THE TRANSNATIONAL JOURNAL OF BUSINESS

Are They Ready for the Real World? A Survey of What Employers Value and What They Find Lacking in Recent College Graduates

Record Graduate Growth Rates through Faculty Led Recruitment and Retention Strategies: A Case Study

The Impact of an Adaptive Learning Technology on Student Performance in an Introductory-Level Business Course

Student-Managed Investment Funds: A Survey of Student Demographics, Fund Policies, and Transparency

From the Transnational to the BoP Approach to Global Strategy: Opportunities and Challenges

Sponsored by:

LIBERTY UNIVERSITY
SCHOOL *of* BUSINESS

VOLUME 3 • SUMMER 2018 • A PUBLICATION OF ACBSP

THE TRANSNATIONAL JOURNAL OF BUSINESS

VOLUME 3 (SUMMER 2018)

A PUBLICATION OF ACBSP

 ISSN 2572-2557

ACBSP GLOBAL BUSINESS ACCREDITATION

ACCREDITATION COUNCIL FOR BUSINESS SCHOOLS & PROGRAMS

Accreditation Council for Business Schools and Programs (ACBSP)

11520 West 119th Street

Overland Park, KS, USA 66213

30 ACBSP 1988-2018

THE TRANSNATIONAL JOURNAL OF BUSINESS

FOCUS AND SCOPE: *The Transnational Journal of Business* (TJB) is a peer-reviewed interdisciplinary and international journal published by the Accreditation Council for Business School and Programs (ACBSP). The TJB publishes manuscripts that link teaching and research to enhance student learning outcomes. More specifically the *Journal* is interested in interdisciplinary research that promotes teaching excellence in the various academic disciplines of business to include all theoretical and applied domains.

MISSION STATEMENT: The mission of the TJB is to provide a forum for a dialogue to advance teaching excellence through research across the disciplines in business. To this end, the TJB welcomes manuscripts from all ACBSP individual members. The goal is to facilitate a linkage between teaching and research at member institutions.

The Transnational Journal of Business

Managing Editor—Justin Matus, Wilkes University (PA)

Scholar-Practitioner Publications Committee

The Transnational Journal of Business acknowledges the contributions of the many reviewers whose efforts made the publication of this issue possible. In particular, the TJB acknowledges the invaluable assistance in finalizing reviews and preparing them for publication.

THE TRANSNATIONAL
JOURNAL OF BUSINESS

VOLUME 3, NUMBER 1 JUNE 2018

CONTENTS

THE TRANSNATIONAL
JOURNAL OF BUSINESS

FROM THE EDITOR

Dear Reader,

WELCOME TO OUR THIRD ISSUE of the *The Transnational Journal of Business!* I hope you will find this year's issue informative and interesting. The work presented here reflects the incredible caliber of ACBSP faculty and the programs which support them. Our acceptance rate was approximately 25% this year, another signal of how competitive the environment is among our ACBSP members. I would be remiss if I did not also thank *all* of those authors who submitted manuscripts for review, whether their work was published here or not.

In the coming months I will be working closely with the Scholarly-Practioner Publications Committee and ACBSP leadership to make our Journal even better as we continue to learn and build upon our success. The biggest contribution to our success will always come from you, the reader. It is you the reader who will determine our future – you can ensure our continued success by reading, sharing and promoting the Journal. We accept papers on a continuous basis and are also always looking for reviewers, so please do reach out to me or one of your regional representatives to get involved!

JUSTIN C. MATUS

Managing Editor

Are They Ready For the Real World? A Survey of What Employers Value and What They Find Lacking in Recent College Graduates

Don Goeltz, Jan Buzydlowski, Bernice Purcell and J. Barry Dickinson

ABSTRACT

The popular press, industry analysts, and academic articles have repeatedly reported on a skills gap in recent college graduates. But far too often, these reports do not provide educators with specific, actionable recommendations. This study is designed to determine whether Philadelphia-area employers experience a skills gap in soft skills as well as a gap in the more concrete, hard skills in recent college graduate employees. The primary contribution of the research is the comparison between the importance of a skill and the presence of that skill. Most surveys ask only for the presence of a skill, without addressing the relative importance of that skill. An additional contribution of this study is the development and testing of a fine-grained definition of skills. This study therefore addresses the need for direction on specific skills that employer's value, but they find lacking in recent college graduates.

The findings of this study are generally in line with other surveys in observing a wide gap for soft skills such as decision-making and teamwork. The study also confirms a gap, to a lesser degree, for technical and functional skills. The findings on the importance of skills and the fine-grained research questions are intended to inform changes in the business school curriculum and the assessment of learning.

The paper begins with a review of academic research, industry surveys, consulting analyses, the business press, and association surveys with the goal of determining the parameters of the skills gaps. Next a process to define, test, and deploy the research survey for Philadelphia-area employers is described, followed by the results of the survey. Implications for curriculum design and areas for future research conclude the paper.

KEY WORDS: workforce readiness, skills gap, employer survey

AUTHORS: Don Goeltz, *Holy Family University*
Jan Buzydlowski, *Holy Family University*
Bernice Purcell, *Holy Family University*
J. Barry Dickinson, *Holy Family University*

The Skills Gap

The Reported Skills Gap

The popular press is replete with alarming news that graduating students do not have the skills that employers are seeking. These skills are generally grouped into "hard skills" – the quantifiable proficiencies useful on the job – and "soft skills" that are difficult to measure, such as public speaking and problem solving. Although some hard skill gaps, such as data analysis, are reported, the soft skills are generally seen as more deficient than hard skills. For example, students are reported to be "failing in job skills" (Selingo, 2015), having "room for improvement" (McGraw Hill, 2016 p.6), and exhibiting "low score in preparedness" (AACU, 2015). Forbes (Strauss, 2016) reports that there are "nine skills missing," while CBS News (Berr, 2016) says "grads are not ready for the workplace."

The academic literature over the prior twenty years supports the existence of this skills gap, calling graduates "woefully ill prepared" (McLester & McIntire, 2006, p.22.). It might be expected that college graduates need some experience and seasoning, and perhaps that on-the-job training will close the skills gap. However, according to Rosenbaum (2002), students who do not learn basic employability skills before they are hired may not have the opportunity to learn them on the job. Employers may be reluctant to invest in the resources needed to provide remedial training for these skills.

Bok (2006) reports that college professors and administrators felt they were teaching students what they need to know, but only 35% of a sample of industry executives thought that colleges taught students what was important to succeed at work. Robst (2007) states that college students believed that a college education provided them with all the skills necessary to obtain employment upon graduation. If nothing is done to improve educational performance, the gap between the skill needs of industry and the skills of graduates will continue to grow (Plastrik, 2007).

These reports from the press and academe are not just the opinions of editors or an attention-grabbing headline, but are based on a number of surveys and studies performed by associations, consultants, and industry members. The surveys behind the storylines include those from The Conference Board (2006), The Association for Business Communication (2012), The Committee for Economic Development (2012), McKinsey & Company (2013), The Association of American Colleges & Universities (2015), McGraw Hill (2016), and PwC (2016).

These surveys uniformly addressed a spectrum of skills that employers found lacking in recent college graduates, both soft skills and hard skills. They also uniformly found that the gap was bigger in the soft skills.

The Nature of the Skills Gap – Soft Skills and Hard Skills

Employers look for graduates with communication skills, empathy, motivation, decision-making abilities, planning abilities, and improvisation abilities (Bagshaw, 1996). Zehrer & Mossenlechner (2009) add that graduates are expected to be proactive and able to solve problems in a creative way.

Yorke and Knight (2006) propose three main attributes for graduate employability - personal qualities, core skills, and process skills. Personal qualities consist of self-awareness, self-confidence, willingness to learn, emotional intelligence, independence, and adaptability. Core skills include self-management, written and oral communication, and critical analysis. Process skills refer to problem solving, team working, computer literacy, integrity, business ethics, planning and prioritizing, and coping with uncertainty.

These personal, core, and process skills are often grouped together and called "soft skills." The prior surveys in this area indicate that employees need to possess these soft skills as well as the more concrete, hard skills.

For example, the Conference Board administered a survey of over 400 businesses in 2006. This survey asked the respondents to rank the presence of skills in new employees in two skill groups, basic knowledge and applied knowledge, corresponding broadly to hard and soft skills. The survey also asked the companies what was important, finding that oral communications and teamwork were ranked most critical to career success.

In 2012 the American Management Association conducted a survey of executives that ranked the soft skills, in order of importance, as integrity, communication, courtesy, responsibility, interpersonal skills, professionalism, positive attitude, teamwork skills, flexibility, and work ethic. More recently, in 2015 the American Association of Colleges and Universities conducted a study of employers. According to this study, the most highly valued among the 17 skills and knowledge areas tested were written and oral communication skills, teamwork skills, ethical decision-making, critical thinking skills, and the ability to apply knowledge in real-world settings.

The surveys from other organizations generally divide the skills into two groups, soft and hard skills. The surveys also asked employers what skills were lacking. Although this abundance of prior research is useful in defining skills that are lacking, there is a gap in the literature regarding the employers' value of the different skills. This research paper addresses the need for a finer definition of workforce skills and for a new dimension to the surveys, the value that employers placed on the skills.

The Research Approach

This research is designed to analyze these skills gaps in several steps: First a database was established from academic articles, US and International government surveys, non-profit and Non-Government Organization surveys, and consulting and for-profit surveys as well as articles from the business press and business magazines. Then, based on this literature review, a draft, pa-

per-based survey was developed and refined with internal reviews and a trial panel prior to deployment of a final survey.
Based on both the review of the literature and prior workforce and employer surveys, it was determined that the workforce readiness survey should: 1) examine the presence of both soft and hard skills, 2) examine what employers value in new employees – what is most critical - and 3) be kept short with a completion target of 15 minutes.

To further refine the survey vehicle, a panel group was formed of local employers and then led through a guided discussion on both soft and hard skills that they require of their employees. An on-line questionnaire was then developed from the focus group results. Then that questionnaire was tested with a small group of employers, and finally the resultant questionnaire was distributed to a broad cross-section of Philadelphia firms.

One challenge was developing the lists of soft skills and hard skills that are specific but also met the above-noted criteria of clear definitions, simplicity, and specificity. To address that concern, the survey included three types of skills - technical, functional, and soft skills - as listed in table one below:

Table One

Technical skills	Functional Skills	Soft Skills
Basic Computer Operations	Sales	Oral communication
Word Processing	Marketing	Written communication
Spreadsheet Skills	Accounting	Team work
Internet	Technology/Computer	Active listening
Email	Operations Management	Defining a problem
Analytical skills	Project Management	Time management
Social media skills	Industry Knowledge	Reading with understanding
Troubleshooting skills	Global Knowledge	Observing critically
Basic database understanding	Language (other than English)	Cooperation with others
General technology skills	General Management	Resolving conflict with others
Research skills	Entrepreneurship	Researching facts about an issue
		Solving problems and making a decision
		Management of others
		Taking responsibility for learning

Final Survey

The survey was revised and entered into Qualtrics. Qualifying questions were added, and a matrix with pull-down menus was developed to facilitate the ranking of the presence and importance of skills, side-by-side. The complete survey is available from the authors, and a sample section is illustrated below in Figure One:

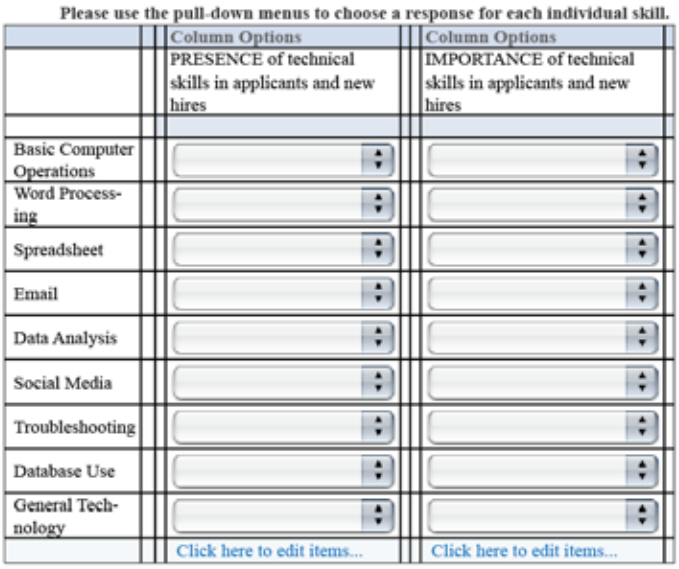
Figure One

F**or** each skill, please indicate your **perception of the PRESENCE of technical skills i**n applicants and new hires as: **High, Above Average, Average, Below Average, or Limited.**

Also

Please indicate your **perception of the IMPORTANCE of technical skills** in applicants and new hires as: **High, Above average, Average, Below average, or Limited.**

Please use the pull-down menus to choose a response for each individual skill.



As illustrated above, the survey design directs respondents to simultaneously consider both the importance and the presence of each skill. This revised form was then used to collect data from Philadelphia-area businesses.

Survey Results - Data Description And Analysis

The Qualtrics survey covered the Philadelphia Metropolitan Statistical Area (MSA), which is ranked seventh in the US with a population of 6 million. The Philadelphia MSA has non-farm employment of 2.6 million, and over 145,000 firms. Budget limitations precluded a stratified sample that reflected the Philadelphia MSA, but a representative sample was requested.

Sixty-five surveys were completed out of over 200 attempts, reflecting the screening questions at the beginning of the survey (e.g. hiring of a recent college graduate) and the thoughtfulness requested on the two primary axes (presence versus importance) of a particular skill. The average time to complete the survey was 11 minutes, well within the target of 15 minutes.

Data Description

For the survey dataset, the mean number of employees is 4.03 and the standard deviation is 2.28. This is comparable to the Philadelphia MSA, where 72% of all firms have fewer than 10 employees (US Census Bureau).

Industries represented in the survey sample are shown below and compared to the 2015 Philadelphia MSA (US Census Bureau):

Qualtrics Survey		PHL MSA
Public Administration	2%	2%
Education	13%	2%
Health and Social Services	12%	12%
Arts, entertainment, sports	2%	2%
Utilities, construction	3%	8%
Manufacturing	9%	4%
Wholesale trade	6%	5%
Transportation	2%	2%
Information Technology	8%	2%
Finance, Insurance, Real estate	12%	10%
Professional, Scientific	17%	12%
Other	16%	10%

Therefore, the sample was reasonably representative of the Philadelphia MSA.

Data Analysis

As the relationship between importance and presence was the focus of this study, it was also the focus of the analyses. First, a basic measure of presence versus importance was derived by combining the top two categories of the presence measure -- very present and above-average presence -- and dividing that by the sum of very important and above-average importance. This resulted in a ratio that is greater than one if a variable is more present than important and vice versa.

The results by skill area and specific skill are shown below:

Technical Skill	Presence/ Importance
Basic Computer Operations	0.91
Word Processing	0.74
Spreadsheet	0.71
Email	0.90
Data Analysis	0.58
Social Media	1.90
Troubleshooting	0.63
Database Use	0.78
General Technology	1.38
Average	0.95

The mean is .74 if social media and general technology are excluded.

Functional Skill	Presence/ Importance
Sales	0.55
Marketing	0.70
Accounting	0.54
Technical/Computing	0.71
Ops Management	0.50
Project Management	0.55
Industry Knowledge	0.54
Global/International	0.65
Foreign Language	0.80
General Management	0.54
Entrepreneurship	0.86
Average	0.63

Soft Skill	Presence/ Importance
Oral Communications	0.58
Written communications	0.50
Team membership	0.65
Listening Actively	0.51
Problem Definition	0.45
Time Management	0.54
Reading w/ Understanding	0.58
Observing Critically	0.46
Cooperating With Others	0.63
Resolving Conflict	0.48
Researching Facts	0.76
Solving Problems	0.49
Making Decisions	0.55
Taking Responsibility	0.45
Average	0.54

A review of this basic data shows a dramatic difference in the average of the three skills areas – technical skills were met 95% of the time, looking at very important and important versus the top two categories for presence – and Functional skills were met 63%

of the time. For soft skills, however, that number was only 54% of the time.

Analysis of Skills Impedance

One of the aims of the analysis was to ascertain the difference between what skills students come to their employer with -- via their education, experience, etc. -- versus what skills are required and valued by their employers; i.e., the impedance of those skills. To that end of determining this impedance, a separate measure was developed.

For each individual question, the respondent was asked to rate the recently hired employees on a scale from 1 – 5, on both: 1) the presence of each skill; and, 2) the importance of each skill. The impedance, therefore, is the difference between those scores.

To analyze this data, presence versus importance, the difference between the two scores was computed and the result was squared. Squaring removes the direction of the difference --negative versus positive differences -- and emphasizes the larger disparities. For example, if the Soft Skill Set, Oral Communication, was graded 3 for importance by one respondent and that same respondent graded 3 for presence, then that result is 0 (= $(3 - 3)^2$). If another respondent graded 3 and 5, respectively, then that results in a 4 (= $(3 - 5)^2$). The sum of the two would be 4 (= 0 + 4). With this scheme, perfect agreement of every respondent will result in a zero overall, and perfect disagreement will result in 1040 (= 16* 65) (= $(1 - 5)^2 * N$). An overall score for each question is the sum of those squares (SSQ) across all of the respondents (N = 65).

While the SSQ shows the magnitude of the impedance, it was also of interest to show the direction: is the difference positive where the respondent indicates there is a surplus of skills, rating presence higher that importance, or negative, where there is a lack of skills? To this end, an approach similar to the above was performed with the exception that the result was not squared. This was denoted as the sum of the differences (SDF), with positive values indicating that the employees have the skills, but that they are not valued as highly by the employer; negative, which shows skill are lacking; or, zero, where the skills sets are either aligned perfectly by every employer or were offset (averaged to zero) by the differing opinions of the various employers.

The results of the analysis, (sorted by SSQ), grouped by skill are presented below:

Functional Skill	SSQ	SDF	Kappa
Industry Knowledge	130	-52	0.084
Sales	113	-25	0.262
Project Management	83	-27	0.386
Language	82	2	0.287
Operations	80	-40	0.250
General Management	69	-25	0.202
Computer	68	-36	0.290
Entrepreneurship	64	2	0.363
International	62	2	0.513
Marketing	55	-7	0.397
Accounting	55	-17	0.392

Soft Skill	SSQ	SDF	Kappa
Taking Responsibility	180	-74	0.236
Time Management	176	-70	0.201
Written communications	175	-65	0.085
Solving Problems	161	-71	0.167
Resolving Conflict	158	-48	0.172
Making Decisions	149	-57	0.154
Oral Communications	146	-66	0.167
Observing Critically	136	-58	0.250
Listening Actively	126	-56	0.206
Problem Definition	116	-56	0.297
Researching Facts	104	-36	0.179
Cooperating With Others	99	-49	0.227
Team membership	89	-43	0.287
Reading with Understanding	79	-47	0.216

Technical Skill	SSQ	SDF	Kappa
Social Media	203	67	0.243
Troubleshooting	146	-48	0.096
data analysis	82	-30	0.148
Database	67	-19	0.032
Word Processing	59	-13	0.071
Spreadsheet	57	-19	0.129
Basic Computer	46	-18	0.181
General Tech	44	26	0.368
email	32	-6	0.232

It is clear that on most of the measures, there is some lack of needed skills, shown by a non-zero for SSQ and a negative value for SDF. The one exception is that of Social Media, where

students seem to have a surplus of skill in an area for which the employers have no need.

Analysis of Rates of Failure

Finally, it was of interest to determine the failure rate of employees: how many employers fired employees for lack of skills. This occurs when an employee is perceived as having skills, perhaps because of a college degree, but fails to show/use them on the job.

A simple question was posed as to whether an employer had fired an employee for lack of skill, and then for which skill. The analysis is simply the percentage of those who said 'yes' for the respondents (N = 65) (in each major category and overall). The results are as follows:

Reason	Fired	%
Technical	10	15%
Function-al	18	28%
Soft	23	35%
Overall	35	54%

(The overall response/percentage is not the sum of the components, as they are not mutually exclusive.)

It was disturbing to the authors to note that more than half of companies surveyed fire their employees for lack of skills. Note that this is the percentage of companies, not the percent of employees. Further research in this area would appear to be warranted.

Statistical Analysis

The small sample size makes it doubtful that statistical analysis adds to the understanding, but nonetheless it was performed using SPSS.

A regression on overall skill satisfaction with overall satisfaction of soft, functional, and technical skills was performed. The model was significant but functional skills are not.

A factor analysis of the three skill-rating scales was performed: Technical skills only captured 60% of the variation; resulting in 2 factors; all scale items loaded nicely on first factor except social media, which loaded nicely on second factor by itself.
Functional skills only captured 62% of the variation; resulting in 2 factors; all items load on first factor nicely except Technical/Computer and Language; Technical/Computer loaded on second factor by itself; Language marginally loaded on second variable but was negative, meaning it was the polar opposite of whatever that factor represented.
Soft skills only captured 66% of the variation, resulting in one factor; all items loaded nicely on that factor. Low captured variance meant there was still something major was not captured.
Reliabilities on the three scales; Cronbach alphas, were high and acceptable.
An exploratory factor analysis was run on all questions, with the result indicating the grouping by the skills, (technical, soft, functional) alone, thus indicating a good grouping of the original questions.
A regression, same as #1 above, but controlled for company size, showed no impact.

Summary of analyses

The analyses of the survey data support the hypotheses that soft skills are generally more important than present, and that hard and technical skills are also more also important than present, but to a much smaller degree. Detailed analyses of particular skills give insights into these skills in all three areas that are held more important than present, also providing insights into areas for curriculum development.

Summary And Areas For Further Research

Surveys at the national and regional level indicate that soft skills are not present at the level desired by employers. This research project was designed with the express purpose of assessing the hard and soft skills sought by Philadelphia-area employers by collecting survey data on specific skills in three groups – soft skills, technical skills, and functional skills - with the intention of incor-

porating the results into business school curriculum design. The results may also be of use to the other schools at the University.

A survey instrument was developed from existing surveys, tested on a focus group, and then deployed through a survey consultant. The cost of the survey kept the size of the dataset small, with an N of 65, but the respondent profiles by industry and firm size are fairly representative of Philadelphia-area employers.

The primary contribution of the research is in asking the respondents for a comparison of the importance of a skill vs. the presence of that skill among recent college graduate hires, as most surveys ask only for one aspect of a skill or the other. The findings of the survey are examined at the category level and by skill level, for soft, technical, and functional skills. In general, the research found that many specific skills were lacking, but that soft skills are both more important and less present that other skills.

The research findings have been initially incorporated into curriculum design – several optional courses were moved into the core, and a new course on analytics has been proposed.

Areas for future research include asking students the same sets of questions that were asked of employers, as other surveys have indicated that students have a much higher opinion of their skills than employers have, particularly in terms of soft skills. Another potential area for further research is an assessment tool for specific skills, with a focus on soft skills. That would also lead to a third area – how to train students in soft skills. Finally, the survey contained one question about firing for a lack of skills, with over 50% of the respondents answering in the affirmative. Further research in this area is also warranted.

References

American Management Association (2012). Critical Skills Survey. Retrieved from www.amanet.org

Association of American Colleges & Universities (2015). Falling Short? College Learning and Career Success. Retrieved from https://www.aacu.org/leap/public-opinion-research/2015-survey-falling-short

Barton, D., Farrell, D., & Mourshed, M. (2013) Education to employment: Designing a system that works. McKinsey & Company.

Bagshaw, N. (1996). Creating employability: how can training and development square the circle between individual and corporate interest? *Industrial and Commercial Training, 28(1)*, 16-18.

Berr, J (2016) CBS News. Employers: New college grads aren't ready for workplace, May 17, 2016. Retrieved from https://www.cbsnews.com/news/employers-new-college-grads-arent-ready-for-workplace/

Bok, D. (2006). *Our Underachieving Colleges*, Princeton University Press, Princeton, NJ.

Herk, M. (2015). Committee for Economic Development, *Which Skills are Most Important on the Job and Which Skills Are in Short Supply?* September 22, 2015. Retrieved from

https://www.ced.org/blog/entry/which-skills-are-most-important-on-the-job-and-which-skills-are-in-short-su

McGraw-Hill Education (2016). 2016 Workforce Readiness Survey. June, 2016.

McLester, S., & McIntire, T. (2006). The Workforce Readiness Crisis. *Technology & Learning, 27*(4). P. 22-28.

Plastrik, P. (2007) Changing Labor Markets: A Systems Approach to Reform, *Jobs for the Future*, Boston, MA. Retrieved from www.jff.orf

PwC (2016). Government and global CEO Survey. February 15, 2016.

Robles, M. (2012). Executive Perceptions of the Top 10 Soft Skills Needed in Today's Workplace. *Business Communication Quarterly 75*(4), 453–465.

Robst, J. (2007). Education and job match: the relatedness of college major and work. *Economics of Education Review*, *26*(4), 397-407.

Rosenbaum, J. (2002). Beyond Empty Promises: Policies to Improve Transitions into College and Jobs, Office of Vocational and Adult Education, US Department of Education, Washington, DC.

Selingo, J. (2015). Why are so many college students failing to gain job skills before graduation? *Washington Post,* January 26, 2015.

Strauss, K (2016). These Are The Skills Bosses Say New College Grads Do Not Have. *Forbes.* May 17, 2016.

The Conference Board (2006). 21st Century Skills, Corporate Voices for Working Families, and Society for Human Resource Management. (2006). Retrieved from http://www.21stcenturyskills.org.

United States Census Bureau, Censtats Database, Retrieved from https://censtats.census.gov/cgi-bin/msanaic/msasect.pl,

Yorke, M., & Knight, P. (2007). Evidence informed pedagogy and the enhancement of student employability. *Teaching in Higher Education, 12*(2), 157-170.

Zehrer, A., & Mossenlechner, C. (2009). Key competencies of tourism graduates: the employers' point of view. *Journal of Teaching in Travel & Tourism, 9*(3-4), 266-287.

Record Graduate Growth Rates through Faculty Led Recruitment and Retention Strategies: A Case Study

Harold Ray Griffin, PhD and Alla Adams, PhD, CHFP, MHA

ABSTRACT

Business schools across the country are experiencing stagnant or declining enrollment in their graduate programs. As a result, many colleges and universities have felt compelled to downsize or teach out their graduate programs in business. In Park University's College of Management, the graduate faculty investigated enrollment trends in the Master of Healthcare Administration (MHA) and Business Administration (MBA) program. The results served as a catalyst for a paradigm shift in the role of faculty in recruitment and retention. This case study will share the lessons learned in our journey to achieve sustained record growth in the graduate programs. It is our sincere aspiration that this study will lead to similar paradigm shifts in colleges and universities that are struggling to keep their graduate programs financially viable amidst rising competition, fewer applicants, reluctance of students to take on more debt, and a thriving economy.

KEY WORDS: graduate program in business, MHA, MBA, recruitment, retention, enrollment, graduate faculty

AUTHORS: Harold Ray Griffin, PhD, Director, MHA Program, College of Management, *Park University,* e-mail: hgriffin@park.edu
Alla Adams, PhD, CHFP, MHA Area Coordinator and BS-HCM Program Coordinator, College of Management, *Park University*

Introduction

The focus of this case study is to critically examine the impact that our faculty led recruitment and retention strategies have had on student enrollments and credit hour generation in the graduate programs in business, which, at Park University, include the Master of Healthcare Administration (MHA) and the Master of Business Administration (MBA). The central question was can faculty led efforts to improve graduate student matriculation and retention really have a positive impact on program growth? To answer this question we examined enrollment and credit hour data before and after our faculty took lead on initiatives designed to grow the graduate programs.

What can be done to support sustainable student enrollment growth in graduate programs is an important issue for higher education to consider. In response to changes in the MBA market, business schools, from across the country, are consciously scaling back their programs and, in some cases, electing to close down their domestic programs. For example, Washington University, in St. Louis, announced that they will no longer be offering their Executive MBA program in Kansas City or Denver (Seltzer, 2017). The University of Iowa, Virginia Tech, Wake Forest, and Simmons College have taught out their full-time MBA programs. The University of Wisconsin at Madison is considering changes to its MBA that will emphasize a shorter and more specialized curriculum (Roll, 2017). According to Zarya and Donnelly (2017), supply and demand is not the only factor driving these recent trends. They added, that students are increasingly choosing specialized

programs, such as accounting and finance over the more traditional MBA, and that many schools are experiencing a general decline in the volume of international and domestic applicants who are reluctant to take on additional student loan debt beyond their undergraduate studies.

In light of declining enrollment trends, there has been a notable reduction in state appropriations to public colleges and universities. This coupled with increasing competition amongst for-profit institutions has highlighted the need for greater focus on graduate student recruitment and retention. It could be argued that a broader approach to recruitment and retention is necessary if institutions of higher learning are to remain solvent and that this approach requires active involvement across functional lines. In 2013, Westrick, Kamal, Mocszygemba, Breland, and Heaton surveyed program officers and department chairs from various graduate social science and administrative programs with an aim to identify strategies used in student recruitment and faculty development and subsequently concluded that more scholarly inquiry is needed to identify effective student recruitment and retention strategies.

There is a body of research that shows that the pursuit of persistence should begin in the preadmission phase and be a high priority (Carroll, Ng, & Birth, 2013; Brito & Rush, 2013; Newberry & DeLuca, 2014; Park, Perry, & Edwards, 2011). Early detection of students experiencing academic difficulties, allows institutions the opportunity to render necessary support services and perhaps improve these students likelihood of success (Brito & Rusch, 2013; Heyman, 2010). While colleges and universities make available student support services (Crawley, 2012; Sullivan & Pagano, 2012), it is faculty engagement that is perhaps one of the strongest predictors of student persistence (Hanson, Paulsen, and Pascarella, 2016). Hanson, Paulsen, and Pascarella (2016) documented strong associations between good teaching practices, which include non-classroom interactions with faculty; prompt feedback; frequency of interaction with faculty; academic challenge and effort; and integrated ideas, information, and experiences and undergraduate students' aspirations to pursue a graduate education. Budash and Shaw (2017) conducted a study of student and faculty perceptions of persistence and concluded that, in the graduate level learning environment, this can be achieved with structured policies, an engaged learning community, and open communication.

While a fair amount of research has been dedicated to exploring the role of faculty in student persistence, few studies examined the benefit of faculty involvement in graduate student recruitment and retention. Eason (1996) administered a survey of graduate department chairs (*N*=66) and faculty (*N*=418) in 37 master programs and 10 doctoral programs and concluded that the lack of articulated student recruitment plans, by graduate programs, may be one of the greatest weakness in recruitment activities. Woodhouse (2006) explored graduate faculty involvement in student recruitment from the standpoint of identifying the reasons of their involvement. He found that even though a majority of faculty believed that "…student recruitment is a part of their job responsibilities, they indicate that they are not required to engage in graduate student recruitment" (Woodhouse, 2006, p. 31). Woodhouse (2006) recommended that academic administrators should encourage faculty to engage in student recruitment in order to support institutional survival and academic personnel employment security. Despite this recommendation, there is little in the literature that highlights systematic processes that directly involve faculty beginning from the preadmission phase to improve student retention. There has been no empirical evidence in the literature reporting the tangible impact of graduate faculty-led student recruitment and retention strategies on the sustainable growth of graduate programs.

Case Study: Park University

Situation.

Not unlike many graduate programs across the U.S., Park University graduate programs in business had experienced years of stagnant enrollment growth. In short, we were attracting just enough new students to offset our losses due to voluntary and involuntary attrition. Our programs were finding it challenging to differentiate ourselves from that of the competition. The faculty

were primarily focused on meeting their teaching obligations, academic advising, community work, and, of course, building a dossier of scholarly accomplishments that would make them eligible for promotion and tenure. Unfortunately, little emphasis was placed on the faculty's role in the recruitment and retention of the graduate students.

In AY2015-2016, the graduate programs in business took a fresh look at the trended data related to unduplicated headcount and credit hour generation for the MHA and MBA programs. A series of one way analysis of variance (ANOVA) tests were performed on the headcount and credit hour figures and affirmed what we suspected all along—the MHA and MBA programs had not experienced any appreciable growth over the prior three academic years. More specifically, there was no statistical difference in the MBA credit hours between academic years 2012-2013 and 2014-2015, $F(2, 12) = .055$, $p = .946$. The same was true for the MHA credit hours over the same timeframe, $F(2, 12) = 2.027$, $p = .1743$. When examining the MBA headcount data, they too revealed no statistical difference between academic years 2012-2013 and 2014-2015, $F(2, 12) = .621$, $p = .940$, and the same was true of the MHA headcount figures, $F(2, 12) = .690$, $p = .521$. Tables 1 through 4 provide descriptive analysis of the raw data from academic years 2012-2013 through 2014-2015. The graduate faculty had become unwittingly accustomed to the *status quo* and failed to make program growth an operational priority. To grow the graduate programs, the faculty knew the focus needed to be on the complex processes associated with admissions and retention; however, what was less understood was their role in driving necessary change to achieve sustainable growth. After much discussion, the faculty came to realize that their active involvement in growth strategy formulation was key to the future success of the MHA and MBA programs. Armed with this understanding, the faculty developed a comprehensive plan designed to put the graduate programs on a positive trajectory with an aspirational goal to achieve phenomenal growth while keeping costs to a minimum. Figure 1 provides a graphical representation and timeline for the recruitment and retention plan developed by the graduate faculty.

Table 1

MHA Credit Hours: AY2012-2013 through AY2014-2015

Terms	AY12-13	AY13-14	AY14-15
Fall 1	303	336	359
Fall 2	261	251	317
Spring 1	312	311	383
Spring 2	270	245	327
Summer	162	189	246
AY Totals	1,308	1,332	1,632
Means	261.6	266.4	326.4
SD	59.68	58.14	52.01

Table 2

MBA Credit Hours: AY2012-2013 through AY2014-2015

Terms	AY12-13	AY13-14	AY14-15
Fall 1	1,305	1,385	1,269
Fall 2	1,233	1,136	1,299
Spring 1	1,394	1,326	1,146
Spring 2	1,211	1,227	1,134
Summer	894	768	1,090
AY Totals	6,037	5,842	5,938
Means	1,207.4	1,168.4	1,187.6
SD	189.23	243.19	91.06

Table 3

MHA Unduplicated Headcount: AY2012-2013 through AY2013-2014

Terms	AY12-13	AY13-14	AY14-15
Fall 1	83	99	93
Fall 2	73	73	82
Spring 1	91	86	98
Spring 2	80	72	88
Summer	49	55	67
AY Totals	376	385	428
Means	75.2	77	85.6
SD	16.01	16.51	11.97

Table 4

MBA Unduplicated Headcount: AY2012-2013 through AY2013-2014

Terms	AY12-13	AY13-14	AY14-15
Fall 1	354	361	360
Fall 2	346	328	360
Spring 1	373	361	330
Spring 2	344	340	322
Summer	243	221	283
AY Totals	1,660	1,611	1,655
Means	332	322.2	331

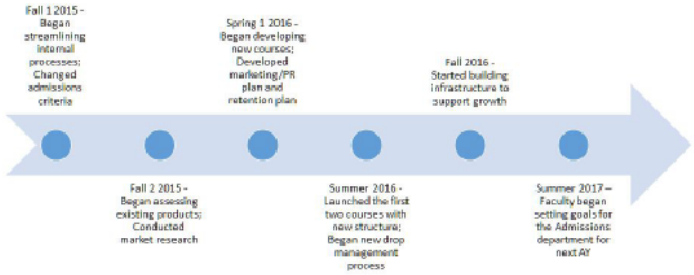


Figure 1. Recruitment and retention plan and timeline

Streamlining Internal Processes.

During Fall 1, 2015, graduate faculty met to discuss possible opportunities to streamline existing processes under the programs' immediate control. It was noted that there was a virtual "pipeline" of graduate program applicants being held up while waiting for outstanding documentation. We determined that more than 70 applicants were in the pipeline and in various stages of completion. Many of the application files were missing a letter

of recommendation, an updated resume, or an official transcript. The faculty took a closer look at the admissions requirements for the graduate programs. After carefully reviewing available literature and conducting a comparative analysis of comparable MBA (*N*=29) and MHA (*N*=17) programs from around the country, it was decided to set the undergraduate GPA at 2.75 on a scale of 4.0; continue not to require the GRE or GMAT; require official transcripts from previously attended colleges and university; and continue to charge a small application fee for non-Park University alumni. Conversely, it was also decided to eliminate the requirement to provide letters of recommendation and a resume, since neither has been proven to be predictive when determining an applicant's ability to academically succeed in graduate school. The faculty decided that we could grant a provisional acceptance to applicants that have only provided unofficial transcripts, and then convert them to full acceptance once the official transcripts have been received and verified. The requirements for international students remained unchanged. The changes to the admission requirements took effect in Fall 1, 2015, following the endorsement of the graduate faculty and approval by the Office of Academic Affairs. This change helped to clear the pipeline and provided a significant boost in the number of matriculated students.

New and Improved Products.

Continuing with the work that began in Fall 1, 2015, the MHA and MBA completed comprehensive program reviews. Based, in part, on our findings, it was decided that the core curricula need to be strengthened in order to better align with the current and future needs and expectations of industry. With an eye on the needs of the marketplace, the faculty noticed an increasing demand for graduates with specialized competencies and felt it best to address this trend by expanding our concentration offerings and making these concentrations available to both MHA and MBA students, since, after all, both are business disciplines. By making the concentrations available to students enrolled in both programs, as well as students pursuing a general MHA or MBA, it lessened the likelihood that enrollment in the concentrations would become diluted. Furthermore, the expansion of concentration options created a bank of courses that can be leveraged in the creation of future degree programs. The redevelopment of the core curricula and concentrations began in Spring 1, 2016, and continues today. Throughout AY2015-2016, the graduate programs in business received faculty endorsement and university approval for the redevelopment of the core MHA and MBA curricula; addition of 5 new concentrations and graduate certificates; creation of a sequential degree option; ability to transfer up to 9 graduate credits even if those hours had been previously applied towards a conferred degree; and the creation of a 4+1 option for qualified undergraduates in their junior or senior year. These changes created product differentiation and stimulated consumer demand. At that point, when we were developing and enhancing our products, it was also time to focus on the faculty facilitating the curricula.

Faculty.

The graduate faculty (full- and part-time) had spent a considerable amount of time and effort developing and redeveloping the various courses within the approved curricula. Knowing that the curricula are only as good as the faculty facilitating the courses, the full-time, graduate faculty worked diligently to put together and subsequently approved a credentialing matrix that identifies the credentials and experiential requirements for faculty to instruct each course. The full- and part-time, graduate faculty collaborated in the development of policies designed to ensure continuity in the delivery of course content regardless of instructional modality (blended or online). In addition to the creation of these policies, which were codified in a document known as the *Instructional Criteria for Graduate Faculty*, a mid-term quality assurance (QA) process was created and implemented by designated faculty to ensure that all policies are being consistently followed. The written results of these QA assessments are shared with the observed faculty member, so that the resultant information can be used for professional development purposes. In addition, the faculty developed and carried out a peer review process, whereby the results are shared with the observed faculty member through the Program Director. The faculty wanted to ensure that the identity of the faculty conducting the observations were kept confidential, which has resulted in more candid feedback on the opportunities

for improvement and recommendation on how to potentially effect change. This information is also made available to the assessed faculty for purposes of professional development.

Building an Infrastructure.

In Fall 2016, the graduate programs in business began to build an infrastructure to support rapid growth. This included the addition of an Associate Dean who has responsibility for ensuring student access to quality programs, creating effective partnerships with business and industry, and working closely with faculty for the delivery of effective instruction. Next, we created a new Assistant Director of Operations position, who is a shared resource that works directly with the Program Directors to provide support and coordination of the graduate programs in business. More specifically, the incumbent facilitates the day-to-day operations of the graduate programs by providing faculty and student support, implementing policies and procedures, and focusing on program growth. Existing personnel, such as the Program Manager and Programs Directors, were cross trained, so that they can cover planned and unplanned absences and provide additional support if needed to meet spikes in demand.

Marketing and PR Strategy Development.

In Spring 1, 2016, after initiating the enhancement of existing products, creating new products, and hiring and developing talented faculty to facilitate courses within the curricula, it was time for the faculty to shift gears and collaborate with Marketing, Admissions, and Student Success to come up with a marketing and public relations plan. Figure 2 outlines the differentiated and undifferentiated strategies targeting the following market segments: active undergraduate students, active graduate students, undergraduate alumni, graduate alumni, and industry professionals. The action items in red font are carried out by the faculty themselves, whereas those items in green font are carried out by another functional area within the university in cooperation with the graduate faculty. In the past, credit hour goals were set by Enrollment Services in collaboration with Marketing, and may or may not have been communicated to the academic programs. The faculty felt it was important for the programs to take the lead on establishing credit hour goals in collaboration with enrollment services and marketing. In Summer 2017, the graduate programs established new start goals for admissions, by term, for AY2017-2018, and the faculty, Graduate Admissions, and Marketing are monitoring the results together.

Market Segments	Differentiated Strategy	Frequency	Undifferentiated Strategy
Active Undergraduate Students	- Email blasts to promote graduate programs - Email blasts to promote 4+1 options	- Twice a year by department - Twice a year by department	- Give radio and published interviews (average twice per year) - Redesign graduate programs website (Still in progress; university led with program input) - Focus on improving annual rankings of the graduate programs at the regional and national levels (On-going, results published annually) **Results**: "2016 Best Online MBA Programs" no. 159; "2017 Best Online MBA Programs" no. 132; *USNWR* 2018 MBA Program ranked 156; "Best Online Master's in Healthcare Administration 2016" no. 22; "Best Online Master's in Healthcare Administration 2017" no. 8; *USNWR* 2018 MHA ranked 92 out of more than 1,200 surveyed programs, except MBAs, which have their own ranking; "Best Value Online MBA Degree Programs and Schools 2016-17" no. 4; "Best Value MBA 2016" no. 28 - Internet advertising that promotes the graduate programs (On-going; university led) - Utilizing international recruiting firms (On-going; university led)
Active Graduate Students	- Email blasts to promote the sequential degree options - Post course announcements in the LMS to promote sequential degree options - Post and email reminders to register for upcoming terms	- Twice a year by department - Twice a year by department - Each term (5 times per year)	
Undergraduate Alumni	- Email blasts to promote graduate programs	- Twice a year by university	
Graduate Alumni	- Email blasts to promote the sequential degree options	- Twice a year by university **Results**: 12/2016: 2,289 emails successfully sent, 276 opened (12.1%)*; 6 sequential student starts. 5/2017: 2,147 emails successfully sent, 451 opened (21%)*, 4 sequential student starts *National open rate is 11%.	
Industry Professionals	- Presenting at regional and national conferences that highlight aspects of the graduate programs - Networking at professional organization functions - Sharing notable improvements and accomplishments with the graduate programs to advisory board members and our scholar/practitioners (adjuncts) - Email blasts to promote the graduate programs - Promoting Access to Education (A2E) Program (build corporate partnerships)	- Average three per year - Average once per quarter (4 times per year) - Each term (5 times per year) - Average twice per year - On-going	

Figure 2: Marketing and PR Plan

Retention Plan.

The faculty have implemented a number of initiatives, in collaboration with graduate Admissions and Student Success to achieve high persistence rates. Faculty developed a formal drop management plan that promotes cross-functional communication between the instructors, Program Directors, and Student Success (for active students) or Graduate Admissions (for new starts). In short, students are not dropped from a course unless their instructor has been given an opportunity to reach out to the student and determine if something can be done to keep the student in class and on track to degree completion. The facul-

ty have developed "stitch-in" activities, designed to help newly accepted students assimilate into the university and their program of study. For example, faculty have developed a series of four short PowerPoint presentations with one a week being emailed to students beginning 3 weeks out from the upcoming start and the last presentation being emailed the weekend before week one of the term. The Program Directors email a personal welcome message following the delivery of the student's acceptance letter. The marketing and public relations plan includes a number of action items intended retain active students and bring undergraduate and graduate alumni back to Park University. For the undergraduate alumni and active students, we let them know of the graduate options (degrees or graduate certificates) they can take advantage of as they look to position themselves for entry into a career path. For the graduate alumni and active graduate students, we encourage them to consider their sequential degree options or perhaps the pursuit of a graduate certificate to augment their earned credentials. We are making progress on tracking "at risk" students and intervening earlier when they display signs of academic distress.

Analysis and Results

During AY2015-2016, we began to see a noteworthy increase in unduplicated headcount and credit hour generation data for both the MBA and MHA programs. To determine if the data reflected statistically significant growth between the academic years 2014-2015 and 2015-2016, we conducted a series of independent sample t-tests, using a .05 level of significance (see tables 5 and 6). There was a statistically significant difference in the MBA unduplicated headcounts between AY2014-2015 and AY2015-2016, $t(6) = -2.369$, $p = .024$, and likewise a significant difference in the MHA unduplicated headcounts for the same period of time, $t(7) = -3.338$, $p = .006$. Furthermore, we noticed a statistically significant difference in the MBA credit hours generated between AY2014-2015 and AY2015-2016, $t(6) = -2.084$, $p = .04$, which was also the case for the MHA program, $t(7) = -3.338$, $p = .006$. These results provided evidence that academic year 2015-2016 was a breakout period for both programs, and signaled a positive shift in trajectory. At this point, there was a need to determine if the growth experienced between AY2014-2015 and AY2015-2016 was an anomaly, or the start of sustainable growth in the programs.

Table 5
Program Unduplicated Headcounts: AY2014-2015 and AY2015-2016

	MBA*		MHA**	
Terms	AY14-15	AY15-16	AY14-15	AY15-16
Fall 1	360	332	93	112
Fall 2	360	401	82	103
Spring 1	330	417	98	126
Spring 2	322	446	88	134
Summer	283	356	67	116
AY Totals	1,655	1,952	428	591
Means	331	390.4	85.6	118.2
SD	31.89	46.11	11.97	12.09

*Statistically significant, $p = .024$
**Statistically significant, $p = .006$

Table 6
Program Credit Hours: AY2014-2015 and AY2015-2016

	MBA*		MHA**	
Terms	AY14-15	AY15-16	AY14-15	AY15-16
Fall 1	1,269	1,134	359	407
Fall 2	1,299	1,410	317	382
Spring 1	1,146	1,517	383	443
Spring 2	1,134	1,566	327	476
Summer	1,090	1,254	246	402
AY Totals	5,938	6,881	1,632	2,110
Means	1,187.6	1,376.2	326.4	422
SD	91.07	180.68	52.01	37.36

*Statistically significant, $p = .04$
**Statistically significant, $p = .006$

To determine if the growth experienced in AY2015-2016 was a "one off" or the beginning of a pattern of sustainable growth, we conducted a series of one way ANOVA tests examining the credit hour and headcount data, for both programs, over academic years 2015-2016, 2016-2017, and through Spring 1 of AY2017-2018. This analysis revealed that there was a statistically significant difference in the MBA credit hours in at least one of the academic years, $F(2, 10) = 24.90$, $p < .001$, and this result was mimicked when examining the MHA credit hours, $F(2, 10) = 39.07$, $p < .001$. Next, we conducted an analysis of the MBA unduplicated headcount, which revealed a statically significant difference in at least one of the academic years, $F(2, 10) = 34.24$, $p = .001$, and this was also the case when examining the MHA headcount, $F(2, 10) = 44.58$, $p < .001$. To ascertain which of the academic years was statistically different, a Tukey Kramer post hoc test was performed and the results reflected in Tables 7 through 10. In short, each academic year was statistically different from the years included in the ANOVA analysis, in terms of headcounts and credit hours generated for both programs.

Table 7
ANOVA Comparisons of MBA Credit Hours for AY2015-2016 through Spring 1 of AY2017-2018

				Tukey's Kramer Comparisons		
Groups	*n*	Mean	*SD*	AY15-16	AY16-17	AY17-18
AY15-16	5	1,376.2	180.68		< .01	< .001
AY16-17	5	1,813.2	200.64	<.01		<.05
AY17-18	3	2,281.3	106.76	<.001	<.05	

Table 8
ANOVA Comparisons of MHA Credit Hours for AY2015-2016 through Spring 1of AY2017-2018

				Tukey's Kramer Comparisons		
Groups	*n*	Mean	*SD*	AY15-16	AY16-17	AY17-18
AY15-16	5	422	37.36		< .001	< .001
AY16-17	5	602.2	51.18	<.001		<.05
AY17-18	3	739.33	69.21	<.001	<.05	

Table 9
ANOVA Comparisons of MBA Unduplicated Headcount for AY2015-2016 through Spring 1of AY2017-2018

				Tukey's Kramer Comparisons		
Groups	*n*	Mean	*SD*	AY15-16	AY16-17	AY17-18
AY15-16	5	390.4	46.11		< .01	< .001
AY16-17	5	548.6	63.52	<.001		<.01
AY17-18	3	696	29.81	<.001	<.01	

Table 10
ANOVA Comparisons of MHA Unduplicated Headcount for AY2015-2016 through Spring 1of AY2017-2018

				Tukey's Kramer Comparisons		
Groups	*n*	Mean	*SD*	AY15-16	AY16-17	AY17-18
AY15-16	5	118.2	12.09		< .001	< .01
AY16-17	5	177.6	14.43	<.001		<.001
AY17-18	3	214	18.74	<.01	<.01	

Prior to academic year 2014-2015, the graduate faculty, like so many other colleges and universities, took a more passive approach to student recruitment and retention. As a result, the MHA and MBA programs experienced several years of stagnant growth, which we statistically confirmed. To be honest, the faculty were not overly concerned about the number of students enrolled in the programs, since they were still able to meet the annual academic load requirements. It was not until we analyzed the unduplicated headcount and credit hour data, that the faculty took notice of the fact that we were in trouble. The faculty realized that the only way to change the trajectory of the programs was for them to become more actively involved in the processes that contribute to the recruitment and retention of students.

Beginning in Fall 2015, the faculty began working collaboratively with other functional areas within the university to streamline internal processes, engage in market research, complete comprehensive program reviews, enhance existing products, develop new products, create new processes to support faculty development and more effectively manage drops, formulate a marketing and PR plan, and set new growth targets and goals. Perhaps equally important, the faculty demonstrated "leadership" in their commitment to promoting student success by increasing graduate program access and persistent to graduation. We considered a number of factors that could have potentially impacted program growth to determine if these conditions existed equally between academic years 2012-2013 and Spring 1, 2017-2018. For example, we considered the economic climate and condition of the country, emphasis on debt management, competition amongst non-profit and for-profit colleges and schools, trends in domestic and international graduate applications, trends in enrollment and graduation rates from undergraduate programs of study, and organization and program level capacity relative to volume. While there may have been other factors not taken into consideration by the faculty that could have potentially influenced program growth, we determined that the major difference before and after academic years 2014-2015 and 2015-2016, was the level of active engagement by the graduate faculty in matters pertaining to student recruitment and retention. As our analysis revealed, AY2015-2016 was a pivotal year for the graduate programs in business. This is where we first observed statistically significant growth in unduplicated headcounts and credit hours in both the MHA and MBA programs. While originally concerned that the growth may be short lived, the continued involvement of the graduate faculty has resulted in statistically significant growth in each subsequent year (AY2015-2016 through Spring 1, 2017-2018). The MHA is conservatively estimating a 183% increase in total credit hours from AY2012-2013 through the end of AY2017-2018. Likewise, the MBA is estimating an 89% increase over the same period of time.

Since this case study was limited to the efforts of business graduate faculty, at one modestly sized (17,000 student population), non-profit, Midwest, 4 year university, and their commitment to growing their programs by taking lead on recruitment and retention, the findings cannot be generalized to other colleges or universities. We are unapologetically bias in our realistic portrayal of the many accomplishments that would not have been possible without

our faculties' unwavering commitment to recruitment and retention. What this case does well is illustrate the positive impact faculty can have on graduate program growth when they are vested in the outcomes. It is not uncommon for faculty to lay the blame for stagnant or declining enrollments on non-academic areas (Admissions, Marketing, or Administration) or on the prevailing market or economic conditions. We had a tendency to do the same thing. The faculty had to create a paradigm shift and accept the role they played in our stagnant growth and only then was real change possible. It is analogous to an addict needing to hit rock bottom before being receptive to accepting help. The growth has been achieved and sustained without incurring much in the way of additional costs to the programs or university. Throwing more money into marketing or hiring additional personnel isn't realistic for many colleges and universities that are already "treading water" just trying to stay afloat and keep their heads above water. After all, it would be argued that we were one of those universities. It wasn't until recently, and after demonstrating sustained growth, that the graduate programs were permitted to hire an additional staff member as a shared resource amongst multiple graduate programs. We learned that real growth can be achieved by first tackling the "low hanging fruit" or those processes for which we had control, and then working closely with other functional areas to achieve economies of scale. What we want our peer institutions to realize is that if we can achieve record growth rates, in our graduate programs, then they can do it too. There is a definite need for more scholarly inquiry into graduate student recruitment and retention and it is hoped that this case study will lay the foundation for future research.

Conclusion

The central question was can faculty led efforts to improve graduate students matriculation and retention really have a positive impact on program growth? To answer this question, we examined enrollment and credit hour data before and after our faculty took lead on initiatives designed to grow the graduate programs in business. For Park University, the graduate business faculty made all the difference in the growth of the MHA and MBA programs. We have experienced statistically significant growth year over year, since AY2015-2016, and anticipate that this growth will continue unabated. We hope that the lessons we have learned and the outcomes we have realized will serve as a catalyst for change in colleges and universities that are experiencing stagnant or declining enrollments in their graduate programs. Changing paradigms is never an easy endeavor. While the faculty may be willing to step up and take lead on recruitment and retention, there could be departments reluctant to relinquish control. We are convinced that without direct faculty involvement in the growth of graduate programs, the future of graduate education will be in serious jeopardy.

References

Budash, D. & Shaw, M. (2017). Persistence in an online Master's degree program: Perceptions of student and faculty. *Online Journal of Distance Learning Administration, 20*(3), 1-19.

Brito, M., & Rush, S. (2013). Developing and implementing comprehensive student support services for online students. *Journal of Asynchronous Learning Networks, 17*(1), 29-42.

Broom, K. D., Wood, S. J., & Sampson, C. J. (2013). Current trends in graduate level healthcare management education: An examination of accreditation outcomes. *Journal of Health Administration Education, 30*(3), 159-179.

Carroll, D., Ng, E., & Birch, D. (2013). Strategies to improve retention of postgraduate business students in distance education courses: An Australian case. *Turkish Online Journal of Distance Education, 14*(1), 140153.

Crawley, A., & Fetzner, M. (2013). Providing service innovations to students inside and outside of the online classroom: Focusing on student success. *Journal of Asynchronous Learning Networks, 17*(1), 712.

Eason, S. H. (1996). *Higher education and graduate recruitment*. Paper presented at the Annual Meeting of the Southwest Education Research Association, New Orleans, LA. Retrieved December 17, 2017 from https://files.eric.ed.gov/fulltext/ED393383.pdf

Gravel, C. A. (2012). Student advisor interaction in undergraduate online degree programs: A factor in student retention. *NACADA Journal, 32*(2), 5667.

Hanson, J. M., Paulsen, M. B., & Pascarella, E. T. (2016). Understanding graduate school aspirations: The effect of good teaching practices. *Higher Education, 71*(5), 735-752.

Heyman, E. (2010). Overcoming student retention issues in higher education online programs. Online *Journal of Distance Learning Administration, 13*(4).

Mangelsdorff, A. D. (2014). Competency-based curriculum, outcomes, and leader development: Applications to a graduate program in health administration. *The Journal of Health Administration Education, 31*(2), 111-133.

Newberry, R., & DeLuca, C. (2014). Building a foundation for success through student services for online learners. *Journal for Asynchronous Learning Networks, 17*(4), 2539.

Park, C. L., Perry, B., & Edwards, M. (2011). Minimizing attrition: Strategies for assisting students who are at risk of withdrawal. *Innovations in Education and Teaching International, 48*(1), 3747.

Park, C. L., Perry, B., & Edwards, M. (2011). Minimizing attrition: Strategies for assisting students who are at risk of withdrawal. *Innovations in Education and Teaching International, 48*(1), 3747.

Roll, N. (2017, October 23). Writing on the wall for future of MBA programs? *Inside Higher Ed*. Retrieved from https://www.insidehighered.com/news/2017/10/23/university-wisconsin-%E2%80%98considering-future%E2%80%99-mba-program

Seltzer, R. (2017, August 24). EMBAs under pressure. *Inside Higher Ed*. Retrieved December 18, 2017 from https://www.insidehighered.com/news/2017/08/24/deans-see-challenges-campus-emba-programs-united-states

Sullivan, E. B., & Pagano, R. V. (2012). Relevant adult programs, resilient students, and retention driven administration. *New Directions for Higher Education, 159*, 2129.

Westrick, S. C., Kamal, K. M., Mocszygemba, L. R., Breland, M. L., & Heaton, P. C. (2013). Caracteristics of social and administrative sciences graduate programs and strategies for student recruitment and future faculty development in the United States. *Research in Social and Administrative Pharmacy, 9*(1), 101-107.

Woodhouse, S. (2006, Spring). Faculty involvement in graduate student recruitment: Administrative directive or professional preference? *Journal of College Admission, 191*, 26-32.

Zarya, V., & Donnelly, G. (2017, October 20). What's killing U.S. business schools? These 4 charts help explain. *Fortune*. Retrieved December 18, 2017 from http://fortune.com/2017/10/20/business-schools-mba-programs/

The Impact of an Adaptive Learning Technology on Student Performance in an Introductory-Level Business Course

Dr. Jack Babinchak, William Habacivch, and Benjamin Lipschutz

Central Penn College of Professional Studies, Department of Business

ABSTRACT

As textbook technology supplements (TTS) become more prolific in higher education as complimentary tools to assist student learning, it is crucial that these technologies be evaluated for their usefulness and impact on student learning outcomes. The purpose of this case study was to understand the efficacy of implementation of an adaptive learning technology (ALT) in an introductory business course, and its impact on student performance in relation to course learning outcomes. The sample of this study consisted of two sections of introductory business course students at a Mid-Atlantic four-year institution. This study divided the sample into two groups, one as a control without the use of the ALT, and one as a treatment group with the ALT. The students were then assessed via a pre-test/post-test analysis as well as through aggregate exam performance. The results of this experimental design study showed a statistically significant positive difference in post-test scores, as well as aggregate exam scores for those students within the treatment group as compared to the students within the control group. The results of this study provides preliminary support that particular student populations could experience improved performance by utilizing an ALT deployed in a classroom.

KEY WORDS: Adaptive learning technology (ALT), LearnSmart, Connect, SmartBook, metacognition, self-efficacy, teaching technology supplements (TTS), computer assisted instruction (CAI)

Introduction

As textbook technology supplements (TTS) become more prolific in higher education as complimentary tools to assist student learning, it is crucial that these technologies be evaluated for their usefulness and impact on student learning outcomes. To date, this evaluative research is still in its infancy, and existing studies are rife with complications. Textbook publishers offer testimonials espousing the effectiveness of their particular learning technologies; however, these remain largely non-peer reviewed case studies provided in sales literature (Pearson, 2014; McGraw Hill, 2013a). On the academic front, a meta-analysis conducted by Timmerman and Kruepke (2006), computer-assisted instruction (CAI) was found to enhance undergraduate student performance in traditional lecture/discussion-type classes, particularly when the technology was used across multiple units. This study has been criticized for the large number of moderating variables, including various media richness constructs, students' field of study, and publication time, all of which could potentially "cloud" the impact of the effectiveness of select technologies (Gearhart, 2016, p. 9). As a result, it has been suggested that the component parts of TTS be evaluated separately, in hopes of understanding the contribution of individual technologies to student learning outcomes (Sellnow, Child, & Ahlfeldt, 2005; Gearhart, 2016).

A few studies have been conducted isolating a particular component of the TTS technology. One such technology studied on a standalone basis is LearnSmart, an adaptive learning tool offered by McGraw-Hill as part of their Connect Package. This tool assesses students understanding on a variety of topics and can re-direct struggling students to more content, while students who have mastered the material can progress through the text. This

is accomplished by tapping into student meta-cognitive responses as to their confidence level for questions answered (McGraw Hill, 2013a). This technology also generates progress and usage reports, allowing instructors to assess student proficiency or areas to target for improvement. Although McGraw Hill claims greater learning efficacy as a result of LearnSmart usage (McGraw Hill, 2013a), several studies have demonstrated no correlation between LearnSmart usage and student exam performance.

In one instance, Gearhart (2016) conducted a posttest only experimental study using students at a mid-size, southwest university. The participants of the study were juniors and seniors in an interpersonal communications class. Results of this study demonstrated no significant differences in exam scores between treatment and control groups [t (55) = -.71, p = .48, d = .19]. In another instance, Griff and Matter (2013) conducted a pretest/posttest experimental design of physiology and anatomy students at several 2-year and 4-year institutions. Their results demonstrated no significant differences between pretest and posttest scores [F (1,581) = .19, p = .67], student grades (G = 9.05, d.f. = 4, p = .06), or retention (t = 1.68, d.f. = 5, p = .15). This research also concluded that the amount of time spent in the LearnSmart application did not impact student performance (r = .07, d.f. = 262, p = .25). Interestingly, two institutions involved in this study demonstrated improvement in both posttest scores and grades, potentially suggesting that some students could benefit from the usage of this technology.

The researchers of the present study hypothesize that the level of student preparedness for collegial academic work could be a factor to the acceptance of, and benefits derived from, adaptive technologies. The business department considered empirical evidence collected by the college and data culled from book store sales, as well as faculty anecdotes that suggested: (a) approximately 60% of business students did not have text books, (b) as high as 65% of incoming students in the business program were First Generation College students (survey data), and (c) that more than 50% received Pell grants, indicating that more than half of the students were from lower socio economic status (SES) households. In addition, data gleaned from incoming math, writing and reading assessment scores suggest that many students come to the college under prepared for college-level work.

As indicated above, previous studies of ALT's analyzed upper classmen, who usually have time to develop and refine their meta-cognitive strategies, and health science students, who traditionally enter school more academically prepared (Salvatori, 2001). As such, it was determined to test the effectiveness of an ALT on incoming freshman, a population generally considered to be under-prepared (Balduf, 2009). Additionally, our college enrollment tends to be highly skewed to first-generation and lower socio-economically status (SES) students. First-generation college students have been shown to be underprepared academically, lacking in study and time management skills, and having lower self-efficacy compared to their non-first generation counterparts (Maietta, H. 2016; McCarron, G.P. & Inkelas, K.K., 2006; Pascarella, E.T., Pierson, C.T., Wolniak, G.C., & Terenzini, P.T., 2004). Lower SES students demonstrate higher anxiety and attention problems. In addition, SES is positively correlated to cognitive development, influencing intelligence and academic achievement (Hackman, D.A., Farah, M.J., & Meaney, M.J., 2011).

This study was initiated to examine the effectiveness of the LearnSmart application specifically for college freshman, skewed toward lower SES and first generation students enrolled in an introductory-level business course. This population may come to school lacking the cognitive and adaptive strategies to succeed in a highly rigorous academic environment. The LearnSmart technology could assist this population in developing the cognitive strategies necessary to persist and develop efficacious academic beliefs and behaviors. The effectiveness of the ALT was gauged through student performance on posttest and aggregate exam score results. Additionally, LearnSmart could potentially allow instructors to redesign their instruction to one that copies a flipped classroom or blended learning archetypal, rather than a traditional lecture model. Given what is reported in extant CAL literature, along with the works of researchers Griff and Matter (2013) and Gurung (2015), the following hypotheses are presented:

$H_0$1: There is no difference in pretest/posttest scores between a treatment group utilizing the LearnSmart adaptive learning technology and a control group.

$H_0$2: There is no difference in aggregate exam scores between treatment group utilizing the LearnSmart adaptive learning technology and a control group.

LEARNSMART: OVERVIEW

LearnSmart is an electronic metacognitive reading comprehension tool embedded into SmartBook that provides the ability to tag learning objectives by the instructor, and allow students to engage with an adaptive learning tool via an algorithm-based quiz system. The goal of the system is to allow students to zero in on the specific areas of the text deemed critical by the professor to maximize the time in text for students. Additionally, LearnSmart's adaptive technology forces students to continue to engage in the text until they have reached mastery of those key learning objectives. McGraw-Hill Higher Education touts Connect as a "digital teaching and learning environment that saves students and instructors time while improving performance over a variety of critical outcomes (McGraw Hill, 2013a)."

Griff and Matter (2013) assessed the tool's effectiveness in introductory anatomy and physiology courses and described how the LearnSmart resource works. Within the LearnSmart reading module, students are presented with various types of questions to include multiple choice, drag and drop, fill-in-the-blank, and choose-all-that-apply. Once students have selected or written their answers, they are asked to evaluate their own self-awareness of understanding by indicating their level of confidence on a scale from "I know it" to "No idea". If correct, the number of items remaining will decrease by one, whereas if they get it incorrect, they will be given another question assessing that specific learning objective later in the series. Students continue answering these questions until they have demonstrated mastery of the learning objectives assigned by the instructor. The algorithmic portion of this adaptive learning tool uses the frequency of questions answered correct and incorrect and the student's metacognition of confidence to select subsequent questions to personalize learning (MGHHE, 2013a). Grading is done based upon completion by the due date. Instructor can then gain access to reporting from these LearnSmart modules to provide just-in-time teaching and reinforcement of learning objectives by viewing frequently misses questions, most difficult learning objectives, and metacognitive scores for individual students. Such an adaptive learning tool can benefit both students and instructors by changing the paradigm of classroom instruction (MGHHE, 2013b).

A primary benefit of student LearnSmart usage advocated by MGHHE is greater learning efficiency, as demonstrated in the numerous case studies they provide on their website (McGraw Hill, 2013a). Learning efficiency is the degree to which a TTS tool can help reduce overall study time or maximize gain in students' already limited study time. Theoretically, students are better able to understand areas of proficiency and deficiency through the LearnSmart tool (McGraw Hill, 2013a, p. 4). As a result, it can pinpoint students' knowledge gaps helping to direct their attention and study time where it is needed, therefore allowing for a more focused study plan. Better focus, they claim, is realized and manifested through increased student performance. Although the MGHHE LearnSmart website offers results of case studies that support claims regarding this benefit (e.g., McGraw Hill, 2013b), relatively few unbiased, published studies document the influence of LearnSmart on student performance.

METHOD

This experimental study examined the impact of an adaptive learning tool on students' performance in an introductory-level business course. Student performance, in the form of individual and aggregate test scores, along with pre and post-test results, were compared between various sections to test if LearnSmart would have any significant impact on student performance outcomes. This sections describes the study participants, including pre-study group comparisons, research procedures, and statistical procedures.

Participants

Participants (N = 57) were comprised of students enrolled in three sections of an introductory-level business course during the fall 2016 semester at a small business college in central Pennsylvania. Students were randomly assigned at the classroom level to either treatment or control groups resulting in an experimental research design with results from 26 in the treatment group and 31 in the control group. One of the daytime sections was designated to treatment conditions, while the other was designated as a control group. Since only one online section of the course was

running in the fall term, half of the students were designated to treatment conditions, while the remaining students were used as a control group. Students in the online section were unaware of the requirements of fellow students. The three sections were being taught from a pre-designed and approved course template to ensure all work, assignments, and grading protocols were the same in each of the classes.

Although students were randomly assigned to the class sections, the control and treatment groups were compared across several demographic variables, to include gender, age, program of study, credit hours completed, military status, and prior college experience. The treatment and control groups exhibited no significant differences across these demographic variables. As a whole, the online section had a higher mean age, but randomly assigning the class to either treatment or control conditions did not skew the age of either group. Next, the pretest scores of the groups were compared to distinguish any significant differences in knowledge of course-related content prior to any instruction. An ANOVA test revealed no significant differences between the groups, $t(57) = .074$, $p = .787$. A few studies have used overall GPA as an indicator of initial equivalence since it has demonstrated a positive correlation to student performance (Cheung & Kan, 2002); however, since this study consisted of mostly freshman in an introductory-level course, this was not possible.

In this study, students were randomly assigned to either the control or treatment group. For the online group, students were randomly selected by lot. Interpersonal communication between students of these two daytime groups could not be limited or monitored, so students were kept unaware of the exact nature of the study being done outside of what was noted in the informed consent waiver the students signed at the beginning of the course (see Appendix A). The online course was split within the class, as there was little concern for interpersonal communication between students since students were unaware that there was a control group in the class. The BlackBoard Learning Management System (LMS) was set up so students could only see the assignments, discussion boards, and tests pertaining to their specific group through the built-in function of adaptive release. Adaptive release allows an instructor to set an assignment in Blackboard LMS so only specific students can see and access the assignment. No specific mention was made of Connect, SmartBook, or LearnSmart in the course through the use of alternative terminology such as a "reading assessment".

Students in the treatment groups were given Connect access by McGraw-Hill Higher Education for free for the purposes of this study. A representative for McGraw-Hill Higher Education was also present one day during the first week of the term to assist the daytime treatment group. They provided this daytime treatment group assistance logging in and gaining access to the Connect system.

Procedures

The classes were taught by different full-time faculty of the School of Business, at different times of the day, and in different rooms on the college campus. To mitigate extraneous variables on student outcomes, instructors followed a prescribed course design, including pre-designed quizzes, tests, written assignments and rubrics, and weighting scale. Additionally, the two professors teaching the two courses met on a weekly basis to discuss teaching methodologies, topic covered, and grading so as to minimize the individual affect they had on student grading and the study habits. It can also be assumed that the time of day and classroom had no significant difference in student learning and outcomes as they were both morning classes in comparably sized classrooms on the main campus of the college.

In the control groups, students completed 25 point online reading assessment quizzes each week for ten weeks, which comprised 25% of the final course grade. These quizzes were given to ensure students were reading the text and were engaged in their own learning prior to coming to class for the week. In the treatment groups, students completed 14 LearnSmart modules covering one chapter apiece for 25 points a week over 10 weeks to comprise 25% of the final course grade. The course ran for 11 weeks, so no quiz or LearnSmart module was assigned in the eleventh week in any section. The LearnSmart module is an online quiz through McGraw-Hill Connect that adapts to the student responses to ensure mastery of content via an algorithmic process. Students were repeatedly quizzed on chapter content until mastery was demonstrated. LearnSmart was given in place

of the weekly quizzes in the treatment groups

All LearnSmart modules were created by the course designer as 40 minute modules for each chapter covered, as research by Rogers (2016) showed that 40 minutes in LearnSmart each week showed the most noticeable improvement in student outcomes. In accordance to this, students were required to complete 80 minutes of LearnSmart modules in some weeks, as the college runs on an accelerated eleven-week format. It must be noted that within LearnSmart, the course designer can adjust the amount of content for each chapter delivered to students. Although 40 minutes was assigned by the course designer for each module, we recognize that each student learns at a different pace and could take more of less time to complete each module. Forty minutes was an approximate guideline for completion. The quizzes were twenty questions each, but were randomly selected from a pool of 40 questions.

The students were also given five non-cumulative 40 question multiple-choice tests in the course covering the 14 chapters covered in the text. All quizzes and tests were created by the course designer and were consistent throughout all sections of this study. The tests were given in weeks two, four, six, eight, and ten, with the post-test given during week eleven. Each test covered no more than four chapters of material from the text, and all questions were generated from the text material.

Of the features provided through Connect, we focused on LearnSmart specifically for the cognitive benefit it could provide our student population. There are other available resources available through Connect to include interactive assignments, quizzes, tests, case studies, and videos. These tools were excluded from the case study and were not used in the treatment group so as to isolate the effect of LearnSmart.

Statistical Analysis

Several measures were utilized to understand the contribution of the LearnSmart technologies to student performance outcomes over that of the control group. Before any analysis of performance outcomes, potential bias in the assignment of students to treatment or control conditions was examined by evaluating whether significant mean differences existed between groups for pretest scores. Ideally, student GPA's would have also been considered, since student GPA is a predictor of student performance (Cheung & Kan, 2002); however, since this was an introductory-level course, student GPA's were not available. To evaluate the LearnSmart adaptive learning tool, comparisons were made on pretest scores relative to posttest scores, both within group and between groups. For between group scores differences, an analysis of covariance (ANCOVA) was employed. Because systematic error was addressed by the randomization of assignment to treatment or control conditions, ANCOVA was chosen in an attempt to reduce error variance (Dimitrov & Rumrill, 2003). Tests on the assumptions associated with conducting an ANCOVA, particularly the linear relationship between pretest and posttest scores and homogeneity of regression slopes, were conducted prior to analysis. In addition to pretest/posttest differences, independent sample t tests on aggregate exams scores of treatment and control groups were conducted to compare between group differences.

RESULTS

This study was initiated to examine the impact of an adaptive learning tool, LearnSmart, on student performance outcomes. The participants were enrolled in an introductory-level business course at a small central Pennsylvania college. Within group comparisons for the treatment and control groups were conducted on pretest/posttest differences, while between group comparisons were conducted to detect pretest/posttest differences between the treatment and control groups. In addition, aggregate exam scores taken throughout the term were compared to identify significant differences.

Hypothesis Testing

$H_0 1$ states that there would be no significant difference between the treatment and control group in relation to pretest/posttest scores. This consisted of three steps for the purposes of data analysis: (a) testing for initial group equivalence, (b) examining the within group differences between the pretest and posttest, and (c) demonstrating the effectiveness of the ALT by comparing between group differences with pretests and posttests. Before conducting within and between group tests, a test of initial group

equivalence was conducted on pretest scores between the two groups. This was done to confirm minimal sample differences between the treatment and control groups and to ensure the groups started at the same level of business-related knowledge. An ANOVA revealed no significant difference in business-related knowledge (Treatment = .445, Control = .4606, F = .074, p = .787). This would suggest that, at least initially, both groups were equal with respect to introductory business-related knowledge. To test hypothesis $H_0$1, a paired sample t-test was first conducted to examine within group differences at the time of the pretest and the posttest. As evidenced in Table 1, both treatment and control groups exhibited significant increases from Time 1 to Time 2. This suggests that both groups experienced exposure to content and materials sufficient enough to demonstrate an understanding of course related materials according to course objectives.

Table 1. Paired Sample t-tests for Within Group Differences

Variable	Mean T1	Mean T2	t Value	p Value
Treatment Group				
Business-related Test	46.06	83.68	17.778	0.000
Control Group				
Business-realted Test	44.46	68.58	35.358	0.000

Next, a between group ANOVA was conducted to determine the extent to which the treatment group demonstrated significantly higher posttest scores at the end of the intervention as compared to that of the control group. At the completion of the course, the treatment group demonstrated a higher posttest score, M=83.68 (SD=.132), than the control group, M=68.58 (SD=.197), F=14.82, P< .000. To test the result in a more robust manner, an analysis of covariance (ANCOVA) was conducted to determine if the differences between the treatment and control groups were significantly different at Time 2 after controlling for the pretest scores at Time 1. Results from the ANCOVA reveal that when controlling for the pretest scores at Time 1, there was still a significant difference between the treatment and control groups for posttest scores (F=14.88, p< .000). Lastly, exam scores taken throughout the term by the treatment and control groups were compared to determine differences. The treatment group demonstrated significantly higher average exam scores, M= 85.70 (SD=.10) throughout the term over that of the control group M=78.33 (SD=.164), t= 4.73, p<.000.

In sum, this analysis suggests that (a) the groups were equivalent at the beginning of the term in regards to initial knowledge of basic business concepts, (b) both the Treatment group and the Control group experienced significant increases from the pretest to the posttest, suggesting that predetermined teaching strategies were successful, (c) the Treatment group experienced significant improvement in posttest scores over pretest scores than those of the Control group, and (d) the Treatment group experienced significantly higher average exam scores taken throughout the term over those of the Control group.

DISCUSSION

This study examined the impact of MGHHE's LearnSmart adaptive learning technology on student performance in an introductory-level business course. The paucity of evaluative research on component parts of Textbook Technology Supplements (TTS) is surprising given their proliferation at all levels of education. To understand the impact of these tools, they must be studied in conjunction with each other, and in isolation, within various student populations. The participants of interest for this study, as opposed to previous studies with non-positive results, were college freshman students, highly skewed to first-generation and lower socio-economic status.

The results of this study provides preliminary support that particular student populations could experience improved performance by utilizing an adaptive learning technology deployed in a classroom. Treatment participants experienced significant within group improvements between pretest and posttest scores, as well as higher between group improvements over those of the Control group. Additionally, the Treatment group demonstrated higher aggregate exam scores over the course of the entire term over those of the Control group. These findings are consistent with prior research results of Gurung (2015), who compared the effectiveness of three separate TTS offerings across three semesters of an introductory psychology course. In investigating the relationship between the amount of time spent using LearnSmart and student exam performance, the authors identified a significant, positive correlation such that the more time students spent with the LearnSmart modules, the higher

students scored on exams (average r = .17).

The findings of this study however, are contradictory to the conclusions reached by Gearhart (2016) and Griff and Matters (2013), two studies that found no significant differences in exam scores between the Treatment and Control groups. Of note, the participants of these studies were upper classmen and health science students, who usually experience more rigorous high school curriculum and have higher college acceptance standards. Prior to the start of this study, the authors hypothesized that in-coming freshman, who typically lack the well-developed cognitive strategies to properly engage with course reading materials, would benefit most from the use of an adaptive learning technology. In addition, the participants of this study were highly skewed first-generation college students and of lower socio-economic status, suggesting benefits could be derived from a metacognitive development application, which is why the choice was made to utilize the LearnSmart tool.

It is possible that other technologies examined in isolation could have a positive influence on student performance, or that various technologies utilized in conjunction could boost the effects on student performance. It is also realistic to suggest that the over usage of various technologies within one class presents confusion and frustration to students. More studies are necessary to understand the individual and combined contribution of these technologies. Additionally, this study focused on freshmen, with a large portion consisting of first generation, low SES college student. These groups should be studied separately, to understand if one particular group would benefit more from this, or other, ADT's.

It is also reasonable to suggest that at some point this technology becomes redundant to college students, as they develop their own cognitive strategies to digest and comprehend text and other materials. At some point in their educational journey, resentment may set in regarding the usage of these technologies; the same may be said if these technologies are introduced later in a student's tenure. Studies should be conducted to determine if a point of diminishing returns exists, where negative consequences outweigh potential benefits.

Limitations

According to Griff and Matters (2013), determining the impact of a specific learning tool within a diverse, dynamic academic environment is difficult, to say the least. This study identified a significant increase in student performance; however, there are many variable to consider when examining student learning. Any number of student characteristics, including self-efficacy, anxiety, and motivation could potentially influence performance. In addition, since different instructors were assigned to treatment or control conditions, it is possible that instructor proficiency played a part in student performance, regardless of the efforts made to maintain consistency between the content, delivery, and assessment of courses. Future studies should strive to have the same instructor deliver the course for both Treatment and Control groups to limit instructor influence on performance.

Conducting research in "real-world" conditions presents many challenges, and in this case the researchers would have preferred a larger sample size to study the effectiveness of the LearnSmart technology. Unfortunately, the sample size was limited to participants enrolling in an introductory business course. The researchers decided to add an online course in order to boost the sample size. In doing so, the overall mean age of the groups was raised. Although the mean age between groups remained statistically insignificant, based on the hypotheses presented, the researchers would have preferred to study all traditional college students, as opposed to including non-traditional students in the study.

Lastly, although every effort was made to conceal the fact that some students were utilizing the LearnSmart technologies while others were not, it is possible that students in Treatment and Control conditions discussed technology utilization in their respective classes. A result of these discussions could have resulted in a situation where Control participants were demoralized by not being selected to engage with these learning technologies, and as a result negatively impacted their performance in the class (Cook & Campbell, 1979).

Conclusion

With the expanded use of textbook technology supplements in college courses, comes the greater need to evaluate these technologies for their effectiveness to enhance student experiences and learning. As suggested by previous research, these technologies should be examined in isolation from other supplemental materials, to better understand their individual impact on student performance. This research was designed to evaluate the impact of McGraw-Hill's LearnSmart technology on students in an introductory-level business class. The results demonstrated a significant increase in pretest/posttest scores, as well as aggregate exam scores of the Treatment participants over those of the Control participants, suggesting this technology improved student performance. The researchers of this study speculate that the participants, highly skewed toward first-generation and lower socio-economic status freshmen, reap more benefits from this particular ALT, since they enter college lacking the cognitive strategies to fully engage course reading materials.

Declaration of conflicting Interests

At the time of this study, the researchers involved were not employed, or in any way compensated by the McGraw-Hill Higher Education company.

References

Balduf, M. (2009). Underachievement among college students. *Journal of Advanced Academics*, 20(2), 274-294.

Cheung, L., & Kan, A. (2002). Evaluation factors related to student performance in a distance-learning business communication course. Journal of Education for Business, 77(5), 257-263. doi:10.1080/08832320209599674

Cook, T.D., & Campbell, D.T. (1979). Quasi-experimentation: Design and analysis issues foro field settings. Houghton Mifflin Company: Boston..

Dimitrov, D. M. & Rumrill, P.D. (2013). Pretest-posttest designs and measurement of change. *Work 20 IOS Press,* 159-165.

Gearhart, C. (2016). Does Learn Smart connect students to textbook content in an interpersonal communication course. *International Journal of Teaching and Learning in Higher Education, 28*(1), 9-17.

Griff, E. R., & Matter, S. F. (2013). Evaluation of an adaptive online learning system. *British Journal of Education Technology, 44*(1), 170-176.

Gurung, R. A. (2015). Three investigations of utility of texbook technology supplements. *Psychology Learning and Teaching, 14*(1), 26-35.

Hackman, D. A., Farah, M. J., & Meaney, M. J. (2011). Socioeconomic status and the brian: Mechanistic insights from human and animal research. *National Review of Neuroscience, 11*(9), 651-659. doi:10.1038/nrn2897

HeikkilÃ, A., & Lonka, K. (2006). Studying in higher education: Students' approaches to learning, self-regulation, and cognitive strategies. *Studies in Higher Education, 31*(1), 99-117. doi:10.1080/03075070500392433

Ishitani, T. T. (2006). Studying attrition and degree completion behaviour amoung first generation college students in the United States. *Journal of Higher Education, 77*(5), 861-885.

Jackson, D., & LeFebvre, E. (2012). Why am I behaind? An examination of low income minority students preparedness for college. *McNair Schoolars Journal, 13*, 121-138.

Maietta, H. (2016). Unfamiliar territory: Meeting the career development needs of first-generation college students. *NACE Journal*.

McCarron, G. P., & InkelasThe, K. K. (2006). The gap between educational aspirations and attainment for first-generation college students and the role of parental involvement. *Journal of College Student Development, 47*(5), 534-549.

McGraw-Hill Higher Education (2013a). LearnSmart works. Retrieved from http://connect.customer.mcgraw-hill.com/studies/effectiveness-studies/learnsmart-works/

McGraw-Hill Higher Education (2013b). Digital course solution improves student success. Retrieved from http://connectmarketing.mheducation.com.s3.amazonaws.com/wp-content/uploads/ 2013/07/Case_Psych_NMSU_Dolgov.pdf

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terinzini, P. T. (2004). First-generation college students. *Journal of Higher Education, 75*(3), 249-270.

Pearson (2014). MyLab & Mastering Humanities and Social Sciences: Efficacy implementation and results. Retreived from http://pearsonmylabandmastering.com/northamerica/results/files/HSSLE_EfficacyResults_2014.pdf

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33-40. doi:10.1037//0022-0663.82.1.33

Rogers, T. A. (2016). *An evaluation of an adaptive learning tool in an introductory business course.* (Doctoral dissertation). Retrieved from PQDT Open. (10128158)

Salvatoi, P. (2001). Reliability and validity of admissions tools used to select students for the health professions. *Advances in Health Science Education, 6*, 159-175.

Sellnow, D.D., Child, J.T., & Ahlfeldt, S.L. (2005). Textbook technology supplements: What are they good for? Comunication Education, 54(3), 243-253. doi:10.1080/03634520500356360

Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology, 19*, 460-475.

Timmerman, C.E., & Kruepke, K.A. (2006). Computer-assisted instruction, media richness, and college student performance. Communication Education, 55, 73-104. doi: 10.1080/03634520500489666

Student-Managed Investment Funds:
A Survey of Student Demographics, Fund Policies, and Transparency

Christopher Kubik

ABSTRACT

This paper summarizes the results of a web-based survey of 441 U.S.-based college and university Student-Managed Investment Funds (SMIFs). Results include three areas not previously included in SMIF research. Information about student demographics, fund policies, and transparency are included. Results indicate that the majority of students participating in SMIFs are white males, with few schools specifically targeting recruitment of females and minorities to the finance and investment field. Results also indicate that most funds are managed by undergraduate students, use the S&P 500 as a benchmark, and average 30% portfolio turnover each year. Results indicate a mix in the dollar value of SMIFs, of dividend policies, and of out of class activities associated with the SMIF. Finally, while professional money managers must provide timely and transparent information about fund performance, fees, and large holdings, the vast majority of SMIFs do not provide this information publicly, in part or in whole.

KEY WORDS: Education, Finance

JEL CLASSIFICATIONS: G00, A29, M10

AUTHOR: Christopher Kubik, DBA *Mount Ida College* e-mail: ckubik@mountida.edu

Introduction

The use of Student-Managed Investment Funds (SMIFs) on college campuses in the United States is certainly no longer a unique experiential learning tool. What began several decades ago as a unique feature in a few Investment Management courses, has gained universal acceptance as a nearly necessary tool for students interested in finance and investment management careers. The majority of SMIFs were created as educational tools for finance students, though there are a number of SMIFs that are utilized as clubs open to students from all majors.

As the number of SMIFs have grown, research has examined the pedagogy of courses using SMIFs, has highlighted how SMIFs were originally funded, and has emphasized the legal and practical design of SMIFs related to decision-making and oversight. One area that had not been reviewed was the demographics of students participating in SMIFs. Knowing that the vast majority of Wall Street financial analysts are men (Green, C., Jegadeesh, N., & Tang, Y., 2009), and that women comprised 47% of business degrees awarded in the United States (National Center for Educational Statistics), there is a natural desire to ponder if financial analyst roles be more gender balanced in future years. Thus, the survey sought to answer the hypothesis that the gender of students participating in SMIFs would be equal. In addition, the survey sought to answer questions about SMIF policies, and the transparency of SMIF dollar values, investment returns, and student activities related to SMIF courses.

LITERATURE REVIEW

A review of the literature regarding SMIFs identifies research has been conducted in three primary areas: pedagogy, operations and management, and funding and performance.
Pedagogical research is critical as the primary goal of SMIFs is educational. Therefore, pedagogical approaches, classroom structure and course design are of significant importance. These areas, when combined successfully should engage students with a positive educational experience that ultimately impacts student learning and career success. Tatar (1987) provides specific classroom examples of a new SMIF at one institution. Cooley & Hubbard (2012) similarly review one institution based on experience from ten plus years of an active SMIF. Kahl (1997) discusses course structure and the educational opportunities that exist when placing students of different genders, races and countries on investment analysis teams. Clinebell, Kahl & Stevens (2012) identify both learning goals and non-learning goals of SMIFs. They conclude both sets of goals should be considered when determining the structure and pedagogical design of a course and associated SMIF. North & Stevens (2012) develop a systematic approach to SMIFs, by designing a proposed two-year academic sequence and associated organizational structure for a SMIF. The approach extends beyond one course and is a coordination of multiple disciplines and courses, all designed to develop best-practices in applied investment management. The activities and structures they suggest are robust and likely limit utilization to larger institutions.

The operation and management of a SMIF is a balance of institutional policy, faculty leadership and student action. Lawrence (1990) identifies various investment alternatives allowed by different SMIFs and how SMIF operations and activities are funded. Saunders (2008) reviews differences in religiously affiliated and independent college SMIFs and identifies attitudinal differences in screening for socially responsible investing. Clinebell (2013) extends the review of socially responsible investing by providing a history of the concept and its application to a SMIF at one school. Peng, Dukes & Bremer (2009) review asset allocation differences and the use of CAPM within SMIFs. Cooley & Hubbard (2012) identify academic content, administrative requirements and SMIF policies at Trinity University. Adams and Belcher (2015) suggest significant resources are not needed to properly operate a SMIF. They discuss the use of the Blackboard learning management system to aid in SMIF communication and information access, with little to no additional costs to SMIFs or college operating budgets. Sources of funding for SMIFs is provided by Neely & Cooley (2004) and identifies donors and college endowments as major fund sources. Lawrence (2008) provides information on U.S.-based and international SMIFs and includes the year each fund started and the fund size.

SURVEY METHODOLOGY

An email, including a link to the survey, was sent to faculty advisors of U.S.-based SMIFs. Faculty advisors were identified by reviewing websites of colleges and universities listed in prior research from Neeley & Cooley (2004) and Lawrence (2008), and from schools identified on the University Finance Labs (ND) website. Contacts from professional associations and conferences were added, and a search of "student managed investment fund" was conducted on over 2,000 additional college websites to complete the list. The email requested confidential faculty participation in the web-based survey hosted on Qualtrics. A second and third email were sent to faculty who did not open the original email, using a tool provided by Qualtrics. This methodology is similar to that used by Saunders (2008) and Peng, Dukes, & Bremer (2009).

A total of 441 surveys were sent to individual SMIF faculty advisors, with 104 survey responses, for a response rate of approximately 24%. Of the 104 responses, several were only partially completed and therefore the response totals throughout the paper vary according to the total responses to each question. A copy of the survey is available from the author. The list of colleges and universities identified as having a SMIF is provided in Appendix A.

SURVEY RESULTS – DEMOGRAPHICS

Those responding to the survey represent a broad range of institutions, including both large and small, and both public and private schools. Respondents include schools with SMIFs that

began as early as 1955 and include a SMIF that was established in 2016. Nearly 70 percent of the SMIFs began operating since 2000. In addition, institutions identified AACSB, ACBSP, IACBE and other business accrediting agencies as those who assess their results. A summary of this information is provided in Table 1.

Table 1: School Enrollment, Institution Profile and Specialized Business Accreditation

Panel A		
What is the Enrollment of Your Institution?	**Frequency**	**Percent**
< 2,000	22	22.9%
2,001-5,000	27	28.1%
5,001-10,000	13	13.5%
>10,000	34	35.4%
Total	96	100.0%
Panel B		
What Type of Institution is it?	**Frequency**	**Percent**
Public	40	41.7%
Private	56	58.3%
Total	96	100.0%
Panel C		
Which organization accredits your business programs?	**Frequency**	**Percent**
AACSB	59	61.5%
ACBSP	16	16.7%
IACBE	2	2.1%
Other	8	8.3%
None	11	11.5%
Total	96	100.0%

Demographic information about student participation in SMIFs is provided in Table 2. The data shows that, for the 2015-16 academic year, respondents reported overall mean SMIF class composition of 73% male and 27% female students. When dis-aggregated by public versus private institutions, the percentage of female students is 20% and 31.4%, respectively. This difference is statistically significant, as shown in Table 3. Respondents also reported overall SMIF classes comprised of 74% Caucasian, 9% Asian, 9% Hispanic, 7% Black, and 1% Other. Differences in the means between public and private institutions are shown in Table 2. Statistically significant differences exist between public and private schools when measuring the percentages of international and Asian students (Table 3). In all cases of significance, private schools have higher proportions of female, international, and Asian students. No significant differences in demographics exist when measured against institution size, accrediting agency or size of the SMIF. These demographic characteristics are likely to remain consistent in the near future, as only 28% of SMIFs and/or SMIF schools actively recruit females specifically to the finance/ investment field, and only 19% recruit minorities.

Table 2: SMIF Student Enrollment Demographics and Recruitment by Institution Type

Panel A	**Public Institution**			**Private Institution**		
Based on Gender	**Mean**	**S.D.**	**Min-Max**	**Mean**	**S.D.**	**Min-Max**
Female	20.0%	12.8%	5-60%	31.4%	17.4%	8-100%
Male	80.0%	12.8%	40-95%	68.6%	17.4%	0-92%
Total	100.0%			100.0%		
Panel B						
Based on Geography	**Mean**	**S.D.**	**Min-Max**	**Mean**	**S.D.**	**Min-Max**
Domestic Student	88.6%	7.2%	71-100%	80.2%	15.7%	30-100%
International Student	11.4%	7.2%	0-29%	19.8%	15.7%	0-70%
Total	100.0%			100.0%		
Panel C						
Based on Race	**Mean**	**S.D.**	**Min-Max**	**Mean**	**S.D.**	**Min-Max**
Caucasian	78.7%	15.4%	29-100%	71.5%	19.4%	25-100%
Black	7.2%	8.5%	0-36%	6.0%	6.9%	0-30%
Asian	6.1%	5.5%	0-20%	11.0%	13.7%	0-60%
Hispanic	6.4%	12.5%	0-65%	9.8%	14.9%	0-73%
Other	1.8%	3.9%	0-16%	1.7%	4.2%	0-20%
Total	100.0%			100.0%		
Panel D						
Student Recruitment	**Number**	**Percent**		**Number**	**Percent**	
Females - Yes	9	25.0%		15	30.0%	
Females - No	27	75.0%		35	70.0%	
Total Females	36	100.0%		50	100.0%	
Minorities - Yes	7	19.4%		10	20.0%	
Minorities - No	29	80.6%		40	80.0%	
Total Minorities	36	100.0%		50	100.0%	

Table 3: ANOVA Test Results on Demographic Differences Based on Institution Type

ANOVA Table					
		Sum of Squares	df	Mean Square	F
% Women * What type of institution is it?	Between Groups	2706.85	1	2706.853	11.094
	Within Groups	20494.97	84	243.988	
	Total	23201.83	85		
% Men * What type of institution is it?	Between Groups	2706.85	1	2706.853	11.094
	Within Groups	20494.97	84	243.988	
	Total	23201.83	85		
% Domestic * What type of institution is it?	Between Groups	1478.01	1	1478.010	8.890
	Within Groups	13966.13	84	166.263	
	Total	15444.14	85		
% International * What type of institution is it?	Between Groups	1478.01	1	1478.010	8.890
	Within Groups	13966.13	84	166.263	
	Total	15444.14	85		
% Caucasian * What type of institution is it?	Between Groups	1063.03	1	1063.033	3.341
	Within Groups	26726.42	84	318.172	
	Total	27789.45	85		
% Black * What type of institution is it?	Between Groups	28.49	1	28.488	0.495
	Within Groups	4831.00	84	57.512	
	Total	4859.49	85		
% Asian * What type of institution is it?	Between Groups	511.69	1	511.693	4.203
	Within Groups	10225.89	84	121.737	
	Total	10737.58	85		
% Hispanic * What type of institution is it?	Between Groups	247.52	1	247.520	1.270
	Within Groups	16366.31	84	194.837	
	Total	16613.83	85		
% Other * What type of institution is it?	Between Groups	0.17	1	0.170	0.010
	Within Groups	1385.97	84	16.500	
	Total	1386.14	85		

** Significant at the .01 level

* Significant at the .05 level

The demographic results showing male dominance of students participating in SMIFs provides insight for industry professionals about likely upcoming recruits. Studies on the role of gender in finance and investing have been researched as related to behavioral finance. Barber & Odean (2001) conclude overconfidence in men causes male traders to trade more often than females, resulting in lower investment returns for males compared to females. Bhandari & Deaves (2006) corroborate this conclusion, finding the results are most significant in single men compared to single women. So why, then, do so few females pursue an investing career? North & Stevens (2012) note that "the imbalance of gender is a complicated phenomenon." Jäkel & Moynihan (2016) report the financial services industry lags in unleashing female leadership potential. The report concludes that only 20 percent of boards and 16 percent of executive committee members are female globally. In addition, they find that "female executives are more likely to leave their employer at mid-career in financial services than in any other industry."

Adams, Barber & Odean (2016) note that 18 percent of Chartered Financial Analysts are women and suggest one possible barrier is "that finance is a profession that disproportionately rewards those who work long and inflexible hours." Foster (2016) suggests those in the industry should "encourage women to pursue an education and career in investment management."

Turning from gender to race, why do fewer racial minorities participate in SMIFs and have a career interest in finance? Delvecchio, McEwen, & McEwen (2001) find that while African American students had higher preferences for careers in human resource management than Caucasians, there was no preference difference for fields of accounting, finance and marketing. What other reasons may contribute to low levels of minority participation? Lahey & Vihtelic (2000) found that 82 percent of finance faculty are white, with 2.4 percent black, 2 percent Hispanic, and 13.3 percent other. Thus, students of color are more likely to have a white professor than a racial minority. Results from Chung, Baskin & Case (1999) and Karunanayake & Nauta (2004) suggest it is possible that a lack of role models leading the classroom leads to lower career interest in the field by racial minorities.

This survey identifies that the current stream of college and university students likely mirrors the demographic imbalances which currently exist in the financial services field. Some institutions are making efforts to counter this imbalance, with 27.9 percent of colleges specifically recruiting females to the finance industry and 19.8 percent specifically recruiting racial minorities.

SURVEY RESULTS – POLICY

Table 4 provides data related to the dollar value of SMIFs responding to the survey. The table also lists the benchmark used by the fund to gauge student investment success. Results show the S&P 500 is used as a benchmark for SMIF performance more than any other metric.

Table 4: SMIF Data by Fund Size and Fund Benchmark

Table 4: SMIF Data by Fund Size and Fund Benchmark

Panel A		
What is the Size of the SMIF	**Frequency**	**Percent**
<$100,000	11	13.6%
$100,0001-$250,000	11	13.6%
$250,001-$500,000	25	30.9%
$500,001-$1,000,000	10	12.3%
>$1,000,000	24	29.6%
Total	81	100.0%
Panel B		
What Benchmark does the SMIF use?	**Frequency**	**Percent**
DJIA	4	4.9%
S&P 500	48	59.3%
Russell 2,000	6	7.4%
NASDAQ Composite	1	1.2%
Other	22	27.2%
Total	81	100.0%

Beyond the S&P 500, the "other" benchmarks mentioned by respondents reflected multiple benchmarks due to multiple funds managed by the SMIF. Why, though, should students who are learning compare their results to the same index generally used by professionals? Haddad and Redman (2006) provide evidence that doing so may be difficult by noting that both the investment portfolio and style of management are difficult to maintain within a SMIF. Mallett, Belcher and Boyd (2010) find the return performance of SMIFs "spotty at best" and suggest one possibility for the underperformance is portfolio turnover, caused by turnover of fund managers. Kreuger (2011) finds that while SMIFs provide numerous non-monetary advantages to students, even the Investment Advisory Board utilized in the study underperformed the market as well, suggesting the level of attention and direct con-

sequence of results differs between SMIFs and professional fund managers. Gradisher, Kahl, Clinebell & Stevens (2016) discuss federal legislation and its potential impact on fiduciary responsibilities of SMIF students and professors. They provide several recommendations on SMIF structure to protect students, faculty and institutions from the SMIF being viewed as a registered Management Investment firm. With this, they suggest donors should not "have expectations of professional investment management." These results all appear contrary to common SMIF practice as the majority of SMIFs use the S&P 500 as a benchmark.

Table 5 provides data on policy matters related to management and dividends. Results show more than 70% of SMIFs are managed by undergraduate students, with 22% managed by both undergraduate and graduate students. About half of all schools (48%) use a policy of cash dividends on all holdings, with 29% having a policy to reinvest dividends and the remaining 23% using a combination of cash and reinvestment. Two-thirds of SMIFs are not actively managed between semesters. This is not surprising given the educational nature of SMIFs.

Table 5: SMIF Data by Student Level, Interim Management and Dividend Policy

Panel A		
Who manages the SMIF?	**Frequency**	**Percent**
Undergraduate	58	71.6%
Graduate	4	4.9%
Both	18	22.2%
Other	1	1.2%
Total	81	100.0%
Panel B		
Is the SMIF Actively Managed Between Semesters?	**Frequency**	**Percent**
Yes	26	34.2%
No	50	65.8%
Total	76	100.0%
Panel C		
What is the SMIF Dividend Policy?	**Frequency**	**Percent**
All Cash Dividends	37	48.1%
Reinvest All Dividends	23	29.9%
Combination of Cash and Reinvestment	17	22.1%
Total	77	100.0%

Study participants were asked to provide portfolio returns for the past two years. Ranges, instead of specific results, were used in the survey to maximize reporting without requiring participants to research their exact return from two years ago. Table 6 provides frequency and percentage of respondent returns for each year. It should be noted that the S&P 500, the primary SMIF benchmark, provided returns of 13.52% and 1.36% in 2014 and 2015, respectively. Specific differences between SMIF returns and the S&P 500 for each year could not be calculated due to the survey design requesting a return range instead of a specific return option. It is noted that in 2015, the range of returns that contained the actual S&P 500 return contained the highest response frequency. In 2014, more SMIFs responded to the range that was lower than the S&P 500 return range.

Table 6: SMIF Returns by Year

Panel A		
What was the fund's return for 2015?	**Frequency**	**Percent**
< (5)%	2	2.9%
0-(4)%	19	27.1%
0%	6	8.6%
0-5%	32	45.7%
6-10%	7	10.0%
11-15%	3	4.3%
16-20%	0	0.0%
>20%	1	1.4%
Total	70	100.0%
Panel B		
What was the fund's return for 2014?	**Frequency**	**Percent**
< (5)%	0	0.0%
0-(4)%	3	4.5%
0%	2	3.0%
0-5%	8	11.9%
6-10%	24	35.8%
11-15%	20	29.9%
16-20%	9	13.4%
>20%	1	1.5%
Total	67	100.0%

Note: Three participating colleges commenced SMIF activities in 2015 or later.

While all participating SMIFs were allowed to invest in equities, the number of SMIFs allowed to invest in other asset classes drops dramatically. Slightly more than one-third of SMIF's have the ability to invest in fixed income, less than 20% in options, and less than 10% in commodities and other. Table 7 provides a breakdown of investible asset classes by institution size and type.

Table 7: Investments Allowed by Institution Size & Institution Type

Asset &	**Institution Type**	**Institution Enrollment**					
	<2,000	2,001-5,000	5,001-10,000	>10,000	Total	Total %**	
	Public	1	3	9	20	33	
	Private	16	17	4	6	43	
Equities	**Total**	17	20	13	26	76	**100%**
	Public		2	3	9	14	
	Private	4	4	3	3	14	
Debt	**Total**	4	6	6	12	28	**36.8%**
	Public		1	1	1	3	
	Private	1	1	1	1	4	
Commodities	**Total**	1	2	2	2	7	**9.2%**
	Public		2	1	2	5	
	Private	4	2	2		8	
Options	**Total**	4	4	3	2	13	**17.1%**
	Public		1	1	3	5	
	Private	1			1	2	
Other*	**Total**	1	1	1	4	7	**9.2%**

* Other included ETF's, currencies, futures and mutual funds

** Total % equals the percentage of responding schools allowed to invest in each asset type

Most funds available for individual investors have a specific targeted asset allocation. This allows investors to determine if a fund is an appropriate investment vehicle for the investor's risk tolerance and investment objectives. SMIFs are likely different than many other funds in that it is assumed that the majority of SMIFs have a long-term investment horizon, with little need for the corpus in the near-term. Of SMIF's participating in the survey, only 59.5% have an asset allocation policy, whereas 40.5% do not. Of those SMIFs that have an asset allocation policy, equities, fixed income, and cash are the asset classes with the largest mean percentage target. A summary of the survey results on asset allocation is shown in Table 8.

Table 8: Asset Allocation Averages of SMIFs with Specified Target Asset Allocations

	All Institutions		
Asset Type	**Mean**	**S.D.**	**Min-Max**
Cash	6.6%	6.5%	0-25%
Equities	82.2%	20.8%	0-100%
Fixed Income	9.7%	1.9%	0-100%
Other	1.5%	4.2%	0-20%
Total	100.0%		

Table 9 provides information on fund asset turnover. The mean asset turnover of SMIFs during a typical year is almost 32% of the portfolio, with a reported range from one to one hundred percent, resulting in a significant standard deviation of 23%.

	All Institutions		
	Mean	**S.D.**	**Min-Max**
Fund Turnover	31.64%	23.72%	1-100%

SURVEY RESULTS – TRANSPARENCY

Survey results indicate that the vast majority – 83% – of SMIFs do not make their fund performance available on the school website (Table 10). In addition, only 6.5% of SMIFs provide public information about the fund's specific holdings. In an era where transparency and performance measurement are paramount in the finance and investment industry, it appears that SMIFs may be lagging incorporating these facts into classroom practice. In so doing, SMIFs are perhaps also missing a teachable moment of what is expected of institutional fund managers.

Table 10: Public Transparency

Panel A		
Is Fund Performance Publicly Available on Website?	**Frequency**	**Percent**
Yes	13	16.9%
No	64	83.1%
Total	77	100.0%
Panel B		
Are Specific Holdings Made Available?	**Frequency**	**Percent**
Yes	5	38.5%
No	8	61.5%
Total	13	100.0%

Kuhle & Ogilby (2010) provide a detailed approach to using publicly available information to conduct fundamental security price analysis. This approach to analysis could be utilized in any SMIF. Haslem (2004) provides a template for transparency of information for mutual funds. The template suggests providing information transparency across multiple areas, including boards of directors, fund managers, and fund performance. Haslem argues such information is necessary for fund owners to make informed decisions. Macy (2010) highlights one benefit of SMIFs is the production reports. Communication and synthesis skills are utilized is report preparation, including Macy's suggestion of an annual report. It is likely that many SMIFs indeed utilize report preparation as a learning tool (as well as an audit or performance measurement tool), yet very few make such reports publicly available.

Finally, the Securities and Exchange Commission (SEC) Final Rule on Shareholder Reports and Quarterly Portfolio Disclosure of Registered Management Investment Companies (2004) mandated, among other things, that mutual funds and similar entities report portfolio information on a quarterly basis and "to include Management's Discussion of Fund Performance in its annual report to shareholders." Agarwal, Mullally, Tang, & Yang (2015) utilize the 2004 SEC rule to analyze stock liquidity and fund performance and find that after the regulation change, stocks with higher fund ownership increase greater liquidity. Each of these examples provide evidence that there are benefits to fund managers with transparency. While there are likely challenges as well, SMIF faculty and administrators should consider the benefits of increased transparency.

Results indicate SMIFs are also a springboard for a host of other educational opportunities. More than half of the survey respondents indicated that students in their respective SMIFs participate in competitions (research challenges, case competitions, security/credit analysis competitions, etc.), conferences and other events. Additionally, students in SMIFs provided community service in the form of financial literacy, provided on-campus educational programs, and attended investor meetings, amongst other things.

Table 11: SMIF Activities and Activity Funding

Panel A		
What Activities do SMIF Students Participate In?	**Frequency**	**Percent**
CFA Institute Research Challenge	37	55.2%
Federal Reserve Challenge	11	16.4%
Campus-wide Learning Initiatives	17	25.4%
Conferences*	49	73.1%
Events	35	52.2%
Personal Finance Topics	21	31.3%
Other	11	16.4%
Total Responding to Question	67	
Panel B		
How are SMIF Activities Funded?	**Frequency**	**Percent**
Earnings	12	17.9%
Fund Drawdowns	8	11.9%
College Operating Budget	47	70.1%
Total	67	100.0%

*Includes QGAME, RISE, ENGAGE and Other

LIMITATIONS AND FURTHER RESEARCH

Survey results indicate a wide range of demographic information. While this is the first research that highlights demographic information of SMIF participants, the confidentiality of survey responses did not allow for further understanding of the why certain schools have higher female and minority participation. It is likely that schools with 100% female participation are female-only institutions, while schools with high percentages of Hispanic student participation may be designated as Hispanic-serving institutions under the federal definition. For college administrators and industry executives interested in increasing female and minority representation in finance and investing, further research into the variability of participation by these student groups is encouraged. With SMIFs designed to be educational in nature, it should be assumed that errors will be made while students are learning. In fact, Lawrence (1990) notes that while most faculty retain veto power over student investment decisions, "faculty advisors felt an important component of the educational experience necessitates allowing students to make their own decisions for better or for worse." Thus, utilizing the industry benchmark for professionals – generally the S&P 500 – as a SMIF benchmark might be a high hurdle. A SMIF performance index may be a better barometer, whereby students, faculty and administrators could measure results against other students who are also learning as they make investment decisions.

The lack of public information transparency is an area that could be investigated further. Assumptions are made as to why colleges and universities do not share SMIF performance results, key holdings, and annual reports, but actual reasons may differ. If a substantial number of SMIFs begin to publicly report information on a routine basis, other schools may follow. The use of a template would aid SMIFs and result in uniform reporting. Public disclosure may also serve as an additional point of information for high school students during their college and university research and selection process. It is also possible that such publication may increase minority and female participation if, for example, large SMIF holdings identify companies of importance to females and racial minorities.

Last, while this research focuses specifically on SMIFs, additional thought and research should be conducted to identify how other business disciplines, namely accounting, marketing and management, could benefit from similar hands-on, real-world applications.

CONCLUSION

While the number of SMIFs has grown significantly in the past two decades, much information about specific fund performance, management and holdings remains private. This runs contrary to public disclosure required by fund managers outside of SMIFs, and is likely the result of protecting faculty and school image and reputation. With most SMIFs continuing to be managed by undergraduate students, using the S&P 500 as a benchmark for SMIFs appears to be at odds with student learning and suggests an alternate benchmark could be established for SMIFs.

Survey results indicate that gender and race in SMIF student enrollment across the United States is skewed towards males and Caucasians. Thus, the hypothesis that the gender of students participating in SMIFs would be equal does not hold. Private colleges and universities enroll higher percentages of females, international students and Asian students than their public institution counterparts. The trend of the investment industry being male-dominated may continue for some time, as few schools and/or SMIFs actively recruit females and minority students to the discipline. This research confirms prior survey results that most SMIFs are not actively managed between semesters and that SMIF fund size varies significantly. In addition, this research shows varying SMIF policies for dividends, target asset allocation and fund turnover. Last, results indicate substantial participation in out of class activities by SMIF participants, highlighting the benefits of the engaged learning component of an actively-managed fund.

References

Adams, S. A., & Belcher, L. J. (2015). "Reporting and Managing on the Cheap: Using Blackboard in a Student-Managed Investments Program," *Journal of Higher Education Theory and Practice*, 15(1), 75-85.

Adams, R.B., Barber, B.M., & Odean, T. (2016). "Family, Values, and Women in Finance," Available at SSRN: https://ssrn.com/abstract=2827952

Agarwal, V., Mullally, K. A., Tang, Y., & Yang, B. (2015). "Mandatory Portfolio Disclosure, Stock Liquidity, and Mutual Fund Performance," *The Journal of Finance*, 70(6), 2733-2776.

Barber, B.M., & Odean, T. (2001). "Boys Will Be Boys: Gender, Overconfidence, and Common Stock Investment," *The Quarterly Journal of Economics,* 261-292.

Bhandari, G., & Deaves, R. (2006). "The Demographics of Overconfidence," *Journal of Behavioral Finance,* 7 (1), 5-11.

Chung, Y. B., Baskin, M. L., & Case, A. B. (1999). "Career Development of Black Males: Case Studies," *Journal of Career Development, 25*(3), 161.

Clinebell, J. (2013). "Socially Responsible Investing and Student Managed Investment Funds: Expanding Investment Education," *Financial Services Review*, 22, 13-22.

Clinebell, J., Kahl, D., & Stevens, J. (2012). "Pedagogy and Student Managed Investment Funds: What Type of Fund is Right for Your University*," Academy of Business Education and Financial Education Association* meetings, Charleston, SC.

Cooley, P.L., & Hubbard, C.M. (2012). "FAQ's About Student Managed Funds*," Advances in Financial Education,* 10(1), 72-83.

Delvecchio, S., McEwen, T., & McEwen, B.C. (2001). "Impact of Race on Business Students' Perceptions of Business Careers," *Journal of Education for Business*, 76(4), 199-208.

Foster, L. (2016). "The 'Diversity Multiplier:' Why We Need More Women in Investment Management." Retrieved September 12, 2016 from: https://diversity.cfainstitute.org/2016/07/13/the-diversity-multiplier-why-we-need-more-women-in-investment-management/

Gradisher, S., Kahl, D.R., Clinebell, J.M., & Stevens, J.L. (2016). "Fiduciary and Legal Considerations for Student-Managed Investment Funds," *Journal of Education for Business*, 91(2), 83-89.

Green, C., Jegadeesh, N., & Tang, Y. (2009). "Gender and Job Performance: Evidence from Wall Street," *Financial Analysts Journal*, 65(6), 65-78.

Haddad, M, & Redman, A.A. (2006). "Students as Fiduciaries: An Examination of the Performance of Student-Managed Portfolios," *Journal of the Academy of Business Education*, Summer, 87-98.

Haslem, J. A. (2004). "A Tool for Improved Mutual Fund Transparency," *Journal of Investing*, *13*(3), 54-64.

Jäkel, A., & Moynihan, T. (2016). "Women in Financial Services." Retrieved September 6, 2016 from: http://www.oliverwyman.com/content/dam/oliver-wyman/global/en/2016/june/WiFS/WomenInFinancialServices_2016.pdf

Kahl, D. R. (1997). "The Challenges and Opportunities of Student-Managed Investment Funds at Metropolitan Universities," *Financial Services Review*, *6*(3), 197-200.

Karunanayake, D., & Nauta, M. M. (2004). "The Relationship Between Race and Students' Identified Career Role Models and Perceived Role Model Influence," *The Career Development Quarterly, 52*(3), 225-234

Krueger, T.M. (2011). "Finance Experts versus Students: Policies, Comparative Return and Risk of Investments in a Student-Directed Investment Portfolio," *Journal of Accounting and Finance,* 11(4), 119-137.

Kuhle, J., & Ogilby, S.M. (2010). "Teaching the Fundamentals of Ben Graham and Warren Buffett," *Journal of the Academy of Business Education*, 11(Fall), 93-112.

Lahey, K. & Vihtelic, J.L. (2000). "Finance Faculty Demographics, Career History, Diversity, and Job Satisfaction," *Financial Practice and Education*, Spring/Summer, 2000, 111-122.

Lawrence, E. C. (1990). "Learning portfolio management by experience: University student Investment Funds," *The Financial Review, 25*(1), 165-173.

Lawrence, E.C. (2008). "Student Managed Investment Funds: An International Perspective," *Journal of Applied Finance*, 18(2), 67-83.

Mallett, J. E., Belcher, L. J., & Boyd, G. M. (2010). "Experiment No More: The Long-Term Effectiveness of a Student-Managed Investments Program," *Journal of Financial Education*, 36 (3/4), 1-15.

Macy, A. (2010). "Student Managed Investment Funds: A Framework for Regional Schools," *Academy of Educational Leadership Journal,* 14(Spcial Issue),47-62.

National Center for Educational Statistics, retrieved from https://nces.ed.gov/programs/digest/d16/tables/dt16_318.30.asp?current=yes

Neely, W.P., & Cooley, P.L. (2004). "A Survey of Student Managed Funds," *Advances in Financial Education*, 2(Spring), 1-9.

North, D., & Stevens, J.L. (2012). "The Two-Year Student Managed Investment Fund: Coordination of Applied Investment Skills across Disciplines and Courses*," Academy of Business Education and Financial Education Association*, working paper, Charleston, SC.

Peng, Z., Dukes, W.P., & Bremer, R. (2009). "Evidence on Student-Managed Funds: A Survey of U.S. Universities," *Business Education & Accreditation*, 1(1), 55-64.

Saunders, K.T. (2008). "Student-Managed Investment Funds in Religiously Affiliated Independent Colleges and Universities," *Christian Business Academy Review*, Spring, 2008, 26-34.

Shareholder Reports and Quarterly Portfolio Disclosure of Registered Management Investment Companies, 17 CFR § 210, 239, 249, 270, and 274 (2004).

Tatar, D. (1987). "Teaching Securities Analysis with Real Funds," *Journal of Financial Education,* (16), 40-45.

University Finance Labs (ND). Retrieved April 5, 2016 from http://universityfinancelab.com/directory/

Appendix B – List of Colleges and Universities with Student-Managed Investment Funds*

Abilene Christian University
Adelphi University
Alabama A&M University
Alaska Pacific University
Albion College
Alfred University
American University
Amherst College
Anderson University
Appalachian State University
Arizona State University
Ashland University
Auburn University
Augustana College
Austin College
Austin Peay State University
Babson College
Baldwin-Wallace College
Ball State University
Barry University
Baruch College
Bates College
Baylor University
Bellarmine University
Belmont University
Benedictine University
Bentley University
Berry College
Binghampton University - SUNY
Bloomsburg University
Bluffton University
Boise State University
Boston College
Boston University
Bowling Green State University
Brandeis University
Brigham Young University
Brown University
Bryant University
Bryn Mawr College
Bucknell University
Butler University
California Institute of Technology
California Lutheran university
California Polytechnic State Univ.
California State University - Long Beach
California State University - Los Angeles
California State University - Northbridge
California State University - Fresno
Calvin College
Cameron University
Canisius College
Carleton University
Carnegie Mellon University
Carroll College
Cedar Crest College
Cedarville University
Centenary College of Louisiana
Centre College
Central Michigan University
Champlain College
Chapman University
Christian Brothers University
Christopher Newport University
Claremont Graduate School
Clark University
Clarkson University
Clemson University
Cleveland State University
Coastal Carolina University
Coe College
Colby College
Colby-Sawyer College
College of New Jersey
College of the Holy Cross
College of William & Mary
College of Wooster
Colorado College
Colorado State University
Colorado State University - Fort Collins
Columbia University
Connecticut College
Cornell University
Creighton University
Culver Stockton College
Dartmouth College
Davidson College

Denison University
DePaul University
DePauw University
Dixie State University
Drake University
Drexel University
Duke University
Duquesne University
East Tennessee State University
Eastern Illinois University
Eastern Mennonite University
Eastern Washington University
Elizabeth City State University
Elizabethtown College
Elon University
Emory University
Evangel University
Fairfield University
Fayetteville State University
Florida Atlantic University
Florida Gulf Coast University
Florida International University
Florida State University
Fordham University
Fordham University - Bronx Campus
Franklin and Marshall College
Freed-Hardman University
Furman University
Gannon University
Gardener Webb University
Georgia Institute of Technology
Georgia State University
George Washington University
Georgetown College
Georgetown University
Georgia Southern University
Gonzaga University
Grand Valley State University
Grinnell College
Gustavus Adolphus College
Hampden-Sydney College
Harding University
Harvard University
Henderson State University
High Point University
Hodges University
Hofstra University
Houghton College
Howard University
Humboldt State University
Idaho State University
Illinois College
Illinois Institute of Technology
Illinois State University
Illinois Wesleyan University
Indiana State University
Indiana University
Indiana University Northwest
Indiana University of Pennsylvania
Indiana University Southeast
Iona College
Iowa State University
Ithaca College
Jackson State University
Jacksonville University
James Madison University
John Carroll University
Johnson and Wales University
Juniata College
Kansas State University
Kennesaw State University
Kutztown University
Lafayette College
Lake Superior State University
Lamar University
LaSalle University
Lehigh University
LeMoyne College
Lewis University
Lipscomb University
Longwood University
Loras College
Louisiana State University
Loyola Marymount University
Loyola College
Loyola University Chicago
Loyola University Maryland
Loyola University New Orleans
Manhattan College
Marian University
Marist College
Marquette University
Marywood University
Massachusetts Institute of Technology
Masters College
McMurry University
McNeese State University
Mercy College
Messiah College
Miami University
Michigan State University
Michigan Technological University
Middle Tennessee State University
Middlebury College
Midwestern State University
Millikin University
Millsaps College
Minnesota State Mankato
Minnesota State Moorhead
Minot State university
Mississippi College
Mississippi State University
Mississippi State University for Women
Missouri Southern State university
Molloy College
Monmouth College
Montana State University - Billings
Montana State University - Bozeman
Montclair State University
Moravian College
Morehead State University
Morehouse College
Muhlenberg College
Murray State University
Nazareth College
Nebraska Wesleyan University
New Jersey City University
New Mexico State University
New York University
Niagara University
North Arizona University
North Carolina A&T

North Carolina Central University
North Carolina State University
North Dakota State University
Northeastern University
Northern Illinois University
Northern Kentucky University
Northern Michigan University
Northwest Nazarene University
Northwestern University
Norwich University
Oakland University
Oberlin College
Occidental College
Ohio Northern University
Ohio State University
Ohio University
Ohio Wesleyan University
Old Dominion University
Oregon State University
Ouachita Baptist University
Pace University
Pacific Lutheran University
Penn State - Fayette, The Eberly Campus
Penn State - University Park
Penn State Behrend
Pennsylvania State University
Pepperdine University
Philadelphia University
Pomona College
Portland State University
Princeton University
Providence College
Purdue University
Purdue University - Fort Wayne
Quinnipiac University
Radford University
Rhode Island College
Rice University
Roanoke College
Robert Morris University
Roger Williams University
Rollins College
Rowan University
Rutgers University
Sacred Heart University
Saint Anselm College
Saint Bonaventure University
Saint Cloud State University
Saint John's University
Saint Joseph's University
Saint Louis University
Saint Mary's University
Saint Xavier University
Salisbury University
Samford University
San Diego State University
Santa Clara University
Scripps College
Seattle Pacific
Seattle University
Seton Hall University
Shenandoah University
Shippensburg University
Siena College
Simpson College
Slippery Rock University
Smith College
South Dakota State University
Southeast Missouri State University
Southern Arkansas University
Southern Connecticut State University
Southern Illinois University
Southern Illinois University Carbondale
Southern Methodist University
Southern New Hampshire University
Southern University
Southwestern University
Spring Arbor University
St. Bonaventure University
St. John Fisher College
St. Lawrence University
St. Thomas University
Stanford University
State University of New York - Albany
State University of New York - Geneseo
Stephen F Austin State University
Stetson University
Stevens Institute of Tech
Stonehill College
Susquehanna University
Syracuse University
Taylor University
Temple University
Tennessee State University
Tennessee Tech University
Texas A & M University
Texas Christian University
Texas State University
Texas Tech University
Texas Wesleyan University
The Citadel
Thomas College
Towson University
Trevecca Nazarene University
Trinity College
Trinity University
Truman State University
Tufts University
Tulane University
Union University
University of Akron
University of Albany
University of Alabama - Birmingham
University of Alabama - Huntsville
University of Alabama - Tuscaloosa
University of Alaska
University of Arizona
University of Arkansas - Fayetteville
University of California - Berkeley
University of California - Los Angeles
University of Central Florida
University of Central Missouri
University of Chicago
University of Cincinnati
University of Colorado - Boulder
University of Colorado - Colorado Springs
University of Colorado - Denver
University of Connecticut
University of Dallas
University of Dayton
University of Delaware
University of Denver

University of Evansville
University of Florida
University of Georgia
University of Hartford
University of Houston
University of Idaho
University of Illinois
University of Iowa
University of Kansas
University of Kentucky
University of Louisville
University of Maine
University of Mary
University of Maryland
University of Massachusetts Boston
University of Massachusetts Lowell
University of Memphis
University of Michigan
University of Michigan - Dearborn
University of Minnesota
University of Minnesota - Duluth
University of Mississippi
University of Missouri - Columbia
University of Missouri St. Louis
University of Missouri-Kansas City
University of Montana
University of Nebraska - Lincoln
University of Nebraska - Omaha
University of Nebraska Kearney
University of Nevada
University of Nevada, Reno
University of New Hampshire
University of New Haven
University of New Mexico
University of North Alabama
University of North Carolina - Chapel Hill
University of North Carolina - Charlotte
University of North Carolina - Wilmington
University of North Carolina at Pembroke
University of North Dakota
University of North Florida
University of North Texas
University of Northern Colorado
University of Northern Iowa
University of Notre Dame
University of Oklahoma
University of Oregon
University of Pennsylvania
University of Pittsburg
University of Pittsburgh - Katz
University of Portland
University of The Redlands
University of Rhode Island
University of Richmond
University of Rochester
University of Saint Francis
University of San Francisco
University of Sioux Falls
University of South Alabama
University of South Carolina
University of South Carolina Upstate
University of South Dakota
University of South Florida
University of Southern California
University of Southern Indiana
University of Southern Mississippi
University of St. Thomas
University of Tampa
University of Tennessee - Chattanooga
University of Tennessee - Knoxville
University of Tennessee - Martin
University of Texas
University of Texas at Dallas
University of Texas at El Paso
University of The Incarnate Word
University of the Pacific
University of Toledo
University of Tulsa
University of Utah
University of Vermont
University of Virginia - Darden Graduate
University of Virginia - McIntire School
University of Washington
University of West Alabama
University of Wisconsin-Eau Claire
University of Wisconsin-La Crosse
University of Wisconsin-Madison
University of Wisconsin-Milwaukee
University of Wisconsin-Oshkosh
University of Wisconsin-Platteville
University of Wisconsin-Whitewater
University of Wyoming
Utah State University
Utica College
Valdosta State University
Vanderbilt University
Villanova University
Virginia Commonwealth University
Virginia Military Institute
Virginia Tech
Wabash College
Walsh College
Wartburg College
Washburn University
Washington and Lee University
Washington College
Washington State University
Washington University in St. Louis
Wayne State University
Wesleyan University
West Liberty University
West Texas A&M University
West Virginia University
Western Carolina University
Western Kentucky University
Western Michigan University
Western New England University
Western Washington University
Westminster College
Whitman College
Whitworth University
Widener University
Willamette University
William Paterson University
Winona State University
Winston-Salem State University
Winthrop University
Wofford College
Wright State University
Xavier University
York College of Pennsylvania
Youngstown State University

From the Transnational to the BoP Approach to Global Strategy: *Opportunities and Challenges*

Kevin Schneider
Oral Roberts University

ABSTRACT

As global demographics change and emerging markets develop, multinational corporations are exploring economic opportunities in low-income markets across the globe. This global, low-income market is often referred to as the base of the pyramid (BoP) market. While MNCs have traditionally relied upon the transnational approach to global strategy regarding global strategic management, these multinational firms are discovering transnational strategies that have worked in developed markets often fail in BoP markets. Alternatively, BoP strategy has been introduced as an approach to global strategy that is more appropriate for targeting low-income markets. This article explores the differences between the transnational approach and BoP approach to global strategy, challenges facing MNCs regarding BoP strategy and opportunities associated with moving from the transnational approach to the BoP approach to global strategy.

KEY WORDS: base of the pyramid, BoP, transnational, global strategy, emerging markets

AUTHOR: Kevin Schneider, *Oral Roberts University* e-mail: Kschneider@oru.edu

Introduction

There has been growing interest in the bottom (or base) of the pyramid field of literature since its inception in 2002. The first two published articles that introduced the bottom of the pyramid were The Fortune at the Bottom of the Pyramid (Prahalad & Hart, 2002) and Serving the World's Poor, Profitably (Prahalad & Hammond, 2002). Since the publishing of these original articles, authors began to use the terminology base of the pyramid to represent more of a bottom-up view (Prahalad, 2010).

The terms bottom and base of the pyramid are used interchangeably throughout the literature, and they are often abbreviated as simply BoP. Although bottom and base of the pyramid are used interchangeably, subsistence marketplaces is also commonly used to describe low-income markets in developing countries (Chikweche & Fletcher, 2010; Viswanathan & Rosa, 2007; Viswanathan, Sridharan & Ritchie, 2010). Furthermore, various definitions of BoP can be found in the literature. There is some ambiguity concerning how BoP is defined throughout the literature, and it is commonly interpreted in several ways.

For instance, BoP is referred to as a socioeconomic demographic of people (London & Hart, 2011; Prahalad, 2010; Simanis, 2010). It is can also be defined as a global consumer market such that the purchasing power of the people living in the BoP demographic can be aggregated, and the market can be segmented (Hammond, Kramer, Katz, Tran & Walker, 2007; Prahalad, 2010; Prahalad & Hammond, 2002; Prahalad & Hart, 2002). Finally, BoP is described as an approach to global strategy in which distinct business strategies are needed to support ventures or initiatives targeting the BoP market (London & Hart, 2004).

There are several aims of the article. First, the article describes the various BoP definitions such as the BoP demographic and the BoP market. Second, it explores the transnational and BoP approaches to global strategy and describes the differences between the two approaches. A final aim is to highlight challenges and opportunities associated with moving from the transnational approach to the BoP approach to global strategy.

Size and Parameters of the BoP Demographic and BoP Market

Prahalad and Hart (2002) were the first to use the term BoP to simultaneously represent a demographic of people and a global consumer market. They demarcated the BoP demographic by income as well as other social characteristics. In regard to income, Prahalad and Hart (2002) originally noted that there are approximately four billion people in the world that live on less than $1,500 (2002 purchase power parity – PPP) per capita. They proposed that multinational corporations (MNCs) should view the BoP demographic as an untapped, multi-trillion dollar consumer market. Prahalad (2004) later advocated that the global market potential of the BoP market is more than $13 trillion PPP. Figure 2.1 segments the world economic pyramid.

Figure 1: World Economic Pyramid (SOURCE: Prahalad & Hart, 2002)

Karnani (2006, 2007) challenged the initial income parameters of the BoP demographic and the global market potential of the aggregate BoP market. He argued that the number of people living in the BoP demographic and the estimated global market potential of the BoP market were overstated. He noted that there are only approximately 2.7 billion people living in the BoP demographic and that the global market potential of the BoP market is less than $0.3 billion (in 2002 PPP). However, these early criticisms were superseded by a joint study conducted by the World Resources Institute (WRI) and International Finance Corporation (IFC) regarding global income demographics (Hammond et al., 2007).

By using global household survey data from 110 countries, the WRI-IFC study found that there are approximately four billion people living in the BoP demographic that earn less than $3,000 PPP per capita in 2002 U.S. dollars ($3,260 PPP in 2005 U.S. dollars) (Hammond et al., 2007; London & Hart, 2011). Hammond et al. (2007) noted, however, that incomes (in 2005 U.S. dollars) vary regionally such as less than $3.35 per day in Brazil, $2.11 per day in China, $1.89 per day in Ghana and $1.56 a day in India. Consequently, using the empirical data provided by the WRI-IFC study, some authors estimated that the four billion people living in the BoP demographic earn less than $5.00 per day (Rangan, Chu & Petkoski, 2011; Simanis, 2010) while others suggested a more conservative estimate of less than $8.00 per day (Dreier et al., 2009; Jenkins, Ishikawa, Barthes & Giacomelli, 2008).

The joint WRI-IFC study further estimated the aggregate global market potential of the BoP market at five trillion dollars. In addition, the study segmented the BoP market into six income segments including the BOP500, BOP1000, BOP1500, BOP2000, BOP2500 and BOP3000 (Hammond et al., 2007). These income and market definitions are helpful. However, London and Hart (2011) caution that over-emphasizing PPP demarcation lines "… ultimately guides the conversation into an arena of diminishing returns," and that attempting to precisely calculate market size is "…fraught with difficult-to-defend assumptions and questionable attempts at pseudoprecision". Therefore, the PPP demarcation lines should be "…viewed as sources of empirical and illustrative convenience, rather than as a rigid definition because income provides a relatively narrow perspective concerning a more complex phenomenon" (p. 7).

Thus, instead of focusing on rigid income demographics, London and Hart (2011) propose that the BoP demographic represents the world population excluded from global capitalism and a demographic of people who conduct business in the extralegal or informal economy. Moreover, Simanis (2010) claimed that the

debate over income and market potential provides limited value when crafting strategy to reach diverse BoP markets.

Changing Demographics and Market Growth Rates

As growth rates have slowed in developed markets in Europe and North America, multinational corporations (MNCs) have increasingly turned to emerging markets (EMs) in developing countries such as China, India, Brazil and Russia. In doing so, they have typically focused on the wealthy at the top of the economic pyramid and the rising middle class rather than the BoP market (London & Hart, 2004; Prahalad & Lieberthal, 1998). MNCs have relied primarily upon the transnational approach when developing global strategy to reach these top and middle of the pyramid markets (Tallman, 2001). This approach is based upon organizational capabilities such as global efficiency, national responsiveness and worldwide learning (Bartlett & Ghoshal, 1989).

In order to target the BoP demographic, London and Hart (2004) suggest that the transnational approach is inadequate and that a new capability and innovative strategies are needed to penetrate this global demographic of people. Focusing global strategy on targeting the BoP demographic is attractive to MNCs because there is an estimated four billion people living in the BoP demographic with an aggregate global market potential of five trillion dollars (Hammond et al., 2007; Prahalad & Hart, 2002). Thus, it is important to compare the two approaches to global strategy for MNCs to understand the differences and potential opportunities and challenges associated with the evolution from the transnational approach to the BoP approach.

The Transnational Approach to Global Strategy

According to Bartlett and Ghoshal (1989), three central capabilities comprise the transnational approach to global strategy, and firms following this approach must simultaneously develop these capabilities. First, transnational firms must seek global efficiency by centralizing control and decision-making and leveraging economies of scale and scope. By centralizing its resources and capabilities, the transnational firm can achieve efficiency through exploiting economies of scale in all its activities. Developing world-scale economies allows transnational firms to lower costs, and centralization of knowledge and skills leads to greater efficiency in managing innovations. As a result, the firm can ultimately develop new products and processes quickly and at a relatively low cost.

Although centralization is integral for efficiency, resources and capabilities are not necessarily centralized in the firm's home market. For example, world-scale manufacturing plants may be located in a low-wage country such as Singapore, and more advanced technological processes may be centralized in Japan or Germany. Such flexible centralization augments the benefits of economies of scale by providing access to the best resources and capabilities, which may be located across country borders. In addition, the transnational firm's resources and capabilities that drive global efficiency are integrated through strong interdependencies. The world-scale manufacturing plant in Singapore may depend on a world-scale component plant in Germany, and global sales subsidiaries may depend on Singapore for finished products. Therefore, the distribution of the transnational firm's resources is best described as an integrated network (Bartlett & Ghoshal, 1989).

The transnational model also requires that firms develop national responsiveness. This capability allows transnational firms to be sensitive to local needs and opportunities across the various global markets in which they compete. However, the need for responsiveness is complex. For example, customers from different markets around the world demand differentiated products that are equal in quality and price to global products. Frequent changes in economic, social, technological and political environments further complicate organizational ability to successfully develop national responsiveness. It is insufficient for firms to be responsive at a single point in time. Rather, companies must develop the organizational capability in order to remain responsive as consumer tastes change, technologies evolve, regulations increase and exchange rates fluctuate. Flexibility across the value chain is

therefore important, and it is central to overall strategy (Amis & Silk, 2010; Bartlett & Ghoshal, 1989).

There are many ways an organization may build flexibility. For instance, transnational firms plan for excess capacity in manufacturing plants, and adopt flexible automation to handle fluctuations in supply and demand. Further, they may design products with a modular format so that basic components and functions are standardized whereas other features and styles can be differentiated to appeal to specific markets. However, the transnational firm recognizes that differentiation is not essential in all markets and appropriately adjusts the roles of its various national operations. As a result, some national subsidiaries operate relatively autonomously and are encouraged by headquarters to differentiate while others implement centralized decisions and adopt standardized global products. Therefore, various subsidiaries assume different roles within the transnational firm. Some may be strategically located or resource rich and play a global role within the firm while others may be given a more autonomous role. Transnational firms appropriately determine the roles of their subsidiaries in order to effectively develop national responsiveness (Bartlett & Ghoshal, 1989).

Finally, the transnational firm leverages worldwide learning to develop creative solutions and diffuse innovations worldwide. These firms simultaneously transfer specialized knowledge throughout the organization and connect critical resources and capabilities across country borders. Worldwide learning benefits companies beyond merely identifying opportunities across different markets. Instead, the capability enables firms to obtain valuable market data and competitive intelligence and access scarce knowledge and expertise that may not be available in their home market. Thus, global subsidiaries provide the transnational firm with important information and innovative ideas that can be managed and shared globally (Bartlett & Ghoshal, 1989; Boudreau, Loch, Robey, & Straud, 1998).

Transnational firms further recognize that market demands and opportunities vary widely across countries and that different areas within the organization possess different capabilities. Therefore, knowledge is jointly developed within the transnational firm so that innovative products and services can be shared on a worldwide basis. These transnational innovations are locally leveraged and globally linked, and the firm leverages the resources and capabilities of its subsidiaries to create and jointly implement innovations globally. Consequently, to capitalize on worldwide learning, the transnational firm combines the resources and capabilities of its central national headquarters with its globally dispersed subsidiaries in order to develop innovative solutions. The innovative products and processes are then diffused globally throughout the entire corporation. Thus, organizational learning is shared on a worldwide basis (Bartlett & Ghoshal, 1989; Hocking, Brown & Harzing, 2007).

The BoP Approach to Global Strategy

It is the simultaneous pursuit of global efficiency, national responsiveness and worldwide learning that characterizes the transnational approach to global strategy. The BoP approach, on the other hand, may require a capability beyond global efficiency developed through centralized control, the adaptive skills of national responsiveness or the sharing and diffusion of knowledge through worldwide learning. In fact, London and Hart (2004) found that the capabilities comprising the transnational approach were not only insufficient for MNCs targeting BoP markets, but may even constrain their efforts.

For example, whereas the transnational approach focuses on flexible centralization and national responsiveness, a decentralized, smaller-scale approach may be more appropriate for BoP markets. Leveraging global efficiency and sharing existing knowledge on a worldwide basis can prevent success in BoP markets because deep listening and local knowledge generation are needed to succeed in these markets. Therefore, the BoP approach tends to require more of a bottom-up solution rather than a standardized global solution or even a local adaptation of a centrally developed solution (Christensen, Craig, & Hart, 2001; London & Hart, 2004).

The BoP approach does not rely upon worldwide sharing of

products and processes or knowledge transfer through diffusing or adapting existing business models across the entire organization. Firms targeting BoP markets cannot simply import the same business model from middle or top of the pyramid markets. Additionally, national responsiveness may also prevent success in BoP markets, particularly where existing solutions and business models are not adequate for the BoP market. Because transnational capabilities alone are insufficient for penetrating BoP markets, a new global capability is needed. This new capability is called social embeddedness, or native capability (Hart & London, 2005; London & Hart, 2004; Prahalad & Lieberthal, 1998).

Native capability is central to the BoP approach to global strategy. It enables an organization to build a web of trusted connections with a wide range of local market participants and become embedded within the local BoP market context. As a result, native capability allows the organization to gain deep understanding of the local environment, build on the local social infrastructure and generate bottom-up solutions. Local market participants view the organization as a natural part of the local landscape instead of a foreign or alien force that does not fit within the local market context. Because embeddedness within this local environment takes time to develop, it is difficult for competitors to imitate. Thus, the deep understanding and integration within the local market can be a source of competitive advantage for the firm that develops native capability (Hart & London, 2005; London & Hart, 2004).

Organizations that develop native capability are able to craft strategies based upon the knowledge and resources that exist in the external environment. This approach challenges and extends the conventional transnational model, which is a more top-down, internally focused approach that leverages and transfers knowledge and resources within firm boundaries. Whereas the transnational approach focuses on transferring proprietary resources within the firm, the BoP approach is dependent upon accessing knowledge and resources beyond firm boundaries. Therefore, competitive advantage is founded on developing trust and social capital instead of protecting existing patents or proprietary technology (Hart & London, 2005; London & Hart, 2004).

For firms to develop this new capability, they must implement strategies that leverage the inherent strengths of the local market context. These strategies include collaborating with non-traditional partners, co-inventing custom solutions, building local capacity, avoiding dependence upon central institutions, and creating social, not legal, contracts. Consequently, implementing the strategies enables firms to develop contextualized solutions to common problems that respect the culture and diversity of the local market context. These strategies are essential for developing native capability and allow firms to become indigenous to the locations in which they compete (Hart & London, 2005; London & Hart, 2004).

First, to develop native capability, firms must collaborate with non-traditional partners. It is common for firms to seek traditional corporate partners to fill expertise and resource gaps when encountering new challenging environments (Eisenhardt & Schoonhoven, 1996). Further, governments often require that multinational corporations engage a local corporate partner to ensure access in emerging economies (Blodgett, 1991). However, when targeting the BoP market, firms may need to expand their scope of alliance partners. London and Hart (2004) found companies that successfully serve the BoP market significantly rely upon non-traditional partners such as non-profit organizations, community groups and even local and village-level governments. Successful companies did not rely on traditional partners such as governments or large corporations because they did not have pertinent business knowledge of the BoP market in their own country. The non-traditional partners, on the other hand, were able to provide crucial information regarding the BoP market context such as the general business environment and target customers.

Hart and Sharma (2004) suggest that working with non-traditional partners enables firms to develop radical transactiveness (RT). RT is the ability to engage non-traditional partners, or fringe stakeholders, in a two-way dialogue to continuously acquire and combine knowledge for the purpose of managing disruptive change and creating competitive imagination. In BoP markets, fringe stakeholders often hold knowledge and perspectives that are important for identifying both potential problems

and innovative opportunities. By integrating the voices and concerns of non-traditional partners, RT enables firms to deepen relationships and develop goodwill with diverse stakeholders.

Although non-traditional partnerships are important for success in BoP markets, they can be difficult to manage. For example, while corporations and socially oriented organizations have begun to collaborate more frequently, tensions often arise in non-profit-corporate alliances due to underlying differences in goals and orientations. Therefore, collaboration with non-traditional partners requires careful design and ongoing attention to effectively share knowledge and maximize impact (Brugmann & Prahalad, 2007; London & Rondinelli, 2003).

Second, firms must co-invent, or co-create, custom solutions in order to develop native capability. Prahalad and Ramaswamy (2002) suggest there are four building blocks for co-creating value, including dialogue, access, risk reduction and transparency. These building blocks allow firms to understand unique social and culture contexts, broaden their view of business opportunities, reduce risk exposure and increase value to customers. Therefore, as firms pursue BoP markets, Prahalad (2010) claims that firms should co-create value in order to gain local knowledge, access context-related skills and resources, reduce capital requirements, develop trust and become a locally relevant market participant.

Co-creation extends far beyond the transnational concept of national responsiveness, which adapts pre-existing solutions to local conditions. Instead of imposing top-down, pre-existing solutions, the BoP approach stresses leveraging local partnerships to co-create every aspect of the product or service. Therefore, local partners contribute information and input into everything from product design to pricing to distribution. As a result, firms tend to allow the product and business model to coevolve. Successful ventures often allow everyone involved in the co-creation process to make money, and these initiatives ultimately become embedded in the local market through developing a product or service that is relevant to local customers (Hart & London, 2005; London & Hart, 2004).

Third, developing native capability requires that companies build local capacity. Whereas the transnational approach focuses on sharing resources internally, native capability requires local capacity building through sharing resources outside firm boundaries. Thus, the BoP approach considers economic as well as social performance. Firms can pursue this dual focus by integrating local capacity building directly into the business model rather than through traditional corporate philanthropy. For example, capacity building can include training programs for BoP entrepreneurs, providing opportunities for existing institutions such as local microfinance organizations and filling gaps in local infrastructure through providing basic services. A firm could also create strategic bridges between diverse stakeholders, which may be struggling to cooperate due to mistrust, tradition, logistical problems, power imbalance or lack of resources and expertise. The strategic bridge may allow the firm to further its own interests while simultaneous serving the interests of other stakeholders (London & Hart, 2004; Sharma, Vredenburg & Westley 1994; Westley & Vredenburg, 1991).

Fourth, firms must eschew dependence upon central institutions to develop native capability. These institutions include national governments, corrupt regimes and central infrastructure planning. By avoiding dependence upon these institutions, firms can fly under the radar by circumventing common problems such as instability, corruption and bureaucracy. Firms that design large-scale products that offer nationwide, centralized solutions to address problems such as energy or clean water often target large institutions in developing countries. However, dependence upon unstable and corrupt governments can be detrimental to the company, especially where politicians or officials may benefit politically or economically from delaying or even derailing a venture. In some cases, this dependency could put the viability of the company at risk. Launching a business on a smaller-scale, on the other hand, and allowing it to grow unhindered by institutional intervention allows firms to bypass unnecessary complexity and corruption associated with institutional dependency. Therefore, a small-scale venture with a product or service that is directly affordable by the end consumer is less likely to get enmeshed in bureaucracy and corruption (Hart & London, 2005).

Finally, firms should seek to develop social, not legal, contracts when conducting business in BoP markets. As previously

discussed, people living in the BoP demographic tend to transact business in the extralegal or shadow economy due to the absence of enforceable contract law and property titles. Extralegal or shadow economies comprise a significant percentage of the overall economy for many developing nations. As a result, social capital is central to how BoP markets operate. BoP markets lack various legal resources, but they are rich in other areas such as interpersonal relationships and local market intelligence (De Soto, 2000; Schneider & Enste, 2000; Schneider, Buehn & Montenegro, 2010; Viswanathan, 2007).

Western-style institutions are typically unavailable in BoP markets, and legally enforceable business contracts are not common. Therefore, firms must leverage the existing social infrastructure when launching ventures in BoP markets instead of attempting to implement Western-style business contracts. For example, the Grameen Bank in Bangladesh pioneered a peer lending model in banking. Since BoP entrepreneurs typically do not have collateral, legal contracts are impractical. Therefore, the peer lending model leverages social capital by lending to small groups of business owners and making the loan recipients mutually responsible for repayment of loans within the group. Borrowers are consequently subject to social, not legal, contracts, and the business model is built upon social capital and trust (Hart & London, 2005).

Conclusions

Many differences exist between the two approaches to global strategy and range from organizational structure and design to business model development. For instance, while the transnational approach relies on centralized control to maximize economies of scale and scope and top down implementation, the BoP approach requires smaller scale, decentralized control and bottom-up implementation. The two approaches also handle knowledge acquisition and transfer very differently. The transnational firm transfers knowledge within organizational boundaries while successful implementation of the BoP approach depends upon accessing knowledge outside organizational boundaries. The types and range of partners also differ between the two approaches. The transnational approach typically incorporates traditional corporate partners while the BoP approach requires non-traditional partners such as non-profits and community groups.

Business model development varies significantly between the two approaches to global strategy. Whereas the transnational approach adapts current business models through national responsiveness and worldwide learning mechanisms, the BoP approach involves innovating new business models through local co-creation and becoming socially embedded in the local context. There is a stark contrast between the types of contracts utilized by the different global approaches. Legal contracts are typical for the transnational approach. However, due to the lack of enforceable contract law and property titles in low-income markets, the BoP approach relies upon existing social capital to form a socially-oriented contract between trusted parties. Organizational objectives and competitive advantage are also more socially oriented in the BoP approach. The various differences between the transnational approach and BoP approach to global strategy are illustrated in the following table.

Table 1: Differences between the Transnational Approach and BoP Approach to Global Strategy

Differences in Global Strategy		
Transnational Approach	vs.	BoP Approach
(1a) Centralized control (economies of scale & scope)		(1b) Decentralized control (smaller scale)
(2a) Top-down implementation		(2b) Bottom-up implementation
(3a) Transfers knowledge within firm boundaries		(3b) Accesses knowledge outside firm boundaries
(4a) Traditional partners (corporations)		(4b) Non-traditional partners (non-profits, community groups)
(5a) Sharing resources internally		(5b) Sharing resources outside firm boundaries (local capacity building)
(6a) National responsiveness (adaptation)		(6b) Social embeddedness (deep understanding)
(7a) Worldwide learning (adapt current business models)		(7b) Local co-creation (innovate new business models)
(8a) Legal contracts		(8b) Social contracts
(9a) Competitive advantage from proprietary technology/trade secrets		(9b) Competitive advantage from trust and social capital
(10a) Financial objectives		(10b) Financial and social objectives

Given the extent to which the BoP approach has diverged from the transnational approach to global strategy, MNCs face many

challenges when competing in BoP markets. In particular, the BoP approach breaches many of the assumptions associated with serving traditional top and middle of the pyramid markets. In order to successfully enter BoP markets, MNCs must shed established mindsets, systems and metrics. These entrenched corporate paradigms can be extremely difficult to change. Although there is a compelling economic rationale for MNCs to target the BoP market, many challenges remain for MNCs determined to successfully implement the BoP approach to global strategy that will enable these firms to capitalize on the global opportunities.

For instance, MNCs must increase local engagement and commitment in BoP markets in order to compete successfully. A recent study by Schuster and Holtbrügge (2012) supports this idea. From their case study research, they found that MNCs go beyond local manufacturing and increase their commitment to BoP markets by developing multiple partnerships from various sectors in order to acquire market-specific knowledge. The higher level of commitment includes activities such as sharing resources externally and aligning with partners' social goals. This commitment can allow the MNC to tap into social networks and access local knowledge resources to overcome market barriers.

Business model innovation represents another significant challenge because the BoP approach requires a market entry strategy beyond importing and adapting business models. According to London (2010), firms must fundamentally rethink and innovate their business models when targeting BoP markets. This means MNCs cannot merely rely upon worldwide learning and sharing knowledge within company borders to incrementally adapt existing business models. Finally, MNCs face a challenging legal and technological environment in the absence of formal contracts and competitive advantage that depends more on trust and social capital rather than proprietary technology and trade secrets.

Although the BoP approach to global strategy presents many challenges for MNCs, significant opportunities exist in the BoP market. Hammond et al. (2007) demonstrate that there are approximately four billion people in the BoP demographic, and the size of the BoP demographic represents the majority of the population in the developing countries of Africa, Asia, Eastern Europe and Latin America and the Caribbean. For instance, the BoP demographic in Asia represents 83% of the region's population and a staggering 95% of the population in Africa. Thus, the BoP demographic provides MNCs with billions of new consumers.

The value of the BoP market represents a significant economic opportunity as the global market potential of the BoP market is estimated at five trillion dollars. This market comprises a substantial percentage of the purchasing power in many developing countries. For instance, the BoP market represents 42% of the aggregate purchasing power in Asia and 71% of the aggregate purchasing power in Africa. On a sector basis, the BoP food market alone is almost a three trillion dollar market, and the housing and energy markets are valued at $331.8 billion and $433.4 billion, respectively (Hammond et al., 2007).

Further economic opportunity lies below the surface in BoP markets. Due to lacking access to enforceable contract law, property titles and live capital, people living in the BoP demographic tend to transact business in the extralegal or shadow economy. Extralegal or shadow economies comprise a significant percentage of the overall economy for many developing countries, and business owners in industries ranging from agriculture to real estate transact business in this informal environment. Much of the resources owned by individuals living in developing countries is considered dead capital. For instance, dead capital in the Philippines is estimated at $132.9 billion and $241.2 billion in Egypt. MNCs may be able to generate additional economic opportunity through unlocking trillions of dollars in dead capital trapped in the extralegal market (De Soto, 2000; Schneider et al., 2010).

A final opportunity for MNCs serving BoP markets is reverse innovation, or trickle-up innovation. MNCs have traditionally created products for developed markets and then sold them in developing economies with some local adaptations. Reverse innovation is just the opposite. It is where products are engineered for emerging markets and then are later sold in developed markets. Thus, products created for BoP markets have the potential to trickle-up to developed markets as GE's has experienced with

some of its healthcare innovations developed for emerging markets and are not sold in the US (Immelt, Govindarajan, & Trimble, 2009; Prahalad, 2010).

In conclusion, MNCs have increasingly turned to emerging markets in developing countries as growth rates have slowed in developed economies. These firms have traditionally relied upon the transnational approach to global strategy to target consumers at the top and middle of the economic pyramid. However, the transnational approach has proven inadequate as MNCs have begun to target the BoP demographic. There are many differences between the transnational and BoP approach to global strategy. As a result, MNCs face a range of challenges in BoP markets. Yet significant economic opportunities exist for innovative firms that have the ability to overcome the various challenges and target this enormous demographic.

References

Amis, J., & Silk, M. L. (2010). Transnational organization and symbolic production: Creating and managing a global brand. *Consumption, Markets & Culture*, *13(2)*, 159-179.

Bartlett, C., & Ghoshal, S. (1989). *Managing across borders*. Boston, MA: Harvard Business School Press.

Blodgett, L. (1991). Partner contributions as predictors of equity share in international joint ventures. *Journal of International Business Studies*, *22(1)*, 63-78.

Boudreau, M., Loch, K. D., Robey, D., & Straud, D. (1998). Going Global: Using information technology to advance the competitiveness of the virtual transnational organization. *Academy Of Management Executive*, *12(4)*, 120-128.

Brugmann, J., & Prahalad, C. (2007). Cocreating business's new social compact. *Harvard Business Review*, *85(2)*, 80-90.

Chikweche, T., & Fletcher, R. (2010). Understanding factors that influence purchases in subsistence markets. *Journal of Business Research*, *63(6)*, 643-650.

Christensen, C., Craig, T., & Hart, S. (2001). The great disruption. *Foreign Affairs*, *80(2)*, 80-95.

De Soto, H. (2000). *The mystery of capital: Why capitalism triumphs in the west and fails everywhere else*. New York: Basic Books.

Dreier, L., Subramanian, A., Baarn, J., Islam, P., Raghuraman, A., Jain, N., Leurent, H., Nayyar, S., Roettger, C., Samans, R., Vasantu, N., Rajagopal, S., and Mens, M. (2009). *The next billions: Business strategies to enhance food value chains and empower the poor.* Geneva: World Economic Forum and The Boston Consulting Group.

Eisenhardt, K., & Schoonhoven, C. (1996). Resource-based view of strategic alliance formation: strategic and social effects in entrepreneurial firms. *Organization Science*, *7(2)*, 136-150.

Hammond, A., Kramer, W., Katz, R., Tran, J., & Walker, C. (2007). *The next four billion: Market size and business strategy at the base of the pyramid*. Washington, D.C.: World Resources Institute and International Finance Corporation.

Hart, S., & London, T. (2005). Developing native capability. *Stanford Social Innovation Review*, *3(2)*, 28-33.

Hart, S., & Sharma, S. (2004). Engaging fringe stakeholders for competitive imagination. *Academy Of Management Executive*, *18(1)*, 7-18.

Hocking, J. B., Brown, M., & Harzing, A. (2007). Balancing global and local strategic contexts: Expatriate knowledge transfer, applications, and learning within a transnational organization. *Human Resource Management*, *46(4)*, 513-533.

Immelt, J. R., Govindarajan, V., & Trimble, C. (2009). How GE Is Disrupting Itself. *Harvard Business Review*, *87(10)*, 56-65.

Jenkins, B., Ishikawa, E., Barthes, E., & Giacomelli, M. (2008). *Supporting entrepreneurship at the base of the pyramid through business linkages*. Rio de Janeiro: International Finance Corporation, Harvard Kennedy School and International Business Leaders Forum.

Karnani, A. (2006). Misfortune at the Bottom of the Pyramid. *Greener Management International*, *51*, 99-110.

Karnani, A. (2007). The Mirage of Marketing to the Bottom of the Pyramid: How the private sector can help alleviate poverty. *California Management Review*, *49(4)*, 90-111.

London, T. (2010). Proceedings from the Academy of Management Annual Meeting '10: *Business model development for base-of-the-pyramid market entry*.

London, T., & Hart, S. (2004). Reinventing strategies for emerging markets: Beyond the transnational model. *Journal of International Business Studies*, *35(5)*, 350-370.

London, T., & Hart, S. (2011). Creating a fortune with the base of the pyramid. In London, T, & Hart, S (Eds.), *Next generation business strategies for the base of the pyramid: New approaches for building mutual value* (1-16). Upper Saddle River, N.J.: FT Press.

London, T., & Rondinelli, D. (2003). Partnerships for learning. *Stanford Social Innovation Review*, *1(3)*, 28-35.

Prahalad, C. K. (2010). *The fortune at the bottom of the pyramid: Eradicating poverty through profits* (2nd ed.). Upper Saddle River, N.J.: Wharton School Publishing.

Prahalad, C. K., & Hammond, A. (2002). Serving the world's poor, profitably. *Harvard Business Review*, 80(9), 48-57.

Prahalad, C.K., & Hart, S. (2002). The fortune at the bottom of the pyramid. *Strategy+Business*, *26*, 54-67.

Prahalad, C.K., & Lieberthal, K. (1998). The end of corporate imperialism. *Harvard Business Review*, *76(4)*, 68-79.

Prahalad, C.K., & Ramaswamy, V. (2002). The co-creation connection. *Strategy+Business*, *27*, 50-61.

Rangan, V. K., Chu, M., & Petkoski, D. (2011). Segmenting the Base of the Pyramid. *Harvard Business Review*, *89(6)*, 113-117.

Schneider, F., & Enste, D. (2000). Shadow economies: Size, causes and consequences. *Journal of Economic Literature*, *38(1)*, 77-114.

Schneider, F., Buehn, A., & Montenegro, C. (2010). New estimates for the shadow economies all over the world. *International Economic Journal*, *24(4)*, 443-461.

Schuster, T., & Holtbrügge, D. (2012). Market entry of multinational companies in markets at the bottom of the pyramid: A learning perspective. *International Business Review*, *21(5)*, 817-830.

Sharma, S., Vredenburg, H., & Westley, F. (1994). Strategic bridging: A role for the multinational cooperation in third world development. *Journal of Applied Behavioral Science*, *30(4)*, 458–476.

Simanis, E. (2010). *The anatomy of market creation: Insights from the base of the pyramid* (Doctoral dissertation). Cornell University, New York.

Tallman, S. (2001). Global strategic management. In M. Hitt, R. Freeman, & J. Harrison (Eds.). *The blackwell handbook of strategic management* (464–490). Oxford: Blackwell Publishers Ltd.

Viswanathan, M. (2007). Understanding product and market interactions in subsistence marketplaces: A study in south India. In Rosa, J., & Viswanathan, M. (Eds.). *Product and market development for subsistence marketplaces* (21-57). Advances in International Management Series, Cheng, J. & Hitt, M. (Series Eds.). Oxford: Elsevier.

Viswanathan, M., & Rosa, J. (2007). Product and market development for subsistence marketplaces: Consumption and entrepreneurship beyond literacy and resource barriers. In J. Rosa & M. Viswanathan (Eds.). *Product And Market Development For Subsistence Marketplaces* (1-17). Advances in International Management Series. J. Cheng & M. Hitt (Series Eds.). Oxford: Elsevier.

Viswanathan, M., Sridharan, S., & Ritchie, R. (2010). Understanding consumption and entrepreneurship in subsistence marketplaces. *Journal of Business Research*, *63(6)*, 570-581.

Westley, F., & Vredenburg, H. (1991). Strategic bridging: The collaboration between environmentalists and business in the marketing of green products. *Journal of Applied Behavioral Science*, *27(1)*, 65–90.

REVIEWERS' ACKNOWLEDGEMENT

This edition would not be possible without the help of our reviewers who provide valuable insights to strengthen the contributors' work and add value to the Journal. The TJB extends its gratitude to the following reviewers:

Erin McLaughlin

Brian Polding

Chip Baumgardner

John Rudnick

Lucas Kavlie

Susan Baxter

Dean Frear

Helen MacLennan

Julie Hinders

Ann Marie Ade

Shannon Creighton

Anupama Rajesh

Jacquelyne Lewis

Ch. Mahmood Anwar

Francisco Barroso-Tanoira

Rajesh Khajuria

Therese Martin

Ana Tomovska Misoska

Gabor Andrasi

Brad Kleindl

Alisa Hunt

Robert Robertson

Leila Sopko

Rachel Byers

Aaron Glassman

Jeanette Landin

Edward Brown

Azam Bejou

Jackie Deem

Anita Satterlee

Michelle Wieser

Ernesto Gonzalez

Douglas Stein

Arlene Goodman

Marvin Ludlum

Timur Narbaev

Denise Smith

Margaret Case

C'Lamt Ho

John Russell

Broderick Martinez

Betsy Wampler

Thomas Varghese

Ashok Sharma

Mihai Nica

Carrie Jaeger

Alyncia Bowen

Jeff Savage

Nicole Cornell Sadowski

Stephanie Nesbitt

Deborah Dunn

Jimmie Warren

EunSu Lee

Debra Salsi

C Moorer

Nidhal Bouazizi

Penny Braboy

Wendy Finlay

Miodraga Stefanovska-Petkovska

V Luthar

Michael Clarizio

Allan MacKenzie

Bright Linf

J Critchett

Jimmie Warren

Wendine Bolon

Parth Patel

W Broucek

J Cantora

Joy Peluchette

LIBERTY UNIVERSITY

SCHOOL *of* BUSINESS

DOCTOR OF BUSINESS ADMINISTRATION

Liberty's Doctor of Business Administration degree program offers specializations in today's fastest growing fields, from accounting to information systems. The program is offered 100 percent online to accommodate working professionals — with optional on-campus intensives in Lynchburg, Va.

ONLINE FACULTY POSITIONS AVAILABLE

Since our inception, Liberty University's focus has been changing students' lives through Christ-centered education. With a focus on educating the whole person, faculty within the School of Business train students with the knowledge, skills, and biblical values necessary to impact the world for Christ. Applicants may inquire at *SchoolofBusiness@liberty.edu*. Applications can be submitted at *Liberty.edu/Jobs*, posting #A00048P, under adjunct faculty.

HIGH-NEED FACULTY AREAS

- Terminally degreed individuals in *accounting*, *cybersecurity, finance*, *healthcare administration, information systems*, *information technology*, and *leadership*.
- Faculty with *strong research experience* using quantitative or qualitative methodology
- *Experience serving* as dissertation committee members or chairs

Proudly sponsoring ACBSP • *Training Champions for Christ since 1971*

ACCREDITATION COUNCIL FOR BUSINESS SCHOOLS AND PROGRAMS
World Headquarters • 11520 West 119th Street • Overland Park, KS 66213 USA
USA • Belgium • Perú • China
acbsp.org • membership@acbsp.org