Act Programs.
13. In U.S. dollars, what was the approximate amount you received in retraining benefits? \$ _____

14. How helpful was your employer (at the time of displacement) in terms of receiving your benefits? *Please circle one letter.*
- A. Very helpful
 - B. Somewhat helpful
 - C. Unhelpful
 - D. Unsure
15. How helpful was the union (if applicable) in helping you to obtain benefits as a displaced worker? *Please circle one letter.*
- A. Very helpful
 - B. Somewhat helpful
 - C. Unhelpful
 - D. Unsure
 - E. Not applicable
16. In your opinion did you, your employer, or your union (if applicable) invest more time in terms of attempting to gain *employee* benefits under TAA or the Trade Act?
- A. Me
 - B. My employer
 - C. The union
 - D. Unsure
17. Please indicate your gender:
- A. Female
 - B. Male
18. Please indicate your race:
- A. African American
 - B. Asian
 - C. Caucasian
 - D. Hispanic
 - E. Native American
 - F. Multi-ethnic
 - G. Other (please list) _____
19. Please indicate your current age category:
- A. 20 years of age or younger
 - B. 21–25 years
 - C. 26–30 years
 - D. 31–35 years
 - E. 36–40 years
 - F. 41–45 years
 - G. 46–50 years
 - H. 51–55 years
 - I. 56–60 years
 - J. 61–65 years
 - K. 66 years of age or older

20. What is the highest level of education that you have achieved?

Please circle one letter.

- A. Less than high school
- B. High school graduate
- C. Vocational school
- D. Some college
- E. Associate’s degree
- F. College graduate (four-year degree)
- G. Master’s degree
- H. Ph.D./M.D./J.D.
- I. Other (please list) _____

21. Were you a member of a union prior to displacement? YES NO

22. Did the union help you obtain a job after your job was outsourced? YES NO

24. Do you live in a more rural or urban area? RURAL URBAN

22. If you have any additional comments, please share them here.

~Many thanks for your time and participation~

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Why Management Education Should Embrace Applied Learning

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INTRODUCTION

Throughout most of the twentieth century, management educators believed it their goal to provide quality education in the areas of accounting, finance, economics, management, marketing, and business law. In the last twenty years this began to change, as business educators undertook a much broader mission. This broadening can be seen in the accreditation standards of the Association to Advance Collegiate Schools of Business (AACSB 2005), which now include proficiency in ethics, globalism, social/political/legal issues, environmentalism, uses and effects of technology, demographic diversity, written and oral communication, analytic skills, group and interpersonal dynamics, and reflective thinking. The inclusion of so much additional material, without significantly increasing the required number of credit hours for the degree, means that both methods of instruction and course content must change.

Some of the new content is difficult to integrate with lecture-based education, as it is most productively taught using non-lecture methods, perhaps outside the classroom. This article examines the use of applied learning as a supplement to lecture-based business classes and considers whether some of the skill and perspective content sought for business degrees can be more effectively delivered through applied learning courses (internships, practica, service-learning, and the like) rather than through redesign of lecture-based courses. This appears most likely to be true with regard to reflective thinking, integrative experiences, demographic diversity, interpersonal skills, and ethics.

APPLIED LEARNING AND REFLECTIVE THINKING

Management education, like all education, has long been presumed to be improving students' thinking abilities. With the advent of the critical thinking movement in higher education in the 1970s, and its popularization in the 1980s, critical thinking made its way into discussions of management education. While teaching critical thinking was not an explicit accreditation evaluation item in the 1991 AACSB standards, over the remainder of the decade evaluation teams increasingly discussed it as an objective for quality management education. The updated 2003 standards listed "reflective thinking" as an educational goal that accredited programs should address. Examining the meaning of "reflective thinking" helps to identify an important underlying issue in the discussion of reflective thinking and applied learning.

King and Kitchener's Reflective Judgment Model (1994) is one example of an attempt to rigorously state what is meant by "reflective thinking." In this model, the lowest level of reflective thinking is Stage 1, wherein people accept statements as true because of beliefs rather than evidence. People at Stage 2 believe things can be determined "true" or "false" with certainty by simple observation or by asking an authoritative source. Stage 3 reflective thinkers accept that some knowledge is uncertain, but justify resolution of the uncertainty emotionally, by what "feels" like the right choice, rather than by what is arguably a better choice. As one moves up the seven stages of reflective thinking, the notion of "truth" as something immutable and singular recedes. The impact of the *context* on the problem and the resulting array of potential solutions are given more and more weight. Thus, solutions increasingly come to be evaluated on the basis of their *appropriateness* rather than their *correctness*. At the highest stages of the King and Kitchener model, the *process* of inquiry becomes the focus. Conditional and contextual processes, rather than one-dimensional answers, are believed to be the basis of knowledge.

What is interesting about these stages with regard to the discussion of lecture-based versus applied learning education is that they reverse the long-standing hierarchy of ways of knowing, wherein deductive logic is believed to be a more certain basis of knowledge than inductive logic. In King and Kitchener (1994), and according to most models of critical or reflective thinking, *deduction* occurs at the lower stages of judgment while *induction* governs at the higher stages. Deduction is associated with the receipt of presumably correct propositions, the decision makers' efforts, then focus on how the propositions interact to give a solution to the problem at hand. We see one example of this in the traditional

classroom: lower levels of critical thinking and the use of deductive processes are involved as students receive generalizations or formulas in authoritative lectures, then apply those to examples in their homework.

Induction, on the other hand, requires taking information from the environment and creating useful generalizations. Working with what is at hand to extract the needed information is the core of induction. Even for the skillful pattern finder, there are significant problem-solving challenges embedded in the nature of many environments. For a substantial proportion of problems that we encounter in the “real world,” the environment may contain irrelevant and distracting information, sometimes discussed as “white noise,” which interferes with the identification of the relevant information. The relevant information in the environment also tends to be incomplete, thus requiring inference, as in the use of samples to infer information about a population. Further, the environment may exhibit “Santa Fe complexity” (Colander 2000); it may be comprised of a multiplicity of interactive causal factors that contribute to the issue to be addressed. So, with inductive decision-making, we begin the process with ill-structured problems, incomplete information, white noise, and complexity. Arriving at effective decisions from such a beginning is truly a challenge. It is not surprising that induction is perceived by proponents of critical and reflective thinking to reside at a higher level than deduction.

Deduction is associated with the use of crystallized intelligence—stored knowledge that can be called upon to solve problems by applying it to situations in an axiomatic manner. A very powerful deductive mind might examine the shapes of the pieces of a jigsaw puzzle and remember them. Puzzle assembly could then occur rather rapidly using the player’s recall, rather than repeatedly testing individual pieces to find which one interlocks with the partially assembled set. A jigsaw puzzle that has lost some of its pieces is deemed inferior or useless, because the deductive game is to construct a flawless whole from pieces that are all present and precisely interlocking. Few of us are this facile at storing and retrieving information, so it is no wonder that we are amazed and entertained by the wealth of information at the fingertips of a Sherlock Holmes (or more recently, an Adrian Monk). It is no wonder that the proof of being an educated person is seen to rely so heavily on stored facts.

Induction, by contrast, is associated with the use of fluid intelligence, the application of pattern-discerning skills to incomplete information in an effort to solve ill-structured problems. Induction is often more arduous than most deduc-

tion and often less comfortable, as the common aversion to uncertainty attests. Induction is also a more self-aware process, as the decision-maker must confront his/her own limits, challenges, and responsibilities in the decision-making process. And induction is somehow less appealing to observe. Dynamic leaders are thought to be decisive—not those who ponder, weighing uncertainties. But, induction is clearly more like a manager’s day at work (or at home). Induction is the “real world” that educators are accused of not presenting. In preparation for their lives, students should be exposed to some induction-based classes, so they will be prepared for decision-making after college. Contrary to the common view of a strong leader arising from an environment of certainty, Middleton (2005) argues that applied learning is a valuable context within which to learn true charismatic leadership. For longstanding success as business and civic leaders, management students should be exposed to authentic inductive environments, some of which are provided by applied learning.

It is clear that *constructing* authentic decision-making settings is difficult. Developing white noise and incomplete information that appears genuine and that provides the appropriate level and scope of challenge is simply harder than it seems. Even as simple a process as assembling a realistic dataset, to illustrate anomalies in basic statistics courses, can be vexing. Multicollinearity, heteroscedasticity, and autocorrelation are relatively common problems encountered when trying to apply regression analysis to datasets from the “real world.” Yet constructing datasets for students that illustrate these problems in a manner that appears genuine can be quite difficult. Defending such a set to students who are much more comfortable with exercises where they apply received rules and can readily check their answers can be harder yet. Applied learning may present at least part of the answer.

Induction is much of what students are asked to do at an applied learning site. Assisting dislocated natural disaster victims to receive public assistance checks or helping seniors select a Medicare drug plan will almost certainly involve interaction with ill-structured problems, incomplete information, and uncertainty. These situations necessitate that students become problem-solvers, by obtaining sufficient relevant information, developing a reasonable plan of action, then moving toward a solution. Discerning patterns that will allow for feasible solutions in the midst of imperfect information is the inductive reasoning process at work. Searching broadly for analogies, then adapting them to the situation at hand, is a creative process. Both can be practiced as a part of an applied learning assignment.

Hopefully, in many situations, managers seeking solutions will be able to find appropriate problem-solving techniques from the information they have previously obtained deductively. These tools are a part of the stored, crystallized intelligence that provides the foundation of managers' knowledge and skills. They are "tried and true" deductive "applets" that can be inserted into the problem-solving process when the conditions for their use appear. A manager possessing many of these applets simply has a larger tool set from which to choose. These problem-solving concepts, stored in crystallized intelligence, are a very valuable resource. Working through the ubiquitous ill-structured contexts of life to find the situations where these applets apply, however, requires induction. Learning to identify the appropriate environments for the use of these deductive tools is a process that itself often requires inductive reasoning. Acquiring facility at the process of identifying the appropriateness of various deductive processes may be better accomplished in an applied learning environment than in a classroom, precisely because at the heart of the exercise is an ill-defined environment within which to solve problems—the applied learning site.

Guided reflection, wherein students are assisted in looking back at an experience to see the patterns and glean the generalizations that indicate a path forward, can assist the student learners to become better decision-makers for life. Developing in our students the ability to confront unstructured situations, then organize the information at hand to build workable solutions, delivers much of what employers want from employees who are college graduates. Managerial thinking and managerial work, in fact, involve just that process. Every manager wants an assistant to whom she/he can delegate mid-sized issues for resolution. If the manager needs to structure the problem and sort through the surrounding information before turning the problem over to the subordinate—if the manager cannot really delegate—then he/she may as well solve the problem without a subordinate's involvement and save the coordination and communication time. Employers seek seasoned reflectors. Applied learning should be embraced by management educators partly because it involves reflection and pattern recognition at its core (Eyler and Giles 1999), while many lecture-based classes do not.

A storehouse of facts and processes is a great asset that can be obtained through deductive processes in traditional lecture-based educational environments. But induction is also important—too important to be left to the hope that students will develop it as a corollary to a deductive curriculum. Applied learning provides for planned induction-with-reflection learning opportunities. For this

reason, applied learning should be a greater part of managerial education, not as a substitute for lecture-based education but as an important complement.

APPLIED LEARNING AND INTEGRATIVE COURSEWORK

Henry Mintzberg (1975) began his well-known critiques of business education in the mid-1970s. High on his list of concerns was the compartmentalization of business education into disciplinary “silos.” Since that time, Mintzberg has been joined by other authors (Mintzberg and Gosling 2002; Godfrey, Illes, and Berry 2005; Smith 2005) with similar concerns. As a result of business schools’ concerns about compartmentalization, the 1991 AACSB standards recommended that business schools develop integrative courses through which students would be encouraged to bring their knowledge of various areas of business together. This commonly has been approached via case-based courses in which a variety of open-ended situations are examined, with students working to ferret out the issues and suggest paths to addressing them. Case-based courses are quite valuable. Cases deliver facts and issues that are more like the “real world,” in that the problem to be solved is not self-announcing, as it is in questions and problems at the end of a textbook chapter. Students are given a fact set that contains symptoms from which they are to determine the problem to be solved. The fact set contains some extraneous information and may not contain the needed information in a format that readily facilitates its use to address the case problem. The alternative paths of managerial action include more than one feasible direction and offer outcomes that are imperfect and uncertain.

Cases are a significantly improved method of representing the “messy” nature of reality, and are much more likely to build some of the inductive skills managers need. What cases do not do as well, however, is integrate the content of the various business disciplines. Capstone case courses have been taught primarily in the management discipline and by experts in behavioral management, using a behavioral management approach. The leading textbooks, such as Thompson, Gamble, and Strickland (2006), contain a variety of cases, but few included in capstone casebooks are challenging in their accounting or finance content. Similarly, quantitative management, economic analysis, and market research cases are uncommon. The integration of business content using case materials often seems to mean dealing with generally understood issues using behavioral management concepts rather than bringing together disparate disciplinary material. Thus, the collective cases of case books exhibit substantially less breadth than the typical business curriculum.

Individual business cases commonly illustrate one or a small group of interrelated business concepts, so they may fail to address adequately the integration issues that arise in most business contexts. Few significant business decisions affect only a single disciplinary aspect of a company. A new machine will influence production, but must be financed and depreciated. A new marketing strategy will affect a customer group, but also expected revenues and stock price. Strategic administrative redesigns change reporting responsibilities, cost-accounting processes, and information-technology-access requirements. Behavioral management is important—DiPadova-Stocks (2005) is correct that managers manage *people*, so technical material should not be stressed to the exclusion of interpersonal skills. But focusing too heavily on the behavioral management issues within a business unit may also mean missing some of the broader company dynamics and nonbehavioral issues. The use of cases in business is to be applauded, but more because it facilitates teaching of inductive reasoning than for its integration of business disciplinary content.

Applied learning is another way, and perhaps a more authentic way, of bringing into focus the multifaceted nature of the issues that business school curricula attempt to address. In considering the relocation of an animal shelter, students will confront financial issues, zoning regulations, neighborhood attitudes, and the production constraints of an industry. “Multi-disciplinarity” follows naturally when addressing such a problem: marketing, business law, finance and production management are implicit here. Further, several items from the list of additional content business educators seek to deliver are represented in this example: interpersonal communications, environmentalism, group dynamics, analytic skills, reflective thinking, and written communication. To be sure, neither the entire depth nor breadth of the business disciplines can be presented in a few applied learning assignments. But an applied learning course can illustrate the interwoven nature of the disciplinary aspects of problem-solving, thus exposing students to more authentic decision-making environments. In seeking solutions that address the concerns of the internal and external constituencies, applied learning students will almost certainly confront genuine integration challenges and opportunities. In doing this, applied learning may assist management education in meeting the integrative aspect of excellence in management education.

APPLIED LEARNING, ETHICS AND DIVERSITY

Management education, along with the rest of American society, became more cognizant of the need to recognize and respect demographic diversity in the 1960s and 1970s. By the time of the publication of the 1991 standards, AACSB

clearly and explicitly advocated including materials that promoted awareness of diversity and the need to work within a diverse workforce.

Diversity can be difficult to address meaningfully within a classroom. If it is addressed only through lectures, the human essence of the problem can be lost in feelings of sympathy or discussions of political positions. In many classroom environments themselves, true diversity is not evident. Social class diversity and age diversity are often as under-represented as the more commonly cited racial diversity. Through applied learning, students may have contact with a broader spectrum of their communities than classroom-based education allows. Further, that contact may be more authentic, as personal contact with people different from oneself produces an understanding that lectures or readings often cannot match. Research points out that applied learning makes students more comfortable interacting with a diverse group and has a positive effect on students' sense of social responsibility and moral development (Eyler and Giles 1999).

Concerns about ethical business behavior (or the lack thereof) were revived with the excesses of the 1980s and again recently, as corporate scandals again made the headlines. Maintaining the confidence of stockholders, contracting partners, legislatures, and the public has been among the top priorities of good managers for years. The need to address ethics through management education—the recognition that ethics cannot simply be left to employee learning at home or at church—became evident as visible and less visible threats to effective business practices surfaced. Ethics education has been a prescribed component of AACSB accreditation since at least the 1991 standards. Discussions of how to include ethics and which ethical issues to include have been ongoing. The suggestion that courses in Business Law or Business Ethics be a single point of insertion of business ethics into the curriculum created considerable debate, with the conclusion that ethics should be presented there when possible, but also in a broader group of courses.

Applied learning is a natural place to talk about ethics. Observing the competing interests at work in the creation or resolution of an applied learning assignment can easily result in considerations of ethics that arise naturally in the thinking of the students, even in the absence of instructor leadership on the topic. Several studies of ethics and applied learning exist. The research efforts of Bonar, Fisher, and Wechsler (1996), Kolenko (1996), and Morgan and Streb (1999) have all shown applied learning to be effective in increasing awareness of the need for ethical behavior. Research by Eyler et al. (2000) supports this also, indicat-

ing that applied learning has positive effects on students' moral development. These results are particularly significant in view of the sentiment expressed in the following statement by former Secretary of Education and President of the Carnegie Foundation for the Advancement of Teaching, Edward Boyer: "Increasingly the campus is being viewed as a place where students get credentialed and faculty get tenured, while the overall work of the academy does not seem to be particularly relevant to the nation's most pressing civic, social, economic, and moral problems" (1996).

The public, business leaders, higher education administrators, and management educators all recognize the need for meaningful inclusion of diversity and ethics into university degree programs. Some of the attempts to insert ethics and diversity into lecture-based coursework have been less successful, because they have seemed inauthentic or superficial. Applied learning presents a path for including these important aspects of management education in a more effective manner. For business schools pursuing excellence and, especially, for those seeking to provide evidence of that excellence through accreditation, applied learning may present an effective part of an integrated effort to address the ethics and diversity aspects of management education.

APPLIED LEARNING AND INTERPERSONAL SKILLS

To the harried educator, proposals to use the classroom to develop interpersonal skills may seem unrealistic. After years of telling school children not to talk in class (and currently, telling college students to turn off their cell phones), it seems ironic to suggest that the classroom is the place to help students develop their interpersonal skills. Nonetheless, competency in this area is certainly fundamental to business students' success.

The importance of "interpersonal skills" became more evident with the publication of Daniel Goleman's *Emotional Intelligence* (1995). In this and subsequent work, the effect of interpersonal communication is subjected to critical analysis and found to be essential to success in careers and social lives. Learning some aspects of interpersonal communication within a classroom is readily feasible. Classrooms are a place where students can learn about protocols and boundaries. They can learn about syntax and body language. They may even learn about the appropriate uses of slang languages such as Ebonics. Other aspects of interpersonal communications, however, are very difficult to learn in a classroom setting. One example of this is ambience. Casual or formal settings, comfortable or frightening settings, home turf versus away—all are hard to construct in the

minds of students in a classroom setting. Classrooms may, of course, bring up any or all of these feelings, but it is difficult for a student immersed in one set of feelings about the classroom and his/her classmates to step outside of those, to see how communication might occur differently in another environment. In a frightening or stressful environment, a calming voice may be as important as an insightful recommendation. Probably both are required to be an effective problem solver. Authentically teaching the emotional management aspects of interpersonal communication in a non-emotional environment can be a challenge.

A second aspect of interpersonal communication that lectures and classroom settings often cannot provide has been mentioned above—different types of people. Thinking in employment categories, for example, people might talk much differently to a policeman or a priest than to a cashier. Students might talk to an octogenarian much differently than to a peer. Universities are places where relatively young people make investments in their futures. The homogeneity of university student populations, often despite our best efforts otherwise, makes learning interpersonal skills that are suitable for a broad spectrum of audiences difficult.

Applied learning is an opportunity to address both of these concerns about interpersonal skills. Taking students to a different location with a different ambience can create an experience of trying to fit into new environments. They can learn to communicate with audiences whose emotional investments in particular solutions may be considerable. When students experience community-based learning, they often become involved with people of very different economic classes, races, and ages. Communications courses should stay in business school curricula. But exposing students to a broader spectrum of society through applied learning—which might be more similar to their workplace environment than is their university—would be doing them a great service. Meeting the interpersonal communication demands of high quality management education may be more effectively accomplished by adding applied learning experiences to the business curriculum.

SOME CONCLUSIONS

Management education is a part of American society and reacts to it. As society has sought to have its members develop into more effective problem solvers, management education has responded by encouraging reflective thinking and integrated academic content. As society has tried to expand its opportunities to more citizens, management education has responded by including ethics, diver-

sity, and interpersonal skills in its accreditation requirements. AACSB accreditation standards represent a window into the best thinking of management educators. Improving decision-making skills and imparting an understanding of the world from a broader social perspective are clearly legitimate goals of business faculty. Including this new content in a manner that is authentic and effective, without removing business discipline content, represents a significant challenge. Applied learning represents a way to include much of the social content desired, to teach reflective thinking, and to provide an integrative experience, all at the same time. Including applied learning courses in the business curriculum, then, may contribute substantially to excellence in management education and to enhanced compliance with accreditation standards, thus enabling business schools to more easily meet the demands of high quality, twenty-first century management education.

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Making Workers More Effective

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INTRODUCTION

Productivity is a measure relating a quantity or quality of output to the inputs required to produce it (About, Inc. 2007). Throughout this paper, we will focus on variables that affect productivity. This information can help guide companies towards increasing their productivity.

In the formula $X=f(a, b, c, d, e \dots \text{to infinity})$, productivity can be the dependent variable (X). The independent variables a, b, c, d to infinity affect firm productivity. This study identifies some individual independent variables, such as culture, goal setting, role clarity, feedback, supervising relationships, expectations, and performance appraisals.

The theory is that positive independent variables should have a positive effect on productivity. All of these independent variables have ever-changing effects on productivity. It is suggested there be a balance of these variables as they affect productivity. For example, W. Edwards Deming makes a major point: "Don't have quotas." For this article it will be assumed that quotas are goals. Deming seems to be saying that an overemphasis on quotas (goals) at the expense of the other independent variables can have a negative impact on productivity and quality. This article takes into account the importance of Deming's work whether you call them goals, objectives, quotas, or schedules. A manufacturing system

must have some measure of expectations. Experience dictates that a balance of independent variables in this study contributes to productivity.

This article and supporting study does not take into account systems, procedures, workflow, ergonomics, and investment in new equipment. Each of these is another of the independent variables that go on to infinity.

REVIEW OF LITERATURE

The quest for increased productivity and job effectiveness in the modern work environment has become a continuous process for those companies seeking a competitive advantage in their respective markets. Many factors have been identified that influence effective behavior. These factors include the use of rewards for effective performance, employee empowerment, participatory management, employee autonomy, clear and achievable goals, control over the work environment, encouragement of creative thinking, opportunity, ability, and resource availability. This article, with study results, attempts to clarify factors that create a culture for good performance. Rewards, empowerment, goal setting, recognition and job satisfaction all play a role in creating a positive work environment. The Continental Can Company Productivity Program, using the theory and procedures of goal setting, knowledge of results and positive feedback, created dramatic results in productivity, quality and morale (Migliore 2005).

“Never underestimate the power of a thank you,” explains Tracy Michaud, HR manager at the Hitchcock Chair Co., “It is a statement that is hard to argue with, after all a tangible expression of thanks or of reward can be an excellent way to encourage higher performance and promote valued company behaviors” (Cadrain 2003, 12). Rewards play an important role in the process of employee motivation and effectiveness. A high level of job satisfaction was reported in a survey of employees with Mesa Products Inc. Employees reported the profit sharing system used by Mesa was a big factor (Ray 2002). “People enjoy working, and tend to thrive in organizations that create positive work environments where they can make a difference, and where most people in the organization are competent and pulling together to move the company forward” (Bursch 1999, 32). Seniority-based bonus vacation, sick leave and totally free health-care are being scaled back in the modern manufacturing setting, but bonus benefits such as cash payments for reaching certain goals are becoming more common and are better for manufacturers, because benefits are tied directly to more productive hours of employment (Vinas 2004). As Tom Davenport, a principal with Towers

Perrin, an international consulting firm in San Francisco, states: “When people have the tools to perform, the proper training, coaching and feedback from the boss, and recognition for good work, they not only do a better job, but they also feel better about their jobs” (Caudron 2001, 14).

Research has shown that there is a direct correlation between productivity and empowerment, and absenteeism and employee turnover (Anonymous 2001). Jim Willard, Sr. Vice President of manufacturing, Nabisco Biscuit Co., explains his philosophy on employee empowerment, “Our adherence to principles of continuous improvement requires communications in a framework of employee involvement, assuring a compatible environment to support our people in their delivery of a smooth flow of production” (Swientek 2004, 4).

Another important factor influencing job performance is the setting of identifiable and reachable goals (Carr 1993; Greenberg and Weinstein 1992; Mundel 1992). According to a recent study in *Performance Appraisal News and Recent Developments*, 52% of workers want their supervisors to state performance goals more clearly. Nearly 40% want the issue of their performance on the job more closely tied to both the development plans and their compensation outcomes. A recent article in *The Wall Street Journal* asserts that people must have goals that are both clear and challenging in order to motivate high performance (Chu 2004). “Companies realize that performance management is not just about automating annual performance evaluations, it is also about establishing an ongoing process that aligns employees to corporate strategy and one that facilitates a continuous cycle of planning, performing and reviewing” states Paul Schaut, President and CEO of Performaworks, *Business Wire* magazine (2003, 1). Performance management focuses on employee goal setting, performance appraisal, development, coaching and rewards (Anonymous 2000). In an interview with *Workforce* magazine, Fred Nickels, a senior consultant with The Distance Consulting Company, describes four basic performance principles. According to Nickels, goals should be set and agreed upon by both manager and employee, metrics for measurements should be clearly articulated, goals should be flexible enough to reflect changing conditions in economy and work place, and employees should think of their managers as coaches who are not there to pass judgment, but to help in their success (Fandray 2001).

Other elements that influence job performance include physical control over the work environment, encouragement of creative thinking (Bridges 1993; Dimitroff 1991), and opportunity, ability, and resources (Carr 1993; Smith 1993).

Although an argument can be made supporting the idea that job satisfaction and performance are related, it is not uncontroversial. In other words, superior job performance may lead to job satisfaction. Paul Spector, Ph.D., a leading researcher in the field of employee satisfaction from the University of South Florida, believes there is a strong relationship between job satisfaction and job performance. He summarizes that when employees are well matched with the job, they will tend to do their jobs well, thus leading to a higher level of satisfaction and increased productivity (Lieberman 2000). According to John McClenahen, productivity in American factories increased at a seasonally adjusted annual rate of 4.6%, with productivity among durable goods growth at a 4.8% rate and nondurable goods at a 5.4% rate (McClenahen 2005). Theorists have even expressed the idea that it is a “myth” that a satisfied worker makes a productive worker (Latting 1991; Herzberg, Mausner, and Synderman 1959). According to an employee study, achievement, recognition, responsibility, the work itself, and advancement along with growth, lead “to extreme satisfaction.” Even today, these factors occur in a well-managed enterprise, and not only do they improve job satisfaction, they also improve agency productivity and corporate profitability (Tobias 2000).

Within the framework of the ongoing debate, many differing perspectives may be engaged. Some researchers believe the issue can be better understood through examination of the corporate culture within which an employee must work (Greenberg and Weinstein 1992; Poupart and Hobbs 1989; Migliore 2005). While large companies almost always have a formalized review process, many smaller to mid-sized companies have a less structured system, sometimes leaving it up to individual managers as to whether, and how, to conduct an employee performance appraisal (Smith 2004). Others believe that a more individualized approach should be used, focusing on the individual within the corporate structure (Dimitroff 1991; Donaldson, 1990).

Manufacturing efficiency measured by engineered standards, quality, spoilage, cost reductions and shipping schedules was improved during a two-year period in a manufacturing department of Continental Can Company, a major U.S. container corporation. In that period, manufacturing efficiency increased from 76% to 92%. A management system of goal setting, feedback on performance, and performance appraisal with an emphasis on communication was introduced (Migliore 1970). The success of that plant set the stage for the overall productivity/efficiency program for the company (Migliore 1974). Cross Manufactur-

ing, Overland Park, Kansas, used this program to increase using cell groups (Migliore 1995).

Despite differences of opinion regarding the relationship between employee satisfaction and employee effectiveness, managers and theorists alike are taking closer looks at ways to better motivate the corporate workforce. For people to be effective at work, they must find fulfillment and satisfaction on the job (Humanext 2007). In examining job performance, several elements of what makes an employee effective continue to surface in the literature. As noted above, those elements include rewards, autonomy, empowerment, participatory management, clear and attainable goals, recognition, ability, and resource availability.

DATA COLLECTION

The research instrument has been developed over a twenty-year period (Migliore 2005). It is designed to measure elements of the corporate culture, individual attributes, and perceived values of both the individual employee and the corporation. The purpose of the questionnaire was to determine how the managers in the study rated different aspects of the planning, management and control systems. The frame of reference for the study was the individual employee. The respondents were asked to rank and to rate various factors as they related to their job performance and the attributes of the organization as a whole. Respondents answered by providing perceptions and beliefs related to the performance of themselves, their supervisors, and those whom they supervise.

The questionnaires were administered in six manufacturing companies in the United States. The respondents consisted of middle and first-line managers in each organization. A total of 288 responses were used for analysis. In addition, demographic information concerning the individual and the company was collected.

METHODOLOGY AND FINDINGS

Statistical analysis was used to explore elements that may contribute to the performance of the respondents. Eleven questions were asked to explore how the respondents believed they could be more effective on the job (see Appendix A). Factor analysis of the eleven questions produced three factors explaining 57% of the variance (see Table 1). Factor 1 could be identified as a “role clarity” factor, and explained 25% of the total variance. Variables loading high on factor one

included “clearer goals,” “clearer job description,” “better understanding of the organization’s purpose,” and “better conception of how my boss evaluates my work.”

Table 1
Factor Analysis of Variables
Contributing to Enhanced Effectiveness

ROTATED FACTOR PATTERN			
VARIABLE	FACTOR 1	FACTOR 2	FACTOR 3
More job training	0.19053	0.69004	0.05543
Better supervision	0.13530	0.72827	0.29452
More control	-0.00157	0.32651	0.74671
Personal commitment	0.22313	0.65929	0.13313
Clear job description	0.73077	0.29012	0.06814
Judgment freedom	0.59394	0.00503	0.49029
How boss evaluates	0.65440	0.37162	-0.00927
Clearer goals	0.84192	0.15118	0.06008
Company’s purpose	0.54534	0.34494	0.06779
Better resources	0.50838	-0.03500	0.41602
Better team	0.11584	0.13429	0.76953
VARIANCE EXPLAINED BY EACH FACTOR			
	FACTOR 1	FACTOR 2	FACTOR 3
	2.69720	1.931202	1.683676
Final Commuality Estimates: Total = 6.3122397			
Note: Rotation Method–Varimax			

The second factor included the variables “better supervision,” “more job training,” as well as “greater personal commitment.” Factor 2 explained 18% of the total variance of the model. The third factor included the two variables “more control over my subordinates” and “better team to work with.” Factor 3 explained 15% of the variance. Table 1 exhibits the findings of the factor analysis with a varimax rotation.

The average scores of the job variable rankings produced five items that were noticeably higher than the rest. The variables rated highest by the composite were “better resources” (x=3.14), “more job training” (x=3.094), “clearer goals” (x=2.858), “more independent judgment and freedom” (x=2.812), and “how boss evaluates” (x=2.742). “Better resources” double-loaded, having moderate

Table 2
Ranked Arithmetic Means

1.	Xj = Better resources	= 3.140
2.	Xa = More job training	= 3.094
3.	Xh = Clearer goals	= 2.858
4.	Xf = More independent judgment and freedom	= 2.812
5.	Xg = How boss evaluates	= 2.742
6.	Xe = Clear job description	= 2.396
7.	Xk = Better team	= 2.380
8.	Xi = Company's purpose	= 2.347
9.	Xd = Personal commitment	= 2.155
10.	Xb = Better supervision	= 2.094
11.	Xc = More control	= 2.092

scores on both factors one and three. “More job training” loaded high on the second variable, while the other three variables loaded high on the first factor. The lack of any single strong score suggests that segmentation of the respondents might reveal varying patterns of needs. To investigate this possibility, the respondent pool was categorized into two subsets.

The analysis was taken a step further by dividing the respondent pool into an “effective/not effective” categorization to determine if the “not effective” respondents answered differently in how they believed that they could increase job performance as compared to the “effective” respondents. The average score for the responses to the eleven questions for each of the 288 respondents was calculated. Then the difference between each question and the average score for each respondent was computed.

A positive difference between the actual question and the average for all questions would indicate that the respondents believed that question was relatively important in being more effective. The t-test for related measures determined whether the differences were significantly different than zero. The important questions were those significant at the $p < .05$ level of significance with positive differences. The results of the test are in Table 3.

The t-test for related measures was used to examine those respondents categorized as “not effective” and then to examine the “effective” respondents. The index created to measure effectiveness combined performance recognition and the employee’s perceived effectiveness. The responses to the question “my

Table 3
T-Test for Related Measures for
“Not Satisfied” and “Satisfied” Respondents

NOT SATISFIED

VARIABLE	DIFFERENCE	N	T	P
More job training	0.450	52	4.94	0.0001
Better supervision	-0.279	51	-1.94	0.0581
More control	-0.500	47	-3.40	0.0014
Personal commitment	-0.416	52	-2.79	0.0074
Clear job description	-0.067	51	-0.41	0.6836
Judgment freedom	0.181	52	1.17	0.2490
How boss evaluates	0.411	52	2.70	0.0093
Clearer goals	0.373	52	2.74	0.0085
Company's purpose	-0.377	52	-2.48	0.0165
Better resources	0.411	52	2.72	0.0090
Better team	-0.242	52	-1.48	0.1438

SATISFIED

VARIABLE	DIFFERENCE	N	T	P
More job training	0.668	86	6.14	0.0001
Better supervision	-0.501	85	-5.86	0.0001
More control	-0.404	83	-3.95	0.0002
Personal commitment	-0.353	85	-3.84	0.0002
Clear job description	-0.215	86	-2.38	0.0195
Judgment freedom	0.331	86	3.03	0.0032
How boss evaluates	0.068	85	0.69	0.4920
Clearer goals	0.133	86	1.32	0.1909
Company's purpose	-0.111	86	-1.12	0.2652
Better resources	0.517	86	4.34	0.0001
Better team	-0.157	86	-1.49	0.1401

capabilities are fully utilized” were added to the responses to the question “I am recognized for good work.” The average index (XPROD) was computed with the highest 25% categorized as effective and the lowest 25% categorized as not effective.

The “effective” respondents responded with the following top two questions: “more job training” (p=.0001, n=71) and “better resources” (p=.0002, n=71).

Table 4
T-Test for Related Measures for
“Not Effective” and “Effective” Respondents

NOT EFFECTIVE

VARIABLE	DIFFERENCE	N	T	P
More job training	0.522	82	4.90	0.0001
Better supervision	-0.559	81	-5.16	0.0001
More control	-0.600	76	-4.86	0.0001
Personal commitment	-0.539	80	-4.84	0.0001
Clear job description	-0.189	80	-1.50	0.1373
Judgment freedom	0.156	82	1.42	0.1605
How boss evaluates	0.363	82	2.93	0.0044
Clearer goals	0.485	82	4.50	0.0001
Company's purpose	-0.124	82	-1.08	0.2844
Better resources	0.585	81	4.90	0.0001
Better team	-0.161	82	-1.27	0.2072

EFFECTIVE

VARIABLE	DIFFERENCE	N	T	P
More job training	0.580	71	5.40	0.0001
Better supervision	-0.489	72	-5.47	0.0001
More control	-0.225	68	-2.51	0.0144
Personal commitment	-0.175	71	-1.95	0.0556
Clear job description	-0.197	71	-2.17	0.0336
Judgment freedom	0.192	72	1.60	0.1147
How boss evaluates	0.011	72	0.11	0.9121
Clearer goals	0.164	72	1.54	0.1277
Company's purpose	-0.225	72	-1.83	0.0708
Better resources	0.516	71	4.00	0.0002
Better team	-0.155	72	-1.37	0.1743

“Clearer goals” and “how boss evaluates” were notably missing from the “effective” respondents. To determine if the “not effective” respondents responded differently than the “effective” respondents, the t-test for independent means was used. Two questions were significant at the $p < .05$ level. “How boss evaluated” ($p = .0300$) and “clearer goals” ($p = .0367$) were both significant. Differentiating between “not effective” and “effective” responses, “not effective” respondents indicated that they would be more effective if they knew how the boss evaluated their work and had clearer goals.

Table 5
T-Test for Independent Means for
“Not Effective” Versus “Effective”

VARIABLE: HOW BOSS EVALUATES

CATEGORY	N	STANDARD MEAN	STANDARD DEVIATION	ERROR
Not Effective	82	0.36337768	1.12431286	0.12415958
Effective	72	0.01129349	0.86541271	0.10198987
		T-VALUE	DEGREES OF FREEDOM	P > T
		2.1912	150.0	0.0300

VARIABLE: CLEARER GOALS

CATEGORY	N	STANDARD MEAN	STANDARD DEVIATION	ERROR
Not Effective	82	0.48532890	0.97737424	0.10793293
Effective	72	0.16407127	0.90339468	0.10646608
		T-VALUE	DEGREES OF FREEDOM	P > T
		2.1082	152.0	0.0367

INTERPRETATIONS OF THE FINDINGS

It appears evident from the study that effectiveness and job performance may be improved when communication of expectations is enhanced and facilitated. The elements, which appeared most often and with the greatest level of significance, in differentiating between the two extremes, included the establishment of more clearly defined goals and a better understanding of the evaluation criteria for achieving the goals that are used by the supervisor in determining job performance. Both elements appear in factor one of the analysis above, identified as the “role clarity factor.” In addition, better job training and availability of resources were the most important elements among all respondents. It seems apparent that the most crucial element in improving “not effective” employees involves improving employee understanding of the evaluation criteria.

CONCLUSION

Productivity can be increased in a positive culture. A balance of performance objectives, feedback, good communication, teamwork, and employee empower-

ment all contribute to improved productivity. These principles were validated in a study of six medium-sized manufacturing companies. The study conducted and the literature reviewed indicates that management can create an environment that is conducive to making workers more effective. Management can set up, maintain and encourage goal setting, performance review, and meaningful boss/worker communication and job training. The work environment must have facilities, tools, and a physical layout for the management system. This would create a positive effect. The 288 responses not only paint a clear picture but also, detail is needed to make workers more effective.¹

1. This article is based on a paper presented at the SWFAD Academic Meeting in St. Louis, March 2002. Significant contributions were made by James Beard, Maggie Dorrell, David Dyson, and Rinne Martin.

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Appendix A
Sample Questions:
Corporate Culture Questionnaire

I believe I would be more effective on the job if I had:
(Circle the numeral to indicate the answer.)

ROTATED FACTOR PATTERN

	NOT AT ALL	SLIGHTLY	MODERATELY	CONSIDERABLY	VERY MUCH SO
A. More job training	1	2	3	4	5
B. Better supervision	1	2	3	4	5
C. More control over my subordinates	1	2	3	4	5
D. Greater personal commitment to produce more	1	2	3	4	5
E. More clearly defined job description and duties	1	2	3	4	5
F. More freedom to use my own judgment	1	2	3	4	5
G. Better conception of how my boss evaluates my work	1	2	3	4	5
H. Clearer goals to work toward	1	2	3	4	5
I. Better understanding of organization's purpose or mission	1	2	3	4	5
J. Better resources (facilities, equipment, tools, etc.) to work with	1	2	3	4	5
K. Better team to work with	1	2	3	4	5

Revisiting When Firms Learn from their Acquisition Experience: Evidence from 1996–2006

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INTRODUCTION

Hayward's 2002 article opens with the statement that "acquisitions continue to be remarkably popular and controversial" (Hayward 2002, 21); this has not changed. Nearly five years after publication of "When Do Firms Learn from their Acquisition Experience?" (Hayward 2002), it is a good time to review his work. During the period 1997–2006, over 356,000 mergers and acquisitions with U.S. and non-U.S. targets took place, for a total value of over \$28 trillion, with an average acquisition cost of \$172 million. Given the quantity and value of acquisitions and large commitment of resources, identification of key success factors remains a topic of interest. Since acquisitions are complex events and key success factors causally ambiguous (Hayward 2002; Haspeslagh and Jemison, 1991), clear identification of what leads to success is elusive. Others suggest factors that impact acquisition performance include the acquisition target, price, integration, and mechanism (Deutsch, Keil, and Laamanen 2007; Hayward 2002; Agrawal, Jaffe, and Mandelker 1992; Capron 1999; Fowler and Schmidt 1988; Loughran and Vjih 1997).

THEORY AND HYPOTHESES

Acquisition Experience and Organizational Learning

There is reason to believe that an organizational learning perspective is an

appropriate referent for acquisition performance (Ahuja and Katila 2001). Organizational learning results from the active process of learning from direct experience, interpretation of that experience, and the conservation of the experience for future retrieval (Levitt and March 1988). The organizational learning paradigm implies that organizations actively engage a learning process (i.e., learning is intentional), and that the process is managed. The organizational learning literature uses production measures as a proxy for learning effects (Darr, Argote, and Epple 1995) that assume related activities. Research suggests, however, that performance improvement is not necessarily indicative of organizational learning, because the causes of the outcome and the learning are often ambiguous (March and Olsen 1975).

The previous study noted, however, that while experience may account for learning effects in tactics where the outcome is more clearly measured, the effect of learning on strategic choices, such as acquisitions, remains uncertain. If learning curve effects accrue to acquisition performance, there are various factors that may mitigate gains that would otherwise be realized. Acquisitions are heterogeneous (Haspeslagh and Jemison 1991; Hayward 2002), so inferences differ across acquisitions (Haleblian and Finkelstein 1999). As suggested earlier, there is significant variation in acquisition performance, which affects the intensity with which managers search for inferences from those experiences (Levinthal and March 1993; Weick 1979). Finally, there is great irregularity in acquisition occurrence. Even if firms generate adaptive inferences, those inferences may not be generated and applied in a timely fashion (Huber 1991).

All this suggests that acquisition experience per se may be insufficient to ensure superior acquisition performance (Haleblian and Finkelstein 1999). Instead, such performance will more closely relate to a) the businesses that are acquired, b) the performance of those acquisitions, and c) the temporal intervals between the focal acquisition and prior ones. The following sections examine each of these issues in turn.

The Business of Prior Acquisitions

This section argues that prior acquisitions that are highly similar or dissimilar to one another will negatively relate to focal acquisition performance. When prior acquisitions are highly similar to one another, acquirers lack the generalist skills to appreciate a range of acquiring opportunities (Levinthal and March 1993). When prior acquisitions are highly dissimilar to one another, acquirers lack the specialist skills to extract gains from any one type of acquisition.

There are a variety of reasons that firms may acquire another firm. An organization may use acquisitions as a mechanism to acquire new resources and capabilities in order to enter new markets (Amburgey and Miner 1992), strengthen an existing market position (Baker and Bresnehan 1985), elaborate positions in existing markets (Ahuja and Katila 2001), or leverage capabilities (Hamel and Prahalad 1993). Market-strengthening acquisitions are particularly common and path-dependent, because they exploit existing market positions and capabilities (Levinthal and March 1993). A series of highly similar acquisitions reflects a singular logic to, say, eliminate competitors (Baker and Bresnehan 1985), attain economies of scale and scope and develop technical knowledge (Ahuja and Katila 2001). As this expertise evolves, gains from deploying it become more accessible, transparent and immediate, prompting further similar acquisitions. Yet because these acquirers fail to explore new markets and capabilities, they cannot attain new knowledge bases. Therefore, they are vulnerable to competitors whose acquisitions co-evolve with markets (Leonard-Barton 1992). When problems are open-ended (e.g., how to develop better returns from acquisitions), diverse experience helps lower the risk of making type 1 (rejecting a hypothesis that is true) and type 2 (accepting a hypothesis that is false) errors in tackling related or sub-problems.

Acquisition is a balancing act between exploiting existing opportunities and exploring for new ones. Acquiring a series of highly similar businesses promotes specialized learning about that business, but prevents learning about other businesses. If these acquirers make another similar acquisition, they become even more specialized. Yet, these firms lack the skills to effectively select and implement non-conforming acquisitions. Acquiring a series of highly dissimilar businesses helps firms to discover new bases of knowledge and experience, but prevents specialized learning about any one business. If these firms make another diverse acquisition, they become even more administratively stretched and incoherent (Teece et al. 1994). Yet, these firms lack the skills to select and implement acquisitions that exploit an existing market position.

Therefore, both types of acquisition experience are detrimental to selecting a focal acquisition *irrespective* of the nature of that acquisition. It follows that firms with experience in acquiring businesses that are not too similar or different from one another are best placed to select a focal acquisition. Put another way, this experience enables firms to gauge what is special, unique and important about that opportunity. Thus, an inverted U-shaped relationship will govern the relationship

between a) the similarity between the businesses of prior acquisitions and b) focal acquisition performance. This is restated below:

H₁: There will be an inverted U-shaped relationship between
a) the similarity of the businesses of prior acquisitions and
b) focal acquisition performance.

As discussed, the performance and nature of prior acquisitions predicts firms' abilities to generate adaptive inferences from their acquisitions (Cyert and March 1963; Levinthal and March 1993). I now turn to such performance.

The Performance of Prior Acquisitions

Prior literature suggests that organizations tend not to search deeply for inferences from prior acquisitions that they perceive to be successful or major failures. This rests on the belief that successful acquisitions promote "satisficing" that limits the desire to search for new and superior solutions (Cyert and March 1963). Likewise, large failures limit organization search since it questions competence that may induce market decline. Further, failed acquisitions lead to attribution errors, in which managers attribute performance to factors outside their control, including industry conditions or surprises about the target firm (Kelley 1971). Unlike the problems associated with gains or large losses, small losses highlight problems without suggestion of incompetence. Therefore, firms are less likely to learn from acquisitions that result in gains or large losses. Based on the above argument, small losses should contribute to organizational learning and superior performance on the next acquisition. Moreover, the greater firms' experience with these small losses, the greater the scope for this learning.

H₂: The greater the number of small acquisition losses incurred in prior acquisitions, the greater the focal acquisition performance.

The foregoing argues that the nature and performance of prior experience predicts the types of inferences that firms will glean from them. Yet, unless inferences are generated and applied in a timely fashion, they assume limited value (Huber 1991). Thus, the following section addresses the temporal intervals between acquisitions.

The Temporal Intervals Between Acquisitions

Research shows that a very long or very short interval between two projects hampers project development (Gersick 1994). On the one hand, very long

intervals increase the likelihood that the inferences from the prior experiences are unavailable, inaccessible and inapplicable (Argote, Beckman, and Epple 1990). Unless the learning is well codified, it may not be compelling, relevant and salient to managers who work on the focal acquisition but not the prior one. On the other hand, firms may be unable to generate meaningful inferences from very recent acquisitions. Research suggests that managers are unable to evaluate acquisitions that occur in quick succession (Haunschild, Davis-Blake, and Fichman 1994). Managers often experience an adrenaline rush or over-exuberance to acquire (Pablo, Sitkin, and Jemison 1996). Preoccupied with doing the next deal, these managers ignore inferences from prior acquisitions, particularly if those inferences raise doubts about the merits of the focal acquisition (Haunschild, Davis-Black, and Fichman 1994). Thus, inferences fail to take root from acquisitions that very quickly follow one another.

All this suggests that the process of generating inferences can be derailed when there are very long and very short intervals between acquisitions. In turn, this will reduce focal acquisition performance, as restated below:

H_{3a}: There is an inverted U-shaped relationship between
a) prior acquisitions and b) focal acquisition performance.

Assuming that organizations form adaptive inferences from prior acquisitions, those inferences may not be applied to the focal acquisition in a timely fashion. Long intervals between a focal acquisition and the one before it magnify the inaccessibility of learning; short intervals between such acquisitions prevent inferences from taking root and being applied in a timely fashion. This suggests the following:

H_{3b}: There is an inverted U-shaped relationship between
a) the time elapsed between the focal acquisition and the one before it and b) focal acquisition performance.

The above hypotheses elaborate a theory on when firms are expected to learn from their acquisitions experience. In particular, the previous study hypothesized that firms will learn from acquiring businesses that are neither too similar nor dissimilar to prior ones. Further, small losses from acquisition experience will promote the search for rich inferences from acquisition experience. Finally, inferences are generated and applied more effectively when there is neither too little nor too much time between acquisitions. In turn, I expect that this learning will be adaptive and so positively relate to focal acquisition performance. I

now outline the current sample and methods that replicated the hypotheses of the previous work.

SAMPLE

The sample contains all publicly disclosed acquisitions for the fifteen year period from 1991 to 2006 for U.S.-domiciled firms. Although Hayward's sample consisted of only the 100 largest U.S.-domiciled firms (by market capitalization, as reported by *Fortune* magazine from six industries), the current sample contains all firms, regardless of size or SIC code. I choose to extend the sample in order to further test whether the findings are generalizable across industries and firm size. The focal deals include both domestic and foreign acquisitions of minority interests, material assets, and wholly acquired deals (Hayward 2002).

The primary source of acquisition data is from the Securities Data Company (SDC) Platinum database provided by Thomson Financial. The SDC Platinum database is frequently used in acquisition research and provides comprehensive information on acquisitions (Deutsch, Keil, and Laamanen 2007; Finkelstein and Haleblan 2002; Hayward 2002). The SDC netted a sample of 8,961 acquisitions by U.S.-domiciled firms. Of the total amount, 2,569 were non-focal acquisitions (those acquisitions announced between 1991 and 1995) but are important since they constitute part of the firm's prior experience (Hayward 2002).

METHODS

Dependent Variable

The dependent variable is acquisition performance measured as the level of wealth that acquirers generate from their focal acquisition.

Explanatory Variables

Acquisition experience. Firm acquisition experience is the sum of recent acquisitions undertaken by the firm, from 1985 to the focal deal.

Similarity of prior acquisitions. The measure is a simple percentage score that calculates the percentage of prior acquisitions that conform to the most common four-digit SIC code.

Small acquisition losses. The number of times a firm recorded an announcement loss of less than 3% as measured by the cumulative abnormal return methodology used above.

Timing of prior acquisitions. The mean number of days between prior acquisitions, excluding the focal acquisition.

Timing of focal acquisition. Number of days between the focal acquisition and the previous one.

Discount factors. The baseline assumption used is no discounting, the approach adopted by Haleblan and Finkelstein (1999).

Control Variables

Year of acquisition. Series of dummy variables for the years 1996–2006, where 1996 serves as the residual category.

Industry. The four-digit SIC codes as dummy variable to remove firm-level effects.

Firm size. The log of firm sales in the year in which the acquisition took place.

Firm performance. The total shareholder returns of the acquiring firm in the year prior to the acquisition.

Business similarity. Controls for the similarity of the focal acquisition to the firms' existing line of business, using the same scale discussed above for the similarity of prior acquisitions (Rumelt 1986).

Transaction-Level Variables

Relative acquisition size. The final purchase price of the acquisition as a percentage of the market capitalization of the acquirer at the time of acquisition announcement.

Contested bid. A dummy variable where 1 denotes a contested bid and 0 is otherwise.

Foreign bid. A dummy variable where 1 is the acquisition of a non-U.S. operation and 0 is the acquisition of a U.S. operation.

Method of payment. A dummy variable where 1 is a cash offer and 0 denotes stock payments or a combination of cash and stock.

Use of advisor. A dichotomous variable coded 1 when an advisor was used on the focal deal and 0 otherwise.

Estimation Techniques

Tables 2 and 3 show the results of the OLS models for announcement returns. Model 1 considers the effects of the control variables, Model 2 the effects of the control and the similarity of business and size variables, Model 3 incorporates the time between acquisitions variable, and Model 4 incorporates the squared term of the time between acquisitions variable and includes all the explanatory variables including small acquisition losses. Model 5 examines the effects of discounting acquisition experience by the inverse of years between the occurrence of the focal acquisition and the prior experience.

RESULTS

Table 1 reports the descriptive statistics and correlations for the variables. This table shows that on average the announcement returns for this sample were 1% (t-statistic significantly different from zero, $p < 0.05$) consistent with other findings (e.g., Haleblan et al. 2006). The number of observations for the dependent variables and announcement returns is 6,389. Table 1 provides background on the firms undertaking acquisitions in this sample. On average, these firms undertook four acquisitions before each focal acquisition. The average number of days between acquisitions was approximately 1,300 days, compared to 500 days in the Hayward study. On average, firms made two small acquisition mistakes prior to the focal acquisition. Acquisitions were contested on 2% of occasions and 16% of the deals were for foreign firms; these results are similar to the Hayward study. Nearly 25% of the deals were paid for with cash. Acquirers used investment bank advisors on 46% of their transactions. Tables 2 and 3 provide the tests of the effects of the amount and nature of acquisition experience on acquisition performance. Model 1 of these tables includes only the control variables. For announcement returns, this model yielded an R-square value of 0.251 (see Table 2), which is consistent with previous research. When other variables are added to models 2–5, there is no change to the R-square. This suggests that for this sample set, the contribution to the R-square is not accounted for by similarity and size of previously acquired businesses, small acquisition losses or timing of acquisition variables. Model 5 examines the effects of the experience variables when experience is discounted and this discounting did not explain additional variance in acquisition performance for both measures of performance. I now turn to the main findings of this article for each of the explanatory variables in turn.

Effects of the Similarity of Prior Acquisitions

Hypothesis 1 predicted an inverted U-shaped relationship between the similarity of the businesses of prior acquisitions and focal acquisition performance. This test involved including a main effect and a squared term for these variables. When announcement returns are the dependent variable, the main effect yielded a negative and significant coefficient for this variable ($p < 0.10$); and the squared term yielded a positive and significant coefficient ($p < 0.05$). Hence, the results do not support a pattern that is consistent with the inverted U-shaped relationship and, therefore, do not support Hypothesis 1; these results are contrary to Hayward's findings.

Effects of Small Acquisition Losses

Acquisition losses were defined as prior deals in which the acquirer recorded announcement losses of less than 3%. Using this definition, each acquirer on average made approximately two small mistakes prior to a focal acquisition. These results suggest that acquirers during this period made more small mistakes prior to the focal acquisition than in previous studies. The presence of small acquisition losses in prior deals had a significant impact on focal acquisition performance. That is, the greater the number of small losses, the poorer the focal acquisition performance, not supporting Hypothesis 2.

Additionally, I used Hayward's (2002) approach to conduct a sensitivity analysis that tested for the effects of acquisitions with certain performance characteristics. The procedure recalculated the small acquisition loss variable and incorporated such variables in Model 3 of Table 2 to test the changes in assumptions. Separate measures that counted the number of a firm's prior acquisitions with losses of more than 3% and less than 3%, 2% and 1%; gains of less than 3% and more than 3% were used. Table 4 reports these sensitivities and shows that acquisition performance does not significantly relate to the number of prior acquisitions that yielded gains. In contrast, acquisition performance was significantly and positively related to the number of losses of 3% or less. Interestingly, acquisition performance was significantly and positively related to the number of acquisitions in which firms experienced losses of greater than 3%. There may be systemic reasons why these firms are poor acquirers, say, because they have poor managers that arrive at the wrong strategy and do not learn from experience.

Table 1
Descriptive Statistics and Correlations for Focal Acquisitions

DEPENDENT VARIABLE: ANNOUNCEMENT RETURNS	N	MEAN	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Announcement returns	6389	0.01	0.70	1.00													
2 Firm size (log)	6389	2.89	0.96	0.01	1.00												
3 Firm performance (Log)	6389	4.05	20.47	0.04	0.24	1.00											
4 Contested bid	6389	0.02	0.14	0.00	0.04	0.00	1.00										
5 Foreign bid	6389	0.16	0.36	0.01	0.34	0.10	0.03	1.00									
6 Business similarity	6389	2.67	3.41	-0.01	0.09	0.01	0.02	0.07	1.00								
7 Relative deal size	6389	16.27	271.69	0.00	0.04	0.04	0.06	-0.01	0.00	1.00							
8 Method of payment	6389	0.24	0.43	0.00	0.10	0.00	0.01	0.08	-0.01	-0.01	1.00						
9 Use of advisor	6389	0.47	0.50	0.01	0.27	0.05	0.10	0.03	0.11	0.05	0.01	1.00					
10 Acquisition experience	6389	3.15	4.11	-0.01	0.02	0.04	-0.03	-0.02	0.03	0.01	-0.05	-0.11	1.00				
11 Similarity of prior acquisition	6389	3.77	3.65	-0.02	-0.10	0.00	-0.01	-0.04	-.16	-0.01	-0.06	-0.14	0.61	1.00			
12 Small acquisition losses	6389	27.55	34.75	-0.02	-0.20	-0.03	-0.01	-0.06	0.17	-0.02	-0.06	-0.17	0.54	0.95	1.00		
13 Timing of prior acquisitions (natural log)	6389	2.46	3.18	-0.01	0.25	0.10	-0.03	0.04	-0.07	0.02	-0.02	0.00	0.70	0.22	0.10	1.00	
14 Timing of focal acquisitions (natural log)	6389	6.94	1.01	0.01	-0.31	-0.07	0.00	-0.08	0.03	-0.01	0.03	-0.01	-0.69	-0.33	-0.16	-0.73	1.00

Effects of the Timing of Acquisition Experience

Hypothesis 3a predicted an inverted U-shaped relationship between time elapsed between prior acquisitions and focal acquisition performance. To model this, I included the time between acquisitions variable, as well as the squared term. Hypothesis 3a is supported for announcement returns (main effect and squared term, $p < 0.10$). Hypothesis 3b predicted an inverted U-shaped relationship between the focal acquisition and the one before it and the focal acquisition performance. This hypothesis is not supported (main effect and squared term, $p < 0.10$).

Effects of the Control Variables

Contrary to experience curve logic, greater acquisition experience reduced focal acquisition performance when announcement returns are the dependent variable ($p < 0.10$ in Model 1). This result did not change despite various changes in the assumptions about discounting the value of that experience. Several control variables had a significant effect on announcement returns. Contested bid was significantly and negatively related to announcement returns ($p < 0.10$). While the tables do not show the year dummies, none was significantly associated with announcement returns or analysts' ratings. The control variables accounted for 25% of the variance in announcement returns ($F < 0.01$). Table 5 summarizes the hypothesized relationships and their level of support for the two measures of acquisition performance.

Effects of Discounting Prior Experience

Model 5 of Tables 1 and 2 reports the effects of discounting the value of prior experience. These results show that discounting experience by the inverse of years elapsed since the focal acquisition did not materially change the results reported above for small acquisition losses. Further, the negative correlation between acquisition experience and acquisition performance reported above did not hold using this discount assumption.

DISCUSSION

Effects of the Similarity and Size of Prior Acquisitions

Similar to the findings of Haleblan and Finkelstein (1999) and congruent with behavioral learning theory, evidence for both positive and negative effects of acquisition experience exists. The effect of acquisition experience was U-shaped, contrary to Hayward's findings. The best performers appeared to be either those without experience or those with a significant amount of experience and ap-

Table 2

OLS Regression Results for Acquisition Learning Using Announcement Returns as the Dependent Variable

DEPENDENT VARIABLE: ANNOUNCEMENT RETURNS	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
Constant					
Firm size (log)	-0.003	-0.001*	0.000**	0.001**	0.001**
Firm performance	0.036	0.036	0.036	0.036	0.036
Contested bid	-0.001**	-0.001**	-0.001*	-0.001*	-0.001**
Foreign bid	0.009	0.009	0.009	0.009	0.009
Business similarity	-0.033	-0.033	-0.034	-0.034	-0.034
Relative deal size	-0.003	-0.003	-0.003	-0.003	-0.003
Method of payment (cash = 1)	0.003	0.003	0.003	0.003	0.003
Use of advisor	0.024	0.024	0.024	0.024	0.024
Acquisition experience	-0.006*	-0.005*	-0.004*	0.004*	0.004*
Similarity of prior acquisition	0**	-0.01	-0.005*	-0.002*	-0.002*
Squared term of similarity of prior acquisition		0.01	0.003*	0***	0***
Small acquisition losses			-0.15*	-0.14*	-0.15*
Timing of prior acquisitions (log)			-0.007*	0.018	0.018*
Squared term of timing of prior acquisitions (log)				-0.026*	-0.026*
Timing of focal acquisitions (log)			0.006*	-0.005*	-0.005*
Squared term of timing of focal acquisitions (log)				0.012*	0.014*
N	6389	6389	6389	6389	6389
R Squared	0.251****	0.251****	0.251****	0.251****	0.251****

*p < 0.1; ** < 0.05; *** < 0.01; **** F < 0.01

proportionately discriminated. This suggests that firms with a moderate amount of experience may suffer from problems in attribution across acquisitions, hubris in ability based on a limited set of experiences, or just “stuck in the middle” (a little bit of knowledge is a bad thing). The results suggest that those firms that make multiple acquisitions within the same industry benefit by generalizing past acquisition knowledge. Even though it is possible to apply past experience inappropriately, poor outcomes might be avoided if firms apply experience to similar acquisitions.

Effects of Small Acquisition Losses

Hypothesis 2 predicted that small acquisition losses have a positive effect on focal acquisition performance; the findings here do not support this. The results suggest that small acquisition losses have a negative and significant effect on performance. This result held under various assumptions, as shown in Table 4.

Effects of Acquisition Timing

The results suggest that the relationship between acquisition timing and performance is a U-shape, contrary to Hayward’s (2002) findings and hypothesis 3b. This suggests that there is an initial decrement following the first acquisition, perhaps due to inappropriate generalization or hubris, followed by subsequent improvement. However, this supports Hayward’s claim that when he sampled only very large deals, he found a positive relationship between time elapsed performance (Hayward 2002).

Limitations and Implications for Further Research

Since this study attempted to replicate the efforts of Hayward’s (2002) article it is fraught with the same limitations. The approach to measure similarity of prior acquisitions may only weakly estimate the true similarity; acquisition performance measures remain a challenge (Schoenberg 2006). This study fails to take into consideration acquisition motivation. If the motivation is to enter new markets, gain access to alternative forms of production (i.e., gain knowledge), or yet another reason, then indicators of intent are needed to account for performance. The preceding suggests that small losses may be acceptable if intent is met. Therefore, the results that are demonstrated in this study might be mitigated by measures of intent other than agency issues. More careful selection of the dependent variables is likely to explain greater variation in acquisition performance.

Table 3
The Effect of Prior Acquisition Performance
on Focal Acquisition Performance

Number of acquisitions (s) with prior performance from	Coefficient	S.E.
$x = < -0.03$	-0.01*	0.08
$0.00 = < x > -0.03$	0.02*	0.00
$0.00 = < x > -0.02$	0.02*	0.00
$0.00 = < x > -0.01$	0.00*	0.01
$0.00 = > x < -0.03$	-0.01*	0.01
$x = > -0.03$	0.02*	0.01

$p < 0.01$; $p < 0.05$; $p < 0.10$

Results report the effect of different assumptions about prior acquisition performance on focal acquisitions performance, as predicted in Model 3 of Table 2.

Table 4
Summary Comparison of Hayward and Current Study

Hypothesis	Hayward 2002 Findings	Current Findings	Effects on announcement returns (coeff.)
1 The relationship between similarity of businesses of prior acquisition and focal acquisition performance is an inverted U.	Supported	Not Supported	-0.002**
Squared term			0**
2 Focal acquisition performance is positively related to the number of prior small acquisition losses.	Supported	Not Supported	-0.014*
3a The relationship between prior acquisitions and focal acquisition performance is an inverted U-shaped relationship.	Supported	Supported	0.018*
Squared term			-0.026*
3b The relationship between the time elapsed between the focal acquisition and the one before it, and the focal acquisition performance is an inverted U-shaped relationship.	Supported	Not Supported	-0.005*
Squared term			0.012*

This study also has implications for acquisition managers. The results suggest that acquirers' subsequent acquisitions underperform prior acquisitions. Hence, although the organization may learn from prior acquisitions, it may not be able to attribute learned experiences to dissimilarities in the focal acquisition. Thus, the acquirer would benefit by more carefully assessing the similarity in antecedent conditions to subsequent acquisition attempts. When an organization's prior acquisitions are more dissimilar to the focal acquisition, however, acquisition managers might benefit by less reliance on prior experience.

CONCLUSION

I started this article with the mixed results in the strategy literature for the impact of acquisition experience on acquirer performance. Furthermore, nearly five years after Hayward's influential article, it is time to reevaluate his findings over a longer period of time and across all industries in an attempt to confirm his findings or others in the field. I find that acquisition experience remains insufficient to ensure acquirer learning. Organizational learning also requires attention to the characteristics, performance and timing of experience (March 1991; Penrose 1959). These results are close to evolutionary thinking that firms adapt from a variety of experiences, experimenting and temporal rhythms (e.g., Martin and Solomon 2003). In this view, acquirers develop specialist skills to exploit their existing opportunities and generalist skills to explore new ones. The findings presented here support Haleblan, Kim, and Rajagopalan (2006) that greater experience in a particular area gives organizations the chance to refine routines and increase the likelihood of future use.

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Adoption of Sustainable Business Practices in Small to Medium-Sized Organizations

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INTRODUCTION

There is a growing global awareness of the benefits for businesses of adopting sustainable business practices. Once just the domain of organizations focused on environmental issues, sustainable businesses practices are now recognized as providing a competitive advantage in certain sectors (Laszlo 2003; Dolan 2003). They accomplish this not only by contributing to positive environmental and social change, but through the strategic vision by top leadership committed to adopting such practices based on company values and a belief that it will contribute to the bottom line and the long-term welfare of the company and its stakeholders.

For the most part, the sustainable business literature is focused on large organizations such as Patagonia, BP, and ABB in Switzerland (Corporate Knights Inc. 2005). There has been less research on sustainable business adoption by small and medium-sized businesses. Yet small and medium-sized businesses in the U.S. represent 99.7% of all employers (SBA 2003). This constitutes a large opportunity for progress on the sustainable business front, albeit on a more micro level.

To learn more about this issue, the authors designed a research study to determine which sustainable business practices small and medium-sized businesses

are currently using. This paper describes the results of this study, which used a sample of 145 small and medium-sized businesses.

LITERATURE REVIEW

In reviewing the literature for this research, it is useful to examine the following four topics: 1) the definition and rationale for sustainable businesses, 2) common sustainable business practices, 3) the process of adopting sustainable business practices, and 4) a description of small and medium-sized businesses.

Definition and Rationale for Sustainable Businesses

As the subject of sustainability has gained momentum over the past decade, a variety of definitions have been set forth. Nonetheless, one of the original definitions is still most often quoted, because of its breadth and simplicity. This was offered by Bruntland (1987) who defines sustainability as “the ability to meet today’s global economic, environmental and social needs without compromising the opportunity for future generations to meet theirs.”

When applied to a business setting, a sustainable business can be described as one that contributes to an equitable and ecologically sustainable economy (Fields 2002). Increasingly there are strong reasons as to why a business should adopt sustainable practices. A primary concern has to do with more stringent regulatory requirements regarding environmental practices. This is more of a compliance issue, however, and businesses that adopt sustainable practices only for this reason have not recognized the larger business rationale for doing so.

Gradually, more businesses have discovered positive financial benefits from adopting sustainable practices. Sustainable businesses achieve a better financial position in industry segments where environmentally friendly practices are important and where they receive attention from government agencies, consumers, and partners (Wolff and Dobers 2000). Some analysts attribute financial success of sustainable businesses to a high degree of consumer awareness of the environment (Cousins, Lamming, and Faruk 1999). Others point out that sustainable businesses are financially successful because they receive strong support from the government due to their development and improvement in environmental management. Government support may include grants, tax breaks or other kinds of financial incentives that may help the company achieve its goals (Skidmore 1997).

Laszlo (2003) outlined five major drivers for adopting sustainable business practices. These are: 1) regulatory demands, 2) political pressure from organizations such as Greenpeace, 3) scientific evidence such as new global warming statistics, 4) market pressure from customers, and 5) moral pressure based on values.

Common Sustainable Business Practices

Increasingly, companies are publishing sustainability metrics along with financial metrics in their annual reports. Some experts argue for an integrated reporting method that could provide more detailed information to stakeholders and encourage positive change in how businesses conduct their activities on a sustainability front (Yongvanich and Guthrie 2006). Identifying, agreeing upon, and quantifying the sustainability practices, however, has been challenging for businesses—especially with respect to social responsibility (Geibler et al. 2006).

Common environmental practices have tended to center around recycling programs, pollution control, restoration and conservation of natural resources, waste disposal, sustainable packaging, and other environmentally conscious activities. With new environmental cost accounting methods that place a cost on each environmental action, it has become easier to calculate and track these types of practices (Dorweiler and Yakhou 2004).

Common social responsibility practices have been grouped into several categories. According to Geibler et al. (2006) these center around quality of working conditions, health and safety, education and training, employment security, customer acceptance, societal product benefit, innovation, and social dialogue.

One organization, Total Social Impact (TSI) has developed a rating system to rank companies according to corporate responsibility, including sustainable business practices (Laszlo 2003). They consider the following categories when evaluating companies: 1) treatment of customers, 2) employee relations, 3) treatment of owners and investors, 4) supplier relations, 5) respect shown towards competitors, 6) community support, 7) environmental practices, and 8) trust and transparency. These dimensions are broader than the common sustainable business practices listed above, but incorporate more social responsibilities practices.

Process of Adoption of Sustainable Practices

In general, many organizations begin to adopt sustainable business practices for three reasons: 1) they are forced to by regulatory requirements, 2) their customers begin insisting upon it, and/or 3) they recognize that their competitors are

doing so, and they need to change in order to compete (Laszlo 2003). For an organization to truly transform itself into a sustainable business, however, the commitment of the top management is essential (Dolan 2003).

To begin transforming the organization, top management needs to develop a sustainable vision statement that will define the company's future place in the industry and in the community (Strannegard 2000). The vision should graphically describe how the organization will operate in the future, including both environmental and socially responsible practices. In many cases, the easiest and most accepted practices center on environmental policies that abolish unsustainable or inefficient operations (Tan and Khoo 2002). An example would be switching from nonrecyclable material to recyclable, for packaging of consumer products. It is an obvious improvement, and usually does not require radical changes within the company infrastructure.

The second step is to incorporate the new vision into company strategy, and create goals and policies that support environmentally friendly practices (Mills 2005). Environmental management requires companies to acquire knowledge that is found outside their regular business practice. It pushes leaders to engage in collaborative efforts to improve the company's strategy, technology management, environmental management, and sustainable development (Roome and Clarke 1999).

A sustainable business has a triple responsibility because it stresses not only the importance of economic viability, but also focuses on environmental and social justice issues (Davis 1973). Therefore any changes made to the strategy of the business will consider possible impacts on all three aspects, as it is the only way to improve environmental and social responsibilities while maintaining economic viability (Springett 2003).

The third step is implementation of policies and continuous improvement with innovation. Since sustainability is achieved from within the business, it is important to give decision-making power to employees and to establish effective communication channels so ideas can be shared (Dolan 2003). If there is more democracy within the organization and profits are shared with the workforce, employees will be motivated to improve the overall success of the business (Jones 2000). Employees that directly deal with everyday environmental issues are more likely to come up with solutions on how to adopt cleaner processes and evaluate the cost-benefit relationship of implementing a specific waste management system (Da Silva and Teixeira 2006).

Finally, the organization must implement a measurement and evaluation system to track sustainable practice costs and benefits. Fortunately there are new methods to do this, such as environmental management accounting that uses financial and related nonfinancial data to provide guidance on sustainable business. By implementing these types of processes, it has become easier to calculate the advantages and disadvantages of strategies developed to achieve organizational goals in becoming an environmental leader (Dorweiler and Yakhou 2004).

One very specific way of achieving sustainability goals was described by Gordon Moore, co-founder of Intel. He explained that the business should not only be aware of materials they use, but they can redesign their products to use materials much more efficiently. This strategy will decrease recycling and per-unit product costs, which cover the areas of economic viability and environmental responsibility (Shireman 1999).

Another efficient method to achieve sustainability on a larger scale includes market transformation. Market transformation occurs with the introduction of new technologies, changes in the economic environment, or changes in consumer taste. It allows shifting of consumers from one product to the other. A good example would be shifting the consumers' use from nonrecyclable energy sources to recyclable ones, which would transform the market to use products that are environmentally friendly (Smallbone 2004).

Implementation and measurement of sustainable business practices often require additional resources initially. For example, a good investment in information technology may help analyze environmental statistics and provide precise calculations about particular areas that need improvements (Lewis 1997). In addition, many large organizations employ an environmental manager to look at all problems and decisions and stress the sustainability issue whenever appropriate (Catasús, Lundgren, and Rynnel 1997). This role is important because environmental changes are versatile and an improvement in one area may lead to problems in another (Aigner, Hopkins, and Johansson 2003). It is important that someone is responsible for looking at the "big picture."

In adopting sustainable business practices, some organizations seek support and validation from certification systems to verify their sustainable practices. Many countries have established "eco-labeling systems" that serve to verify business statements regarding their environmental practices. Businesses apply for a permit to use such labels and subject themselves to voluntary audits. These systems help consumers verify the validity of the companies' statements about their

product manufacturing and their environment-friendly and socially responsible practices (Kirchhoff 1999).

Even without the benefits of positive public relations, decreased risk of regulatory infractions, and potentially increased revenues over the long term, these efforts by organizations to adopt sustainable business practices are laudable. According to experts on the subject, without corporate sustainability the society by itself will by no means achieve sustainable development (Hahn and Scheermesser 2006).

Small and Medium-Sized Businesses

There are some distinct differences between small and medium-sized enterprises. The first has to do with number of workers: small businesses employ 1–100 people and medium-sized businesses from 101–1,000 (Wager and Langrock 2003; Hornsby and Kuratko 2003). In addition, though the culture and values of most organizations are influenced by top leadership (Thompson, Strickland, and Gamble 2007), this is more true in a small company in which the owner operates as the CEO and/or general manager. His/her values have a tendency to direct the way in which business is accomplished. Therefore, a small business owner with strong environmental or socially responsible values will have a tendency to instill those values and practices within the firm. Likewise, if this is not the case, the small company may not be as open to adopting sustainable business practices.

Another key difference with small and medium-sized businesses is the lack of standardized business policies and procedures in the preliminary years of the business (Meckel et al. 2004). Indeed, research shows that small and medium-sized businesses are usually so focused on the sales and revenue generation portion of the business that they often do not take time to develop strategic long-term plans and document policies (Storey 1994). This is also supported by the business lifecycle literature, which shows that as businesses go through the various stages of start-up, growth, maturity, and eventually transfer, they grow in complexity and implement more policies and procedures to manage their growth more effectively (Frankl et al. 2000).

Therefore with regard to sustainable business practices, small and medium-sized businesses may not yet have had the time and resources to implement company policies that regulate these types of practices. This may be especially true regarding socially responsible practices, because most small U.S. companies do

not hire a professional human resource manager until they reach an average of 100 employees (Noe et al. 2007). Without a function focusing on these types of practices and establishing policies for their implementation, such as paid leave to work with community charity organizations, it is probable that smaller organizations may have not yet adopted certain sustainable practices.

Based on the review of the literature, the authors developed the following research question: Which sustainable business practices are currently being implemented by small and medium-sized businesses?

METHODOLOGY

The methodology used for this study was a survey, conducted in an interview format. A checklist of sustainable business practices was developed based on items listed in the TSI rating system (Laszlo 2003). The TSI is a list of practices that allows for a quantitative measurement of corporate responsibility, business behavior and global citizenship. It was invented by Stephen Dillenburger, Timothy Greene, and O. Homer Ereckson (2003) and has been used to measure sustainable practices for many large companies. Because small and medium-sized businesses generally do not have the sophisticated systems of larger organizations, however, the list of sustainability practices was limited to those items that were deemed feasible for such businesses to implement. Therefore nine environmental practices and 11 socially responsible practices were identified (see Table 1) and placed into a checklist. In addition to the checklist, several demographic questions were included, along with a description of the purpose of the survey and the definition of sustainability.

The sample was a convenience sample of leaders of small to medium-sized organizations in California. The fact that California is known as a state that places a high degree of emphasis on environmental awareness is a limitation of this study; however, it also provides a starting point to measure these types of business practices. In addition, the researchers and interviewers were located in California.

Business leaders were defined as employees who had at least two direct reports and the title of CEO, VP, Director, or Manager. Furthermore, they had to work in small to medium-sized organizations with at least five employees. For this study, a small business was defined as having 5–100 employees and a medium-sized business was defined as previously defined (Wager and Langrock 2003). The

leaders were identified through a combination of networking and cold-calling via email or phone.

A team of student interviewers was trained to contact leaders, schedule a 30-minute interview, and then conduct the interview in a face-to-face setting in the business leader's organization. During the interview, students described the purpose of the study, provided a definition of sustainability, and collected basic demographic information to verify that interviewee and his/her organization fit the sample requirements. Then they handed the checklist to the interviewee, and asked them to place a checkmark next to any of the sustainable practices that they were currently implementing.

A total of 158 surveys were completed, of which 13 were not usable because the companies had over 1000 employees. Therefore, the final sample was 145 usable surveys: 111 from small businesses and 34 from medium-sized businesses.

The data were analyzed using descriptive statistics and an Excel spreadsheet. Frequencies and percentages were calculated for all sustainable practices, and comparisons between small and medium-sized businesses were computed.

RESULTS

The results indicate that this sample of small and medium-sized businesses in California are actively implementing certain environmental and socially responsible leadership practices, but some are not being implemented as frequently. According to Table 1, 77% of the organizations have an active recycling program and 66% encourage employees to recycle. Less than half the organizations, however, are implementing the remaining environmental practices, which range from using energy-saving devices for operations, to environmentally friendly packaging and providing guidelines to suppliers on environmental practices. The lowest scoring practice was providing employees release time to participate in environmental activities such as Clean up the Beach Day. Only 11% of the sample indicated that this was a practice within their organizations.

Regarding socially responsible practices, the highest scoring practice was a commitment to health and safety training, at 81%. This was followed closely by providing health benefits for all full-time employees (76%) and equal pay for equal value (74%). Only 45% of the sample, though, could report that they were providing sustainable community wages. This is most likely because California

Table 1
Implementation of Sustainable Business Practices

Environmental Friendly Leadership Practices	Total	Percent
Have an active recycling program in your company	112	77%
Encourage employees to recycle at work and home	95	66%
Implementation of energy-saving devices for operations	60	41%
Use of environmentally friendly packaging for your products	55	38%
Encourage customers to recycle and conserve	44	30%
Encourage suppliers to recycle and conserve	32	22%
Supplier selection that seeks, encourages and prefers suppliers who use environmentally friendly practices	22	15%
Provide guidelines to suppliers on environmentally friendly practices you expect of them	20	14%
Provide employee release time to participate in environmental activities, e.g., clean up beach day, plant a tree, etc.	16	11%
Socially Responsible Leadership Practices	Total	Percent
A commitment to health and safety of employees through training and inspection	117	81%
Provide health benefits for all-full-time employees	110	76%
Provide equal pay for work of equal value	108	74%
Provide fair pay and treatment of suppliers	82	57%
Open and ethical communication to your employees and the community about your products and services	82	57%
Advertising and labeling of products that is complete, fair, honest and respectful	81	56%
Philanthropy in your local community (donations of money, service and assistance)	76	52%
Sustainable community wages and social infrastructure (making sure your employees have a safe and healthy place to live)	65	45%
Participation of your executives on community boards of charities and other non-profits	47	32%
Corporate governance policies that balance the interest of managers and all stakeholders	45	31%
Provide employee paid time-of for charitable work in the community, e.g., Habitat for Humanity	32	22%

is known to have higher living costs compared to other states, and there is much pressure to increase the minimum wage to a “living wage.”

Practices that scored lowest were executive participation in charities at 32%, implementing corporate governance policies at 31%, and providing employee paid time-off to participate in charity activities at 22%. At the same time, 52% of the sample said they conducted philanthropic work in their community. This may indicate that though small and medium-sized businesses cannot afford to provide paid time off for employees and executives to participate in community and charity activities, they are still donating other types of resources to support their communities.

Similarities and Differences Between Small and Medium-Sized Organizations

Though the sample was skewed heavily toward small businesses, the results were quite similar on several aspects. According to Exhibit 1, with environmental practices, both small and medium-sized companies were equally fervent in implementing active recycling programs within their companies, at 77% and 79% respectively. Small organizations reported encouraging their employees to continue to recycle both at work and home (71%), however, more than medium-sized organizations (47%). This could be because smaller company leaders may be in more frequent contact with employees because they have fewer of them, and can therefore encourage this type of activity.

Both organization types reported using energy-saving devices for operations at about the same percentage: 40% and 47%. There was a large difference in reported use of environmentally friendly packaging, however, with 32% of small companies implementing this practice versus 59% in medium-sized companies. This could be because the larger companies are more standardized in their practices and had more time and resources to implement this concept. This is supported by the fact that medium-sized companies also reported basing supplier selection (21% vs. 14%) and providing guidelines to suppliers on environmentally friendly practices (29% vs. 9%) at a much higher level than smaller companies.

Socially responsible practices were divided into two exhibits (2 and 3, below) because of the larger number of practices. Exhibit 2 illustrates the practices that were reported as being implemented most frequently by both small and medium-sized businesses. Here both groups expressed a strong implementation of commitment to health and safety training (79% small and 85% medium);

providing health benefits to full-time employees (75% small and 79% medium); and providing equal pay for equal value (75% small and 74% medium). Policies regarding fair treatment of suppliers and fair advertising and labeling, however, were reported to be more frequently implemented by medium-sized companies. Again, this could be because they generally have more standardized practices and procedures than smaller companies.

Exhibit 3 illustrates the less frequently implemented socially responsible practices. From this, it is interesting to note that in all six practices the medium-sized companies report a higher percentage of implementation compared to the small organizations. Again, this could be because they have implemented these practices as part of their standard procedures and policies as they have grown in size. For example, they report 71% implementation of open and ethical communication, compared to 52% of the small businesses. Medium-sized companies also indicated that 79% were participating in some type of philanthropic activities within their communities, versus 44% of the smaller companies. Likewise, they encourage more executives to participate in charities, implement corporate governance, and offer paid leave to employees for charitable work, such as Habitat for Humanity, than do smaller organizations.

DISCUSSION

This study has four major findings. The first, which is primarily positive, is that small to medium-sized businesses in this California sample are indeed implementing sustainable business practices. For the most part, they tend to center around environmental issues, with social responsibility practices being primarily those that are required by law, such as a commitment to health and safety of employees. This supports previous research findings that many businesses tend to focus on environmental aspects as an entry point into sustainability (Geibler et al. 2006).

The fact that more than half of the sample is engaged in recycling and 41% are using energy-saving devices is quite positive, and indicates movement in a direction that is supportive of California economic and environmental policy. For example, a University of California study for the State Legislature found that “reducing greenhouse gas emissions to 1990 levels by 2020, could boost the state’s annual gross product by \$74 billion while adding 89,000 new jobs if California companies invest in new technologies to save energy and cap greenhouse gas emissions” (Cannon 2006, 23). It is possible that many of these business owners are influenced by California’s public policy on the environment and therefore

Exhibit 1 Environmental Practices for Small and Medium-Sized Companies

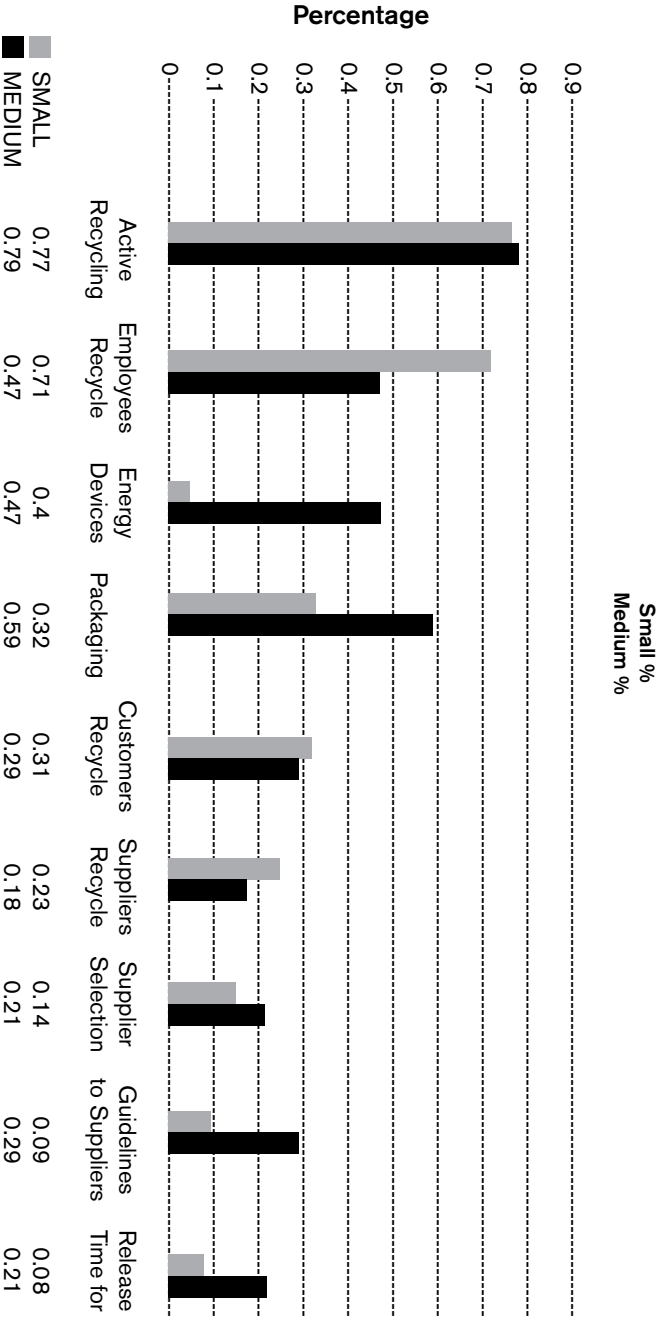
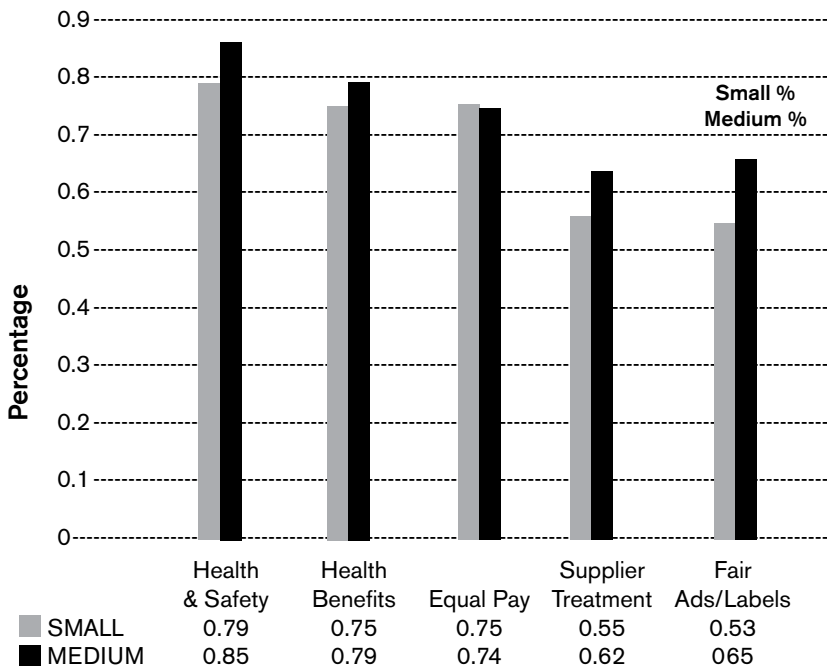


Exhibit 2
Most Frequently Implemented Socially Responsible Practices for Small and Medium-Sized Companies

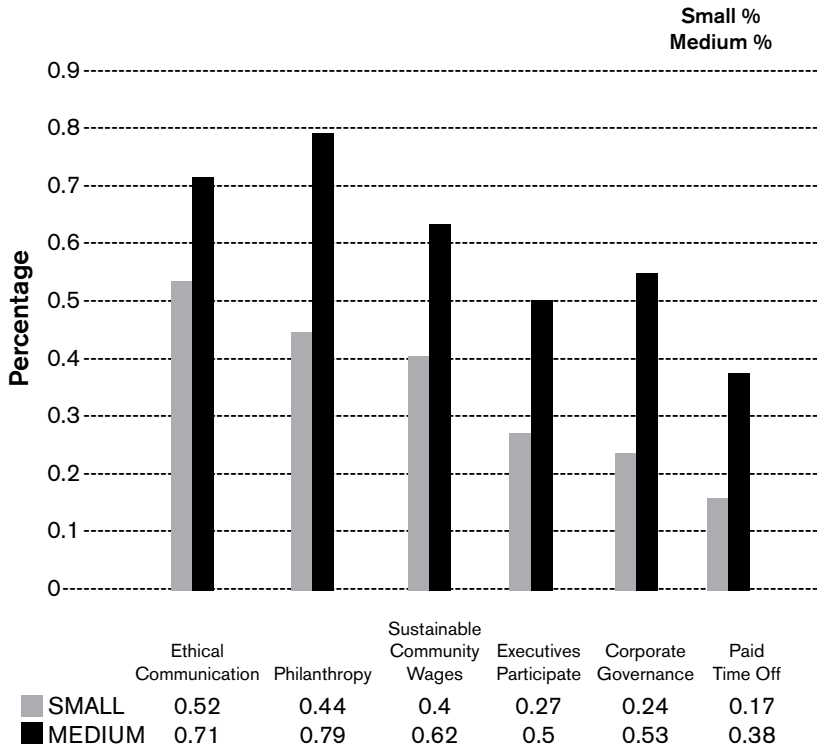


have elected to implement these types of practices within their organizations.

A second result arises around the question of why these same businesses are not implementing some of the other environmental practices as strongly. For example, very few have worked with their suppliers to encourage recycling (22%), to provide guidelines on environmental practices expected of them (14%), or to select suppliers who use such practices already (15%). These seem like relatively easy practices to adopt. Perhaps this is because they are not yet being pressured by their customers to do so, and there are currently no regulatory requirements to select suppliers based on these criteria. Anecdotal feedback from the interviews suggests that many of the small business leaders had not thought of these types of practices, but were intrigued with exploring them.

A third finding of this study is that the size of a business does affect adoption rates of some environmental and socially responsible practices, though not all. Small and medium-sized businesses were equally active in implementing

Exhibit 3
Less Frequently Implemented Socially Responsible Practices for Small and Medium-Sized Companies



recycling programs, using energy-saving devices, providing safety training, and implementing equitable pay practices. Medium-sized businesses, however, were more apt than smaller businesses to base supplier selection on environmentally friendly practices and to provide supplier guidelines in order to comply. Medium-sized business also implemented many of the socially responsible practices to a higher degree than small companies. These practices included philanthropic activities, executive participation in charities, policies on open/ethical communication and employee paid leave for charitable work. This supports previous findings in the literature showing that as businesses grow in size and complexity, they have a tendency to implement more policies and processes to manage their growth (Meckel et al. 2004; Frankl et al. 2000). To some extent, it appears to hold true for sustainable business practices as well.

This leads to a fourth result of this study, which is perhaps the most valuable outcome of the survey. The interviews created an interventional education pro-

cess—in that by asking the questions, we “made” small business leaders aware of new sustainable practice possibilities. Many of the businesses interviewed said, for example, “Wow, I never thought about doing that!” To this extent, this type of research may provide a certain degree of benchmarking, making businesses aware of best practices while educating them of new ways to work.

The results of this study suggest a need for more information on this topic. It is not entirely clear from the research how much companies reduce, reuse, reclaim, redesign, adopt best practices, or challenge their suppliers to do the same. Furthermore, it is not exactly clear why these small and medium-sized businesses are adopting the practices they are. However, it is highly probably that the reason many of the businesses in this sample adopt such practices is because they see their competitors doing so, and many customers in California are highly aware and outspoken on such issues as recycling. This supports Laszlo’s (2003) reasons for adopting sustainable business practices. At the same time, there is still a great way to go before it can be said that small and medium-sized businesses are taking sufficient action with respect to the issue of sustainability.

LIMITATIONS

While the study may indicate certain trends, it is subject to specific limitations. First, the sample size is necessarily small, comprising 145 firms in California, a state noted for its high degree of environmental awareness. Secondly, important sustainability issues were not included in the questionnaire. These include actions to reduce the levels of toxic chemicals, substitution of renewable (low GHG emitting) energy for nonrenewable energy sources, and replacement of nonrecyclable materials with more recyclable materials, such as organic materials and foods. In addition, questions about issues such as the redesign of packaging so that it is (a) part of product, (b) reusable or returnable, (c) easily recyclable, or (d) biodegradable were not included in the research. Finally, additional socially responsible issues, such as the controversial topic of paying employees a “living wage,” in order to be able to afford to live in certain high-cost regions of California could have been included.

SUGGESTIONS FOR FUTURE RESEARCH

Clearly the issue of sustainability is growing in importance. Each day brings new information about the dangers to society and business, associated with climate change. Small and medium-sized businesses are not subject to the public reporting and public accountability standards that apply to large, publicly traded

firms. Yet, because of their substantial impact on U.S. employment and GDP, it is imperative that others learn more about their practices and make a greater effort to educate such firms about potential for cost saving, productivity gains, and other financial and social benefits that may be associated with actions toward sustainability. In addition, it seems important that they be informed about best practices. Consequently, some valuable additions to future research might include the following:

- Efforts to reduce greenhouse gas emissions
- Specifics on recycling (e.g., recycling rates of selected materials)
- Hazardous wastes generated or diverted
- Discharge of pollutants and steps taken to reduce or divert them
- Efforts to redesign products to prevent or reduce waste (e.g., redesign packaging or reduce materials)
- Specifics with respect to energy (e.g., sources of energy, use of biofuels or renewables)
- Best practices in social responsibility issues
- Research that has the double purpose of educating small and medium-sized organizations on sustainable business practices

Moreover, it would seem desirable to extend the geographic range of the survey to include other parts of the nation. Finally, a more qualitative research study, designed to elicit the reasons the business leaders adopted the practices they did, would be very enlightening. Clearly, there is much that needs to be done with respect to this issue.

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Safety and Workers' Compensation Considerations in Telework

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A teleworker, working on a company laptop in his living room, takes a coffee break and goes to the kitchen to make a peanut-butter sandwich. On his way back to the work area, he trips and injures his head on the laptop. Is the employer financially liable for the injury?

While this may be a far-fetched scenario, in the real world of telework or telecommuting (the terms are interchangeable) strange things occur, and it would behoove organizations to consider a number of issues adequately before they hand their workers a laptop computer and a password to access the organization's network off-premises. This paper addresses legal matters with respect to safety and workers' compensation considerations surrounding telework. It begins with a discussion of telework and its popularity, where telework occurs, key telework safety and workers' compensation issues, and concludes with a discussion of future telecommuting considerations.

INTRODUCTION

Over the years, a variety of work structures have emerged and been considered by employers in an effort to attract and retain qualified workers while minimizing rising employee costs (Crumbley 2001). Additionally, due to shifting workplace demographics, organizations are examining various strategies to accommodate workers from two-income families, single-parent households, and employees taking care of younger and older relatives (Society of Human

Resource Management 2007a). Furthermore, as the manufacturing sector of the economy discarded jobs, the services sector was adding them (Bivens 2004). Manufacturing businesses traditionally house their operations at a “central office” site where employees are expected to report for work. While most service businesses also house operations at a specified location, the need for employers to work at this central office is not nearly so obvious (Fox 2004). Indeed, the technology that allows service businesses such as banks, insurance companies, accounting firms, and retail establishments to work—email, fax machines, cellular phones, and laptop computers—also permits employees to communicate with customers and co-workers from any number of locations. Lastly, a recent set of enforcement guidelines published by the Equal Employment Opportunity Commission (EEOC) strongly encourages employers to consider flexible work arrangements for their workers in order to achieve greater work-family balance, particularly for individuals with caregiving and family responsibilities (EEOC 2007). Thus, a number of factors, including strategies designed to attract and retain valued employees, programs intended to meet the varied needs of a diverse workforce, a changing economic base, and regulatory pressures, demand consideration of alternative working arrangements. Not surprisingly, numerous practices that provide the flexibility needed by today’s workers and organizations have gained popularity in recent years. Examples of such programs include compressed work weeks, job sharing, flexible work hours where employees can, with certain limits, determine when they come to work and leave, and voluntary reduced work time. Another such activity involves telework or telecommuting and is the topic addressed in this paper.

Telework

Telecommuting is not new, but it has never been more popular. Today’s technology makes it easier to implement than in previous years and today’s economic and social realities make it more attractive. With portable computers, high-speed telecommunications links, and ever-present pocket communications devices, many employees today can work almost anywhere at least some of the time and no longer have to meet at their “official duty station” to conduct business. Instead, they can work in cyberspace just as effectively as if they were sitting next to their co-workers and, with advances in videoconferencing, teleworkers can feel particularly connected (Smith 2007).

“Teleworking is a mode of work in which employees perform all or a significant part of their roles from a base physically separated from the location of their employer—usually their home—and use of information technology as their

main tool for operation and communication” (Baruch and Smith 2002, 62). It is the practice of using computer-based communications technology so as to enable work to be performed outside the conventional workplace from remote locations, such as a home, a ship, a hotel room, or anywhere an internet connection can be made. To be considered telework, it must generally occur at least one day per week on a regular and recurring basis and does not include (1) situational telework (unscheduled, project-oriented, non-recurring, and/or irregular telework and/or any teleworking that occurs less frequently than once a week on a recurring basis) or (2) full-time mobile work arrangements (General Services Administration 2006).

Growth of Telework

Years ago, telecommuting was used mostly by sales representatives and consultants, but today it is used regularly by many employees, such as researchers, attorneys, university professors, and people in a variety of creative positions (e.g., artists, photographers, and writers). The typical telecommuter is a middle-aged, college-educated, white male who owns a home computer and earns at least \$40,000 per year (Kossek 2003) and while some individuals telecommute full time, most work at home for one or two days a week (U.S. Department of Labor 2000). In recent years, telework has grown in popularity from an interesting, out-of-the ordinary possibility for some people to a mainstream reality for many. Research indicates that the federal government has been more receptive to telework than has the private sector (Cranmer 2007).

Recent data available from the U.S. government (calendar year 2005) found that there were 119, 248 federal government employees teleworking, and that over 70,000 or 60% of these employees teleworked one or more days per week (U.S. Office of Personnel Management 2007). The Society for Human Resource Management’s 2007 benefits survey indicated that 56% of the 590 U.S. companies surveyed are offering some form of telecommuting in 2007, up from the 51% in 2006 (Society of Human Resources Management 2007b). According to the survey, 21% of companies let at least some workers telecommute full time, up from 19% in 2006; 33% let some employees work from home on a part-time basis, up from 26%; and 48% say they allow telecommuting on an ad hoc basis, up from 45%. The survey also indicated that another 10 million people telecommute at least one day a week. Combined, the ranks of these telecommuters have risen 10% since 2004 (Christie 2006). Similarly, 22.2 million Americans worked from home or another out-of-office location at least one day per week in 2005 (Suite Commute). This trend is anticipated to continue as employees become

more mobile, operating from remote locations via electronic means (Mamaghani 2006).

Telework Locations

Telework is performed in a variety of locations: 7.8 million people work on trains or planes, 15.1 million at a park or outdoor location, 16.3 million while on vacation, 20.6 million in a car, 24.3 million worked at a client's or customer's place of business, and 45.1 million worked at home (Business Wire 2005). Many people rely on more than just one: an average of 3.4 locations, in fact (Greenberg and Baron 2008). For many, their local Starbucks represents "the third space" beyond office and home, wherever a notebook computer, a wireless network, and a latte may be found. But with increased availability of broadband connections in people's homes, the home is the fastest-growing location (Greenberg and Baron 2008).

Benefits and Limitations of Telework

Both employees and employers enjoy the benefits of telework (Crandall and Gao 2005). For example, telework makes it possible for employees to avoid the hassle and expense of daily commuting, which, in an era of congested roads and high fuel costs, can be dramatic. Employees working at home also enjoy saving money that they would have spent purchasing work clothing and buying meals in restaurants and from vending machines. In fact, one estimate holds that in 2005 each teleworker was able to save approximately \$5,000 per year, taking into account all expenses (Hodson 2006).

Saving money is not the only reason most telecommuters like the arrangement. They also enjoy the flexibility it gives them to balance work and family matters (Kugelmass 1995). For example, over 83% of the 4,000 employees at IBM's Midwest Division indicated that they are not interested in returning to the traditional office environment. Other findings showed that employees choose *telecommuting* to decrease work-related stress, to work longer hours but in more comfortable environments, and to provide uninterrupted time to focus on their work (Kurland and Bailey 1999).

Telecommuting also makes it possible for companies to save millions of dollars in expenses for office facilities (Kurland and Bailey 1999). Hewlett-Packard, for example, saves about \$230 million annually in office expenses. This occurs because companies are able to get more work done in the same space. Cisco Systems, for example, has so many teleworkers that it now takes only the physical

space of 88 workers to do the work of 140 employees (Hodson 2006). IBM also has been able to slash its office space by as much as 55%, in some locations. As one might imagine, the savings are particularly important to small, start-up companies, which can hire workforces without having to make large investments in office space. Other data indicate that organizations adopt *telecommuting*, not only to save real estate costs but also as an attempt to improve employee morale and productivity, reduce absenteeism, and attract workers who might not otherwise be available (American Management Association 2002).

Importantly, telework allows companies to comply with government regulations (e.g., the federal Clean Air Act of 1990) requiring them to reduce the number of trips made by their employees. In fact, the federal government is a major proponent of telework (Shanks 2007). For example, in October 2000, Congress passed the Department of Transportation appropriation bill (Public Law 2000), which included a provision requiring every federal agency to allow eligible employees to telework to the maximum degree possible without diminished performance. The Office of Personnel Management and the General Services Administration have summarized a number of other telework laws for federal agencies (U.S. Office of Personnel Management) including the Public Law 108–447, Division B, § 622 of December 8, 2004; Public Law 108–199, Division B, § 627 of January 23, 2004; Public Law 105–277, Omnibus Appropriation Act, Title IV, § 630, of Oct. 21, 1998.

A particularly interesting and all-too-real reason to use telecommuting is to help businesses organize after a disaster strikes. After all, if an organization's assets are spread out—as is the case if they are in the hands of employees who are geographically dispersed—they are less vulnerable to attacks by human threats (e.g., terrorist strikes, arsonists) and natural disasters (e.g., floods, hurricanes, tornadoes) (Bosco and Harvey 2003).

Despite these benefits, telecommuting is not for everyone; it also has its limitations (DuBrin 1994). Many people simply do not have the kind of self-discipline needed to get work done without direct supervision (Hartman, Stoner, and Arora 1992). Critics argue that telecommuting arrangements are fraught with pitfalls, including employee isolation, lower productivity, and reduced teamwork and camaraderie (Bailey and Kurland 2002; Kurland and Cooper 2002). It works best on jobs that require concentration, have well-defined beginning- and end-points, are easily portable, call for minimal amounts of special equipment, and can be done with little supervision (Mariani 2000). According to a U.S. Department of Labor

study, telecommuting works best for jobs that demand a high degree of privacy and concentration, are predictable, and information-based (U.S. Department of Labor 2000).

In summary, telecommuting is an increasingly popular work alternative that can take place in a number of locations and has a number of benefits for workers and organizations. Telework also has some limitations, and making it more effective requires careful adjustments work structure, especially as related to important legal considerations with respect to worker safety and workers' compensation issues.

SAFETY AND WORKERS' COMPENSATION ISSUES

Telecommuting presents unique challenges to safety and health—most of which have been anticipated for years. For example, Galitz (1984) estimated that 50% of the office workers of the future could be telecommuters. The chapter, “Toward the Year 2000,” describes ergonomics/human factors, fatigue, social isolation and stress as critical concerns (Galitz 1984). This was an early hint of the challenges to come. Recent studies related to occupational safety and health indicate that although telecommuters report higher levels of job satisfaction, they have a lower level of awareness and knowledge concerning ergonomic and safety issues (Healy 2000). Thus, the development of this paper.

Worker Safety

The Occupational Safety and Health Act (1970) “requires, in part, that every employer covered under the Act furnish to his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees” (Occupational Safety and Health Act 1970, Section 1903.1). In order to fulfill their OSHA obligations, CSC Credit Services in August 1997 advised OSHA that it was about to require its sales executives to begin telecommuting from home. The sales executives were to work from a single room in their homes, using a desk, chair, file cabinet, telephone, computer, printer and facsimile machine. CSC asked OSHA to provide advice as to the nature and extent of the company's responsibilities under the OSH Act with respect to these home-based sales executives. Two years after having received CSC's inquiry, OSHA's Directorate of Compliance Programs issued a letter of interpretation (Letter from OSHA 1999). In that opinion, OSHA affirmed its position that the OSH Act applied to home-based workers and that employers ultimately were responsible for ensuring safe and healthful home offices.

An uproar followed regarding invasion of privacy and compliance issues, which led the agency to rescind the letter just two months later. After the public outrage, OSHA issued a directive that set out the following major points on employers' responsibilities regarding work performed at home (Occupational Safety and Health Administration 2000).

Policies for home offices (Section IX). 1) OSHA will not conduct inspections of employees' home offices; it would, however, investigate work-related fatalities occurring in a teleworker's home, in compliance with Fourth Amendment procedures. 2) OSHA will not hold employers liable for employees' home offices, and does not expect employers to inspect the home offices of their employees. 3) If OSHA receives a complaint about a home office, the complainant will be advised of OSHA's policy. If an employee makes a specific request, OSHA may informally let employers know of complaints about home office conditions, but will not follow up with the employer or employee.

Policies for other home-based worksites (Section X). 1) OSHA will only conduct inspections of other home-based worksites, such as home manufacturing operations, when OSHA receives a complaint or referral that indicates that a violation of a safety or health standard exists that threatens physical harm, or that an imminent danger exists, including reports of a work-related fatality. 2) The scope of the inspection in an employee's home will be limited to the employee's work activities. The OSH Act does not apply to an employee's house or furnishings. 3) Employers are responsible in home worksites for hazards caused by materials, equipment, or work processes the employer provides or requires to be used in an employee's home. 4) If a complaint or referral is received about hazards at an employee's home-based worksite, the policies and procedures for conducting inspections and responding to complaints as stated in OSHA Instruction CPL 2.103 and OSHA Instruction CPL2.115 will be followed.

Other requirements (Section XI). Employers who are required by the OSH Act to keep records of work-related injuries and illnesses will continue to be responsible for keeping such records as long as they are work-related and meet the criteria in 29 C.F.R. Part 1904.2 and the *OSHA Recordkeeping Handbook* (Occupational Safety and Health Administration 2005).

In summary, OSHA indicated that employers are not responsible for white-collar telecommuters, but they may be for home-based blue-collar employees engaged in manufacturing or other hazardous home-based work. The regulations implement-

ing the act provide, however, that not every accident that occurs at a home work site is necessarily considered work-related. Specifically, the regulations say that injuries “and illnesses that occur while an employee is working at home. . . will be considered work-related if the injury or illness occurs while the employee is performing work for pay or compensation in the home, and the injury or illness is directly related to the performance of work rather than to the general home environment or setting” (Occupational Safety and Health Act, 29 C.F.R. §1904.5(b)(7), 2004). Hence, if “an employee drops a box of work documents and injures his or her foot, the case is considered work-related. [However, if] an employee is injured because he or she trips on the family dog while rushing to answer a work phone call, [or if he or she] is electrocuted because of faulty home wiring, the injury is not considered work-related” (Occupational Safety and Health Act, 29 C.F.R. §1904.5(b)(7), 2004).

Finally, employers should remain concerned about telecommuter safety because of state “OSHA plans.” These are federally approved plans for the development and enforcement of occupational safety and health standards. States may include in these plans more stringent standards than federal law imposes (Peterson 2000). Although “[m]ost states adopt standards identical to federal ones” (Occupational Safety and Health Administration), and although some have excluded private residences from safety inspection requirements (e.g., Montana 2001; Wyoming 2001), other states could choose to require employers to oversee the safety of home work sites (Peterson 2000).

Based on these considerations, some companies only permit employees to work at home after a company representative has inspected the workspace. For example, Merrill Lynch selects and pays for all telework equipment, and inspects home offices for safety and ergonomics, before allowing an employee to telecommute (Job Boardz 2004). Other organizations have established guidelines, but do not require home inspections (Topf 2005). In summary, a rule of thumb is that the situations and guidelines and liabilities that exist for office employees apply to home and remote employees.

Workers’ Compensation

Another reason employers should be attentive to telecommuter safety and health stems from workers’ compensation issues. Several considerations must be examined in determining liability. One such principle involves the “arising out of and in the course of employment” rule. Most states provide that a worker may be compensated for injuries if they “arise out of” and “in the course of

employment” (Minnesota, 1999, subd. 9). For example, in Illinois, an employee must prove that he or she suffered accidental injuries that arose out of and in the course of employment: “An injury ‘arising out of’ one’s employment may be defined as one which has its origin in some risk so connected with, or incidental to, the employment as to create a causal connection between employment and the injury” (*Orsini v. Industrial Commission* 1987, 45). “An injury is received in the course of one’s employment when it occurs within the period of employment, at a place where the employee may be reasonably in the performance of his duties, and while he is fulfilling those duties or engaged in something incidental thereto” (*Millen v. Industrial Commission* 1997, 324).

It is generally established that the work incident need not be the sole cause, but only a substantial contributing cause for an injury to be compensable (*Egeland v. City of Minneapolis* 1984). Indeed, the injury must be associated in time, place, and circumstance to the employer’s business (*Scheppman v. T&E Serv., Inc.* 1970). An additional legal question involves the scope of the “reasonableness” and “foreseeability” of the employees’ activities at the time of the accident (Wade 1999), and whether they were engaging in activities “incidental” to their employment (*Millen v. Industrial Commission* 1997; *Orsini v. Industrial Commission* 1987).

Several workers’ compensation liability concerns have been noted regarding teleworkers (Goluboff 2001a, b; Swink 2001; Wade 1999):

- Injuries occurring at home
- Injuries occurring while traveling to or from home office
- Injuries occurring when teleworkers located outside the employer’s state are injured at home, and the determination of which state’s workers’ compensation law applies—the employer’s or the teleworker’s.

Injuries Occurring at Home

Injuries occurring at the home work area in the performance of job duties will certainly be awarded workers’ compensation benefits (Wade 1999). More problematic, however, is whether workers may be compensated for injuries occurring during rest/meal breaks taken on the employer’s premises.

Solel v. K-Mart Corp. (1989) may provide some guidance in situations involving telecommuters who take breaks from their work, leave their computer worksta-

tion to use the bathroom, have a meal, stretch their legs, get a cup of coffee or attend to domestic concerns and are accidentally injured. In *Solel*, the claimant fell and was injured during her lunch break while dining in the company's on-premises cafeteria. The Court of Appeals first noted the traditional rule regarding lunch-hour accidents, which holds that:

An employee who leaves his employer's premises and takes his noon hour meal at home or some other place of this choosing is outside the course of his employment from the time he leaves the work premises until he returns.... When the employee is ordered to eat on the premises, or where the location of the location of the place of work is such to require this it is generally held that an accident which occurs during the meal hour is within the course of employment
(*Solel v. K-Mart Corp.* 1987, 5).

The court concluded that, "[t]he determination of whether an accident occurring during the lunch period was in the course and scope of the plaintiff's employment depends on the facts of each case" (*Solel v. K-Mart Corp.* 1987, 7).

The court awarded workers' compensation benefits to the claimant, making a broad finding "that an employee injured while dining in their employer's on-premises cafeteria is covered by workman's compensation"
(*Solel v. K-Mart Corp.* 1987, 8).

Under this rule, telecommuters, since the in-home location of the work renders in-home rest/meal breaks away from their computer workstation foreseeable and reasonable to their employer, certainly would be covered when engaging in rest/meal breaks when the break activities take place within the home. Non-work areas of the home are directly analogous to on-premises break rooms and cafeterias. If traditional employees are covered while dining in their employer's on-premises cafeteria, teleworkers should be covered while dining in their kitchen or family room, because "the conditions of work have affected the normal eating habits of the employee and have forced him to make adjustments in this respect for his employer's benefit" (*Solel v. K-Mart Corp.* 1987, 5).

Another question concerns whether an injury is compensable if it occurs as a result of an activity that has both business and personal attributes. This issue was addressed in *Ae Clevite, Inc. v. Labor Commission* (2000); a district sales supervisor who worked out of his home was preparing for a sales trip and waiting for a package related to the trip. His driveway was icy due to a snowfall the night before. When he saw the mail carrier approaching, he decided to salt the

driveway so that the postal worker would not slip. The salesman slipped while salting the driveway and suffered a neck injury that left him a quadriplegic. The Utah Court of Appeals found for the salesman, because the act of salting the driveway was motivated in part by a purpose to benefit the employer and was thus reasonably incidental to his employment.

Finally, some guidance regarding working nontraditional hours in a home setting, even though an individual was not officially a teleworker, come from *State Compensation Fund v. Workers' Compensation Appeals Board* (1980). In this case, a college professor was injured in his home when he slipped on some papers and fell, while preparing a syllabus for his class. While the university had made office space available on campus for his use, he claimed it was impractical to work there because of frequent student interruptions. Testimony revealed that faculty members frequently took work home and the university authorities did not object to that practice. The Court of Appeals affirmed compensation for the professor, because they found his home had become a second worksite and his employer benefited from his work at home.

Injuries Occurring While Traveling to or From Home

Ordinarily, employees are not eligible for workers' compensation when they sustain injuries commuting between work and home, which is known as "the going-and-coming rule." A number of exceptions to this rule may apply, however, in certain jurisdictions. One is that if the worker was traveling for a dual purpose—for example, traveling home for both personal and work-related reasons—when the injury occurred, compensation may be awarded (Larson and Larson 2000). Workers also may be compensated for injuries sustained when traveling between work locations. If a worker's home qualifies as a second work location, injuries sustained while traveling between work and home may be compensable (Plitt et al. 1995). Telecommuters may also be entitled to compensation for injuries sustained while traveling between home and a work site other than the regular one (*Schoenfelder v. Winn & Jorgensen* 1997).

In a related situation, commercial drivers, traveling salespeople, or those regularly engaged in traveling in furtherance of their employer's business are covered by workers' compensation while engaging in such travel, because such employees are considered to carry their "employers' premises with them while engaged in furtherance of their employer's business" (*Williams v. Hoyt Construction Co.* 1976, 345).

Injuries Occurring While Out of State

When a telecommuter is located outside the employer's state and is injured at home, which state's workers' compensation law applies—the employer's or the telecommuter's? Employers must consider the laws of both states in order to answer the question.

State laws may differ concerning whether they cover workers injured outside the state. In Vermont, the law provides that a worker hired there who is injured in an accident arising out of and in the course of employment is entitled to compensation under Vermont law “even though such injury was received outside [the] state” (Vermont Statute Annotated 2001, §619).

Similarly, in Oklahoma, “when the contract of employment was entered into within ... Oklahoma, and the ... employee was acting in the course of such employment and performing work outside [Oklahoma] under direction of” his or her employer, the state's workers' compensation law applies, “irrespective of where accident resulting in injury may occur” (Oklahoma Statute 1992, §4).

In states with similar laws, nonresident telecommuters injured at home may be able to recover under the workers' compensation laws of their employer's states. Oklahoma does “not preclude the injured employee from recovering any benefits ... provided under any law of the state where injury occurred.” If the employee prosecutes an action under the law of the other state “to final determination,” however, he or she loses the right of action under Oklahoma's Workers' Compensation Act (Oklahoma Statute 1992, §4).

Other states may define more narrowly the circumstances under which they will permit compensation for injuries sustained outside their borders. For example, in Wisconsin, for a nonresident to receive compensation for an injury sustained in the home state, he or she might have to satisfy one of a number of conditions. Compensation might be awarded if the worker's employment is “principally localized” in Wisconsin. Or, it might be awarded if the employee is working under a contract that was made in Wisconsin at a job that is “principally localized” in a state “whose workers' compensation law is not applicable to that person's employer” (Wisconsin Statute 1997, §102.03).

The laws of the telecommuter's home state may also protect him or her when injured there. In Colorado, for example, the “jurisdictional prerequisites to recovering benefits under the [workers' compensation] act are that a substantial portion of the employee's work must be performed in Colorado, combined with either an

injury in Colorado or an employment contract entered into in Colorado” (*Monolith Portland Cement v. Burak* 1989, 688). In *Monolith*, an employee who lived in Colorado was killed in a car accident in Colorado on his way to his Wyoming office. The employee regularly worked at home in the evening. In litigation concerning death benefits awarded to the worker’s wife under Colorado law, the employer and insurance company argued that Colorado’s Workmen’s Compensation Act did not apply. The court held that it did: “The record supports the finding that Burak performed a substantial portion of his work for Monolith at his home in Colorado.... And, since it is undisputed that the accident occurred in Colorado, we conclude that the state’s compensation act does apply” (*Monolith Portland Cement v. Burak* 1989, 689).

Although state workers’ compensation laws vary from state to state and no state has laws specifically addressing how workers’ compensation should apply to teleworkers, various rules and doctrines addressing other employment situations may provide guidance in addressing the issues listed above.

Future Safety and Workers’ Compensation Issues

OSHA’s regulation of safety conditions in the home seems firm. OSHA places a positive duty upon employers to correct those hazards the employer “is or should be aware of.” Replacing faulty computers is easy; replacing faulty wiring or unsafe stairs leading to the employee’s office is not. While OSHA has for now indicated that it will not inspect home offices, organizations should be concerned that OSHA may, under a different administration, assert its authority to inspect home-based offices. As telework increases in popularity, employers should take proactive measures to ensure that their telecommuters’ home offices are safe. Undoubtedly, organizations may want to conduct safety inspections periodically. If inspections are conducted with advanced notice to the teleworker, the situation becomes less problematic. Even so, the balance between an employee’s right to privacy and the employer’s duty of ensuring compliance may be somewhat difficult to find.

A related issue involves whether teleworkers must set up an official home office in a room, rather than working on the kitchen or dining room table, or in a space that serves multiple purposes. If the employee is required to designate one area in the home as the official workstation, potential exposure to liability is limited; however, if work-at-home arrangements could be interpreted as including any number of areas, then liability is expanded.

Several key telecommuting workers' compensation issues present difficult situations that will require further discussion, including injuries occurring at locations other than at the central office or home office. As indicated earlier, employees are performing job activities at a variety of locations. What happens when an employee takes a laptop to Starbucks and is working on job-related activities and then goes to the bathroom and falls? Is this a compensable injury under workers' compensation considerations?

Another workers' compensation concern involves permitting employees to establish their own work hours and even work days. This practice gives rise to a number of problematic scenarios. Specifically, at what point are teleworkers actually working and when are they preparing to work or temporarily abandoning their work? In *Tovish v. Gerber Electronics* (1994), a salesman who maintained a home office did not observe strict working hours and was expected to visit account holders regularly. He suffered a fatal heart attack while shoveling snow. The trial court determined that he had suffered the heart attack because of shoveling snow and the only reason he was shoveling snow was to call on customers and he was, therefore, entitled to workers' compensation benefits. Dismissing the employer's appeal, the appellate court determined that no convenient legal distinction existed between mere preparatory work and activities that were in the course of employment and suggested that the legislature should develop guidelines to establish fine distinctions.

Another workers' compensation concern involves third-party liability. What happens when meetings are held with others (e.g., customers) and they are injured in a teleworker's home or when they meet at another location suggested by the teleworker (e.g., Starbucks)? Certainly, the determination will depend on the specific circumstances related to the injury, the telework policies of the employer, and the telecommuting agreement between the worker and the organization.

A final issue in workers' compensation is that in the majority of accidents involving telecommuters, there is no witness to the accident other than a pet or infant child. The employer must rely solely on the employee's account as to whether the injury arose out of and occurred in the course of employment. Notwithstanding this disadvantage, employers should still require telecommuting employees to follow the same procedures in recording an injury within a certain number of hours, inspecting the premises, and investigating the cause of the injury.

SUMMARY

OSHA requires a covered employer to provide a workplace free from hazards that are likely to cause serious harm or injury. OSHA's warning of liability concerns should, at the very least, require employers to take pause before implementing any type of telecommuting arrangement. Again, although telecommuting is not expressly included in the statutory definition of "place of employment," this definition is broadly interpreted and will likely include at least the home office portion of the telecommuting employee's residence. In order to avoid OSHA liability, an employer should work with the employee in designing and maintaining a safe, hazard-free home office. The telecommuting agreement should allow the employer to conduct periodic inspections of the telecommuting work space.

A summary of workers' compensation law to be applied by analogy to telecommuters is as follows. If telecommuters are en route to pick up or drop off materials to their employers' worksite, injuries suffered either going to or coming home will be covered. If they are conducting personal errands during the same time frame as dropping off or picking up materials, any injuries suffered while on personal business will be covered. Clearly, if telecommuters are injured on the premises (at home) while they eat/rest/take breaks, any injury suffered during that time period will be covered, just as if the employee were performing such acts off the premises, if such acts are reasonable, aid in the efficient performance or personal necessity or comfort of the employee, and are in some way meaningfully limited, controlled, or foreseeable by the employer. Such activities taken in "preparation of" or "incidental to" work activities are compensable, as are injuries occurring during the actual performance of the employer's work.

Employers have also expressed concern over the potential for increased workers' compensation costs resulting from injuries incurred by telecommuting employees. Work-related injuries, regardless of location, are usually covered by workers' compensation. The law is still unsettled in this area, so employers should verify the requirements of their state workers' compensation standards and otherwise follow the guidance of legal counsel when it comes to the corporate telecommuting program.

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Book Reviews

Supercapitalism: The Transformation of Business, Democracy, and Everyday Life

By Robert Reich

Reviewed by Steven B. Gilbert

If one follows the writings of Robert Reich, one can easily predict what he will end up saying in his latest thesis. Although not a stated enemy of capitalism and certainly a supporter of democracy, Reich always seems to craft a perspective that leaves the reader questioning his motives. Attempting to factor out his obvious political persuasion, one still questions, at the end of the read, how much does he really support free enterprise and for what purposes? Reich suggests that life was grand in the 1950s and 1960s—in what he calls the “Not Quite Golden Age”. He writes that those days of oligopolistic corporations, powerful unions, and more governmental regulatory power combined to exhibit the best for all of our society. But, economic power shifted to investors and consumers over time. Supercapitalism replaced democratic capitalism. The reader will have to determine for themselves what “democratic capitalism” is, since one is a political idea and the other an economic one. Democratic capitalism implies one votes with one’s dollars. Not a particularly unappealing notion. That occurred in the “Not Quite Golden Age” and, so far as this reviewer knows, still occurs today. Throughout the text, Reich attempts to suggest that the power in the hands of consumers and investors is somehow a threat to American democracy.

One of the most revealing perspectives in Reich’s latest effort is on the concept of corporate social responsibility. In a day when no one in business escapes the tentacles of this nebulous notion, Reich puts forth a surprising idea: forget it. Just when one thinks Reich has dropped all previous notions of business and its relationship to society, he drops this bombshell. But alas, further reading clarifies all: firms cannot be socially responsible. When they attempt it, it is only for

good press coverage and PR initiatives. There is only one institution that can assure a firm is socially responsible—the government. Welcome back, Mr. Reich; we knew you had not gone far.

Reich’s supercapitalism thesis centers on his distaste for what we now call “globalization”. Therein he feels we, as a nation, have subordinated our democracy by expanding the rights of consumers and investors in a new world economy. His perspectives are aligned perfectly with the progressive Galbraithian model of “countervailing forces”—bigger government and expanded control therein, more powerful unions, interest group activism, etc. Globalization is here and not likely to diminish. If more powerful unions are a part of the solution, Reich should look at the current condition of Ford and General Motors vis-à-vis their unions, which look more like problems than solutions, as foreign competition breathes down the corporate necks.

Admittedly, Reich makes some valid points, such as renovating and placing severe limitations on campaign financing. Fair enough. But if government were not so big and influential, why would we need a campaign finance system as a counter-influence anyway? Reich’s solution to saving democracy is more big government. In his latest effort, he once again forgets the thoughts of the Fathers who created democracy in this country. Capitalism, like democracy, works best when it is governed least. Mr. Reich still seems oblivious to the point here, once again.

Mr. Gilbert teaches management classes at Northwest.

How Starbucks Saved My Life—A Son of Privilege Learns to Live Like Everyone Else

By Michael Gates Gill
Reviewed by Brenda Jones

There are plenty of rags-to-riches stories out there. In this book, Michael Gates Gill describes his life journey as the opposite—riches to rags. In truth, his story is riches to rags and back to riches again—a journey from *monetary* riches to *monetary* rags and back to *spiritual* riches—back to a life filled with true grace, when his sense of entitlement was replaced with real humility. Gill was born the first son to a prominent New York family and he spent most of his childhood in a 25-room house in an affluent suburb of the city. Like his father he attended Yale and, through his father’s connections, he landed a job with the top ad agency in the world immediately after graduating. His fall from grace began when he was 53: he was fired from his job at the ad agency he had worked for since college, tried to start his own ad agency and destroyed his twenty-year marriage, with his own infidelity. The final blow on his way to the bottom came when he was diagnosed with a slow-growing brain tumor.

Amid all of the chaos and misery, Gill says a chance encounter at Starbucks saved his life. One morning, while he was at the Manhattan Starbucks, a young, African-American woman wearing a Starbucks uniform approached him and asked him if he would like a job. Without much thought, Gill answered, “Yes.” Whether that specific moment on that specific day was pure chance, or as Gill would later describe it, divine intervention, it was the moment that began his resurrection.

Gill describes his transformation from a sense of entitlement to real humility in connection to the organization’s culture. One of the first life lessons he learned from Starbucks was the true meaning of respect—respect for other people and

for the environment. Because it is the front-line employees that have ultimate control over service, Starbucks understands that it is not enough to claim that customers come first. Their partners (Starbucks' employees) come first. Because of his previous work experience, Gill believed that respect was demanded and coerced through fear, but as a barista at Starbucks, he quickly realized that real respect is not tied to gender, age or ethnicity. And it does not end with people, but must include the entire environment. In fact, one of Starbucks core beliefs is that "everything matters." Another lesson for Gill was that he felt more dignity serving others than he ever did being served. At one point he comments on the funny feeling he initially had, as customers lined up for his services. His green Starbucks apron was initially a source of embarrassment for him, but it quickly became a proud symbol of the fact that he served others. He realized that there is dignity in work done well, even if it was something as mundane as cleaning a restroom. Until this realization, he had thought of work as a chore, never a calling.

As a middle-aged, Caucasian male, Gill found himself in the minority at "his" Starbucks. But he soon learned that the partners didn't care about his background. There simply wasn't time. Because of the pressure to serve customers well, there was a kind of "immediate democracy" at Starbucks. Gill found himself to be just one more part of a team that had to function well in order to surprise and delight the customer, another promise made by Starbucks.

Some see Gill's message as somewhat manipulative, but it is still a good message. While most of us see coffee as a way to wake up each morning, Gill's awakening was much deeper. His journey began with a new understanding of respect, dignity and democracy, which led to his realization of grace through humility.

Ms. Jones teaches marketing classes at Northwest.

Quality or Else: The Revolution in World Business

By Lloyd Dobyns and Clare Crawford-Mason

Reviewed by Chi Lo Lim

Quality or Else chronicles the demise of the American economy despite having some of the most prominent quality gurus in modern times. Dobyns and Crawford-Mason delve deep into the roots of how Deming and Juran started the quality movement in the United States, and the country managed to come back from behind the Japanese. The authors stressed the importance of quality and its impact on organizations public and private.

Dobyns and Crawford-Mason do an excellent job reporting the events leading to the quality movement in the United States through their exhaustive research. The authors support their convictions with extensive interviews of over 180 leaders of United States. Their research encompasses a wide variety of organizations, including business and educational institutions. *Quality or Else* is a chronicle of the resurrection of the quality movement in the United States.

Dobyns and Crawford offer readers a solid foundation on the thoughts and theories of the best-known American quality gurus: W. Edwards Deming, Philip Crosby, Armand Feigenbaum and Joseph Juran. The authors provide a clear comparison between the works of the quality gurus and illustrate their distinctive similarities and differences.

Dobyns and Crawford-Mason make it clear that quality is not just a temporary change of some insignificant adjustments here and there. Quality should be a way of life permanently engrained in organizational culture, where everyone involved continuously endeavors to do better. The authors caution about the difficulties of achieving quality in any organizational setting, as it takes commitment from everyone, starting with top leadership. Finally, the authors stress

the purpose of quality awards such as the Baldrige Award as a process to strive for continuous improvement and not a goal to achieve yet another piece of well designed decoration.

Dobyns and Crawford-Mason conclude that quality is no longer a luxury organizations can choose or ignore. Some 25 years after they wrote *Quality or Else* had been written, their message remain important today to those who take heed to their warning. In the global marketplace, quality is expected and is a key component for anyone striving to succeed in the 21st century and beyond.

Dr. Lim teaches management classes at Northwest.

Little Red Book of Selling:

12.5 Principles of Sales Greatness

By Jeffrey Gitomer
Reviewed by Doug Russell

There are many “how to” books on the subject of sales, but there is no book that slaps you in the face, pulls no punches, and better yet, compels you to read it over and over again like the very popular *Little Red Book of Selling*. Jeffrey Gitomer’s high energy level, when coupled with his extensive real-world sales experience, makes his *Little Red Book of Selling* a must-read for any business person. Most sales books talk about selling tactics and tips on how to sell; this little red slice of information focuses not so much on how to sell, but rather why people buy.

Gitomer’s innovative and charismatic style is evident throughout the book. For example, the Red “Whine” and Red Selling cartoons in the margins prevent any salesperson from making excuses for the most basic “whines” (excuses) of selling, like making cold calls to prospects. Not only does he provide the whine, he provides the response, too, which for the cold calling whine would be, “If you brand yourself, prospects call you.” All of these “whines” and “responses” are effective and can be put into action right away.

The main theme of the book is the “12.5 Red Principles of Sales Greatness.” Some of these are networking, personal branding, using creativity, being prepared to win and reducing the buyer’s risk. Along with the 12.5 principles, this red gem contains Gitomer’s Red Bites, which are at the end of each chapter, and they provide even more quick sales tidbits that also include access to Gitomer’s website for even more in-your-face remedies.

Gitomer also reveals early on what red means, in the book and in the title:

- Red is the color of love, and if you do not love what you sell, then you should sell something else.
- Red is the color of passion and passion is the fulcrum point of selling; no passion, no sales.
- Red is the most visible color and you must be visible to your customers with a value message, not just a sales pitch.
- Red is the brightest color and you must be bright in order to convert selling into buying.

Whether you are a beginner to sales or a seasoned pro, the book is easily digestible and it takes you through the basics of selling like cold calls, asking the right questions, handling objections, building relationships and asking for the sale, just to name a few. The best thing about this book is you can implement Gitomer's straightforward—with a little humor sprinkled in—sales tools immediately. One last “red” tidbit for success: love what you do, for if you do, it will be easy for you to be successful.

Mr. Russell teaches marketing classes at Northwest.

Microtrends: The Small Forces Behind Tomorrow's Big Changes

By **Mark J. Penn, with E. Kinney Zalesne**

Reviewed by Deborah Toomey

What factors will determine the next presidential election or successful advertising campaign? Although there are many issues that influence consumer decisions, one is the belongingness they feel to different groups or segments. In *Microtrends: The Small Forces Behind Tomorrow's Big Changes*, the authors measure, describe and analyze 75 growing groups, in a way that is relevant to a wide array of professionals, including business practitioners, political and social scientists.

Microtrends are groups of at least one percent of the population, with a distinct and identifiable characteristic. Penn identifies fifteen distinct divisions including: Love, Sex and Relationships, Work Life, Race and Religion, Health and Wellness, Family Life, Politics, Teens, Food, Drink and Diet, Lifestyle, Money and Class, Looks and Fashion, Technology, Leisure and Entertainment, Education, and International.

Interested parties can use the microtrends to decipher the potential needs and wants of each group. For instance, one trend in the Teens section is “High School Moguls”. Approximately eight percent of all teens are now using the Internet to thrive financially, a shift from delivering newspapers for extra money to a more geographically diverse business environment.

Once known as a melting pot, the United States is now being identified as a compilation of diverse and unique communities, based on motives and lifestyles, moving in multiple directions, simultaneously. A dynamic collection of segments allows each individual to be perfectly satisfied with the life they lead, rather than

being pigeon-holed into a distinct personality based on simplified demographics. As we progress towards a one-to-one relationship marketing philosophy, it becomes necessary to understand the intricacies of the population. Some of the segments are larger than others, but they are all “relatively unseen, either because their actual numbers are small or because conventional wisdom hides their potential in the shadows, sometimes even emphasizing the exact opposite” (p. xxi).

Some of the assessments are more entertaining than others, but readers should examine the content of each microtrend, to determine new potential target markets and shed old traditional outlooks. For instance, one group, “Snowed-under slobs” are people who don’t keep their “stuff” organized. Each year, almost as many Americans try to organize their lives as plan to lose weight. They spend over \$6 billion per year on home-organization items and over \$3 billion more just to organize their closets. Understanding this group and the other 74 microtrends can help businesses identify new and emerging products or services to satisfy the needs of these growing segments.

The primary author, Mark J. Penn, is the CEO of Burson-Marsteller and has served as a pollster and advisor to multiple political campaigns. Penn coined the term “soccer moms” in the 1996 re-election campaign of President Clinton. E. Kinney Zalesne has also experienced a diverse career in politics and now serves on the board of two national social-change organizations. The practice of trend-spotting has become a passion of the authors and understanding microtrends can become significantly important and, in this case, an entertaining process.

Ms. Toomey teaches marketing classes at Northwest.

