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THE INFLUENCE OF FINANCIAL 'SKIN IN THE GAME' ON NEW VENTURE CREATION

Casey J. Frid, Pace University, USA
David M. Wyman, College of Charleston, USA
William B. Gartner, Copenhagen Business School, Denmark + California Lutheran University, USA

ABSTRACT

A common theme in entrepreneurship research is that the founder must be committed in order for a new venture to succeed. Although investments of time and sweat equity can indicate commitment, external stakeholders may prefer founders who have made a significant, personal financial stake in their nascent ventures. This personal financial commitment is known as "skin in the game." Founders that invest more of their own money into their ventures signal greater commitment to potential business partners, suppliers, and resource providers.This study examines the amount of personal funds invested by 1,214 nascent entrepreneurs in the United States, between the years of 2005 and 2012. Findings demonstrate that the dollar amount of personal money invested prior to launch does not significantly impact the creation of new firms. However, nascent entrepreneurs that invest larger amounts as a proportion of their net income are more likely to succeed and are less likely to disengage from the process. Personal funds invested as a proportion of net income may therefore be a better measure of future success than the precise amount. This study also shows that the founder's human capital, perceptions of community support, and industry characteristics influence startup outcomes.

INTRODUCTION

Research on entrepreneurial finance has found that the growth, performance, and survival of emerging organizations are correlated with higher levels of capital investment (Cassar, 2007; Parker & Belghitar, 2006; Reynolds, 2011). For most startups, the principal source of financing comes from the founder's personal savings (Gartner, Frid, & Alexander, 2012). The amount of personal money invested may signal the entrepreneur's commitment to the venture, as well as the quality of the business opportunity, and both are important criteria for external stakeholders' decision to invest (Prasad, Bruton, & Vozikis, 2000).

Whereas an entrepreneur's personal financial commitment toward his or her firm has been linked to increased attention from external investors (Atherton, 2012), the impact of such commitments on startup outcomes prior to launch is less understood. Examining nascent entrepreneurs' use of personal funds before a firm is created (i.e., during the gestation phase of the venture creation process) eliminates survivor bias. This allows us to ascertain how the use of personal funds affects both successful new firm creation and disengagement from the startup process. Additionally, the extent to which nascent entrepreneurs' personal investments affect

startup rates across the entire U.S. economy is unknown. Measuring this is important given that most startups are funded in part by personal savings.

This study examines the financing of emerging ventures from the standpoint of the personal financial resources of the nascent entrepreneur. Given the popular adage that "skin in the game" signals entrepreneurial commitment to the venture, we investigate whether a founder's investment of personal funds is related to new firm creation. We use data from the Panel Study of Entrepreneurial Dynamics II (PSED II). The PSED II is a longitudinal dataset of 1,214 nascent entrepreneurs who, between 2005 and 2012, acted to create new ventures. The PSED II is designed to provide a comprehensive description of the business creation process through its nascent stages by tracking individual entrepreneurial outcomes over the duration of the study (Reynolds & Curtin, 2008), and it allows us to (1) examine the effects of personal financing before a firm is created, and (2) generalize our findings to the entire population of individuals in the United States attempting to start businesses.

This study contributes to research on the concept of organizational emergence and the relative importance of financial capital (Gartner, Frid & Alexander, 2012; Kim, Aldrich & Keister, 2006). Our findings inform educators and policymakers as to the pervasiveness of the use of personal funds in the U.S. economy, how this affects startup success rates, and how characteristics of the entrepreneur and industry factors come into play.

HYPOTHESES DEVELOPMENT

The resource based theory of the firm is based upon the premise that the "transformation of an idea into an organization requires that entrepreneurs acquire resources" (Aldrich & Martinez, 2001; Barney, 1991). Although some level of financial capital is usually required to start a new venture, nascent entrepreneurs face a paradox—how do they acquire needed resources when they lack legitimacy in the eyes of the resource gatekeepers (Tornikoski & Newbert, 2007). The problem of resource acquisition would seemingly be amplified in cases where nascent entrepreneurs invest limited financial capital in their new organization.

Also, the process of venture formation is inherently diverse. Entrepreneurs operate in multi-dimensional environments with differing capital requirements, resources and structures (Cassar, 2004; Gartner, 1985). Theoretically, this personal financial commitment is a testament to the entrepreneur's self-belief or commitment in the new venture. Most new ventures are founded using the entrepreneur's personal savings (Berger and Udell, 1998; Carter and van Auken, 2005; Cassar, 2004; Gartner, Frid, & Alexander, 2012). A personal, financial stake in an emerging organization signals commitment to the venture, and also distributes the risk of entrepreneurship across both internal and external stakeholders (Atherton, 2012; Myers & Majluf, 1984). However, it is unclear whether such signaling stems from a specific amount of personal funds invested, or from funds invested as a proportion of net income. If successful outcomes from entrepreneurial activity during gestation depend on a specific amount invested, then capital constrained individuals will have difficulties starting new firms. On the other hand, if outcomes are linked to personal investments as a proportion of net income, then capital constraints should be of less concern to outside investors. Prior research has shown that a better signal of commitment is the proportion of one's wealth invested in a nascent venture (Prasad,

Bruton, & Vozikis, 2000). Thus, we adopt two measures of "skin in the game" as personal financial resources (personal savings + credit card debt), as well as personal financial resources invested as a percentage of household income. We hypothesize that the level and percentage of a founder's personal financial resources invested is a signal to external investors, customers and other stakeholders that positively impacts the firm's viability.

> *H_1: Nascent entrepreneurs that invest larger amounts of personal funds in their ventures are more likely to start new firms rather than disengage from the process.*
> *H_2: Nascent entrepreneurs that invest a larger proportion of their net income into their ventures are more likely to start new firms rather than disengage from the process.*

METHODOLOGY

The setting for this study is nascent entrepreneurship. Nascent entrepreneurs are individuals who are in the process of creating a new venture, but the venture is not yet an operational firm (Reynolds & White, 1993). The outcomes from actions undertaken during this phase are the successful creation of a new firm, or disengagement from the process. Examining nascent entrepreneurs' personal financial contributions to their ventures in this context avoids survivor bias that is inherent to prior studies. The characteristics and choices of founders are also likely to leave an imprint on future structures and firm practices, and the consequences of their activities cannot be adequately understood without studying them in the months immediately following the decision to start a business (Davidsson & Klofsten, 2003; Yang & Aldrich, 2012).

Sample

The PSED II is a representative sample of 1,214 U.S. working-age adults who were actively engaged in creating new ventures between 2005 and 2012. The University of Michigan Institute for Social Research identified the nascent entrepreneurs through a screening process where 31,845 individuals were contacted through a random digit dialing process. Individuals who met four criteria were included in the final sample: (1) they considered themselves as involved in creating a firm, (2) they had taken some startup activity in the past 12 months, (3) they expected to own all or part of the new firm, and (4) their efforts had not resulted in an operating business (Reynolds & Curtin, 2007).

The next step took place between 2005 and 2012 when each of the 1,214 nascent entrepreneurs were interviewed for 60 minutes, in 12-month intervals. Interviews were discontinued when the nascent entrepreneur either (a) created a new firm or (b) disengaged from the process.

Dependent Variables

The dependent variable "outcome" reflects the results of a nascent entrepreneur's efforts and is coded as "1" for a new firm; "2" for still trying; and "3" for disengagement. The PSED II defines a new firm as income received for six of the past 12 months covering all expenses, including owners' wages and salaries; still trying as devoting more than 160 hours in the past 12 months to the startup, with expectations of 80 or more hours in the next 6 months; and disengagement as answering "yes" to the question, "Would you consider yourself disengaged from the business effort discussed a year ago?" (Reynolds & Curtin, 2008).

Independent Variables

The two independent variables "personal funds invested" are the sum of the total amount of personal savings and credit card funds used between conception of the business idea and success or disengagement. The second independent variable is this sum divided by the respondent's net income. We include credit card funding as part of the nascent entrepreneur's personal contribution because it represents money and risk assumed solely by the founder. While credit cards are technically a form of debt, no external party holds claim on how the funds are used, nor on the venture itself.

Items Q4 and R10 in the PSED II ask respondents, "What is the dollar amount provided by you that came from personal savings?" Items Q7 and R15 ask respondents, "What is the dollar amount provided by you that came from credit card loans?" These were added together for the independent variable in Hypothesis 1. For Hypothesis 2, which looks at the proportion of net income, this dollar amount was divided by net income. Item Z14 asks respondents, "What was your total household income from all sources, and before taxes, last year? Be sure to include income from work, government benefits, pensions, and all other sources for all members of your household." Of the 1,214 respondents in the sample, 1,105 (91 percent) provided an exact amount for their household income.

Human Capital

Human capital extends from prior work, managerial, and startup experience, as well as from formal education and age. Formal academic education that helps nurture complex problem solving skills (explicit human capital) while work, managerial and startup experiences (tacit human capital) enhance domain-specific entrepreneurial skills (Davidsson & Honig, 2003; Grichnik, Brinckmann, Singh, & Manigart, 2014). We control for these human capital effects as they may contribute to signaling to external stakeholders.

"Work experience" is measured by item AH11 and asks, "How many years of work experience have you had in the industry where this business will compete?" Item AH21 measures "managerial experience" and asks, "For how many years, if any, have you had managerial, supervisory, or administrative responsibilities?" Item AH12 measures "startup experience" and asks, "How many other businesses have you helped to start as an owner or part-

owner?" Item QS7 measures "education" and asks, "What is the last grade in school that you completed?" Finally, "age" measures the respondent's age in years at the time of the interview.

Social and Community Support

Theory suggests that founders' activities will be strongly shaped by the contact networks in which they operate (Baker, Miner, & Eesley, 2003) and that the typical nascent entrepreneur has a more limited contact network than experienced entrepreneurs. Thus, an over-reliance on a limited number of resource gatekeepers could lead some to obtain resources at comparatively less favorable terms (Salancik & Pfeffer, 1978).

Also, research indicates that weak ties such as memberships in business networks or stronger ties such as having entrepreneurs as close friends – is a strong predictor of speed of gestation and ensuing nascent success in terms of profitability (Davidsson & Honig, 2003). An extended network of weak ties may be particularly beneficial in providing informational resources to nascent entrepreneurs (Cook & Whitmeyer, 1992; Davidsson & Honig, 2003).

The "social and community support" subscale consists of four items that ask respondents the extent to which they agree or disagree with statements related to the availability of local government, bank, and community support. The Cronbach's alpha for these items was found to be moderately reliable ($\alpha = 0.6955$). Table 1 shows the test correlations and inter-item covariance for the measure.

Items AP6, AP7, AP8, and AP9 ask respondents to rate their agreement on a scale of 1-5 (1=Strongly agree; 5=Strongly disagree) with the following: (1) "Young people in your community are encouraged to be independent and start their own businesses." (2) "State and local governments in your community provide good support for those starting new businesses." (3) "Bankers and other investors in your community go out of their way to help new businesses get started." (4) "Community groups provide good support for those starting new businesses."

Table 1 CRONBACH ALPHA FOR 4-ITEM SCALE: COMMUNITY SUPPORT (0.6955)						
Item	No. Observations	Sign	Item-test correlation	Item-test correlation	Avg. inter-item covariance	Alpha
AP6	1194	+	0.6938	0.4024	0.4638	0.6811
AP7	1189	+	0.7596	0.5207	0.3856	0.6033
AP8	1181	+	0.7212	0.4776	0.4264	0.6319
AP9	1190	+	0.7338	0.5235	0.4200	0.6079
Test Scale					0.4240	0.6955

Individual Characteristics

Characteristics of the nascent entrepreneur have been shown to affect financing and nascent venture outcomes. While black and Hispanic-owned firms are just as likely to apply for loans as white-owned firms, they are less likely to be approved (Coleman, 2002). Personal investment has been found to differ by gender, with 88 percent of women and 70 percent of men investing less than $10,000; and only 12 percent of women and 24 percent of men investing

more than $10,000 (Carter, Shaw, Wilson, & Lam, 2011). Self-efficacy, the belief in one's own ability to achieve set goals, has been shown to increase the likelihood of startup success and growth (Cassar & Friedman, 2009), as have the entrepreneur's intentions for the future growth of the firm.

"Race" is coded as "1" for non-minority, and "2" for minority and is based on item QS9 that asks, "Which of the following best describes your race-White or Caucasian, Black or African American, Asian or Asian American, or some other race?" Item "QSEX" asks the sex of the respondent and is coded as "1" for male, and "2" for female. "Self-efficacy" is a a three-item subscale that asks respondents to rate their agreement on a scale of 1-5 (1=Strongly agree; 5=Strongly disagree) with the following questions: (AY6) "Overall, my skills and abilities will help me start this new business." (AY7) "My past experience will be very valuable in starting this new business." (AY8) "I am confident I can put in the effort needed to start this new business.". Table 2 shows the Cronbach's alpha to be reliable ($\alpha = 0.71$). "Growth intentions" is coded as "1" if the respondent wants to grow the business as large as possible, and "2" if the business is to be kept to a manageable size. It is based on item AT1 that asks, "Which of the following two statements best describes your preference for the future size of this (new) business: I want this (new) business to be as large as possible, or I want a size I can manage myself or with a few key employees?"

Table 2
CRONBACH ALPHA FOR 3-ITEM SCALE: SELF-EFFICACY (0.7059)

Item	No. Observations	Sign	Item-test correlation	Item-test correlation	Avg. inter-item covariance	Alpha
AY6	1214	+	0.8162	0.5962	0.1840	0.5346
AY7	1214	+	0.8370	0.5213	0.1788	0.6542
AY8	1214	+	0.7394	0.4946	0.2627	0.6587
Test Scale					**0.2085**	**0.7059**

Industry Characteristics

We control for the types of nascent ventures that can be started since some ventures are more complex or more expensive to launch than others. The legal form of the business acts as an external signal of legitimacy to outside investors. Also, some firms in the sample are manufacturing ventures that require large capital outlays early in the process, while others are routine start-ups (i.e., businesses that can be run from the home and are based on skills and tools already acquired by the individual). These include barbers, hairstylist, daycare operators, and consultants. We also control for time spent in the start-up process since nascent entrepreneurs in process longer may be starting more complex ventures, or are otherwise investing more personal money as a result of working on it for longer periods of time.

"Legal form" is coded as "1" for a sole-proprietorship or partnership; "2" for an LLC or corporation; and "3" if no legal form has been determined. It is based on item AC1 that asks, "What is the current legal form of the business?". "Industry" is coded as "1" for asset intensive and "2" for non-asset intensive and is based on item AA1 that asks, "What kind of business are

you starting?" Responses to this item were then assigned a NAICS code. "Venture type" is coded as "1" for an independent new business; "2" for a purchase of an existing business; "3" for a franchise; "4" for a multi-level marketing initiative; and "5" for a new business sponsored by an existing business. This is based on item AA10 in the data set. "Years" in process is the period of time between conception of the business idea and the date of either disengagement, starting a new firm, or the final wave of data collection.

Estimation Procedure

A multinomial logistic regression is used to predict the probability of a nascent entrepreneur meeting one of three outcomes-starting a new firm, still trying throughout the data collection period, or disengagement. The probability of meeting one of these outcomes is based on multiple independent and control variables. Model 1 tests Hypothesis 1 which predicts that the larger the amount of personal funds invested the more likely a new firm will result, controlling for human capital, community support, and characteristics of the entrepreneur and industry. Model 2 tests Hypothesis 2, which makes a similar prediction using the same controls, with the difference being that the independent variable is measured as the proportion of household income invested in the startup. Descriptive Statistics

The use of this statistical procedure is attractive as it does not assume normality or linearity of the data. This is important as the distribution of financial contributions to startups tend to be skewed. In addition, each of the three categories in the dependent variable is independent of one another.

RESULTS

Descriptive Statistics

Table 3 depicts the total amount of personal funds invested (personal savings + credit card), and the proportion of household income invested, by each of the three nascent venture outcomes in the dependent variable. Nascent entrepreneurs that successfully start new firms invest $40,169 and 72.8 percent of their household income, on average. Those who disengage from the process invest $21,375-about half of those that succeeded-and only 21.9% of their household income.

	Table 3 PERSONAL FUNDS INVESTED (TOTAL AND PROPORTION OF INCOME) BY OUTCOME					
	New Firm		**Still Trying**		**Disengaged**	
	Total Personal $ Invested	Proportion of Income	Total Personal $ Invested	Proportion of Income	Total Personal $ Invested	Proportion of Income
N	237	220	273	241	600	550
Mean	$40,169	72.8%	$38,678	46.6%	$21,375	21.9%
Std. Deviation	$109,784	320%	$157,793	91.1%	$251,664	102%

Multicollinearity of the variables run in Models 1 and 2 is assessed in Table 4 below. While some correlations are high (e.g., age and managerial experience = 0.590), the mean

variance inflation factor (VIF) among all variables is 1.17, and the VIF does not exceed 1.82 for any variable used in the analysis. This is well below the threshold of 10, which would indicate significant multicollinearity.

	1	2	3	4	5	6	7	8
Table 4 **CORRELATION MATRIX**								
1 Outcome	-							
2 $ invested	-.038	-						
3 Work exp	-.168	.027	-					
4 Mgt. exp	-.144	.121	.333	-				
5 Ent. exp	-.045	.110	.132	.380	-			
6 Education	-.076	.083	.066	.227	.155	-		
7 Age	-.068	.058	.334	.590	.299	.198	-	
8 Support	.036	.064	-.011	-.024	.091	-.002	-.066	-
9 Race	-.003	-.026	-.062	-.187	-.068	-.098	-.178	.067
10 Sex	-.047	-.065	-.171	-.099	-.070	.053	.019	-.076
11 SE	.078	-.055	-.230	-.106	.091	-.071	-.049	.074
12 Growth	-.019	-.071	.096	.026	-.084	-.017	.122	-.041
13 Legal	.182	-.033	-.022	-.085	-.086	-.055	-.097	-.000
14 Industry	-.020	-.009	-.091	-.077	-.027	.030	-.178	-.032
15 Biz type	-.045	.015	-.069	.044	.048	.044	-.029	-.017
16 Years	-.103	.062	.196	.059	.015	-.013	.096	.030
	9	10	11	12	13	14	15	16
9 Race	-							
10 Sex	-.006	-						
11 SE	-.017	.052	-					
12 Growth	-.070	.035	-.035	-				
13 Legal	.029	-.049	.055	-.019	-			
14 Industry	.079	.045	-.031	-.014	-.017	-		
15 Biz type	-.003	.022	.055	-.133	.027	-.013	-	
16 Years	.067	-.079	-.082	.000	-.072	.012	-.072	-

Regression Models

A multinomial logistic regression analysis was conducted to predict whether the amount of personal funds invested affects new firm creation (Hypothesis 1, Model 1), and whether personal funds invested as a proportion of household income affects new firm creation (Hypothesis 2, Model 2). Table 5 below depicts the results of the regression models. Both models were found to be statistically different from the null (constant-only) model at the 0.000 level (chi-square = 203.51, df = 36; chi-square = 197.68, df = 36). The personal financial investment predictor variable was found to be significant only in Model 2 (personal investments / household income) at the 0.01 level, meaning it is significantly related to startup success or disengagement from the process.

Table 3
MULTINOMIAL LOGIT OF PERSONAL INVESTMENT ON STARTUP OUTCOMES

	Model 1 (Baseline = Quit)		Model 2 (Baseline = Quit)	
	New firm	*Still Trying*	*New firm*	*Still Trying*
Personal $ invested *Model 1=$* *Model 2=$/Net Income*	0.45 (4.03^{-07})	0.28 (3.81^{-07})	2.74** (0.156)	2.47** (0.152)
Work experience	3.52*** (0.009)	2.34* (0.009)	3.12*** (0.009)	2.19* (0.009)
Managerial experience	2.88** (0.011)	0.42 (0.011)	2.38** (0.012)	0.41 (0.011)
Startup experience	-0.76 (0.080)	0.78 (0.089)	-0.64 (0.085)	0.04 (0.089)
Years of education	1.89* (0.099)	0.35 (0.086)	1.65** (0.101)	0.77 (0.935)
Age	-1.95* (0.077)	-0.07 (0.087)	-1.51 (0.082)	0.17 (0.093)
Community support	-0.86 (0.094)	-1.98* (0.081)	-1.11 (0.095)	-1.81† (0.086)
Race	0.82 (0.162)	0.99 (0.153)	0.84 (0.169)	0.70 (0.159)
Sex	-0.38 (0.164)	-1.29 (0.139)	0.05 (0.184)	-1.39 (0.143)
Self efficacy	-0.65 (0.147)	-0.5 (0.148)	-0.37 (0.157)	-0.65 (0.152)
Growth intentions	0.67 (0.059)	-1.47 (0.048)	0.66 (0.062)	-1.45 (0.051)
Legal form	-4.65*** (0.004)	-2.94** (0.003)	-4.35*** (0.005)	-2.75** (0.003)
Industry	1.03 (4.95^{-07})	0.21 (4.80^{-07})	1.01 (5.14^{-07})	0.13 (5.02^{-07})
Independent venture, or:				
Takeover	1.43 (0.750)	-0.15 (0.458)	1.07 (0.740)	0.22 (0.565)
franchise	-1.26 (0.267)	-2.34* (0.140)	-1.63† (0.224)	-2.39** (-0.135)
Marketing initiative	0.11 (0.432)	-0.90 (0.294)	-0.16 (0.402)	-0.86 (0.309)
sponsored by biz	3.13*** (0.768)	0.14 (0.388)	3.35*** (0.907)	0.64 (0.489)
Years in process	0.85 (0.025)	7.21*** (0.023)	0.42 (0.026)	6.77*** (0.023)

N	1050	971
-2 Log likelihood	-950.5828	-875.3914
Pseudo R^2	0.0967	0.1015
χ^2	203.51***	197.68***

*Significance notation: ***0.001; **0.01; *0.05; †0.1*

Using the relative risk ratios to interpret the significant levels of the predictor and control variables, we may say that for a unit change in the predictor variable, the relative risk ratio of either the creation of a new firm or still trying compared to disengagement will change by a factor of the parameter estimate, holding all over variables in the model constant.

Hypothesis 1 predicted that the larger amounts of personal funds invested will increase the likelihood of successful new firm creation over disengagement from the process. Hypothesis 1 is not supported, as we find an insignificant statistical association between the amount of personal funds invested by a nascent entrepreneur and the likelihood of starting a new firm. The findings from Model 1 are detailed below:

Personal funds invested. Findings are statistically insignificant. Hypothesis 1 is not supported.

Work experience. For every one-year increase in prior work experience in the same industry as the startup we can expect the risk of new firm creation over disengagement to increase by 1.030, or 3 percent (3.52; $p < 0.001$); and of still trying over disengagement to increase by 1.020, or 2 percent (2.34; $p < 0.05$).

Managerial experience. For every one-year increase in prior managerial experience we can expect the risk of new firm creation over disengagement to increase by 1.031, or 3.1 percent (2.88; $p < 0.01$).

Education. For every year increase in formal education we can expect the risk of new firm creation over disengagement to increase by 1.173, or 17.3 percent (1.89; $p < 0.05$).

Age. For every year increase in age we can expect the risk of new firm creation over disengagement to decrease by 0.834, or 16.6 percent (-1.95; $p < 0.05$).

Community support. As respondents indicate disagreement with whether there is strong community support for startups we can say that the risk of remaining in process over disengagement decreases by 0.822, or 17.8 percent (-1.98; $p < 0.05$).

Legal form. As respondents indicate no legal form has been decided (neither a sole-proprietorship or incorporation) we can say that the risk of a new firm or still trying over disengagement decreases by 0.979 and 0.991 respectively (2.1 percent and 0.8 percent) (-4.65; $p < 0.001$ and -2.94; $p < 0.01$).

Venture type. For respondents who are attempting to start a franchise rather than an independent venture we can say that the risk of still trying over disengagement decreases by 0.211, or 78.9 percent (-2.34; $p < 0.05$). For respondents starting a business with sponsorship from another existing business we can say that the risk of succeeding over disengagement increases by 2.560, or 156 percent (3.13; $p < 0.001$).

Years in process. For every one-year increase working on the nascent venture we can say that the risk of still trying over disengagement increases by 1.153, or 15.3 percent (7.21; $p < 0.001$).

Hypothesis 2 predicted that the larger amounts of personal funds invested, as a proportion of household income, will increase the likelihood of successful new firm creation over disengagement from the process. Our results support Hypothesis 2 as we find that a marginal increase in personal funds invested as a proportion of household income is associated with an approximately one-third increase in the likelihood of successfully starting a new firm. The findings from Model 2 are detailed below:

Personal funds invested. Findings are statistically significant. For every percent increase in personal funds invested as a proportion of household income we can expect the risk of successfully starting a new firm or of still trying, over disengagement, to increase by 1.367 and 1.326 respectively (36.7 percent and 32.6 percent) (2.74; $p < 0.01$ and 2.47; $p < 0.01$).

Work experience. For every year of prior work experience we can expect the risk of a new firm or still trying, over disengagement, to increase by 1.027 and 1.005, respectively (2.7 percent and 0.5 percent) (3.12; $p < 0.001$ and 2.19; $p < 0.05$).

Managerial experience. For every year of prior managerial experience we can expect the risk of starting a new firm over disengagement to increase by 1.027, or 2.7 percent (2.38; p < 0.01).

Education. For every year of education we can expect the risk of starting a new firm over disengagement to increase by 1.156, or 15.6 percent (1.65; p < 0.05).

Community support. As respondents indicate disagreement with whether there is strong community support for startups we can say that the risk of remaining in process over disengagement decreases by 0.828, or 17.2 percent (-1.81; p < 0.10).

Legal form. As respondents indicate no legal form has been decided (neither a sole-proprietorship or incorporation) we can say that the risk of a new firm or still trying over disengagement decreases by 0.980 and 0.991 respectively (2 percent and 0.9 percent) (-4.35; p < 0.001 and -2.75; p < 0.01).

Venture type. For respondents who are attempting to start a franchise rather than an independent venture we can say that the risk of a new firm or still trying over disengagement decreases by 0.410 and 0.201 respectively (59 percent and 79.9 percent) (-1.63; p < 0.10 and -2.39; p < 0.01). For respondents starting a business with sponsorship from another existing business we can say that the risk of succeeding over disengagement increases by 2.874, or 187 percent (3.35; p < 0.001).

Years in process. For every one-year increase working on the nascent venture we can say that the risk of still trying over disengagement increases by 1.146, or 14.6 percent (6.77; p < 0.001).

DISCUSSION

The concept of skin in the game centers on whether an entrepreneur is willing to make a significant financial contribution to his or her own venture. If an entrepreneur is not willing to invest in their own new venture, then external investors are less likely to put their hard cash earned into it. However, it is not evident if skin in the game refers to an absolute amount, or as a term of commitment relative to personal income or wealth.

We test whether the concept of skin in the game translates into performance and find that as the funds invested proportional to household income increases, the likelihood of successful new firm creation increases. Successful nascent entrepreneurs invest double the amount of personal funds into their efforts compared to nascent entrepreneurs who quit, and the proportion of household income they invest is four times greater. Additionally, a marginal percent increase in personal funds invested (as a proportion of household income) leads to roughly a 35 percent increase in the likelihood of successfully starting a new firm, or of still trying, compared to quitting the process. Interestingly, we find the total amount of personal funds invested is insignificant. This indicates that personal commitment is measured in relative, not absolute terms.

These findings indicate that a nascent entrepreneur's "skin in the game" in a new venture is an important signal for external stakeholders. Based on our findings, we would encourage external sources of finance (i.e., banks, investors, the Small Business Administration) to investigate the relative amount that an entrepreneur has invested in their new venture, rather than the absolute. These findings reiterate the importance of personal savings and investment in the launch of a new venture (Cassar, 2004; Gartner, Frid, & Alexander, 2012).

Additional findings in this paper correspond to a substantive body of research on nascent entrepreneurship. We find that human capital as measured by work experience, managerial experience and education all increase the odds of starting or still trying to start a new firm (compared to quitting). The entrepreneur's perceptions of community support, and whether the venture is legally incorporated, were also positive factors in the transition phase from nascent entrepreneurship into new firm creation.

The use of the PSED dataset allows us to explore the financial activities of individuals who are in the startup process of entrepreneurship. The in-depth waves of interviews in the PSED allows one to more precisely measure financial sourcing of new ventures and reduces misspecification biases that may occur in large panel datasets. Our study contributes to the literature by specifying a variable – skin in the game – previously neglected in entrepreneurial studies. Despite the attempts of the PSED to be a generalizable sample of nascent entrepreneurs, there are limitations in its research. For example, the PSED does not specify which particular subsets of nascent entrepreneurs are more likely to require specific sources of financing. Given the heterogeneous nature of entrepreneurship, it is incumbent on researchers to take great care in extrapolating individual-level results.

CONCLUSION

This study is encouraging to anyone considering starting a business, or currently attempting to do so. It shows that entrepreneurial success is not determined by how much money one invests, but rather by their level of *relative* commitment. Individuals who shoulder the risks of entrepreneurship by investing a large proportion of their household income are more likely to successfully create new firms.

Financing one's own entrepreneurial endeavors can be stressful and difficult, especially for the poor or those who are otherwise financially constrained. Perceptions of these difficulties may stem in part from the belief that, "I don't have enough money to start the business I want." However, it is the proportion of funds one invests that leads to success, and very likely to attracting external partners and investors as well. We therefore believe this to be a key metric for both future entrepreneurship research and education.

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THE INFLUENCE OF RELIGION ON BECOMING AN ENTREPRENEUR IN THE UNITED STATES

Nicholas J. Hill, Jackson State University
Samuel Perkins, Jackson State University
Joann White, Jackson State University

ABSTRACT

This research examines the religious influence on the choice of an individual to become an entrepreneur. The undertone of this research examines the preference of Christians versus non-Christians who decided to become an entrepreneur in the United States. Previous research has linked entrepreneurship decision to individual risk preference while controlling other individual characteristics. This research uses a unique approach by suggesting that the employment choice is influenced by ones religion. Using data from the General Social Science Survey, we use a logistic likelihood model to determine the probability of being an entrepreneur given ones religious preference. Furthermore, we examine the level of religiosity on the decision to become self-employed. Results suggest there is an increase likelihood of being an entrepreneur (Self-employed) for non-Christians versus Christians. However, Christians have an increased likelihood of preferring to be self-employed versus non-Christians.

Key Words: *risk, entrepreneurs, religion, religiosity, employment, choice*

INTRODUCTION

This research seeks to identify the influences of religion on the potential of being an entrepreneur in the United States. This question has specific undertone to whether being a Christian or non-Christians has an increased influence on becoming an entrepreneur. Much of the literature that has examined this influence has been examined in other countries and not specifically the United States. In the article by Audrestsch et. al. (2007) that examined the relationship between religion and entrepreneurship in India, found that Hinduism decreases the likelihood of being and entrepreneur. They further found that other religions such as Christianity and Islam are more conducive for entrepreneurial preferences. These finding could be influences through the culture of India having majority of the population selecting Hinduism as their religious belief. In the United States, Christianity is the major religion that could suggest an inverse relationship between majority religion in a country and probability of becoming an entrepreneur.

Religion, similar to any other belief, constrains individual decision and economic behavior. Hill et.al. (2014) examined the influence of religion on individual's behavior in their choice of contraception preferences. Hill et.al.(2007 found that being Catholic had an increased likelihood to use planned contraceptive methods versus unplanned methods. McCleary and Barros (2006) examine how honesty and work ethic are influenced by an individual's level of religious belief. In these articles, modeling economic outcomes (e.g., labor force participation and income) are determined by various demographic

characteristics and religious belief (Arano et. al. 2008). Religious belief is considered by much of the literature as one of the most influential determinants of individual's behavior.

At the core of all business decision, profit/competition are influential factors that firms and entrepreneurs use to make decisions. Given this incentive to make profits, firms sometimes make unethical decisions. The Financial crisis of 2001 is an example of firms such as Enron, WorldCom, etc., participating in unethical behavior to increase profits. It is suggested by this research that entrepreneurs are just a smaller firm and are subject to the same behavioral characteristic. Cooper and Dunkelberg (1987) concluded from their research that the differences between entrepreneurs and managers in large organizations are quite small and rarely systematic. In this situation, entrepreneurs who have an ethical/religious influence are should be well suited to make decisions that are more ethically efficient for the economy.

Based on the information discussed above, this research prepares a theoretical model of how the decision to become an entrepreneur is based on the characteristics and religion preference. Second, this research prepares a discussion of the results from testing the empirical model. Lastly, this research prepares a conclusion and discussion for further study.

METHODOLOGY

To understand the role that religion and religiosity influences the decision to become an entrepreneur, this research begins with the decision to be come self-employed. This research extends the model first constructed by Rees and Shah (1986). Our research makes assumption and changes to their model that is justified later in this section. The model is derive by assuming that the decision to work is based on a binary decision of being self-employed or an employee.

According to Rees and Shah (1986) it follows that the decision is best represented by the following hedonic index, Q_j, where J represents Self-employment (SE) or paid employment (E). This decision is characterized with factors of work characteristics and other weights such that

$$Q_j = \sum_n \delta_{nj} q_{nj} \tag{1}$$

where q_{nj} are work characteristics and δ_{nj} are the corresponding weights.

From this functional form it can be stated that if $Q_{se} > Q_e$ then self-employment has the greater utility. From this we begin to derive how variances in characteristics lead to employment choices. The utility from (1) can be denoted as

$$U(Q_j, Y_j) \tag{2}$$

where Y denotes income and further extension of this specified form suggest;

$U(Q_j, Y_j) = e^{dQ_j} \frac{Y_j^b}{b}$, b = 1-a, d is a constant and where "a" measures the relative risk aversion. Also it is noted in the earlier works of Aitchison and Brown (1954) that if we assume that Y is a log-normally distributed then,

$Y \sim LN(\mu, \sigma)$, $E(Y) = e^{\mu + \frac{1}{2}\sigma^2}$, $c = \sqrt{e^{\sigma^2} - 1}$ where "c" is the coefficient of variation.

It is found that maximizing (2) is equivalent to maximizing the utility index:

$$V(Q_j, \overline{Y}_J, c_j) = \ln \overline{Y}_J - \frac{a}{2}\ln(1 + c_j^2) + \frac{dQ_j}{b} \tag{3}$$

where $\overline{Y}_J$ is the mean of Y. It can be postulated that an individual chooses self-employment if

$$V(Q_{SE}, \overline{Y_{SE}}, c_{SE}) \geq V(Q_E, \overline{Y_E}, c_E) \tag{4}$$

It can be implied from equation (4) that

$$\ln \overline{Y_{SE}} - \ln \overline{Y_E} \geq \frac{a}{2}[\ln(1 + c_{SE}^2) - \ln(1 + c_E^2)] - \frac{d}{b}[Q_{SE} - Q_E] \equiv R \tag{5}$$

Relating (5) makes it explicit that an individual gives greater weight to dispersion of income the higher degree of relative risk aversion. According to the earlier works of Knight (1921) $c_{SE} > c_E$ suggest a person who is self employed bears more risk which is the main theory of an entrepreneur.

From Rees and Shah (1986), the choice of employment status from equation (5) depends not just on the relative earnings, but also on, "a", "c", and "Q" degrees of risk aversion, and the coefficient of variation in earnings and the index of work characteristics. It was further suggested that direct observations of these characteristics are extremely difficult so proxies are used. The characteristics used by Rees and Shah (1986), are Education, Age, Health, Marriage, Children and Race. These factors are all measureable characteristics. Many of these variables are supported by various other literatures. Risk (Kihlstron and Laffont, 1979), education (Bates, 1990), personality characteristics (McCelland 1964) and job and income characteristics (Evans and Leighton, 1989) are all found to influence the decision of an entrepreneur. In our research, a measure of religiosity or religion is added in the characteristics of determining to become self-employed. Religion is a measurable observation of an internal drive by the individual that was not originally introduced. This research suggests that employment opportunity like many other decisions are influenced by the religiosity or religion that one is affiliated.

Based on equation (5) this research estimation model is shown with the added variable of religion to be:

$$R = \beta_0 + \beta_1 ED + \beta_2 AGE + \beta_3 married + \beta_4 Child + \beta_5 Race + \beta_6 Religiosity + \varepsilon_i \tag{6}$$

it is implied by (5) and (6) that

$$\ln \overline{Y_{SEt}} - \ln \overline{Y_{Et}} \geq \beta_0 + \beta_1 ED + \beta_2 AGE + \beta_3 married + \beta_4 Child + \beta_5 Race + \beta_6 Religiosity + \varepsilon_i \tag{7}$$

It is suggested by (7) that the income difference and characteristics be used to estimate the likelihood of self-employment. To further estimate this relationship, the logistic regression can be express in terms where $I_i^* \geq 0$ such that our logistic equation form is

$$I_i^* = \alpha_1(income) + \alpha_2 ED_i + \alpha_3 AGE_i + \alpha_4 Married_i + \alpha_5 Child_i + \alpha_6 Race_6 +$$
$$\alpha_6 Religiosity_i - \varepsilon_i \; \varepsilon_i \sim N(0, \sigma^2) \qquad\qquad (8)$$

To estimate (8) a logit model is used with odd ratio reported to measure the likelihood.

Data

       To estimate the logistic regression specified earlier, we use data from the General Social Science Survey (GSS). This survey provides an opportunity to examine any of the characteristics specified above. Furthermore, this survey provides enough observation, approximately 57,000, to where this research can provide emphasis of the influences on being self-employed. Below provides a description of variables in the research.

VARIABLE DESCRIPTION

WORKSELF	BINARY VARIABLES THAT DESCRIBES IF YOU ARE SELF-EMPLOYED (1) OR WORK FOR SOMEONE (0)
PREFER	BINARY VARIABLES THAT DESCRIBES WHETHER YOU PREFER TO BE SELF-EMPLOYED (1) OR YOU DO NOT (0)
SEX	BINARY VARIABLES FOR SEX OF THE INDIVIDUAL; (1) MALE OR (0) FEMALE
RACE	BINARY VARIABLE FOR RACE OF THE INDIVIDUAL; (1) NON-WHITE OR (0) WHITE
MARITAL	BINARY VARIABLE FOR MARRIAGE OF THE INDIVIDUAL; (1) MARRIED OR (0) NOT MARRIED
AGE	DISCRETE VARIABLE OF THE AGE OF THE RESPONDENTS
INCOME	BINARY VARIABLE THAT MEASURES THE LEVEL OF INCOME (1) ABOVE $25000 OR (0) BELOW $25000
CHILDS	DISCRETE VARIABLE OF THE NUMBER OF CHILDREN THE RESPONDENT.

EDUCATION	DISCRETE VARIABLE THAT MEASURES THE NUMBER OF YEARS OF SCHOOLING FROM THE RESPONDENT.
RELIGION	BINARY VARIABLE THAT MEASURES THE RESPONDENT'S RELIGION; (1) CHRISTIAN OR (0) NON-CHRISTIAN
STRENGTH	BINARY VARIABLE THAT MEASURES THE STRENGTH OF RELIGION; (1) VERY STRONG/STRONG OR (0) NOT THAT STRONG/NOT AT ALL

RESULTS

Table 1 provides the descriptive statistics for the following variables of consideration. From the sample there were 57,061 observations. In this data about 11% (6197) are self-employed. The average age of individual is 45 with the majority of the sample selecting white as their race (18% non-white). About half the sample identified as being married and the average household has about 2 children. It can be seen that our income variable shows about 42% of the sample makes about $25000. Furthermore, the High School degree is the average level of education.   The variable of consideration is Religion and Strength of Religion. From the sample, 84% identified as Christian and 16% identified as non-Christian. Lastly, approximately 71% of the sample identified themselves as having a strong religious belief.

Table 1
SUMMARY STATISTIC

	MEAN	STD	MIN	MAX
WORKSELF	.1157258	.3198988	0	1
PREFER	.3521931	.4777158	0	1
SEX	.4406863	.4964738	0	1
RACE	.1877114	.390485	0	1
AGE	45.69795	17.47211	18	89
INCOME	.4269116	.4946336	0	1
MARITAL	.5390897	.498474	0	1
CHILDREN	1.952848	1.791539	0	8
RELIGION	.8426421	.3641411	0	1
STRENGTH	.7160057	.450938	0	1
EDUCATION	12.75359	3.181642	0	20
N	57061			

To begin answering the question about the impact of religiosity on the decision to become an entrepreneur; using equation (8), this research begins by estimating the logistics regression reporting odds ratio. Table 2 reports equation (8) measuring the Religious Affiliation and the strength of religion. It can be gleamed that for model (1), being male

increases the likelihood of being self-employed. Being non-white, decreases the odds of being self-employed 37%. The main emphasis of the research is to examine the effect of religion. From this model, it can be seen that being a Christian decreases the chances of being self-employed by 31%. When examining model (2) in Table 2, it is found that those who are stronger in their religious belief has a 11% decreased likelihood of being self-employed. From this table we can, see that strength of religion and religions are significant influences on the self-employment decision. The findings suggest the level of religiosity decreases the level of self-employment participation.

Table 2
LOGIT ANALYSIS ODDS RATIO FOR
BEING SELF EMPLOYED

	(1) RELIGION AFFILIATION AND SELF EMPLOYED	(2) STRENGTH OF RELIGION AND SELF EMPLOYED
WORKSELF SEX	1.887*** (0.05)	1.916*** (0.05)
RACE	0.638*** (0.03)	0.641*** (0.03)
AGE	1.018*** (0.00)	1.018*** (0.00)
INCOME	1.178*** (0.04)	1.194*** (0.04)
MARITAL	1.222*** (0.04)	1.194*** (0.04)
CHILD	1.043*** (0.01)	1.038*** (0.01)
EDUCATION	1.017*** (0.00)	1.021*** (0.00)
RELIGION	0.699*** (0.03)	
STRENGTH		0.892*** (0.03)
CONSTANT	0.035***	0.028***

	(0.00)	(0.00)
N	53129	53129

Exponentiated coefficients; Standard errors in parentheses
* p<.10, ** p<.05, *** p<.01

Table 3 reports the logistic regression odds-ratio, for the sample when considering whether the respondent prefers to be self-employed. Interestingly, males are 45% less likely as well as being non-white are approximately 20% less likely to prefer being self-employed. Observing the main variable of conversation, Christians are 35% more likely to prefer being self-employed. Also, individuals who have a high level of religiosity are 17% more likely to prefer being self-employed. It seems clear from Table 3 that once entering into self-employment, being religious and a Christian, become positively related to this employment preference.

Table 3:
LOGISTIC ODDS RATIO ANALYSIS FOR
PREFERRING TO BE SELF EMPLOYED

	(1) RELIGION AND SELF EMPLOYED	(2) RELIGIOSITY AND SELF EMPLOYED
PREFER		
SEX	0.551***	0.546***
	(0.04)	(0.04)
RACE	0.806**	0.811**
	(0.07)	(0.07)
AGE	1.013***	1.013***
	(0.00)	(0.00)
INCOME	1.246***	1.246***
	(0.10)	(0.10)
MARITAL	0.880*	0.887
	(0.07)	(0.07)
CHILD	0.964	0.966
	(0.02)	(0.02)
EDUCATION	0.975**	0.974**
	(0.01)	(0.01)
RELIGION	1.356***	
	(0.13)	

STRENGTH		1.177**
		(0.09)
CONSTANT	0.435***	0.499***
	(0.10)	(0.11)
N	3821	3821

Exponentiated coefficients; Standard errors in parentheses
* p<.10, ** p<.05, *** p<.01

CONCLUSION

Based on this research, it suggests being a Christian decreases the likelihood of becoming an entrepreneur. However, it is found that non-Christian do not prefer to stay an entrepreneur but prefer to work for someone/firms. This maybe rooted in the notion that most non-Christians may be foreign or first generation citizen of the US. Given that majority of foreigners may have non-Christian religion as a background, this may parallel the barriers to work in organization or for public sectors companies. The only viable labor market is to become self-employed. Understanding this maybe one of the limitations of this study, this paper provides insight to the sensitivity of religion on becoming an entrepreneur.

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SMALL BUSINESS AND OBAMACARE:
RIPPLE EFFECTS WHEN THE COST IS "TOO HIGH"

Robert J. Lahm, Jr. Western Carolina University

ABSTRACT

Some small businesses were granted a temporary reprieve following postponements to the implementation of numerous provisions of the PPACA (i.e., ACA/Obamacare). While many have characterized the law's impact-once fully implemented-to affect only a small portion of businesses overall, those with more than 50 full-time equivalent FTE employees, such a view fails to acknowledge that all citizens are affected under the new law. This is because the ACA includes both an individual mandate and an employer mandate, and the former of these two mandates affects the self-employed entrepreneurs and non-employer firms. According to Small Business Administration data[1], almost eighty percent of small businesses are non-employer firms (run by persons who are arguably more likely to create new jobs as compared to job seekers and employees). Notwithstanding any improvements to user interface and stability, SHOP exchanges continue to reflect underlying issues including design flaws and personal security risks. The glaring issue is: costs are "too high."

INTRODUCTION

This paper explores issues that are on the immediate horizon as small businesses attempt to maneuver the Patient Protection and Affordable Care Act[2] (ACA, a.k.a., Obamacare), as amended by the Health Care and Education Reconciliation Act[3]. Various aspects of the implementation of the law have received abundant attention in the popular media. Most notably, these have been glitches (Another ObamaCare website suffers delays, glitches ahead of launch date, 2014; Chumley, 2013; Lahm, 2014a; Weigel, 2013) and alarming security flaws (Gertz, 2014) with the HealthCare.gov website; millions of individual and group policy cancellations (Gottlieb, 2013; Lahm, 2014a; Myers, 2013; Roy, 2013a) and the characteristics of new enrollees; and with these cancellations, the revelation that notwithstanding campaign promises on the part of the President (Obama, 2010) and others most health insurance policy holders will not be keeping their current plans, doctors, or provider networks. Considering the name, logical proposition, and sales pitch before the passage of the ACA, that of "affordability," the cost of health care, including insurance policy premiums, deductibles, co-pays, out-of-pocket costs, a paperwork and compliance burden, and other expenses for small businesses and consumers amount to a betrayal of public trust which is of historic proportions. As an example of what may be an insurmountable flaw, mixing health care with the IRS may prove to be a prescription for a headache that will not go away.

However, other aspects of the law's implementation have not been discussed as widely. The law has myriad tentacles, and the unnatural interconnectedness it created among some government agencies and their respective processes has resulted in a pattern of delays that has triggered tremendous uncertainty. Some small businesses "won a reprieve" (Needleman & Loten, 2014) from Obamacare until 2015 or later, but "the penalty for not buying insurance is going up" (Klein, 2014b). The ACA's nuances and impact, whether small business owners may

be deciding to pay penalties (Coombs, 2013; Neiburger, 2011), provide health insurance coverage, or otherwise attempting to mitigate unfavorable consequences of the law are a game-changer. According to testimony by the founder and president of the Galen Institute (a not-for-profit health and tax policy research organization) before the US House of Representatives Committee on Small Business Subcommittee on Investigations, Oversight and Regulations:

> Even though small businesses are exempt if they have fewer than 50 employees, it presents a huge obstacle to their growth. And even if the company is small enough to escape the mandate, each of the employees still will be subject to the individual mandate in PPACA. The costs and disruptions are enormous. (Turner, 2011, p. 11)

Noting that health insurance has been a top issue for small businesses for decades (Dennis, 2013), they are also attempting to leverage any positive changes under the law. Meanwhile, the reprieve was only temporary (depending on the size of a given business), and a schedule with higher and higher penalties (as a flat-fee or a percentage of income, whichever is greater) over time was not adjusted despite the postponements.

LITERATURE REVIEW

This present paper is conceptual in nature. However, this should not suggest that a rigorous scholarly methodology has not been employed. In the past year, the author(s) have conducted numerous literature reviews in connection with ongoing research efforts. Simply put, and to summarize the results of these efforts, scholars who work within the realm of small business and entrepreneurship research have not developed many contributions to the literature-the scholarly pipeline has yet to carry more than a trickle while at the same time, coverage in the popular media is ongoing.

Providers of database content including scholarly journals in these search efforts have included Ebsco databases such as: *Academic Search Complete, Business Source Complete, Entrepreneurial Studies Source, and Small Business Reference Center*; as well, the *ProQuest Entrepreneurship* database has also been consulted. Most of the findings associated with the searches in these aforementioned databases have been from other areas of scholarly and professional endeavor besides what one would expect from small business and entrepreneurship scholars. As a basis for comparison relative to judgments about various scholarly disciplines, a list entitled, "*Core publications in entrepreneurship and related fields: A guide to getting published,*" by Katz (2012) was utilized. Other databases were subsequently consulted, such as *ProQuest Accounting & Tax* and *ProQuest Health Management*. Both of these latter two databases proved to be productive, reflecting increasing attention that has been paid to Obamacare.

But judging by journal titles and subject matter, the results, while useful and appreciated, largely fell outside of domains that small business and entrepreneurship academicians and practitioners would ordinarily consult. From the *Accounting & Tax* database, journal titles included: *Journal of Insurance Regulation, Journal of Financial Planning,* and several from either of the law review publications from Vanderbilt- or Stanford Law School. Journal titles from the *ProQuest Health Management* database included: *New England Journal of Medicine, Journal of Law, Medicine & Ethics, Health Affairs* (several), *Journal of Health Politics, Health Services Research* and *Benefits Quarterly*. Thus, besides the scholarly disciplines above that are contributing, content from trade associations, government documents, research organizations, blogs, and many other sources in the popular media (business press and consumer) are producing

voluminous responses to the ACA and its implementation-pundits and others with a political agenda are acknowledged as participants in the intermingling as well.

Under a qualitative research framework, all of the above would be characterized as artifacts which are legitimate sources of information for analysis (Creswell, 1994; Hodder, 1994; Strauss & Corbin, 1994). Note that the reference above to "legitimate sources of information for analysis" is not the same as suggesting that artifacts in and of themselves are all considered to be representative carriers of truth (Caporaso, 1995; Maxwell, 1992); rather, the veracity of information is to be challenged by researchers. Analysis could just as well disprove the accuracy or applicability of certain information. Using a constructivist approach (Barry, 1996; Schwandt, 1994), theoretical frameworks (Alasuutari, 1997; Strauss & Corbin, 1990, 1994) are built reflecting methods such as triangulation via verification of data from multiple independent sources. This present research utilizes a database of almost three hundred artifacts (the majority of which are textual in nature), starting with the text of the PPACA itself, as amended.

DISCUSSION

The discussion that follows presents some dominate themes that have emerged regarding the implementation of the ACA and the impact that it has had and will have on entrepreneurs and small businesses (and in some cases larger businesses as well as other employers). Some are not so easy to compartmentalize as only touching employers themselves. After all, Americans have implemented what is predominately an employer sponsored health insurance system (Buchmueller & Monheit, 2009; Conover, 2014; Mrkvicka, Held, Stich, & Kolsrud, 2013). More than 99 percent of all businesses are categorized as "small businesses" ("The small business economy," 2012), and they are responsible for about half of the private-sector economy. Independent businesses with fewer than 500 employees fall under the SBA's definition of "small."

Importantly, between 1993 and 2011 small businesses were responsible for the creation of 11.8 million out of 18.5 million net new jobs—64 percent—almost two thirds (*Ibid.*). Some members of the media and analysts have attempted to portray views of which businesses might be impacted by the law by digging into slices of the small business population data and suggesting to the effect that only a small minority, such as those with more than 50 FTE employees, will be impacted. Unfortunately, what is missed in such an effort is the Individual Shared Responsibility requirements under that ACA (Neiburger, 2011; Olafson, 2013). In fact, according to the SBA (and Census figures upon which the SBA often builds its estimates), the vast majority of the small business—78.5 percent—are non-employer firms (Frequently Asked Questions about small business, 2012; The small business economy, 2012; Small business size standards, 2013). Others may have employees, but their organizational form is such that they still file tax returns as individuals. As observed in a recent *Forbes* article:

> The tax on investment income is especially significant, because it affects all businesses that file their taxes as individuals. According to Ernst & Young, 54 percent of the private-sector workforce is employed in "flow-through" businesses whose income is subject to the individual income tax rate. While not all of those businesses earn enough income to be affected by the Obamacare tax, affected businesses will have to make up the difference by either hiring fewer workers, or charging higher prices for their goods and services, or both. (Roy, 2014b)

An overarching reason for maneuvering and hand-wringing on the part of small business owners is costs in a variety of forms from complicated paperwork to premiums that are regarded to be "too high" (Gabel, 2014): "When asked to choose 'the most important reason why your firm does not currently offer health insurance to your employees,' 75% of respondents chose the answer 'cost of health insurance is too high.'" (*Ibid.*).Quoting an instance from a *Wall Street Journal* article which referenced the paperwork burden:

> Laura Land, who co-owns cellphone-case-maker Empire Cell Phone Accessories in Riverside, Calif., which has 38 full-time employees, said the company plans to discontinue its health plan next year and instead direct workers to the state's health-insurance exchange. 'It's getting to be too much paperwork for us to administer the plan, especially if workers are going to decline anyway and go to the exchange,' said Ms. Land, adding that several new hires recently turned down the plan in favor of cheaper exchange options. (Matthews, Loten, & Weaver, 2014)

Increased Administrative Costs for Small Businesses

One of the hidden costs of the ACA is that of subjecting small business owners to an intricate new process during a period when arguably, the economy has been less than robust for years (Ausick, 2013; Boubacar & Foster, 2014; Mangan, 2013; The small business economy, 2012). In other words, Obamacare has presented entrepreneurs with a whole new to-do list. The learning curve, or costs associated with hiring professionals (or both) is noticeably steep (Amato & Schreiber, 2013; Cannon, 2012). Thus, there is a burden that goes beyond costs measured in dollars. For instance, a small businesses seasonal staff or higher turnover for any other reason faces a more difficult administrative task in tracking employee FTEs. "Companies in retail, hospitality and highly seasonal businesses that are near the 50-employee threshold need to be particularly careful that they're counting FTEs properly and not misclassifying employees as independent contractors, or they'll face fines" (Moran, 2014).

New Taxes on Insurance Policies

According to a *Wall Street Journal* article it has been predicted that a new Health Insurance Tax (HIT) on policies that is charged to insurance companies will be passed on to customers, "as any company subject to such a tax would" (Marcus, 2014).

Higher Premium Rates

According to a publication entitled, *Report to Congress on the impact on premiums for individuals and families with employer-sponsored health insurance from the guaranteed issue, guaranteed renewal, and fair health insurance premiums provisions of the Affordable Care Act*, it is estimated that "65 percent of the small firms are expected to experience increases in their premium rates" (2014, p. 5). "That is because new guidelines define 'employers' as having at least two full-time employees, not including a spouse, in order to be eligible for group plans" (Loten, 2014). The aforementioned Report to Congress cited above also found that due to sections 2701 through 2703 of the PHS (Public Health Service) Act "premium rates for roughly 11 million people will increase" (p. 6). An article in a professional publication, *Employee Benefit News*, explained from an industry point of view, due to the increased benefit

requirements for all policies under the ACA, limits on deductibles (notwithstanding that many plan deductible amounts have dramatically increased), and required acceptance of individuals with pre-existing conditions "small group premiums are likely to rise even more" (Hood, 2014).

Higher Prescription Drug Costs

According to a study by HealthPocket.com, "on the whole, the 4 types of metal plans averaged a 34% increase in drug cost-sharing as compared to copayments and co-insurance fees in the pre-reform market" (Coleman & Geneson, 2014). As observed by Norton in *Pharmaceutical Executive* (a leading resource in the industry):

In the case of prescription drugs copays, the anecdotes are piling up about newly covered Obamacare patients paying more for drug copays—in fact, some have termed it 'unacceptable' amounts of copay—versus their privately covered brethren. Another substantial reason that the Obamacare Rx insurance copays are 'so high' is that when the insurers entered into the creation of these plans, the actuarial premises on which they generated their Obamacare designs were primarily based on many uncertain assumptions. Let's face it, an awful lot of it was just guess work. (Norton, 2014)

MIXING HEALTH CARE WITH THE IRS: A PRESCRIPTION FOR A HEADACHE

Professionals (e.g., CPAs, tax attorneys, insurance consultancies) seem to recognize the burden of compliance on the part of small businesses. From that perspective, calculating Full Time Equivalents (FTEs) (Full-time equivalent employee calculator for employer shared responsibility, 2013; ObamaCare and the '29ers': How the new mandates are already reducing full-time employment, 2013; Small business health care tax credit questions and answers: Determining FTEs and average annual wages, 2013), the small business health insurance tax credit (Brighenti, 2011; Hines, Kreuze, & Langsam, 2011; Small business health care tax credit questions and answers: Determining FTEs and average annual wages, 2013) or penalties (Lahm, 2013; National Federation of Independent Business v. Sebelius, Slip Opinion, No. 11–393, 2012; Neiburger, 2011), or understanding how to distribute a Medical Loss Ratio check (Cauchi & Landess, 2014; Kirchoff & Mulvey, 2012), may be all in a day's work and a boon to business, but entrepreneurs may not necessarily be able to afford to hire all of this expertise.

The ACA is extremely complex, and to make matters worse, numerous government agencies are busily generating an avalanche of new paperwork, rulings, interpretations, and regulations in connection with their respective obligations for implementing the law. For a small business owner who may be struggling already just to stay afloat in sustained period of economic recovery that has been tenuous at best, keeping up with the law, "learning the new math" (Coombs, 2013), and abiding by its provisions is arguably going to be just way too time consuming for an entrepreneur to take on. An example of the kind of paperwork and time that an entrepreneur would have to spend is given in IRS Form 8941 (and accompanying instructions) as illustrated in Figure 1 below:

Figure 1

Estimated Burden (as per Form 8941 Instructions: 10 pages, 7 worksheets)

Figure derived from information posted on IRS web page entitled: "Affordable Care Act Tax Provisions" as of August 12, 2014 (and by following links as indicated in figure). Retrieved August 23, 2014, from http://www.irs.gov/uac/Affordable-Care-Act-Tax-Provisions

The burden of compliance with the ACA is typically portrayed in a narrative which focuses on expenses in monetary terms; yet, that burden may also be more fully articulated as researchers analyze the impact on entrepreneurs in other ways, such as when they are wading through the complexities of new tax forms, rules and regulations (Amato & Schreiber, 2013; Coombs, 2013), spending valuable time on paperwork, or hiring accounting and tax professionals to do so on their behalf (Brighenti, 2011; Dykxhoorn & Sinning, 2010; Neiburger, 2011) probably at considerable expense. There is also a headache factor. While this present paper is conceptual in nature, interestingly, such a headache factor is possible to describe both qualitatively and quantitatively. In medicine, clinical practitioners have developed various assessments to facilitate communication regarding the nature and level of "pain" (Pain Assessment Scales) that may be indicative as that which is experienced by patients of various ages and clinical situations.

Entrepreneurship scholars might analogously explore not only the "headache factor" in complying with Obamacare, but antecedents such as the amount of time (in billable hours, for instance) that tax and accounting firms are generating in connection with law, changes to employment practices such as shifting workers to part-time positions (Health reform poses biggest challenges to companies with the most part-time and low-paid employees, 2012; Lopez Bauman, 2014; Puzder, 2014), and other responses. Meanwhile, as any entrepreneur in the

practitioner community knows from first-hand experience, tending to government imposed burdens instead of tending the store, jeopardizes the very prospect of survival for nascent firms.

A TEMPORARY REPRIEVE

Under the ACA large employers, i.e., those with more than 50 FTE employees were to provide health insurance or pay penalties in 2014 (Full-time equivalent employee calculator for employer shared responsibility, 2013; Small business health care tax credit questions and answers: Determining FTEs and average annual wages, 2013). And, rather than chose to comply with Obamacare by purchasing health insurance under either an individual or an employer mandate, some may choose to instead pay the penalty (Berry, 2014). President Obama's first delay of the employer mandate under the ACA occurred in July 2013.

This delay changed the date of enforcement for businesses employing more than 100 FTE (full time equivalent) employees from January 1, 2014 to January 1, 2015. Then, in February 2014, the date was extended again (Treasury and IRS Issue Final Regulations Implementing Employer Shared Responsibility Under the Affordable Care Act for 2015 2014); this latter extension though applied to small businesses with fewer than 50 FTE employees whose average wages were less than $50,000 per year. Firms with 50 to 99 FTE employees were still required to report on their employee health care coverage that would be provided in 2015, but due to the postponement these businesses were given until 2016 pay any penalty amounts due under the ACA's employer mandate.

This latest delay in the employer provided health insurance requirements did afford small and mid-sized businesses more time to react to both the costs and some of the more onerous provisions of the ACA (Clark, 2014). "But the Obama administration pushed that deadline back repeatedly after the bungled rollout of health insurance exchanges in late 2013" (Klein, 2014a). Contrary to some arguments which have proclaimed that a majority of businesses are not affected by the ACA, because of the individual mandate, even very small businesses with no employees are impacted (Lahm Jr, 2014). Although the penalty under this individual mandate had been $95 in 2014 (or 1 percent of household income, whichever is greater) the new penalty has increased to $325 (or 2 percent of household income, whichever is greater). "The applicable dollar amount is $95 in 2014, $325 in 2015, $695 in 2016, and increases with an inflation index for years after 2016" (Health Care And Education Reconciliation Act, 2010; Neiburger, 2011).

"GLITCHES" AND DESIGN FLAWS CONTINUE

The HealthCare.gov website was supposed to provide a convenient shopping experience for users so that they could purchase affordable health insurance coverage. From the very beginning (on October 1, 2013, when HealthCare.gov launched), the website sputtered, hiccupped and crashed like a failed design for a "flying machine" at the advent of aviation. However, the difference is that the functionality of such a site is not new. As observed by Schlussel (2013) "the Obama administration gushed that it [HealthCare.gov] can now (barely) handle 50,000 users at one time…contrast that with Walmart over the Thanksgiving holiday weekend or Amazon today, Cyber Monday." Jeff Bezos, founder of Amazon was interviewed on the CBS News television show *60 Minutes* (Rose, 2013). During this show it was stated that Amazon expected to handle 300 items per second. "That's 18,000 transactions per minute and

1,080,000 per hour. For a 24 hour period, it's 25,920,000 sales. And that's not counting traffic from those who browse the site but do not make a purchase" (Schlussel, 2013).

Questions about the site and serious issues remain. For example, it was recently announced on the Centers for Medicare & Medicaid Services (CMS) website that approximately 800,000 users of HealthCare.gov received incorrect tax forms—20 percent of those "who signed up through one of the 37 states using HealthCare.gov" (What consumers need to know about corrected Form 1095-As, 2015). As observed by the *National Law Review*, "Customers involved in the glitch will likely have to wait weeks to receive new forms to refile their taxes. This latest problem is one in a string of issues that have faced HealthCare.gov since its inception" (Goldstein, 2015).A comment beneath an article related to this event on a website for professional accountants stated: "Only 20%? Only 37 states? If ONLY the government could something RIGHT, there would be no need to defend their 'screw-ups' as ONLY this or ONLY that" (Cohn, 2015; comment by Thomas P., February 23, 2015, 8:09 AM).

Errors such as the one described above, though obviously problematic for individuals, small businesses, and those who may represent them are not the only concern, however. There are other more serious issues that portend consequences that are even worse. One must question security vulnerabilities (Chumley, 2013; Howell, 2013; Lahm, 2014a) and basic process/design concerns as well.

The Small Business Health Options Program (SHOP) is a web portal that is a part of the HealthCare.gov site to which small businesses were directed to purchase health insurance (SHOP health plan information for small businesses, 2013). However, the SHOP launch was postponed when it became clear that a major overhaul would be needed (Radnofsky, Weaver, & Needleman, 2013; Taulli, 2013). Since then, work has been done to improve the users interface of the SHOP marketplace exchange, yet the backend is still plagued with problems (Goodman, 2015).The anecdote below, quoting a *Wall Street Journal* article about those supposed improvements, is telling with respect to a continuation of process flaws:

> Jennifer Alley in St. Louis said she spent time at the online health insurance portal late last month, when she created an account for Steady Rain Inc., the digital strategy agency with 20 employees, where she works as a chief financial officer. She said she was generally satisfied with the experience. 'Overall I didn't find many problems with it.. it was definitely streamlined,' she said. One thing that caught her attention: Her personal information was listed under 'Company Account Profile.' 'You're entering the information setting it up as the employer, but they're asking for your individual Social Security number. I was surprised by that,' she said. That approach, she added, is one that assumes the business owner herself is setting up the account, rather than, say, a CFO or human-resources administrator. (Janofsky & Radnofsky, 2014)

Logically, it follows that process flaws are brought about by underlying assumptions on the part of a given website's developers. HealthCare.gov at large (and thus the SHOP marketplace as well) has numerous serious security flaws in the first place (Chumley, 2013; Lahm, 2014a; Roy, 2013b; Wallace, 2013). The inference from the anecdote suggests that these are not helped by a design that evidently, at least in this one case, did not anticipate a user besides the business owner acting on behalf of the business.One might have thought that the system would have allowed for the use of an EIN (Employer Identification Number) to identify a business as an entity that is the "customer" (as compared to an individual user).

RIPPLE EFFECTS

Indirectly, that which impacts employers of any and all sizes also may create ripple effects that reach all members of society at large. Further, "over the next decade, Obamacare increases taxes by more than $1.2 trillion: one of the largest tax increases in U.S. history, and the largest in nominal dollars" (Roy, 2014b). There have also been systemic issues for all consumers (Rosenthal, 2014). A study published by the Manhattan Institute found that "Obamacare had increased the underlying cost of individually-purchased health insurance in the average state by 41 percent in 2014, relative to 2013" (Roy, 2014a). Also growing, are health insurance premium rates (Costs of Premiums For Employer-Provided Health Insurance Jump, 2011), costs for prescription drugs (Norton, 2014), individual and small business policy cancellations (Gottlieb, 2013; Lahm, 2014a; Myers, 2013; Roy, 2013a), increasing deductibles, and other problems. Referring to the various tiered "metal" (Davis, 2013; Folger, 2013) plans under Obamacare, some policy types come with deductibles that are so high, many policy holders may as well have no health insurance at all.

When consumers begin to lose confidence (Banjo, 2013; Feulner, 2013; Health care law: 56% still don't like health care law, 2014; Lowry & Gravelle, 2014), they tighten their wallets and curtail spending, and this hurts small businesses (which in-turn hurts those who may seek employment, and so on, and so on). When businesses lose confidence or face uncertainty, they take steps to mitigate impacts as well. In particular, myriad studies have all come back with a similar finding: small businesses are curtailing hiring and/or cutting work hours (Graham, 2013; Jacobe, 2013; Lopez Bauman, 2014), shifting health care costs to employees (Mrkvicka, et al., 2013), raising prices, and taking other steps to deal with the consequences of the ACA. "The health law that so many small business owners had hoped would benefit them by lowering costs is instead harming their ability to continue to offer health insurance at all" (Turner, 2011). The problem is, "Obamacare forces insurers to offer services that most Americans don't need, don't want, and won't use, for a higher price" (Roy, 2013a).

CONCLUSION

The PPCA has already created tremendous uncertainties among individuals and small businesses (Anderson, 2014). A plethora of surveys about anything from perceptions to actions on the part of small businesses have demonstrated that the law "is already having a lasting impact on how lots of owners choose to run their companies" (Needleman & Loten, 2014). One survey of Michigan firms found that "many employers plan to shift more insurance costs to workers, often in the form of high-deductible plans or changes in prescription drug coverage" (Thoms, 2015). Small businesses and entrepreneurs (as well as numerous citizens at large) are experiencing the effects of one of the most profound changes in health care delivery and the law in decades (Neiburger, 2011).

Given a tenuous recovery that has persisted for several years in the United States, hoisting a burden of compliance on the backs of small business owners, including millions of non-employer firms, which could be regarded as the seedlings of future entrepreneurial growth potential (Lahm, 2013; U.S. Census Bureau nonemployer statistics, 2013), may place this key sector of the economy at risk (The small business economy, 2012). However, imposing a burden is exactly what the Patient Protection and Affordable Care Act (PPACA, also known as the ACA and Obamacare), as amended by the Health Care and Education Reconciliation Act (Health Care

And Education Reconciliation Act, 2010; Patient Protection and Affordable Care Act, 2010) have done thus far.

Due to numerous postponements (Lahm, 2014b; Radnofsky, et al., 2013; Taulli, 2013) as various government agencies have attempted to develop rules and systems to implement the law inclusive of the disastrous rollout of the HealthCare.gov insurance exchange (Another ObamaCare website suffers delays, glitches ahead of launch date, 2014; Ferenstein, 2013; Young, 2013), all apparently on-the-fly, one might predict that more difficulties that exacerbate the situation are to come. At the very least Obamacare has created a period in the small business environment that has instilled anxiety and a loss of confidence (Anderson, 2014; Lowry & Gravelle, 2014; Turner, 2011). In the meantime, increased fines are here, and the temporary reprieve for many small business owners (and their employees, and the self-employed), is over.

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A CONCEPTUAL FRAMEWORK OF INNOVATION AND PERFORMANCE: THE IMPORTANCE OF LEADERSHIP, RELATIONSHIP QUALITY, AND KNOWLEDGE MANAGEMENT

Jeffrey Overall, Nipissing University

ABSTRACT

Innovation is an important antecedent of organizational performance, but it is also one of the most knowledge-intensive activities and it does not come easy. However, through trusted leadership, employees begin to develop a sense of commitment and satisfaction toward their employing organization, which stimulates creativity that can lead to innovation. Given the importance, in this research, it is argued that leadership, knowledge management, and the relationship quality construct comprised of trust, commitment, and satisfaction, are important dimensions of the innovation-performance relationship. By synthesizing three streams of research, namely: social capital, the resource-based view of the firm, and relationship quality, I contribute to the innovation literature by developing a conceptual framework of innovation and performance. Propositions are included whilst implications for managers and future directions are suggested.

INTRODUCTION

To maintain a sustainable competitive advantage in the hypercompetitive marketplace, innovation (Gunday, Ulusoy, Kilic, & Alpkan, 2008; Rosenbusch, Brinckmann, & Bausch, 2011; Van Auken, Madrid-Guijarro, & Garcia-Perez-de-Lema, 2008), defined as a construct that captures the newness of a product or service that can increase organizational performance (Bowen, Rostami, & Steel, 2010), is essential (Caselli, Gatti, & Perrini, 2009). Organizations that innovate can grow their profits, size, and market share (Van der Panne, Van Beers, & Kelinknecht, 2003) by increasing the value of the products and services that they offer (Caselli et al., 2009). This, in turn, leads to continuous improvement, efficiencies, and, eventually, profitability (Caselli et al., 2009). Indeed, the ability to innovate and differentiate from the competition whilst shielding one's organization from external factors is vital to long-term success (Hult, Hurley, & Knight, 2004; Jimenez-Jimenez & Sanz-Valle, 2011; Lin & Chen, 2007).

Given the importance, managers perpetually strive to foster innovation throughout their hierarchies by organizing corporate retreats, design thinking courses, and recruiting management consultants. These activities can be useful, but innovation is one of the most knowledge-intensive activities, which encompasses the collective knowledge within an organization (Caselli et al., 2009), and does not come easy. Innovation is dependent on an organizational culture that incentivizes creativity. Through this, organizations eventually become breeding grounds for innovation (Caselli et al., 2009). To achieve this level of innovation, leadership is important. According to the resource-based view (RBV) of the firm, which is based on viewing

organizations as pools of resources, capabilities, knowledge, intangible assets, skills, and leadership (Chisholm & Nielson, 2009; Mention, 2012), the collective knowledge and skill-set within an organization are crucial to success (Chisholm & Nielson, 2009; Henton, Melville, & Walesh, 2009; Mention, 2012).

Social capital, which is based on the premise that external networks, cultural norms, and trust facilitate the communication, cooperation, and coordination of activities (Putnam, 1995; Rodriguez, Perez, & Gutierrez, 2007), can lead to the development of innovation and, eventually, success (He & Poh-Kam, 2012; Rogers, 2004; Romijn & Albaladejo, 2002). Considering that leaders are vitally important to instilling a value-system within an organization, fostering best practices, and developing a culture that can stimulate collaboration and motivate employees, social capital is a function of leadership, which has been suggested to be an important antecedent to innovation (Garcia-Morales, Jimenez-Barrionuevo, & Gutierrez-Guiterrez, 2012; He & Poh-Kam, 2012; Montes, Moreno, & Morales, 2005). Through leadership activities, organizational members begin to develop a sense of trust in the integrity and reliability of their leader, which can subsequently develop commitment and satisfaction among the workforce (Caceres & Paparoidamis, 2007). Both trust and commitment are considered two dimensions of social capital.

In the customer relationship management literature, relationship quality, defined as the overall strength of a relationship that is capable of meeting the needs, wants, and expectations of business partners (Woo & Ennew, 2004), is vital to establishing and prolonging long-term relationships (Morgan & Hunt, 1994; Singh et al., 2012). Relationship quality is composed of the commitment, trust, and satisfaction that business partners experience in exchange relationships (Athanasopoulou, 2009; Fynes, Voss, & Burca, 2005; Lambe, Wittman, & Spekman, 2001). In their research, Yli-Renko et al. (2001) determined that fostering and managing effective relationships can lead to knowledge sharing, acquisition, and exploitation. Eisingerich, Rubera, and Eifert (2009) found that the organizations that were able to foster greater commitment and high-functioning inter-organizational relationships were not only more innovative, but more productive than other firms. Indeed, commitment gained from valued relationships stimulates trust within an organization that leads to engagement (Putnam, 1995). Although relationship quality has not been studied within the context of knowledge management, leadership, and innovation, it is clearly not only relevant to the RBV of the firm, but also social capital.

The main contribution to knowledge of this research is the synthesis of three streams of theory, namely the RBV of the organization, social capital, and relationship quality within a conceptual framework of innovation and performance. In the first section of this paper, the theoretical framework that forms the foundation of the conceptual model is discussed. In the second section, the conceptual framework of innovation and performance is presented. In the final section, implications for managers are discussed and future directions are suggested.

THEORETICAL FRAMEWORK

Social capital involves networks of social interactions between colleagues, customers, suppliers, superiors, and stakeholders, in general, which are vitally important to creating value (Hitt et al., 2002). Considering that organizations rarely have adequate resources to compete in the marketplace, social capital is necessary. Put differently, it is rare that organizations are capable of being fully integrated or self-sufficient and, thus, require assistance from external networks to attain objectives (Hitt et al., 2002). These external networks are essential to

attracting customers, suppliers, identifying entrepreneurial opportunities, and fostering innovation (Lee et al., 2001). These relations might involve buyer-supplier interactions that could entail business-to-business and business-to-consumer networks.

Although primarily based on external networks, social capital seems relevant to internal networks, those within the boundaries of an organization and, in particular, the employee-management network. Given the importance of trust and commitment in the employee-management relationship (Vaccaro, Parente, & Veloso, 2010), leadership appears to be important to social capital (Hitt et al., 2002). Considering the relevance of social capital to internal resources, researchers (Lee et al., 2001; Yeoh, 2004) have called for the synthesis of social capital with internal networks. In this context, social capital is created when, under the guidance of leadership, employees strive for the same vision, objectives, and goals, which can form a collective aim and a group identity with permanent and stable links (Ferragina, 2010). However, social capital can only occur when leaders have instilled trust among employees (Hitt et al., 2002). Social capital is not only founded on the structure of the relationship, namely trust, reciprocity, and mutual gain, but it is also involves the quality of the relationship (Hitt et al., 2002; Stone et al., 2003). When the quality of the relationship is high and valued by all members of the organizational hierarchy functioning under the leadership, there is a greater chance of employee loyalty to the organization (Athanasopoulou, 2009). Through this loyalty, sustainable competitive advantages and, eventually, success can occur (Hitt et al., 2002). Indeed, relationship quality is the most vital element of social capital (Hitt et al., 2012).

Founded in the services marketing literature (Grönroos, 1994, 2000), the relationship quality construct is used to define business relationships (Ulaga & Eggert, 2006). In the extant literature, commitment, trust, and satisfaction have been found to be interrelated and highly correlated (Caceres & Paparoidamis, 2007; Dagger & O'Brien, 2010; De Canniere, De Pelsmacker, & Geuens, 2010; Morgan & Hunt, 1994). Considering the high correlations, relationship quality has been conceptualized as a higher-order construct comprised of commitment, satisfaction, and trust (Athanasopoulou, 2009; De Canniere et al., 2010; Rauyruen & Miller, 2007). Trust is contextualized as the level of reliability and integrity that translates into confidence that one party feels toward another (Athanasopoulou, 2009). Commitment is defined as an employee's willingness, motivation, and desire to make efforts to strive for a collective goal within their employment context whilst maintaining a valued employer-employee relationship (De Wulf et al., 2001; Garbarino & Johnson, 1999). Satisfaction is defined as an employee's emotional state resulting from the relationship, in general, between his or her employer (De Wulf et al., 2001). In the main, relationship quality involves the mutual trust that is held between leaders and their subordinates, their commitment to the relationship, and their overall level of satisfaction (Leonidou et al., 2006). In other words, the happier employees are under the guidance of leadership and their level of motivation toward achieving a common goal, the more comfortable they will be and, subsequently, likely they will achieve said goal.

Indeed, social capital is a relational-based phenomenon that involves the shared resources that are embedded in these relationships (Huang, Lai, & Lo, 2012; Liao & Welsch, 2005). In many organizations, these resources are increasingly centred on intangible assets and knowledge, in particular, is becoming vital (Chisholm & Nielson, 2009). From the RBV, social capital can be used to not only access knowledge, but also to exploit collective knowledge to attain mutual ends, such as innovation and organizational success (Henton et al., 2002; Hitt et al., 2002). In the RBV literature, organizations are viewed as entities comprised of unique resources and these resources are capable of affecting, either negatively or positively, firm performance (Lee et al.,

2001). The RBV contrasts the population ecology literature whereby it is contended that organizational successes and failures are a result of external factors, such as industry lifecycles, population density, organization size, and age (Aldrich, 1979; Donaldson, 1995). Through the RBV of the firm, researchers focus on the internal factors that can contribute to success, which typically involve valuable, scarce, non-substitutable, and difficult to replicate resources (Bolino et al., 2002; Hoelsher, Hoffman, & Dawley, 2005; Lee et al., 2001; Mention, 2012; Pearson et al., 2008; Santoro & Chakrabarti, 2001). Bolino et al. (2002) contended that high-quality relationships between employees and leadership (i.e., social capital) are intangible, valuable, rare, and not easily replicated, which can contribute to competitive advantages. Given the importance of internal relationships, Lee et al. (2001) advocated for the synthesis of RBV with social capital (Yeoh, 2004).

It has been argued that social capital can influence the commitment that employees have to the organization, which can develop high-levels of intellectual capital (Bolino et al., 2002), such as knowledge. Indeed, the scarce resources that are typically difficult to replicate have increasingly been associated with harnessing and managing organizational knowledge (Huang & Li, 2009; Santoro & Chakrabarti, 2001; Thornhill, 2006). As such, it has been suggested that knowledge management, which is a function of strong leadership and the quality of the relationships internal to a firm, can stimulate innovation (Matzler, Schwartz, Deutinger, & Harms, 2008; Mention, 2012; Radas & Bozic, 2009). In the innovation literature, it is argued that the companies that are able to innovate and respond to market trends quickly can grow faster compared to their non-innovative counterparts (Harms et al., 2010; Jimenez-Jimenez & Sanz-Valle, 2011). In the conceptual framework of innovation and performance (Figure 1), the relationship between leadership, relationship quality, and knowledge management are postulated to have a positive impact on innovation and performance.

Figure 1
Framework of Innovation and Performance
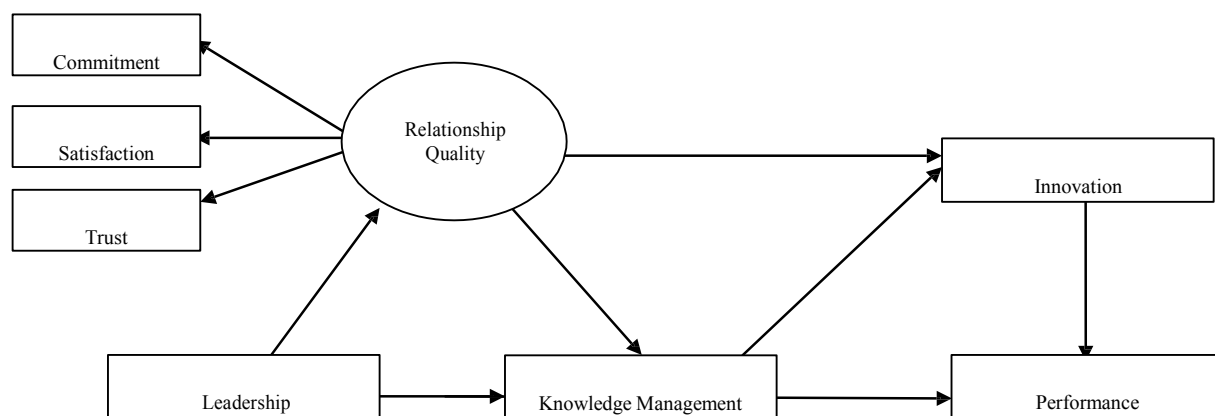
CONCEPTUAL FRAMEWORK OF INNOVATION AND PERFORMANCE

Peter Drucker, the management guru, emphasized the importance of innovation and advocated that it should be a core competency of all organizations (Lin & Chen, 2007). Leadership has been shown to positively influence organizational innovation (Lyon & Ferrier, 2002) and has been suggested to be one of its most important determinants (Jung, Chow, & Wu,

2003). There are two types of leadership styles: transformational and transactional. According to the former, transformational leadership has been contextualized as a leadership style that "… heightens consciousness of collective interest among the organization's members and helps them to achieve their collective goals" (Garcia-Morales et al., 2012, p. 1040). For the latter, transactional leadership is based on promoting the individual interests of the leader and, subsequently, his or her followers in "… attaining the satisfaction of contractual obligation on the part of both by establishing objectives and monitoring and controlling the results" (Garcia-Morales et al., 2012, p. 1040). In general, leadership has been shown to positively influence innovation (Crossan & Apaydin, 2010), but transformational leadership has been shown to be slightly more important (Jung et al., 2003).

From the extant literature, it has been argued that an organizational culture, which is a function of leadership (Garcia-Morales et al., 2008), influences knowledge management (Otero-Neira, Arias, & Lindman, 2013). Crossan et al. (2010) argue that leadership influences knowledge management, which subsequently impacts innovation. Although leadership is important, it has been argued that organizational learning and knowledge have a stronger and direct influence on innovation, which implies that leadership, might indirectly impact innovation, potentially through knowledge management (Aragon-Correa, Garcia-Morales, & Cordon-Pozo, 2007).

Dodgson (1994) contended that relational interactions or the quality of relationships, which he termed as collaboration, were vitally important to establishing knowledge within organizations. The commitment that employees have to their relationships has been proven to enhance organizational knowledge (Eisingerich, Rubera, & Eifert, 2009). Furthermore, trust is vitally important to fostering knowledge within an organizational context (Vaccaro, Parente, & Veloso, 2010). Similarly, Huang and Li (2009) argued that social interactions are positively related to knowledge management, which in turn influences innovation. In general, there is a positive association between relational interactions and knowledge management (Huang, Lai, & Lo, 2012). Although it has been contended that knowledge management is a function of leadership, the relationship appears to be indirect, 'filtered' by relationship quality. Therefore, the following is postulated.

> *P1   Relationship quality mediates the relationship between leadership and knowledge management*

Knowledge management influences the multidirectional flows of knowledge, which facilitates the sharing of knowledge among employees that can lead to the successful implementation of innovation (Huang & Li, 2009). When employees share their knowledge, new perspectives are generated, which enables the development, acquisition, and transformation of new knowledge that can contribute to innovation (Jimenez-Jimenez & Sanz-Valle, 2011). When knowledge is used effectively, learning is fostered, which improves the uniqueness of the scarce resources available within an organization (Huang & Li, 2009). In the extant literature, this has been identified as an important element in achieving a sustainable competitive advantage (Darroch & McNaughton, 2002). In their research, Nonaka and Takeuchi (1995) consider innovation to be a knowledge-intensive activity that requires input from increasingly scarce internal resources (Jiang & Li, 2009) and is vital to firm success (Caselli, Gati, & Perrini, 2009). In the extant literature, knowledge management has been consistently shown to have a positive impact on innovation (Baker & Sinkua, 1998; Beaver & Prince, 2002; Darroch & McNaughton,

2002; Garcia-Morales & Ruiz-Moreno, 2007; Johannesen & Olsen, 2011; Kamasak & Bulutar, 2010; Roper, Du, & Love, 2008). From this, the following relationship in the conceptual framework of innovation and performance is suggested.

P2   Knowledge management is positively associated with innovation

According to the customer relationship management literature, relationship quality, which comprises trust, satisfaction, and commitment, has been shown to enhance long-term performance, measured by customer loyalty (Caceres & Paparoidamis, 2007; Dagger & O'Brien, 2010). Researchers have found that relationship quality influences the innovation-focus of an organization and strengthens performance (Eisingerich et al., 2009; Gronum, Verreyne, & Kastelle, 2012). For innovation to be sustainable, it has been suggested that a satisfying organizational culture that is inclusive to employees is vital (Lyons, Chatham, & Joyce, 2007; Sarros, Cooper, & Santora, 2008). Using a case study of Toyota, Huang and Li (2009) demonstrated that high interconnected networks, which create a strong, motivating culture, where employees are willing to share their knowledge, tend to enhance innovation. From this, relationship quality appears to foster feelings of trust, commitment, and satisfaction among the workforce, which contributes to a comfortable working environment that seems to be a 'breeding ground' for creativity. This individual-level creativity can enhance innovation within an organizational context (Gronum et al., 2012). Therefore, the following relationship is suggested.

P₃   Relationship quality is positively associated with innovation

In the extant RBV literature, knowledge management has been shown to be vitally important to developing sustainable competitive advantages through enhanced innovations (Jimenez-Jimenez & Sanz-Valle, 2011). The quality of innovations is directly influenced by the available knowledge within an organization, which subsequently influences performance (Thornhill, 2006). Indeed, knowledge management has been shown to improve innovation and, consequently, performance (Caselli, Gatti, & Perrini, 2009; Darroch & McNaughton, 2002; Gronum et al., 2012; Huang et al., 2012; Jimenez-Jimenez & Sanz-Valle, 2011; Thornhill, 2006). Therefore, the following relationship is suggested.

P₄   Knowledge management is positively associated with performance

Organizations that are able to foster innovation throughout their hierarchies and develop new products and services quickly are capable of capitalizing on opportunities and entering new markets (Huang & Li, 2009). By doing this, organizations are likely to sustain competitive advantages and remain viable in the long-term through enhanced performance (Crossan & Apaydin, 2010; Neely & Hii, 1998). Indeed, innovation is vital and, perhaps, one of the most important dimensions of organizational success (Radas & Bozic, 2009). In the extant literature, a direct and positive relationship between innovation and organizational performance has been found (Aragon-Correa et al., 2007; Bowen, Rostami, & Steel, 2010; Garcia-Morales et al., 2012; Hult et al., 2004; Jiang & Li, 2009; Lyon & Ferrier, 2002; Thornhill, 2006; Veidal & Korneliussen, 2013). Therefore, the following relationship is proposed.

P₅   Innovation is positively associated with performance

IMPLICATIONS AND FUTURE DIRECTIONS

Through the conceptual framework of innovation and performance, the importance of knowledge management, leadership, and relationship quality in the innovation-performance relationship, has been demonstrated. The leaders that are able to foster satisfying cultures and trust through relationship quality are likely to enhance the knowledge that is available within their organizations. This knowledge can be used to stimulate innovations that can ultimately contribute to developing sustainable competitive advantages, which can eventually lead to enhanced performance (Chisholm & Nielson, 2009; Garcia-Morales et al., 2012). In this research, I contribute to theory by not only synthesizing three streams of theory, namely social capital, the resource-based view of the organization, and relationship quality, but also by introducing the relationship quality construct into the innovation literature. Indeed, there are several important implications for managers associated with this research.

Organizations should attempt to establish satisfying organizational cultures through their leaders and, by doing so, attempt to foster relationship quality in their interactions with employees. Leaders can achieve this by creating satisfying and trusting environments, namely by scheduling corporate retreats, paid lunches, one-to-one interactions, and flexible working conditions, that cause employees to perceive their leaders as colleagues as opposed to superiors. To do this, organizations should focus on recruiting leaders that destroy hierarchical layers and attempt to create more personable exchanges with employees. Through this, employees are likely to begin trusting their superiors and become committed to their organization.

Once relationship quality has been established, leaders should encourage employees to share their knowledge by providing them with incentives. Indeed, employees should be rewarded for sharing and making their knowledge available to others. In turn, this knowledge should be stored, easily accessible, updated regularly, and effectively communicated throughout the organization by managers, leaders, and employees. Through this, organizations should be in an improved position to manage the knowledge that is available to them, which can be used to innovate as the right information should be available when needed.

Beyond establishing reward systems for knowledge sharing, employees should be encouraged to innovate. Specifically, employees should be rewarded for not only successful innovations, but also for those innovations that fail. An organizational culture that is based on fostering the willingness to create and innovate, regardless of failure, should be the goal that all organizations strive to attain. Put differently, the fear of failure should be discouraged and employees should be willing to fail and to learn from their failures. Indeed, the negative stigma associated with failure should be eradicated as learning from failure is vital to gaining important knowledge (Cannon & Edmondson, 2005).

By using the conceptual framework of innovation and performance as a theoretical platform, there are several avenues that future researchers can take. Through longitudinal studies, researchers should investigate the importance of relationship quality that is fostered by leadership within young start-ups, established entities, and small-medium enterprises to see how relationship quality can transition as organizations become established. Similar longitudinal studies could be undertaken to investigate the differences in relationship quality among successful organizations compared to those in decline. Researchers should attempt to investigate the effect that relationship quality has on influencing the creation of innovation and knowledge among external partners, namely suppliers and customers. Researchers might endeavour to understand what other factors might be potentially important mediators or moderators in the

relationship between innovation and performance. Specifically, researchers could investigate firm size, firm age, demographic factors of the workforce, and industry factors. Researchers might also attempt to understand how human resources policies, such as wellness centres, flex time, and flexible working conditions, can create an inclusive environment that can influence relationship quality. Considering that high employee turnover rates tend to have a negative impact on knowledge management within an organization (Jafari, Rezaeenour, Mazdeh, & Hooshmandi, 2011), researchers might consider investigating methods that can be used to encourage employees to remain committed to an organization as opposed to emigrating to rival firms.

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THE COMPLEXITY OF OPPORTUNITY

Steven E. Phelan, Fayetteville State University

ABSTRACT

Entrepreneurship can be usefully conceived as the shifting of bundles of resources from low to high valued uses in the pursuit of profit. While the discovery and creation schools of opportunity both agree that some combinations are more profitable than others they disagree about what can be known about this reality. Discovery theorists believe that opportunities can be perceived, which makes it possible to acquire knowledge about payoffs before a market test. Creation theorists, on the other hand, believe that knowledge can only be gained after a market test. This leads creation theorists to advocate action and discovery theorists to emphasize planning. This paper considers both schools of thought and proposes a third conceptualization based on a model from complexity known as a fitness landscape.

A fitness landscape is simply a visual representation of all possible resource combinations, where the height of the landscape corresponds to the value (or fitness) of a particular combination. The landscape will tend to comprise peaks and valleys as not all combinations will yield the same payoff but similar combinations will tend to have similar (or correlated) values. Searching fitness landscapes to discover regions of higher fitness is thus akin to discovering higher valued uses for resources and thus has the potential to shed insights on the process of entrepreneurship.

Research on different algorithms to improve fitness has revealed that the choice of search strategy depends on the nature of the landscape and the capabilities of the agent. In some cases, blind search is the most viable strategy, while in others guided search may prove more effective. There is also a curious middle case where an agent does not know the payoff but because the landscape is correlated can determine more efficacious places to search. It is this third type of knowledge, which Ludwig von Mises called praxeological knowledge, which has been overlooked by entrepreneurship theorists. This approach allows us to resolve several tensions in entrepreneurship theory. First, payoffs exist independently of entrepreneurs' beliefs but cannot be measured directly. Thus, the outcome of all entrepreneurial action is uncertain and can only be determined with a market test. Second, this is not a license for 'anything goes'. Successful strategies tend to cluster together, so everything else being equal, future successes will build on past successes. Third, blue ocean strategies are still possible but investors are wise to be wary of them as the risk of failure increases with the complexity, duration, and novelty of an idea.

INTRODUCTION

'The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.'
- Marcel Proust

The issue of whether opportunities are discovered or created has inspired a great deal of debate in the entrepreneurship literature (Alvarez & Barney, 2007; Alvarez, Barney, & Anderson, 2013; Sarasvathy, Dew, Velamuri, & Venkataraman, 2010). The realist school sees opportunities as out there waiting to be discovered (Shane & Venkataraman, 2000;

Ventakaraman, 1997), while the constructionist camp maintains that opportunities are created through entrepreneurial action, with opportunities not existing prior to such action (Baker & Nelson, 2005; Garud & Karnøe, 2003; Sarasvathy & Dew, 2013).

The debate is a foundational one because it determines the objects of study for the entire field. Traditionally, an entrepreneur has been defined as one that pursues or exploits an opportunity, implying that the opportunity exists independently of the entrepreneur (Shane & Venkataraman, 2000; Stevenson & Gumpert, 1985). If, instead, opportunities are created, then the processes used by entrepreneurs to achieve success may be completely different from those previously envisaged and require a major shift in pedagogical philosophy and technique (Baker & Nelson, 2005).

Some authors have attempted to bridge the divide between the two schools by taking a contingency approach, entrepreneurs should be discovery driven in some situations and effectual in others (Alvarez et al., 2013). Another set of authors has argued that the opportunity construct should be jettisoned as unhelpful (Chiles, Bluedorn, & Gupta, 2007; Klein, 2008). This paper seeks to enter this debate by positing a number of propositions about the nature of opportunities drawing on the literature of complexity theory for inspiration. While arguably a realist philosophy, complexity theory has grappled with similar issues that are now facing entrepreneurship and has developed a more nuanced view of the issue that may assist in bridging the discovery-creation divide in entrepreneurship.

ENTREPRENEURSHIP AS SEARCH ON A FITNESS LANDSCAPE

The concept of a fitness landscape was first introduced in theoretical biology by Wright (1937) and subsequently applied to many fields, including physics, computer science, and business (Beinhocker, 1999; Brown & Eisenhardt, 1998). In this perspective, the height of a given point on a fitness landscape represents the payoff to a combination of finite elements. Actors (or agents) in the landscape are assumed to prefer regions with higher payoffs and 'adaptive' agents will gravitate towards those regions over time. In biology the elements being combined are DNA nucleotides and the payoff is reproductive success, while in business the elements are resources or factors of production and the payoff is profit.

Rugged fitness landscapes contain many peaks and troughs (see Figure 1). Although fitness landscapes are often presented in three dimensions for expositional purposes, they are actually *n*-dimensional constructs. Researchers have developed theoretical models, known as NK-models, which enable the ruggedness of a fitness landscape to be 'tuned' (Rivkin, 2000; Rivkin & Siggelkow, 2003; Weinberger, 1991). In a rugged landscape, agents can be trapped on 'local' peaks because moving to a higher peak may involve moving through areas of lower fitness.

Much effort has been expended in computer science attempting to find algorithms to locate global optima on different types of fitness landscapes. The efficiency of a given algorithm can be determined by comparing it with *brute search* (i.e. trying every possibility), which is clearly expensive and time consuming, and *hill climbing*, which involves altering one element at a time and retaining variations that improve performance. Hill climbing is typically ineffective on a rugged fitness landscape, as searchers are unable to cross troughs in the landscape to reach regions of higher payoff.

Figure 1

A RUGGED FITNESS LANDSCAPE
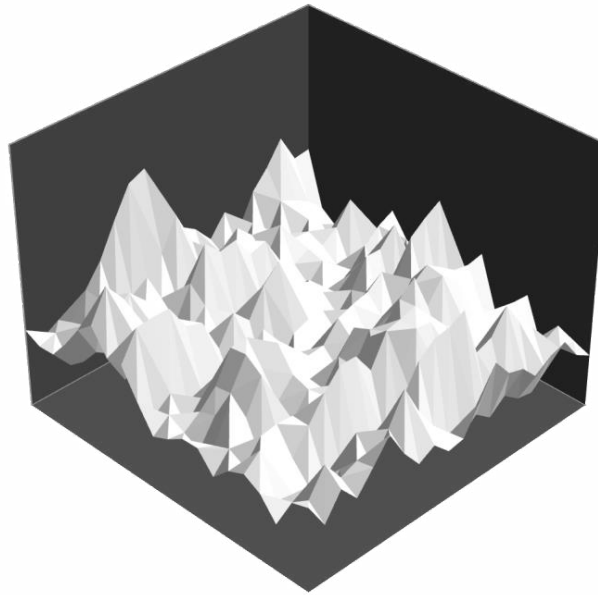
In many disciplines, such as biology and computer science, agents are typically engaged in blind search, meaning the agents have no ability to perceive the fitness landscape, and are guided only by feedback on payoffs from one round to the next. An economic agent like an entrepreneur, on the other hand, may be able to see a higher peak on a fitness landscape and thus *anticipate* that a particular combination may yield a higher payoff. This property will take on more importance as the paper develops.

The subjectivity of new combinations

The act of combination is a physical act because when I take action *real* things *really* move in the physical world. There is nothing subjective about a new combination. An example might be reallocating a train from a Boston-New York route to a New York-Philadelphia route.

The literature on opportunity has been greatly concerned about how evident these new combinations are to different individuals. For instance, Kirzner (1973, 1997) maintains that some entrepreneurs are simply more alert to opportunities than others, implying that anyone with a goodly dose of alertness should be able to perceive any opportunity. In contrast, Shane (2003) details how past knowledge and experience may condition certain people to see opportunities that others do not, thus limiting perception to 'knowledge corridors'.

Taken to the extreme, we can argue that each person has a unique set of experiences, so that every entrepreneur might see the possibilities for new combinations in a unique way.

Lachmann (1976). There is also some debate whether this knowledge can be shared with others. Sarasvathy and Dew (2008) argue the shared experience of working together can generate an inter- subjectivity that enables agreement on the objective presence of an opportunity. On the other hand, Langlois and Robertson (1989) have coined the term 'dynamic transaction costs' to refer to the costs of educating others on your vision. If these costs are high enough, an entrepreneur may be forced to act unilaterally without the support of others.

At the other end of the spectrum is the view that opportunities may not be perceptible in advance. In the effectuation literature, entrepreneurs are guided by the results of their actions to build on successes and abandon failures (Sarasvathy, 2008). It seems hardly relevant how the idea for a new combination arises or whether it needs to be perceived accurately at all.

The fitness landscape metaphor can be used to reflect on these different conceptualizations of opportunity. An opportunity on a fitness landscape is simply the possibility of moving to a position with a higher payoff, and the best opportunity is simply the highest peak. If the landscape is visible to all agents recognizing an opportunity simply involves keenly surveying the landscape (Sarasvathy et al., 2010).

However, if some agents have a better view of the landscape due to their relative position then different agents will perceive different opportunities. In fact, being at the top of a local peak may give you a better view of the surrounding terrain than being in a valley or on some lesser peak. Metaphorically, you may have to move to get to a better vantage point. This description corresponds well with Shane's (2003) notion of *opportunity discovery*. Moreover, no single agent will be able to see all of the landscape, even when on the highest peak, if perception is limited in range.

If you are unable to perceive the landscape at all then you will be forced to rely on some form of blind search, such as hill climbing or brute search, to locate areas of higher fitness. Sarasvathy et al (2010) refers to this feedback driven search as *opportunity creation* but it is clear from our earlier discussion that nothing is being created in the process. I prefer to call this process *opportunity revelation* as the fitness landscape is still present but opportunities only reveal themselves over time. Effectuation might also be considered an algorithm, or method, of exploring a unknown landscape but many other sophisticated techniques has been developed and the choice of method is ultimately a function of the task and type of landscape.

ALL COMBINATIONS ARE NOT CREATED EQUAL

All potentially profitable combinations (a.k.a. opportunities) are not created equal. At the very least, variations occur in the complexity, duration, and novelty of an opportunity. Complexity can refer to both the sheer scale of operation – the quantity of people and capital to realize an opportunity as well as the difficulty of melding the constituent elements together. Duration refers to the length of time required to assemble and maintain factors to realize a return, while novelty refers to the degree of departure from existing combinations or forms.

It is reasonable to surmise that the more complex or specialized an act of recombination the fewer people will be able to grasp the nature of the opportunity, particularly if it relies on some specialized expertise or experience. Similarly, the novelty of a combination, by its very definition, is unlikely to be widely appreciated by others. These factors are also not independent. More complex projects are apt to take more time.

In the fitness landscape metaphor, novel combinations are combinations that are more distant from existing combinations. If we assume that economic agents cluster around known combinations and agents do not have perfect knowledge of the landscape then fewer agents will perceive these novel combinations, typically those on higher peaks or closer to the fringes.

The notion of complexity is not necessarily problematic for the fitness landscape metaphor given that a fitness landscape already represents all possible combinations. Of course, if the actors are unaware of certain resources, this will make the parts of the landscape involving.

Those resources invisible to them. The invention of electricity or the web browser may thus reveal a whole new world of possibilities that were hitherto unknown. In this sense, progress is possible. The economic system will display some path dependence based on previous innovations and the level of complexity in the system will increase as the number of available building blocks increases.

Combinations and uncertainty

Time has been incorporated into complexity studies through the notion of a 'dancing' fitness landscape, where the actions of various agents cause the landscape to endogenously change over time (Kauffman & Johnsen, 1991). Changes in the landscape may also occur due to exogenous forces or shocks. This complicates the search process as the landscape may change over time and there is no guarantee that a perceived opportunity in one time period will still exist at a later time. It also means that the requirements for a successful combination will change over time.

The possibility of a dancing fitness landscape greatly complicates the search process. Even if an opportunity is accurately perceived it may not be present when the combination is realized. Thus, the passage of time creates uncertainty. This uncertainty exists even in the simplest examples of arbitrage. Seeing a $100 bill lying on the ground represents an opportunity, but even in the time it takes to bend down and pick it up the situation might change – someone else might beat you to it or the wind might blow it away. Generally, the longer the period of time between perception and execution, the greater the uncertainty, but some uncertainty is present in every project.

Note that this is pure uncertainty in the Knightian sense (Knight, 1921). Risk management involves forming probabilities from historical data (e.g. the mortality rates of a given population). Uncertainty, however, refers to those 'black swan' events that have the potential to alter the underlying historical distribution (Taleb, 2010). In other words, the landscape may change in unanticipated ways.

There can also be issues with perception. Following Shane (2003), only a few people will have the requisite experience to assess the viability of a highly complex or highly novel project. To the layperson, these projects will always appear highly uncertain. At the extreme, only the entrepreneur (or entrepreneurial team) will have the capability to see the potential of a novel or complex project. Entrepreneurs can also be wrong in their perceptions and investors must factor this uncertainty into their determinations.

It is also possible to completely reject the possibility of accurate perception and this *radical uncertainty* may be one of the hallmarks of the effectuation and lean startup movements (Ries, 2011; Sarasvathy, 2008). If one relies only on feedback to determine the viability of a project then it also follows that an entrepreneur is incapable of accurately perceiving opportunities in the environment.

This position is indistinguishable from blind search on a fitness landscape, a position that has led Blank and Dorf (2012) to propose (paraphrasing Moltke) that 'no business plan survives first contact with customers' (p. 22).

Related to the proposition that some combinations are more uncertain than others is the proposition that not everyone will agree that a given combination will have a profitable outcome. Building on the discussion above, this disagreement may come from two sources: first, a perceptual disagreement about the viability of a course of action, and second, a more existential disagreement about whether knowledge of profitable combinations is even possible.

In the first case, there is strong evidence that one's personal/educational background and career/industry experience shapes how one perceives opportunities (Shane, 2000; Shane & Khurana, 2003). As such, no two individuals will see the same opportunity in precisely the same way. This difference in perception may, in turn, lead to a difference of opinion about the profitability of a venture. Of course, the more common the background or shared experiences of a group, the more likely they are to perceive a common opportunity and this may explain why angel investors are more likely to invest in industries where they have experience. However, as we have seen, an entrepreneur may not be able to convince others of the vision, and may have to go it alone (which may or may not lead to success).

Given that perceptions vary, theorists in entrepreneurship have wondered whether Opportunities really exist independent of the observer and how shared knowledge is possible (Alvarez & Barney, 2010; Alvarez et al., 2013). Shane and his co-authors in the discovery school make a sharp distinction between the subjective conjectures (or business ideas) of entrepreneurs and objective opportunities (Eckhardt & Shane, 2013; Shane, 2003, 2012; Shane & Venkataraman, 2000). For Eckhard and Shane (2003, p. 336), opportunities are: 'Situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships'.

From a complexity perspective, it is not clear whether those from the discovery school Are referring to possible combinations, viable combinations, or profitable combinations. Nucleotides may be combined in almost infinite combination, but only a tiny fraction of possible combinations will generate a viable design, and only a small fraction of those designs will survive in a given environment. In fact, biologists estimate that human DNA is 99.9 percent identical, which is remarkable given the enormous range of possible combinations available (Thomson, Pritchard, Shen, Oefner, & Feldman, 2000).

A close reading of the discovery school suggests they are referring to viable combinations as the measure of objective opportunities as they make explicit reference to the physical world acting as a constraint on possible designs (Eckhardt & Shane, 2013). For instance, while it is possible for us to vividly imagine teleportation (in no small part thanks to works of science fiction like "Star Trek"), we currently do not have the technological means to achieve this end. Thus, teleportation would not be considered an opportunity within the discovery framework.

Because knowledge is dispersed, entrepreneurs are not aware of every use for a given technology. This has led to the development of a critical realist approach in the discovery school, where knowledge is acknowledged to be tentative and subject to revision (Alvarez & Barney, 2010; Mole & Mole, 2010), much as the allegorical blind men might touch different parts of an elephant and provide different reports on what they have found (Mintzbcrg & Lampel, 1999).

Critics of the discovery school's approach have focused on humanity's general inability to predict viability in advance of experimentation (Alvarez & Barney, 2013). Indeed, history is full of inventions that were imagined, declared to be impossible, then realized at a later date, human flight being just one storied example. This creation of new means (or ends) lies at the heart of Sarasvathy et al's (2010) conception of opportunity creation, where the means or ends or both are presently unknown.

BRIDGING THE DISCOVERY - CREATION DIVIDE

One way to bridge the divide between discovery and creation is to erase the false duality between a viable and non-viable combination and focus on relative fitness instead. First, as we mentioned earlier, the outcome of every possible combination is uncertain. There is no sure thing because even a global optimum can shift in a dancing fitness landscape. But it is also possible to make educated guesses. The reason that humans have 99.9 percent of their DNA in common is because it has adapted well to our current environment. In complexity-speak, humans are clustered around some sort of optimum. We do not know if this is the global optimum but it is definitely better than many other alternatives. The implication is that it is generally smarter to make small changes than large changes.

Natural selection is nature's way to conduct blind search using this principle. Sexual reproduction enables variation on a common theme by sharing half the DNA from each parent. This enables a species to explore its local fitness landscape while not straying too far from what has worked in the past. The presence of mutations, or random changes to the DNA pool, serves to create greater variation. Although most mutations are non-viable, some will allow a species to improve its fitness and migrate to higher areas of fitness. Computer scientists have developed a technique called a 'genetic algorithm' to explore theoretical fitness landscapes that is modeled on the principles of natural selection. Not surprisingly, these techniques have shown some success in complex optimization problems (Goldberg, 1989, 2002).

Similar principles have been applied to the business world by Beinhocker (1999, 2006) who has suggested that business strategies should involve a combination of short jumps (to optimize local performance) and medium or long jumps (to escape local optima and develop capabilities in advance of landscape shifts). However, Beinhocker is relatively silent on the exact proportions of these jumps, although presumably the number of small jumps should exceed the number of larger jumps.

Discovery as risk management

Alvarez and Barney (2010) have argued that risk can be incorporated into opportunity discovery by taking data from trend analysis and market research and using it to derive probabilities for use in risk-based decision tools like net present value, real options, and scenario analysis. This positions the discovery entrepreneur as some sort of risk manager (in the Knightian sense), who uses sophisticated decision tools to construct manage expected outcomes . However, in practice, it is often exceedingly difficult to assign probabilities of success to novel combinations and it is not clear that many entrepreneurs engage in this sort of activity.

Artificial selection is a different sort of risk-management technique that purposefully mixes desired traits together to limit the search to the most viable part of the landscape.

For instance, a breeder seeking to create a pure white dog would proceed to mate two mostly white dogs together in the hope of producing an even whiter dog.She would never mate two black dogs together and hope for a white dog nor would she mate a dog with a cat and hope for a white dog. Selective breeding is thus a method that combines relatively fit instances together to seek a higher level of fitness. This process can greatly speed up the process of natural selection. Most of the hundreds of breeds of dogs we see today did not exist just a few hundred years ago; a blink of the eye in evolutionary time. It is highly improbable that nature would have produced this degree of variety even with thousands of years to work. Computer scientists exploit this technique when using artificial genetic algorithms to accelerate their search. Weighting the selection of parents in each generation on the basis of their relative fitness is the usual way this is achieved.

Canvas as an example

A company seeking to create the next generation of a learning management system (LMS), like Canvas, will inevitably reproduce a host of successful elements from Black Board, the market leader of the previous generation, including assignment submission, grade book, modules, and discussion boards. In this case, Canvas is also using cloud-based technology to host its LMS. Once again, they are not inventing new techniques in this area, just incorporating popular functionality like mobile apps, cloud storage, and open source development. While it would be possible to construct an LMS from the ground up with a completely new set of user functions, this imposes unnecessary risks (and delays) relative to using elements that have already passed a market test. I would argue that any such combination of tested elements would represent an opportunity for the discovery school.

It is important to note that this calculation does not involve any sort of probabilistic determination in a Knightian sense. Using a known technology involves an almost 100% chance of success even if the viability (or fitness) of the resultant combination is uncertain. In this sense, discovery entrepreneurs are economizing on dynamic transaction costs, which are the costs of introducing novelty beyond the immediate production costs (Langlois & Robertson, 2002).

Canvas is a hybrid of two successful technologies, LMS and cloud technology. In this sense, it is like trying to crossbreed two successful species to create a hybrid. This is more uncertain than recombining successful elements from individual organizational forms. The strategy might lead to a region of higher fitness or fall into the valley between local peaks. Advocates of blue ocean strategy laud the benefits of finding a new part of the landscape that is unoccupied by competitors but they tend to underplay the inherent risks of venturing too far from tested solutions (Kim & Mauborgne, 2005). On the other hand, organizational ecologists have long observed the tendency of organizations in a given industry to display a high degree of similarity (Hannan & Freeman, 1993). Although often attributed to a need for social legitimacy, this observation is perfectly consistent with the evolutionary logic of building on past success.

The LMS example also allows us to build a bridge to the creationist perspective. While the founders of Canvas might have had prior experience in traditional LMS and cloud-based technologies, it is also possible that the opportunity was sparked by a chance encounter between an LMS specialist and cloud specialist.

The effectuation literature emphasizes the importance of the 'crazy quilt', which is the new knowledge that arises from such interactions and additions to the entrepreneurial team (Sarasvathy, 2008). Of course, many applications are moving to the cloud, so the thought of a cloud-based LMS, was not particularly avant-garde.

The crucial distinction between the discovery and creation approaches seems to be whether the actions were intended or not. The debate is reminiscent of the deliberate/emergent debate in strategy, where realized strategy is a product of intended and emergent strategies (Mintzberg & Waters, 1985). An LMS specialist might have deliberately sought out a cloud specialist to develop a new combination but they may just have equally met by chance. In reality, every company is likely to be a combination of deliberate pairings and happy accidents.

Testing combinations

Effectual theorists have contested whether advanced knowledge of profitable projects is even possible. In their view, any claim to possess such knowledge can only rise to the level of a hunch or hypothesis because the only true test is an empirical one (Blank & Dorf, 2012; Ries, 2011). From the fitness perspective, the market is still the ultimate arbiter of success, just assurvival is the ultimate test for an organism. Business combinations that are not profitable will ultimately not survive.

However, from the preceding discussion, it should be clear that all hypotheses are not created equal. Business combinations that build on previously successful elements are more likely to succeed. Just as artificial selection accelerates natural selection, so too can directed discovery improve the search process in entrepreneurship. Of course, this does not mean that long jumps into uncharted territory cannot be successful but they are also riskier.

Selection pressures have the effect of winnowing out poor choices. This has led theorists in entrepreneurship to embrace a form of evolutionary realism, with the success of a combination being a strong proof that an objective opportunity truly existed (Alvarez & Barney, 2010). Actually, evolutionary realists prefer to use the term 'verisimilitude', the appearance of being true or real, rather than 'truth' to indicate the tentative nature of knowledge (McKelvey, 1999). A prediction of success is another strong indicator that the entrepreneur has knowledge of the underlying causal mechanisms but, following critical realism, there is a chance that this knowledge is wrong. As Alchian (1950) pointed out in economics many years ago, in a large population many actors will be successful by luck alone and Barney (1986) has also discussed the role of luck in the strategy literature.

Complexity theory also acknowledges that fitness can be improved by virtually any variation, random or otherwise. A range of factors may affect the fitness of a combination, including: blind search, directed search, luck, the actions or inactions of competitors, and exogenous changes in the environment. The beliefs of others agents in the economy, such as customers suppliers and employees, will also interact with those of the entrepreneur to determine success (Barney, 1986). For instance, there must be a difference in expectations about the future for a trade to occur. Over time, evolutionary realists believe that market feedback will cause revisions in faulty beliefs in line with the underlying objective reality.

DO WE NEED OPPORTUNITIES AT ALL?

Klein (2008) has been sharply critical of the opportunity debate in entrepreneurship. A market test can only occur after committing resources to a given course of action. If an opportunity is just a successful market test then it is a tautology. Opportunity is just another word for success. The discovery school attempts to avoid this problem by defining opportunities as viable combinations that are independent of the business idea but, as we have seen, there is no test for a viable combination independent of a market test.

The creation school prefers to argue that opportunities emerge from the entrepreneurial process itself and cannot be predicted in advance.

For Klein (2008), opportunities are basically superfluous. In the same way that consumer choices are guided by underlying subjective preferences, we can infer that the subjective mental models of entrepreneurs guide entrepreneurial actions. However "…action is a real thing" (Mises, 1949, p. 13), so are results. Just as economists are wary of stated preferences over revealed preferences (i.e. real choices), Klein (2008) questions the focus on (stated) opportunities instead of action. Words are cheap. Action forces an entrepreneur to use judgment, sell others on the idea, and put resources at risk.

DISCUSSION

Contra Klein (2008), I believe that the opportunity construct serves a useful purpose for entrepreneurs. An opportunity is the business idea or conjecture that guides future action (Eckhardt & Shane, 2003, 2013). An opportunity is rational because the entrepreneur believes it will result in goal satisfaction, which in a business setting usually means monetary gain (Mises,1949). However, in most cases, there is a significant period of time between the decision to pursue an opportunity and its realization (Parker & Belghitar, 2006; Reynolds & Curtin, 2011). Moreover, most ideas will be subject to revision and many will be abandoned without firm formation. The two panel studies on entrepreneurial dynamics report that only 30% of ideas had resulted in new firm formation after six years. About 20% were still actively pursuing the opportunity but almost 50% of ideas had been abandoned. Thus, the pursuit of an opportunity is a journey rather than an act (Cha & Bae, 2010). Even after execution, the nature of the underlying opportunity will continue to evolve. We utilize these insights to highlight four ways that the different theories of opportunity may be synthesized together using a complexity lens.

Subjectivism

No two entrepreneurs are likely to have exactly the same business idea. Following Shane (2003), each entrepreneur will bring a different set of demographic, psychological, and experiential attributes to the situation, resulting in the same data being perceived in different ways. Moreover, the business environment (or landscape) will itself change over time. On the micro-level, every interaction with a stakeholder in the business, including co-founders, employees, investors, customers, partners, associations, and other agencies will influence the entrepreneur's business idea, possibly taking it in a new direction or confirming existing beliefs.

In turn, the actions of the entrepreneur will also influence the belief systems of the stakeholders that come into contact with the business, leading to a co-evolution of relationships, and beliefs (Sarason, Dean, & Dillard, 2006).

At the industry-level, the actions of other firms, and their resultant successes and failures, will also feed into the business idea of the focal firm, just as the actions of the focal firm will influence the industry. Similarly, at the macro-level, traditional macro-environmental trends and events, such as the state of the economy, the political system, and social values will shape the business idea over time and, in turn, will be be influenced by the actions of firms.

The business idea must therefore be in constant flux because all levels of the entrepreneurial system are in flux. This has led the Lachmannian branch of Austrian economics to view the economy as a system in constant disequilibrium with no intrinsic tendency towards rest (Chiles, 2003; Chiles, Tuggle, McMullen, Bierman, & Greening, 2009; Lachmann, 1976). Disequilibrium economics is closely related to the concept of a dancing fitness landscape.

While it would be helpful if this change occurred at a manageable pace that allowed an entrepreneur to adjust his or her plans, there is no guarantee that change won't be rapid, although the Austrians tend to see change as a 'kaleidic' process, where the payoffs to various combinations change over time in coordinated ways (Chiles, 2003).

Radical subjectivism is simply the view that these realities will ensure that no two business ideas will be exactly the same (Chiles et al., 2007). Even two entrepreneurs starting out in the same business on the same day on the same street will make different decisions on how to deploy their resources and these decisions will increasingly diverge over time. Note that subjectivism in this sense is not the opposite of objectivism (i.e. it is not the denial of an objective reality). Both ideas may be viable. One way to temper the opportunity debate is for all sides to accept that opportunities (or business ideas) are subjective states, influenced by psychological and sociological factors, and subject to revision over time.

Realism

All major theories of opportunity (the discovery, creation, Austrian, and complexity approaches) can agree that the entrepreneur starts with a business idea or conjecture. In the complexity approach presented here, the business idea *is* the opportunity and the terms are strictly interchangeable. Moreover, all four theories acknowledge some ontological reality independent of the business idea, which determines whether some realized combination of resources is more profitable than another. The metaphor of a fitness landscape describes the relative payoffs in this ontological space. These payoffs exist independently of entrepreneurs' beliefs but cannot be measured directly.

Elements of the creation school have toyed with the notion that entrepreneurs are "creating something from nothing" and that reality is a social construction (Lindgren & Packendorff, 2009; Valliere & Gegenhuber, 2014). On closer inspection, these theorists are arguing that existing resources can be recombined for new purposes if we remove artificial limitations on how resources can be used. This is not quite the same as saying 'anything goes' or 'anything is possible'. We have already acknowledged that entrepreneurs have varying beliefs about what is possible based on their life experiences. However, just because something cannot be perceived or imagined does not mean it is not there.

Epistemology

Epistemology concerns what can be known about the ontological reality described above. While the complexity approach has much in common with the discovery school's view that certain objective combinations are more profitable than others, it rejects the view that the viability of a combination can be definitively known *ex ante* independent of a market test, particularly when the fitness landscape is subject to change. However, complexity theory maintains that historical patterns and precedents can serve as useful guides to areas of superior fitness. Entrepreneurs with detailed knowledge of successful configurations are thus likely to outperform those with limited knowledge of a market although such knowledge can also lead to core rigidities that may prevent further adaptation (Leonard Barton, 1992).

In his treatise on human action, Ludwig von Mises (1949) distinguished between scientific knowledge based on laws (or known probability distributions), and praxeological knowledge, based on general regularities that lacked specificity. For instance, we know that everything else being equal, demand will rise when prices fall.

However, in our complex world, things are never equal so we are always uncertain about whether this particular regularity will hold in any given case. Although entrepreneurs must display judgment in applying these general principles, they would be foolish to ignore this source of knowledge (Foss & Klein, 2012).

In general, however, the Austrian school has been somewhat disinterested in the mental states of entrepreneurs and what they know or claim to know. Yes, an entrepreneur might have a mental model; in fact it is quite likely to be the case given that humans are rational and goal-driven. But action is the ultimate expression of the conviction of one's beliefs. Beliefs may be influenced from any range of factors but ultimately the choice (or judgment) to commit resources in the face of irreducible uncertainty is the true hallmark of an entrepreneur and something that cannot be delegated (Chiles et al., 2007; Foss, Klein, Kor, & Mahoney, 2008; Klein, 2008). It has also been noted that the ownership of assets within a firm makes it easy to redeploy them in new combinations thus opening the door for an entrepreneurial theory of the firm based on the ability to economize on the costs of experimentation (Klein, 2008).

The key debate then seems to be whether *ex post* knowledge is preferable to *ex ante* knowledge. One way to approach the issue is to view it as a false dichotomy. Surely it is preferable to have *both* types of knowledge. Both are based on the belief that an observed regularity will continue in the future (Phelan, 2001). Even the supposedly superior *ex post* technique pre-supposes it can be repeated or extended. In fact, there might be more *ex ante* evidence to proceed in a certain direction. There are certainly plenty of cases of successful small market tests not scaling effectively. Conversely, in a high-velocity environment, knowledge may rapidly become obsolete pushing the balance towards *ex post* knowledge (Brown & Eisenhardt, 1998).

Experimentation

To date, the creation school has focused on experimentation as the best way to test an idea against reality, but there has been a lack of discussion on how to form conjectures, which leaves the impression that 'anything goes' and that any given starting point on the landscape is as good as any other. For instance, the lean startup literature discusses the need to pivot if an experiment fails (Ries, 2011). There is some attempt to categorize different types of pivots but specific details on the direction or magnitude of a pivot are lacking. In the effectuation literature, entrepreneurs are advised start to take action with the resources and relationships they already control or influence (the bird in the hand principle).

Experiments should be made with an eye to 'affordable loss' that enables the entrepreneur to financially weather a test. The 'crazy quilt' principle lets the business model evolve as new resources and relationships are added to the mix but there is little guidance on which resources and relationships are the most relevant for success.

From a complexity approach, the view that 'anything goes' is patently false. It would be a dire mistake to start a search anywhere on the fitness landscape if prior information existed about the relative viability of various sections of the landscape. As we have seen, living organisms share an enormous amount of DNA in common, and nature is careful to stick very closely to successful combinations by relying on sexual reproduction with occasional mutations that might, every now and then, drive evolution in a new direction. The strategy of natural selection, on the whole, is extremely conservative. We have also seen that a variety of search strategies exist for efficiently exploring fitness landscapes faster than brute search or hill climbing. Techniques such as artificial selection can greatly speed up the evolutionary process.

Of course, blue ocean strategies are always possible (Kim & Mauborgne, 2005). Unexplored areas of the landscape are still capable of generating extraordinary payoffs whether located by deliberate search or 'happy accident'. By definition, any dancing fitness landscape will constantly be changing its payoff structure so using historical precedent to guide search may also be a dangerous strategy when change is accelerating (Christensen, 2013). This is why Beinhocker (2006) has advocated that mature companies use a mix of small and long jumps; the exact mix being determined by the degree of change and uncertainty in the industry.

However, all else being equal, the more novel, complex or time-consuming an opportunity, the less likely its chances for success. Much like DNA, opportunities that are built on successful elements are more likely to succeed and long jumps or pivots should be used sparingly. More work is needed in this area.

A Possible Limitation

In a recent article, Felin et al (2014) have strongly repudiated the application of the landscape metaphor to entrepreneurship. They argue that "… the landscape metaphor and associated computational tools require every observable in a given environment", which "mis-specifies what the economic problem entails" because "…we cannot prestate all the possibilities and thus do not (and can not) know the sample space of the process". Instead, "it is from the unprestatable uses of [components] in general that economic novelty emerges." They go on to argue, "…if we seek to retain the landscape metaphor, [we must explore] how portions of the landscape—hidden to our view—emerge in the first place". Thus, entrepreneurship is not (just) search on a fitness landscape for the best combination of known components, or uses of those components, but must incorporate the creation of new uses for known (and unknown) components.

However, it should be clear by now that complexity theorists do not claim perfect knowledge of real-world fitness landscapes. The combinatorial complexity is astronomical even with known combinatorial elements and there is little doubt that new elements (or even surprising new combinations of existing elements) will continue to be discovered. Instead, complexity science is concerned with building models of reality, which abstract elements of the real world, but also shed light on how to deal with certain classes of problems. For instance, does the way an entrepreneur searches a fitness landscape depend on how rugged (or correlated) the landscape is? Experiments on model landscapes suggest that the ruggedness of the landscape matters a great deal. Similarly, the question of long versus short jumps is also a function of the topology of the landscape and the rate of change.

Conclusion

In this paper, we have strongly argued that an opportunity is a business idea or conjecture on how resources or factors of production can be combined to yield higher returns or payoffs on a fitness landscape. This approach is able to preserve the subjectivity (or pluralism) of the Austrians and creationists, while maintaining the objective realism of discovery and complexity theorists. The paper also touches on the issue of ex ante and ex post knowledge and most effective methods of experimenting with new combinations.

A number of issues were identified for future research, including the tradeoff between specialized knowledge and core rigidities, the most favorable ways to combine *ex ante* and *ex post* knowledge, and the best search strategies in different entrepreneurial environments, including the right mix of short and long jumps under various conditions. It is hoped that moving past the definitional issues that have plagued the field will allow further work on these issues.

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POLITICKING AND ENTREPRENEURSHIP: DETERMINING THE CRITICAL POLITICAL SKILL DIMENSIONS FOR HIGH ENTREPRENEURIAL INTENTIONS

Simone T. A. Phipps, Middle Georgia State University
Leon C. Prieto, Clayton State University

ABSTRACT

The value of entrepreneurship for economical enhancement and social uplift is widely accepted, and thus, considerable research has been geared toward the examination of factors that influence entrepreneurial intentions and success. However, one area that lacks empirical analysis is the importance of political acumen for the entrepreneurial journey, from intent to behavior, and ultimately, success. Since entrepreneurial intentions are an essential antecedent of entrepreneurial behavior, this study examined the dimensions of political skill (social astuteness, interpersonal influence, networking ability, apparent sincerity) to discover which dimensions were more strongly related to entrepreneurial intentions. Results revealed that although there was a statistically significant positive relationship between entrepreneurial intentions and all political skill dimensions, networking ability, followed by social astuteness, had the strongest correlation with entrepreneurial intentions. Independent t-tests showed differences between men and women, with the female undergraduate students scoring higher on each political skill dimension. However, the associations between each political skill dimension and entrepreneurial intentions were found to be stronger for the male undergraduate students. Theoretical and practical implications of these results as well as recommendations for future research are discussed.

Keywords: *Entrepreneurial Intentions, Political skill, Social Astuteness, Interpersonal Influence, Networking Ability, Apparent Sincerity*

INTRODUCTION

Entrepreneurship plays a key role in economic growth and development. Baumol (1993) advocated that innovative entrepreneurship transforms inventions and ideas into economically viable entities. Acs and Szerb (2007) explain that entrepreneurship revolves around the recognition of opportunities along with the cognitive decision to commercialize those opportunities by starting a new firm. Therefore, it can serve as a mechanism that permeates the knowledge filter that prevents ideas and opportunities from being pursued by organizations, and thus it can provide the missing link to economic growth. Entrepreneurship is also crucial in times of recession. World-changing new ventures (e.g., Boeing, IBM, and Hyatt) and mainstay products (e.g., Miracle Whip and Kraft Macaroni and Cheese) are often born at the depth of economic upheavals (Bygrave & Zacharakis, 2010).

Entrepreneurship can also have positive social impact. Social entrepreneurship, or entrepreneurial activity with an embedded social purpose, has been on the rise in recent decades (Austin, Stevenson, & Wei-Skillern, 2006). The authors defined the phenomenon as innovative, social value-creating activity that can occur within or across the nonprofit, business, or government sectors. The concept is still poorly defined (Mair & Marti, 2006), as it means different things to different people and researchers (Dees, 1998; Mair & Marti, 2006). However, social entrepreneurship embraces the idea of pursuing an opportunity that is appealing, not solely due to its fiscal potential, but as a result of its capacity for positive social impact.

Since entrepreneurship is important for economic sustenance and resurgence, as well as social enrichment, entrepreneurial activity should be encouraged. Part of the battle lies in determining key factors that influence entrepreneurial behavior. There are many approaches to studying entrepreneurship, and several scholars have contributed to increasing our understanding about the phenomenon on different levels of analysis, ranging from the individual to the economy at large (Davidsson & Wiklund, 2001). Support for analysis at the individual level can be found in Gorman, Hanlon, and King's (1997) assertion that propensity or inclination towards entrepreneurship and small business is commonly associated with several personal characteristics.

A factor that is shaped, in part, by personal characteristics is entrepreneurial intentions, which have been found to precede entrepreneurial behavior. According to Bird (1988), entrepreneurial intentions form the initial strategic template for new organizations and are important underpinnings of new venture development. Therefore, the worthy cause of increasing entrepreneurial activity is aided when individuals have high entrepreneurial intentions, and thus, it is necessary to conduct research pertaining to such intentions. Extensive research has already found a correlation between entrepreneurial intentions and a number of personal characteristics including creativity, risk taking, self-efficacy, and proactive personality (Crant, 1996; Phipps, 2012; Prieto, 2011; Zhang, Wang, & Owen, 2015; Zhao, Seibert, & Hills, 2005).

Considerably less research has delved into political skill. Although political skills, including people skills, are considered essential resources for entrepreneurs (Thompson, 1999), there is hardly any empirical research that investigates the relationship between political skill and entrepreneurial intentions. However, Phipps (2012) did find a statistically significant positive relationship between political skill and entrepreneurial intentions for both men ($r = 0.282$, $p < 0.001$) and women ($r = 0.233$, $p < 0.001$). This paper serves the purpose of furthering the research by conducting additional analysis to determine the critical dimensions of political skill that are associated with entrepreneurial intentions. Which dimensions, for example, have a stronger correlation with entrepreneurial intentions? This study is significant because the findings can be utilized to facilitate more carefully targeted training and developmental opportunities that are not only designed to increase political skill in general, but are also particularly geared toward increasing specific political skill dimensions as needed by individuals and groups.

Fortunately, political skill can be developed and shaped (Perrewé & Nelson, 2004). In fact, Ferris, Perrewé, Anthony, and Gilmore (2003) viewed the development/training of political skill as a potentially new area of interest and activity in human resource development programs and management development programs. The researchers in this study see the potential for implementing such programs in educational institutions so that students can enhance their political skills as early as possible, in preparation for future entrepreneurial activity. Efforts must be made sooner rather than later to equip students with social perspicacity, influential abilities, and other skills that would serve them in good stead "politically," as these skills are linked to entrepreneurial intentions and ultimately, entrepreneurial behavior.

THEORETICAL FOUNDATION

Understanding and predicting new venture initiation requires research using theory-driven models that adequately reflect the complex perception-based processes underlying intentional, planned behaviors such as new venture initiation (Krueger & Carsrud, 1993). The "theory of planned behavior" is an empirically tested and validated theory that explains how behavior (including entrepreneurial behavior) is preceded by intentions (including entrepreneurial intentions), and how these intentions are shaped by an individual's outlook on the behavior, situational variables in the form of apparent pressure to engage in the behavior, and the seeming effortlessness or complication of engaging in the behavior. A study by Gird and Bagraim (2008) indicated that the theory of planned behavior significantly explained 27% of the variance in the participants' entrepreneurial intentions, suggesting that the theory is indeed a valuable tool for predicting entrepreneurial intentions.

According to the theory of planned behavior, intentions predict behavior, and these intentions are preceded by attitudes towards the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991; Gird & Bagraim, 2008). Attitude refers to the favorability of the person's evaluation of the behavior, which is determined by beliefs concerning the nature of the behavior's outcomes. Subjective norms reflect perceived social pressure to perform or not perform the behavior, and they emanate from beliefs derived from what key people in the person's life think about the behavior. Perceived behavioral control refers to the perceived ease or difficulty of performing the behavior and is reinforced by beliefs concerning one's definite and perceived shortfalls as well as external hindrances (Ajzen, 1991; Gird & Bagraim, 2008). Thus, perceived behavioral control encompasses the individual's ability to perform a particular behavior, and includes factors like resources (e.g., skills) and the availability of opportunities (Ajzen, 1991). The authors of this manuscript view political skill as one of the personal resources subsumed under perceived behavioral control that can serve as an asset in the entrepreneurial process and therefore, contribute to an individual's confidence in their ability to successfully engage in entrepreneurial behavior, thus, increasing their entrepreneurial intentions.

Another useful framework is the "knowledge spillover theory of entrepreneurship." Opportunities can be created when incumbent firms invest in, but do not commercialize, new knowledge, and entrepreneurship can be a response to these opportunities, contributing to economic growth by acting as a conduit through which knowledge created by these incumbent firms spills over to agents who create new firms (Acs, Braunerhjelm, Audretsch, & Carlsson, 2009). Acs et al. (2009) explain that the knowledge that induces the decision to start new firms is generated by investments made by the incumbent firm, and thus, the start-up serves as the mechanism through which knowledge spills over from sources that produced it (e.g., a university or research and development department or laboratory in an incumbent firm), to a new organizational form where it is actually commercialized. Therefore, according to the knowledge spillover theory of entrepreneurship, ideas and knowledge created in one organizational context such as a firm or university, but left uncommercialized, serve as a source of knowledge, generating entrepreneurial opportunities (Audretsch & Keilbach, 2007). Thus, the agent (i.e., the employee in the incumbent firm, or the employee or student at the university) sees an opportunity and capitalizes on it through entrepreneurship.

The idea(s) upon which the new firm is built/based can be, but are not necessarily identical to those of the incumbent firm or university. The knowledge gained from the latter can be

assimilated and adapted or transformed through different combinations before being commercialized, and political skill would be an asset in the commercialization process as agents interact with key individuals and persuade them to get on board. Capello (2009) revealed that the capabilities of agents to exploit spillovers highly depend on creativity, and not solely a skilled labor force, to combine existing know-how with interpretations of market needs, and develop new products, and attain new niches and new markets. In addition to creativity, the authors of this manuscript see political skill as invaluable since the interpretation of market needs, new product development, and the acquisition of new niches and markets require perspicacity and influence, among other qualities.

Baron and Markman (2000) provide a list of what they call social skills that are relevant to entrepreneurs' tasks and also, to their success. These skills, however, possess similarities to the dimensions of the political skill construct used in this study. Baron and Markman (2000) assert that these skills influence the quality of interactions between entrepreneurs and their (business or customer) alliances. Thus, in the context of the knowledge spillover theory of entrepreneurship, the creative agent, who has perceived an opportunity based on knowledge within the incumbent firm, and after careful evaluation, has decided to exploit it, can use these skills to develop and expand their social networks, to gain valuable information, and to facilitate access to financial capital and markets. These skills are presented in Table 1, and their prospective relevance to the performance of important tasks faced by entrepreneurs is described. Agents need political skill to successfully introduce "spillovers" to the market, and if these agents are secure in their belief that they possess such skill to facilitate or simplify entrepreneurial behavior, they should also possess higher entrepreneurial intentions.

Table 1
SOCIAL SKILLS POTENTIALLY RELEVANT TO ENTREPRENEURS' SUCCESS

Social Skill	Description	Examples of Potential Relevance to Entrepreneurial Success
Social perception	Ability to perceive accurately the emotions, traits, motives, and intentions of others	Making presentations to investors and customers, attracting and selecting partners and employees, conducting negotiations
Impression management	Ability to use tactics designed to induce liking and a favorable impression by others	Obtaining financing, attracting key employees, dealing with customers and suppliers
Persuasion and social influence	Ability to change others' attitudes and/or their behavior in desired directions	Obtaining financing, recruiting key employees, dealing with customers and suppliers, conducting negotiations
Social adaptability	Ability to adapt to, or feel comfortable in, a wide range of social situations	Establishing business relationships with strangers (i.e., cold calls), and working with people from diverse backgrounds

Note. Adapted from "Beyond Social Capital: How Social Skills can Enhance Entrepreneurs' Success," by R. A. Baron and G. D. Markman, 2000, *Academy of Management Executive, 14,* p. 106.

HYPOTHESES

Factors relevant to entrepreneurs and their success include their motives, skills, and abilities (Baron, 2004). Individuals' motives can be explained as the reasons underlying their intentions and actions. Whatever the motive, whether it is personal achievement, social influence, or economic gain, individuals' skills and abilities help shape their beliefs about the feasibility of entrepreneurial behavior, and as a result, play a role in influencing their entrepreneurial intentions. A beneficial skill for entrepreneurs to possess is political skill. Ferris et al. (2003) conceptualized political skill as a distinct type of social skill. Indeed, it was aforementioned that Baron and Markman's (2000) social skills, which they deemed relevant to entrepreneurial tasks, greatly resembled the political skill dimensions used in this study.

In general, political skill provides an individual with the ability to understand others and use that knowledge to effectively influence situations (Harris, Kacmar, Zivnuska, & Shaw, 2007). Politically skilled individuals view interpersonal interactions as opportunities rather than threats, facilitating the establishment of friendships, connections, and alliances, which in turn ensures a favorable identity in their network (Perrewe, Ferris, Frink & Anthony, 2000). One can see how these attributes would aid an entrepreneur as he/she tried to establish and grow a venture, and to convince potential stakeholders to support him/her. It certainly would help if these stakeholders (e.g., customers, employees, suppliers, etc.) saw him/her in a positive light. So, what qualities do politically skilled individuals possess that enable them to build and maintain relationships, to gain the trust of others, and to persuade others to cooperate according to their wishes? As used in this study, political skill has four key dimensions, namely social astuteness, interpersonal influence, networking ability, and apparent sincerity (Ferris, Treadway, Kolodinsky, Hochwarter, Kacmar, Douglas, & Frink, 2005), all of which the authors of this study expect to correlate positively with entrepreneurial intentions.

Social astuteness encompasses ingenuity and cleverness in dealing with others (Ferris et al., 2005). According to the authors, politically skilled individuals are highly self-aware, have strong powers of discernment, are astute observers of others, and are keenly attuned to diverse social situations. They comprehend social interactions and accurately interpret their behavior as well as that of others in social settings (Ferris et al., 2005). According to Lux (2005), social astuteness likely increases entrepreneur's ability to sell products and services, effectively negotiate, perceive opportunities through social connections, and foresee problems with business relationships.

H1:   A positive relationship exists between social astuteness and entrepreneurial intentions.

Interpersonal influence involves the capability to appropriately adapt and calibrate behavior to each situation to elicit particular responses from others (Ferris et al., 2005). According to the authors, politically skilled individuals have a subtle and convincing personal style that exerts a powerful influence on those around them. They are flexible enough to adjust to different targets of influence, according to the contextual conditions, to achieve their goals (Ferris et al., 2005). According to Lux (2005), entrepreneurs high in interpersonal influence are likely to be able to close sales with customers, and convince key resource holders to invest in their ventures.

H2:   A positive relationship exists between interpersonal influence and entrepreneurial intentions.

Networking ability embraces the individual's ease of developing friendships and building strong, beneficial alliances and coalitions (Ferris et al., 2005). According to the authors, politically skilled individuals are adept at developing and using diverse networks of people, who hold valuable assets for successful personal and organizational functioning. They ensure that they are well positioned to create and take advantage of opportunities, and are often highly skilled negotiators and deal makers, and adept at conflict management (Ferris et al., 2005). According to Lux (2005), entrepreneurs high in networking ability are likely to obtain information on opportunities and access to resources that others lower in networking ability may not be able to obtain.

H3: *A positive relationship exists between networking ability and entrepreneurial intentions.*

Apparent sincerity reflects the appearance of integrity, authenticity, sincerity, and genuineness (Ferris et al., 2005). According to the authors, politically skilled individuals appear to be honest, open, forthright, and devoid of ulterior motives, thus inspiring trust and confidence. They are perceived to have pure intentions/motives, and thus, their actions are not interpreted as manipulative or coercive (Ferris et al., 2005). The authors explain that this dimension strikes at the very heart of whether influence attempts will be successful, because these attempts are interpreted, and favorable interpretations are likely to benefit the actor in terms of the responses he/she obtains from others. According to Lux (2005), people will be more likely to share information on potential opportunities with entrepreneurs high in apparent sincerity, and to trust them with valuable resources. The author also asserts that apparent sincerity, like other political skill dimensions, is likely to be very useful in obtaining and maintaining customers.

H4: *A positive relationship exists between apparent sincerity and entrepreneurial intentions.*

Critical analysis of the theory of planned behavior suggests to the authors of this study that political skill should play a role in increasing entrepreneurial intentions. Political skill can be associated with perceived behavioral control because it is a valuable resource that can affect the ease or difficulty of performing entrepreneurial behavior. Social astuteness, interpersonal influence, networking ability, and apparent sincerity would be assets to the entrepreneur, aiding him/her in building and maintaining important relational ties, increasing sales, persuading venture capitalists and other financers to invest, and pursuing other opportunities as they arise. Therefore, an individual's possession of political skill should help convince him/her of the feasibility of entrepreneurial behavior, and serve as a positive influence as regards motivating him/her to start his/her own business, thus increasing his/her entrepreneurial intentions.

METHODOLOGY

The data for this study was collected in spring 2011 from a population consisting of full-time, degree-seeking, undergraduate students at a research extensive university in the southern region of the United States of America (N = 20,115). The population comprised of 10,313 females and 9,802 males, and the stratified random sample (n = 5,340) from whom data was sought consisted of 2,670 females and 2,670 males. The response rate was 19.8% (a total of 1,057 students), with 614 respondents (61.6%) specifying their gender as female and 383 respondents (38.4%) specifying their gender as male. Sixty students did not disclose their gender. The majority of respondents indicated that they were Caucasian (78.5%) and between the ages of 18 and 25 (96.6%).

Entrepreneurial intentions were measured using Liñán and Chen's (2009) 6-item measure called the Entrepreneurial Intention Questionnaire (EIQ). Responses were indicated on a 7-point scale ranging from 1 (total disagreement) to 7 (total agreement) with such items as "I am ready to do anything to be an entrepreneur," "My professional goal is to become an entrepreneur," and "I will make every effort to start and run my own firm."

The political skill dimensions were measured using the 18-item Political Skill Inventory (PSI) developed by Ferris et al. (2005), with responses being indicated on a 7-point scale ranging from 1 (strongly disagree) to 7(strongly agree). Social astuteness was measured using 5 items from the PSI including "I understand people very well" and "I am particularly good at sensing the motivations and hidden agendas of others." Interpersonal influence was measured using 4 items from the PSI including "It is easy for me to develop good rapport with most people" and "I am able to communicate easily and effectively with others." Networking ability was measured using 6 items from the PSI including "I spend a lot of time and effort at work developing connections with others" and "I have developed a large network of colleagues and associates at work who I can call on for support when I really need to get things done." Apparent sincerity was measured using 3 items from the PSI including "When communicating with others, I try to be genuine in what I say and do" and "It is important that people believe I am sincere in what I say and do."

All subjects completed the same web-based survey, which they accessed via their email accounts. They received an email requesting their participation in the study, and they were invited to click on the internet link provided in the email if they agreed to participate. Incentives were used to boost response rate in the form of a lottery drawing ($100, $50 and $25) for three participants who completed the survey before its closing date (which was fifteen days from the opening date). Deutskens, De Ruyter, Wetzels, and Oosterveld (2004) found that lotteries did make a significant difference in response rate and that the value of the lottery mattered. The authors also concluded that lotteries were the most effective reward (i.e., better than vouchers and donations) in an online environment, as they led to the highest response rate in the short version of their questionnaire, and still a respectable response in the long version, while being much more cost-efficient than vouchers. They also noted that the response time in lottery groups was faster, probably because respondents inferred that an early response would garner benefits for them in terms of a higher chance of winning a prize.

A follow-up email was sent to non-respondents after five days to remind them to respond to the survey. This email also contained information about the drawing and the date of the drawing. Again, five days thereafter, a third email was sent to non-respondents as a reminder to respond to the survey. This final email also conveyed information about the drawing, and informed participants that it was their last reminder before the survey closed five days later.

Correlation analysis was used to determine whether a positive relationship exists between each of the political skill dimensions and entrepreneurial intentions, with the Pearson Product Moment Correlation Coefficient being the measure of choice. Additional analyses were then conducted to investigate gender differences pertaining to political skill dimensions, as well as gender differences in the correlations between the political skill dimensions and entrepreneurial intentions. Are men or women found to be more socially astute? Which gender is more adept at using interpersonal influence? Is the correlation between networking ability and EI higher for men? Is the correlation between apparent sincerity and EI higher for women? Answers to these questions would provide further insight into the intricacies of entrepreneurial intentions and behavior. Independent t-tests were used to analyze whether any of the political skill dimensions varied

according to gender. Finally, the data file was split by gender to examine whether the correlations between political skill dimensions and entrepreneurial intentions differed according to gender.

RESULTS

Using the Pearson Product Moment correlation coefficient to measure the correlation between political skill and entrepreneurial intentions, a statistically significant positive correlation was obtained ($r = 0.222$, $p < 0.001$) at the 0.01 level. Results also revealed that at the 0.01 level, there was a statistically significant positive relationship between social astuteness and entrepreneurial intentions ($r = 0.203$, $p < 0.001$), interpersonal influence and entrepreneurial intentions ($r = 0.156$, $p < 0.001$), as well as networking ability and entrepreneurial intentions ($r = 0.259$, $p < 0.001$). At the 0.05 level, there was a statistically significant positive relationship between apparent sincerity and entrepreneurial intentions ($r = 0.072$, $p = 0.024$). Therefore, Hypotheses 1, 2, 3, and 4 were all supported. Means, standard deviations, and correlations for the variables are reported in Table 2.

	Mean	SD	Social Astuteness	Interpersonal Influence	Networking Ability	Apparent Sincerity	Entrepreneurial Intentions
Table 2							
DESCRIPTIVE STATISTICS AND CORRELATIONS FOR VARIABLES							
Social Astuteness	5.53	1.03	1	-	-	-	-
Interpersonal Influence	5.69	1.13	0.748**	1	-	-	-
Networking Ability	4.98	1.18	0.682**	0.69**	1	-	-
Apparent Sincerity	6.16	0.96	0.565**	0.597**	0.432**	1	-
Entrepreneurial Intentions	3.34	1.77	0.203**	0.156**	0.259**	0.072*	1

* Correlation is significant at the 0.05 level ($p < 0.05$)
** Correlation is significant at the 0.01 level ($p < 0.01$)

Further analyses were conducted to determine whether any of the political skill dimensions varied according to gender. First, measures of central tendency were reviewed for men and women. The mean social astuteness score for the male students was 5.45 (SD = 1.07), and the mean social astuteness score for the female students was 5.58 (SD = 0.999). For interpersonal influence, the mean score for men was 5.55 (SD = 1.19), and the mean score for women was 5.78 (SD = 1.08). For networking ability, the mean score for male students was 4.89 (SD = 1.23), and the mean score for female students was 5.04 (SD = 1.14). The mean apparent sincerity score for men was 5.96 (SD = 1.02), and the mean score for women was 6.28 (SD = 0.9). The independent t-test statistic was then used to determine if there was a difference between males and females with regard to each political skill dimension.

To determine the most appropriate t-value to be used in this comparison, the results of the Levene's test for equality of variances were inspected. The Levene's test was not significant for social astuteness (F = 2.157, p = 0.142), interpersonal influence (F = 3.861, p = 0.05), and networking ability (F = 2.514, p = 0.113), so the pooled variance estimate for the assumption of equal variance was used. According to the findings, the independent t-tests were significant for social astuteness (t (994) = -2.018, p = 0.044), interpersonal influence (t (995) = -3.153, p = 0.002), and networking ability (t (994) = -2.072, p = 0.039) at the 0.05 alpha level. The Levene's test was significant for apparent sincerity (F = 4.505, p = 0.034), so the pooled variance estimate for the assumption of unequal variance was used. The independent t-test was also significant for apparent sincerity (t (994) = -5.208, p < 0.001) at the 0.05 alpha level. These findings showed that female undergraduate students had significantly higher levels of all the political skill dimensions than male undergraduate students. Tables 3, 4, 5, and 6 illustrate these differences.

Table 3 SOCIAL ASTUTENESS COMPARISON BY GENDER			
Gender	Mean	SD	SE
Male	5.45	1.07	0.05
Female	5.58	0.999	0.04

Note: t (994) = -2.018, p = 0.044

Table 4 INTERPERSONAL INFLUENCE COMPARISON BY GENDER			
Gender	Mean	SD	SE
Male	5.55	1.19	0.06
Female	5.78	1.08	0.04

Note: t (995) = -3.153, p = 0.002

Table 5 NETWORKING ABILITY COMPARISON BY GENDER			
Gender	Mean	SD	SE
Male	4.89	1.23	0.06
Female	5.04	1.14	0.05

Note: t (994) = -2.072, p = 0.039

Table 6 APPARENT SINCERITY COMPARISON BY GENDER			
Gender	Mean	SD	SE
Male	5.96	1.02	0.05
Female	6.28	0.9	0.04

Note: t (994) = -5.208, p < 0.001

The final analysis involved the splitting of the data file by gender to examine whether the correlations between political skill dimensions and entrepreneurial intentions differed according to gender. As expected, there was a statistically significant positive relationship between entrepreneurial intentions and all the political skill dimensions for both men and women, and the

relationships did vary by gender. Means, standard deviations, and variable correlations for men and women are reported in Tables 7 and 8.

Table 7
DESCRIPTIVE STATISTICS AND VARIABLE CORRELATIONS FOR MEN

	Mean	SD	Social Astuteness	Interpersonal Influence	Networking Ability	Apparent Sincerity	Entrepreneurial Intentions
Social Astuteness	5.45	1.07	1	-	-	-	-
Interpersonal Influence	5.55	1.19	0.749**	1	-	-	-
Networking Ability	4.89	1.23	0.68**	0.681**	1	-	-
Apparent Sincerity	5.96	1.02	0.561**	0.564**	0.396**	1	-
Entrepreneurial Intentions	3.87	1.81	0.256**	0.184**	0.293**	0.13*	1

* Correlation is significant at the 0.05 level (p < 0.05)
** Correlation is significant at the 0.01 level (p < 0.01)

Table 8
DESCRIPTIVE STATISTICS AND VARIABLE CORRELATIONS FOR WOMEN

	Mean	SD	Social Astuteness	Interpersonal Influence	Networking Ability	Apparent Sincerity	Entrepreneurial Intentions
Social Astuteness	5.58	0.999	1	-	-	-	-
Interpersonal Influence	5.78	1.08	0.746**	1	-	-	-
Networking Ability	5.04	1.14	0.681**	0.694**	1	-	-
Apparent Sincerity	6.28	0.9	0.567**	0.614**	0.454**	1	-
Entrepreneurial Intentions	3.06	1.69	0.197**	0.183**	0.269**	0.099*	1

* Correlation is significant at the 0.05 level (p < 0.05)
** Correlation is significant at the 0.01 level (p < 0.01)

CONCLUSIONS, IMPLICATIONS AND FUTURE INQUIRY

The results of the study indicated that all the political skill dimensions (social astuteness, interpersonal influence, networking ability, and apparent sincerity) were positively associated with

entrepreneurial intentions. However, networking ability was the political skill with the strongest association with entrepreneurial intentions. Bird (1988) proposed that entrepreneurs who have networking skills achieve greater attunement in their ventures and are more successful than those who lack these skills. It may be that of all the political skill dimensions, networking ability is most easily recognized as linked to entrepreneurial success, as strong (and weak) ties enable entrepreneurs to acquire necessary resources, and thus individuals who view themselves as possessing this ability are more likely to have intentions to be entrepreneurs.

Social astuteness was the political skill with the second strongest association with entrepreneurial intentions Baron and Tang (2009) found that social perception (which is closely related to social astuteness) was significantly related to new venture performance. Individuals may also readily recognize the connection between social astuteness and entrepreneurial success, because they see and understand the links between social awareness, adept social interaction, and building valuable business relationships.

Although interpersonal influence was the political skill with the third strongest correlation with entrepreneurial intentions, this study did find that there was a strong positive relationship between social astuteness and interpersonal influence. In fact, they were the political skill dimensions that had the strongest correlation. Thus, they are both important for heightened entrepreneurial intentions and increased entrepreneurial behavior. Research must continue to uncover the factors, including knowledge, skills, and abilities, that influence entrepreneurial intentions and behavior. Findings would allow for more customized training and development programs and opportunities.

Phipps and Prieto (In Press) found that women had higher political skill perceptions than their male counterparts. Consistent with this finding, the present study revealed differences between men and women, with the female undergraduate students scoring higher on each political skill dimension. However, the associations between each political skill dimension and entrepreneurial intentions were found to be stronger for the male undergraduate students. Therefore, higher political skill perceptions for women than men did not translate into higher entrepreneurial intentions for women than men. Students who reported higher entrepreneurial intentions still tended to be male rather than female (Crant, 1996; Phipps & Prieto, In Press).

Why don't women capitalize on their perceived high political skills and intend to use these skills by pursuing entrepreneurial opportunities? It may be that other skills are more highly valued by them, and thus, may contribute more to their entrepreneurial self-efficacy, which then drives entrepreneurial action. Women need to be targeted early, in our educational institutions, and also via programs implemented in communities, where they are informed about the importance of political skill and taught how to use it effectively in the context of entrepreneurship, so they can be more confident, and perceive the ease rather than difficulty of engaging in entrepreneurial behavior. Then, their entrepreneurial intentions should increase.Also, future inquiry should be directed toward training design and finding effective training methods for political skill. Opportunities must also be provided for individuals to utilize the knowledge and skills they have gained from training so that their training can be transferred as they pursue entrepreneurial opportunities.

Implications do arise for corporate entrepreneurship (aka intrapreneurship) as well, and future inquiry should delve into the influence of political skill and its dimensions on intrapreneurial intentions. Entrepreneurship has been recognized as having a vital role within organizations. For example, Hult, Snow, and Kandemir (2003) revealed that entrepreneurship plays a role in building cultural competitiveness, which is the degree to which organizations are predisposed to detect and fill gaps between what the market desires and what is currently offered. Also, Schindehutte, Morris,

and Kocak (2008) contended that market-driving behavior, where an organization shapes the structure, preferences, and behaviors of market stakeholders, instead of simply adapting to the already existing market, is the essence of entrepreneurial action within firms.

Based on the tenets of the theory of planned behavior, it is reasonable to posit that corporate entrepreneurial intentions would precede corporate entrepreneurial behavior. A politically skilled individual should be better able to navigate through the organizational politics, and their awareness of such ability and the power that it holds to assist in intrapreneurship should increase their perception of behavioral control as they should then view intrapreneurial behavior as easier rather than more difficult. As such, their intrapreneurial intentions should be higher. If this is the case, political skill would also be quite invaluable to intrapreneurship.

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THE RELATIONSHIP BETWEEN RESOURCES AND FIRM PERFORMANCE: FACTORS THAT INFLUENCE SMEs

David Price, Washburn University
Michael Stoica, Washburn University

ABSTRACT

This research seeks to identify unique relationships between the resources utilized by Small and Medium-sized Enterprises (SMEs) and examines which resources are critical to firm performance. A model was developed and a cross-sectional survey administered to 229 SMEs in the United States. Statistical tests were conducted on the relationship between five resource categories: human, organizational, social, knowledge-based resources and entrepreneurial orientation (EO) and firm performance. In contrast to many previous studies, this research takes the position that EO is a firm-specific resource. Findings indicate that the resource dimensions of EO and knowledge-based resources are more important to SMEs.

INTRODUCTION

Understanding how SMEs achieve high performance in order to impact society has significant implications of SME owners/managers, SME employees and the economies in which the SME operates. High levels of performance can facilitate firm growth and subsequent profit performance, which in turn can yield employment gains and contribute to the general economic health of a state, region or nation (Wolff & Pett, 2006). Due to the lack of resources most common with small firms, a better understanding of the factors contributing to their performance is beneficial (Rauch et al., 2009). This research investigates SME performance by integrating various intangible resources into a model that attempts to explain which resources are most effective for SMEs. Thus the variability in a firm's performance may be attributed to distinct bundles of organizational resources (Anderson & Eshima, 2011; Barney, 1991). In addition to its practical contributions, the results of this research will add to the theoretical body of knowledge in the RBV and extend the current understanding in EO research.

THEORY AND HYPOTHESES DEVELOPMENT

Scholars have noted that the resource-based view (RBV) of the firm is fundamental in understanding the performance of firms (Barney, 1991; Wernerfelt, 1984, Wiklund & Shepherd, 2011). This is an internal focus on the importance of firms' resources and is the foundation of the RBV (Barney, 1991; Wiklund et al., 2010). Additionally, as there is acknowledgement that entrepreneurship is an important part of the resource-based framework (Connor, 1991), the combining or bundling of resources involves configuring them into complex combinations, so as to yield competitive advantage (Newbert, 2007). Resources should not be viewed as homogenous but as heterogeneous and variable, and the value of resources depends on the combinations with other resources (Anderson & Eshima, 2011; Barney, 1991).

Often RBV research has employed a single factor (resource) to explain variations in firm performance, which will often consist of a single measure. In this paper we investigate the

combined effects of multiple resource variables and firm performance.There has been a proliferation in resource categories, often seeing a firm as the combination of accumulated tangible and intangible resource stocks that are owned or controlled by the firm, such as technological assets, capabilities, human, financial, physical and knowledge-based resources that are tied to the firm or controlled by it. Intangible resources are essentially knowledge-based and therefore more difficult to imitate and are the focus of this study. These include human capital, social capital, organizational resources and knowledge-based resources.

The importance of human resources in enhancing firm performance has been widely studied and there is little disagreement that human capital constitutes an important element in the resources a firm possesses (Chadwick & Dabu, 2009). Organizational resources include systems and policies, expertise, organizational routines, culture and structure (Greene & Brown, 1997), and due to it inimitability is included for analysis. Social capital (networks) involves relationships between individuals or between organizations and the need to understand social capital as a resource has been highlighted in the entrepreneurship literature (Davidsson & Honig, 2003) and relationships have been seen as a key source of competitive advantage (Chisholm & Nielson, 2009).

Knowledge-based resources are an important group of intangible resources that can foster competitive advantage and has been described as having the greatest ability of all resources to serve as a source of sustainable differentiation due to immobility (Gold et al., 2001; Wang et al., 2009). According to Wiklund and Shepherd (2003), the management of knowledge is required to integrate all knowledge in order to anticipate current and future needs, and there is a continuous process to identify and exploit knowledge to develop new opportunities. Alavi and Leidner (2001) describe this process as creating, storing/retrieving, transferring and applying knowledge. Entrepreneurship scholars have attempted to explain performance through investigating a firms' entrepreneurial orientation (EO). EO refers to a firm's strategic orientation, and many researchers agree that EO is a combination of three basic dimensions: innovativeness, proactiveness and risk-taking (Covin & Slevin, 1989; Wiklund & Shepherd, 2005), although there is much discussion on other measures (see Covin & Wales, 2012). This paper adopts the position that EO is an important resource in itself, and it is posited that this concept is an important *resource* for firms. Previous research has empirically explored the independent effects of EO on performance (Zahra & Covin, 1995) and its relationship with the environment (Covin & Slevin, 1989), but has not fully investigated internal firm-level characteristics that may interact with other resource variables and performance. Thus the following hypotheses were developed:

H1: There is a positive relationship between human resources and firm performance.

H2: There is a positive relationship between organizational resources and firm performance.

H3: There is a positive relationship between social resources and firm performance.
H 4: There is a positive relationship between knowledge resources and firm performance.

H5: There is a positive relationship between a firms EO and firm performance.

The final model to be tested includes two control variables for firm age and size:

Figure 1

THE RELATIONSHIPS BETWEEN A FIRM'S RESOURCES AND PERFORMANCE
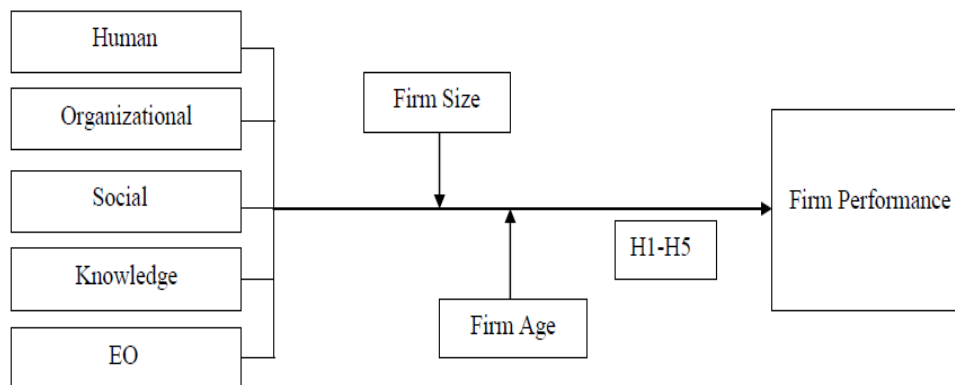
METHOD

In total, 229 useable responses were received utilizing SME databases, networking and snowballing techniques. Respondents were sent an online survey through three emails or delivered in person. Questions in the survey were sourced from existing scales within the entrepreneurship and strategy literature (Alavi & Leidner, 2001; Carmeli & Tishler, 2004; Covin & Slevin, 1989; Edelman et al., 2005; Gundry & Welsch, 2001; Wiklund & Shepherd, 2003; Yiu, Lau & Bruton (2007). Two control variables were added to the final model: firm size (employees) and firm age (Duncan, 1972). The acknowledged differences between industries in the sample required the use of subjective performance measures (Miles & Snow, 1978), with the selected scale indicating the perceptions of performance goals with regard to sales, market share, profitability, image/reputation and an overall evaluation. The scales were subjected to reliability and validity testing and factor analysis was used to reduce the number of items in some scales. Hierarchical regression analysis in SPSS was used to analyze the relationships between each set of variables in the final model.

RESULTS

The most commonly reported industries were in the retail sector (93 businesses or 40.6 percent) as shown in Table 1 below.

Table 1

FIRM CHARACTERISTICS – INDUSTRY TYPE

TYPE OF BUSINESS	PRIMARY NAIC CODE	BUSINESSES PARTICIPATING IN THE STUDY	
		NUMBER	%
Agriculture	1	7	3.1
Construction	2	16	7.0
Manufacturing	3	9	3.9
Wholesale	4	6	2.6
Retail	5	93	40.6
Transportation	6	1	0.4
Information	7	5	2.2
Finance & Insurance	8	23	10.0
Real Estate	9	9	3.9
Professional & Technical	10	21	9.2
Health & Social	11	6	2.6
Arts & Entertainment	12	4	1.7
Accommodation & Food	13	22	9.6
Other Services	14	7	3.1
Total		229	100.0

Most firms had from one to three employees (37.1%) closely followed by firms with 4-10 employees (35.4%). Very few firms had more than 20 employees (3%). Firm age difference was surprisingly spread, with the largest proportion of firms (32.3%) from 4-8 years old, but quite a large proportion were over 14 years (27.9%). Tables 2 and 3 below illustrate both firm size and age:

Each scale was assessed in terms of reliability, first based on Cronbach's alpha coefficient for the following constructs: human, organizational, social and knowledge resources, entrepreneurial orientation and performance. All scales were robust, analyses showing final scales ranging from 0.71 (organizational resources) to 0.92 (knowledge resources). These results indicate evidence of high internal consistency and homogeneity in each set of items. Reliability and correlation analysis is presented in Table 4.

Table 2

FIRM CHARACTERISTICS – SIZE (NUMBER OF EMPLOYEES)

CHARACTERISTIC	RANGE	BUSINESSES % (N = 229)
Number of Employees	No employees	11.8
	From 1-3	37.1
	From 4-10	35.4
	From 10-20	12.7
	More than 20	3.0

Table 3

FIRM CHARACTERISTICS – AGE (IN YEARS)

CHARACTERISTIC	RANGE	BUSINESSES % (N = 229)
Number of Years in Business	1 to 3 years	21.4
	From 4 to 8	32.3
	From 9 to 13	18.4
	From 14 to 19	15.2
	Over 20 years	12.7

Table 4

RELIABILITY AND CORRELATION ANALYSIS

Variable	Cronbach Alpha	HUMAN	ORGAN	SOCIAL	KNOW	EO	PERF	
HUMAN (Human Resources)	0.85							
ORGAN (Organizational Resources)	0.71	0.34**						
SOCIAL (Social Resources)	0.84	0.23*	0.53**					
KNOW (Knowledge Resources)	0.92	0.44**	0.38**	0.30**				
EO (Entrepreneurial Orientation)	0.90	0.33**	0.47**	0.31**	0.69**			
PERF (Performance)	0.91	0.29**	0.33**	0.24*	0.66**	0.59**		

*p< .10, **p< .05, ***p< .01

RESULTS

The variables were entered into a hierarchical multiple linear regression with performance as the dependent variable. The variables in the model included control variables age (AGE) in years and size (SIZE) as number of employees. Independent variables included in the analysis are human resources (HUMAN), organizational resources (ORGAN), social resources (SOCIAL), knowledge resources (KNOW), entrepreneurial orientation (EO) with the dependent variable performance (PERF). The results are shown in Table 5 below:

Model 1 was regressed on two control variables, age (AGE) and size (SIZE) against performance (PERF). The lack of significance suggests that the two control variables do not affect the model and the second model can be analyzed. Model 2 includes the five independent variables with the two control variables and shows strong results. The adjusted R2 is 0.45, ANOVA F is significant (28.02) at the one percent level. Comparing Model 2 with Model 1 we see that the addition in the Adj. R^2 is 0.01 to 0.45, an additional 0.44. Thus the five key independent variables are making a major contribution to the explanation of firm performance. Knowledge resources has the strongest result (β = 0.48, t = 6.71, p = < .01) and significant at the 1 percent level. EO also shows strong results (β = 0.26, t = 3.52, p = < .01). There is a large decline in performance to the next variable, as organizational resources indicated a small beta and is not significant (β = 0.03, t = 0.54). Similarly social resources and human resources were small and not significant.

Model 3 is the final optimal model. The adjusted R^2 improves slightly to 0.46. However, there is a substantial increase in the F-value (from 28.02 to 97.97), both significant at the one percent level. The two key variables that remain in the final model are knowledge resources and

EO. Compared to Model 2, the beta coefficients and t-values remain at the same high levels (5.48 and 3.35) respectively (both significant at the one percent level).

Hypothesis 1 *states that firm performance is positively related to human resources. The results indicate no significance (Model 2) (β = -0.04, t = -0.61). Therefore H1 is rejected.*

Hypothesis 2 *states that firm performance is positively related to organizational resources. The results show no significance (Model 2) (β = -0.03, t = -0.54). Therefore H2 is rejected.*

Hypothesis 3 *proposes that firm's performance is positively related to its social resources. Findings indicate no significance (Model 2) (β = -0.01, t = -0.11). Thus, H3 is rejected.*

Hypothesis 4 *proposes that firm's performance is positively related to its knowledge resources. The results show very strong support for this relationship. Results show significance at the one percent level and despite a slight decrease in beta and t-value from Model 2 (β = 0.48, t = 6.71) to Model 3 (β = 0.39, t = 5.48).The adjusted R-square shows 45 percent of explanation in the variance in Model 2, increasing to 46 percent in Model 3. We can conclude that H4 is supported.*

Hypothesis 5 *proposes that a firm's entrepreneurial orientation is positively related to performance. ANOVA F-tests and beta coefficients were significant (p < 0.01) in Models 2 and 3. Adjusted R-square for EO increased slightly from 44 to 45 percent of the explained variance. We conclude that H5 is supported.*

Table 5

HIERARCHICAL REGRESSION RESULTS (DEPENDENT VARIABLE: PERFORMANCE)

VARIABLES	MODEL 1		MODEL 2		MODEL 3	
Control Variables	*β*	*t*	*β*	*t*	*B*	*t*
Age	.03	.45	.04	.83		
Size	.06	.83	.04	.78		
Independent Variables						
Human Resources			-.04	-.61		
Organizational Resources			.03	.54		
Social Resources			-.01	-.11		
Knowledge Resources			.48	6.71***	.39	5.48***
Entrepreneurial Orientation			.26	3.52***	.25	3.35***
Adj. R^2	.01		.45		.46	
F value	.65		28.02***		97.97***	
Delta R^2			.44		.01	
F change			27.37		69.95	

*p< .10, **p< .05, ***p< .01

DISCUSSION AND CONCLUSION

Knowledge resources were the most powerful variable in the final model. This result is consistent with the literature which argues that knowledge-based resources have perhaps the greatest ability of all resources to serve as a source of sustainable competitive advantage (Lee & Sukuco, 2007; Wang et al., 2009). Knowledge permits a firm to predict more accurately the nature and commercial potential of changes in the environment and the appropriateness of strategic actions (Cohen & Levinthal, 1990). Importantly, research suggests that the enhancement of knowledge-

based resources can increase the application, distribution and creation of new knowledge, potentially increasing competitive advantage exponentially for firms (Hauschild et al., 2001).

EO was also significant in the final model. This result is consistent with the strong support shown for the EO concept in the literature (Covin & Wales, 2011; Moreno & Casillas, 2008; Wiklund & Shepherd, 2005). EO dimensions (innovativeness, risk-taking propensity and proactiveness) are related to first-mover advantages, the tendency to take advantage of emerging opportunities and respond more quickly (Zahra & Covin, 1995). EO may have a strong affect as it may be used as a mechanism to overcome resource constraints encountered by most smaller-sized firms. It is under these conditions that managers can more greatly benefit from being innovative and proactive and from pursuing risky new initiatives, thus differentiating their firm from competitors.

The remaining variables in the model were substantially less powerful, including human, organizational and social resources. It is suggested that the interplay between the bundle of resources tested in this model reduced the influence of these variables. For example, Greene and Brown (1997) noted the interaction of human and organizational resources are key in understanding firm performance, and that the two are closely related. Edelman et al. (2005) also found that human and organizational resources are closely tied. Individual learning can enhance ongoing firm learning and knowledge-enhancement opportunities, as human capital is a resource that is fundamental to knowledge creation (Hitt et al., 2001). Thus, as knowledge has been found to be a significant factor in the model, it could be argued that this finding is consistent with research that suggests knowledge resides ultimately in the people of the organization (Carmelli & Tishler, 2004; Grant, 1996; Hitt et al., 2001). In other words, it appears to follow a contingent approach, in that the existence of one resource affects the other.

Our testing indicated a lack of support for social resources, which is in contrast to research (Davidsson & Honig, 2003; Dubini & Aldrich, 1991; Lee & Sukuco, 2007). However, social resources have been observed to have drawbacks that may help explain this result. For example an organization with high levels of social resources can be resistant toward outside resources if it has strong internal ties, and these can inhibit the adoption of new relationships with others (Nahapiet & Ghoshal, 1998). This suggests that the opportunity to gather new information and knowledge might be less in an organization with plentiful social resources.

This research strongly supports the notion that high-performing SMEs possess a predisposition for EO and the successful management of knowledge resources. Policy-makers may need to afford a means of identifying knowledge-based resources and the processes involved with the acquisition and management of this capability, to ensure firms are organized to exploit its usefulness. This research also suggests a close link between EO and knowledge resources and this has theoretical implications for the RBV literature. The resource-based view of the firm has emerged over the last fifteen years as one of the more dominant perspectives used in strategic management and more recently in entrepreneurship, and this research has shown that the RBV indeed has potential to explain performance in smaller organizations.

While this research may not address all potential obstacles that manager's face in their quest to create successful firms, it does imply that certain firms may be predisposed to successful knowledge integration and EO characteristics. Additionally, these results indicate that managers should choose wisely in investments in human, organizational and social resources, as it was found that these resources may not add as much value to an organization. Limitations include findings being drawn from a convenience sample across multiple industries, which may prove problematic for generalizability. The cross-sectional nature of the data collection limits potential findings and it

is unclear if similar results would be found in a comparison of large firms. As resources are accumulated and managed over time, a longitudinal approach would provide more reliable data. The study utilized the variable a subjective measure of performance as opposed to other more common measures such as sales. We believe with the number of variables considered for this analysis, a structural equation modeling approach might help us better understand the interaction between the variables. Thus, results should be considered within these limitations

Future research on what role resources play at varying points in time during the evolution of SMEs and small business would be beneficial. For example, do the dimensions of knowledge and EO become less important? Additionally, the EO literature has stated that the different dimensions that comprise EO (proactiveness, risk-taking and innovativeness) are best measured as distinct dimensions (Lumpkin & Dess, 1996). Other questions left unanswered include does an organization gain strength as its culture (an organizational resource) begins to develop and this resource becomes more important to a firm's competitive position? Finally, consideration of strategic contexts other than the resource-based view could be an important area for research in the field.

This research argues that knowledge-based resources and entrepreneurial orientation are the most critical resources for SMEs. The empirical study examined four different types of traditional resources and positions EO as a firm-level resource. The study contributes to our knowledge about performance in SMEs and investigated performance based on a multi-resource method. While the firms have differing industry backgrounds, research conducted by Crook et al. (2008) on RBV research showed no significant differences across small and large firms or service versus manufacturing firms, suggesting that performance and resources are important across a range of contexts. Small businesses face enormous challenges and policymakers will need to address issues presented in this research and elsewhere to maintain and develop a strong economic presence. These include factors such as encouraging a strong entrepreneurial orientation and the development of knowledge resources and the two are closely related (Kreiser, 2011). As core elements in the findings of this research, these concepts are essential, both individually and collectively, for the creation of more successful entrepreneurial endeavours.

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THE ECONOMIC IMPACT OF ENTREPRENEURSHIP: SETTING REALISTIC EXPECTATIONS

David summers, University of Houston-Victoria

ABSTRACT

Many involved in economic development are convinced encouraging entrepreneurship and small business activity is key to economic growth. Often, however, the positive economic impact of entrepreneurship and small business is exaggerated because of faulty expectations based on hype rather than a critical analysis of current data. Realistic expectations are especially important to guide economic development as the nation's economy rebounds from recession. This paper addresses faulty expectations by evaluating current data and trends in new business startups, job creation, and the family income and net worth of families that report business ownership to establish a realistic assessment of the impact of entrepreneurship and small business activity.

Overall entrepreneurial startup activity and business dynamism, which measures firm births, deaths, expansions and retractions, are in decline in recent years. Of those firms that do start, most remain small (over 50% are home-based) and often fail. Even new establishments, which include stand-alone firms and locations owned by larger firms, have recently had minimal startup and growth rates.

Employer firms have shown disappointing growth in numbers of firms and in jobs created in recent years. In fact, employer firm deaths have exceeded employer firm births. Overall, the number of employees per firm is declining. What job growth there is tends to come from a small number of high-growth employer firms. These high-growth firms make up only 2.4% of all startups. Finally, firm size does improve job quality as measured by wage rates and access to benefits. The more employees a firm has, the better the quality of the job provided.

The income-producing ability of most firms is small with the average sole-proprietorship, which makes up 72% of all small firms, producing an average net income of $14,285. For families reporting self-employed as the occupation of the head of household, total mean and median family income and net worth significantly exceeded that of families with employed heads of household.

The expectations established by analysis of the numbers show that economic development activities may best be focused on supporting the small number of high-growth employer firms rather than on encouraging mass business startups. The biggest return on the investment of economic development resources will likely come from the growth of the few high-growth employer firms.

INTRODUCTION

There is growing agreement that entrepreneurship is a critical component of economic growth (Ahlstrom, 2010; Baumol & Strom, 2007; Holcombe, 2003; World Economic Forum, 2014). The Small Business Administration reports that entrepreneurial startups and small businesses (fewer than 500 employees) make up 99.7% of employer firms, 63% of net new private jobs, 48.5% of private sector employment, 42% of private sector payroll, 46% of private sector output, 37% of high-tech employment, 98% of firms exporting goods, and 33% of

exporting value (Small Business Administration, 2014). These impressive statistics entice community leaders and economic developers, especially in rural areas, to view entrepreneurial and small business activity as key to economic growth. Many communities focus a significant amount of resources on encouraging entrepreneurial activity (Markley, Macke, & Luther, 2005). Overall entrepreneurial activity coupled with business growth is seen as being essential to economic growth. Often, however, the positive economic impact of entrepreneurship and small business is exaggerated because of faulty expectations based on hype rather than a critical analysis of current data and trends.

Scott Shane in his book The Illusions of Entrepreneurship (2008) provides a cautionary note about the positive economic impact of entrepreneurship. He concludes that a careful analysis of the data challenges some of the widely-held positive assumptions about the inflated economic impact of entrepreneurship, especially if the growth dynamics of the startups are considered as the firms age. In addition, he suggests that policy makers should have realistic expectations before committing community resources to encourage startups (Shane, 2009). The data may indicate the economic impact of most startups is not sufficient to justify the resource commitment.

It has been several years and a recession since Dr. Shane came to his conclusions. What do the numbers indicate now? Realistic expectations are especially important to guide economic development as the nation's economy rebounds from recession. This paper addresses faulty expectations by evaluating current data and trends to establish a realistic assessment of the impact of entrepreneurship and small business activity for two major economic development components: job creation and business ownership income.

To understand the value of an evaluation of the current numbers is to realize the importance of economic growth and development. Economic growth and development are critical components of overall community development by providing financial resources to develop community assets (Flora & Flora, 2013). Though there is no agreed-upon definition of economic development, there is agreement on the general notion that a primary goal of economic growth and development is to increase per capita incomes of local residents (Perryman, 2006). Two primary sources of income are jobs and business ownership. The number and quality of jobs and the level of business income are directly tied to overall entrepreneurial startup and business growth activities. Therefore, this study begins with an investigation of the current level of entrepreneurial and business growth activity followed by a focus on job creation and business ownership income.

When conducting a research project such as this, it is necessary to start with a cautionary reminder. The data presented in the paper are from a variety of sources. As a result, some of the data collection periods, assumptions, and definitions may not align perfectly. In fact, data may differ from source to source. Therefore, regardless of the source, the numbers should not be taken as absolute but only as good estimations of reality. Every attempt will be made to make the data as consistent as possible and any major variations will be noted.

WHAT STORY DO THE NUMBERS TELL?

A widely accepted measure of startup activity is the Kauffman Index of Entrepreneurial Activity which is supported by the Kauffman Foundation and is compiled by Robert Fairlie, an economics professor for the University of California at Santa Cruz (Fairlie, 2014). The index tracks monthly startup activity per 100,000 of adult population and is derived from a variety of

data sources. Startup activity is tracked at the national, state, and metropolitan statistical area level as well as for other demographic criteria such as age, gender, race, and other factors. In the United States for 2013, the entrepreneurial index was 0.28% which translates into about 476,000 businesses started each month or 5,712,000 each year. The index is down from a peak of 0.34% in both 2009 and 2010 and is slightly above the 18 year low of 0.26% in 2001. Variation among the states is high ranging from a low of 0.11% in Iowa to a high of 0.61% in Montana. Men tend to start a business at a higher rate (0.34%) than women (0.22%). Latinos lead the way at 0.38% followed by Asians with 0.28%, then whites with 0.27%, and finally blacks with 0.19%. Americans ages 45-54 have a startup index of 0.36%, followed by a tie between those ages 35-44 and ages 55-64 at 0.31%, and finally those ages 20-34 at 0.18% (Fairlie, 2014). All the index numbers for 2013 are below the highs of the last 10 years of all small firms, 52% are home-based; 72% are sole proprietorships; 18.5% are corporations; and only 2% are a franchise (Small Business Administration, 2014). The Small Business Administration (SBA) also estimates about half of new establishments survive 5 years or more with one-third surviving more than 10 years. In fact, the probability of failure tends to decrease at a slower rate with firm age (Small Business Administration, 2014).

Another view of entrepreneurial and business activity is found in a times-series database initially developed by the Edward Lowe Foundation to study business dynamics. The current database, Your Economy, has data on establishments at the state, metropolitan statistical area, and county levels. The data base includes information on establishment numbers, job creation, and sales for establishments classified as self-employed (1 employee), stage 1 (2-9 employees), stage 2 (10-99 employees), stage 3 (100-499 employees), and stage 4 (500+ employees). Establishments include both stand-alone firms and firms started by other firms. For the community or economic developer, however, it does not make any difference if a new firm is a stand-alone startup or a startup established by another firm. The economic impact is similar. For the 2007 to 2013 time frame which covers the recent recession and recovery period, the United States has shown average yearly changes in the number of self-employed (-4.4%), stage 1 (+2.4%), stage 2 (+0.7%), stage 3 (1.0%), and stage 4 (0.1%). The average annual change reflects firm additions less closures for each category. The numbers also vary from location to location with number one, Virginia, seeing a 2.7% increase in the numbers of all firm sizes to a low in Mississippi of -4.8% (Your Economy, 2015a). Overall the average growth rate in the number of establishments in each category has not been impressive and is consistent with the Kauffman Index of Entrepreneurial Activity described earlier.

The general conclusions that can be drawn from the data so far are that business starts have declined in the last few years; startup activity varies greatly from location to location; those engaged in firm startup vary according to demographic factors; most startups and small businesses are small in size and economic impact; and many fail, however, the probability of survival increases with firm age. If the focus is switched to all establishments, whether stand-alone firms or establishments by other firms, the growth in number of establishments in all categories is not impressive when both additions and closures are considered. In addition, the growth in the number of establishments varies greatly from location to location.

Realistic expectations for economic development based solely on startup activity or increasing numbers of establishments should be subdued, but what about expectations for increased incomes from job creation or business ownership?

WHAT ABOUT JOB CREATION?

A primary focus of all economic and community developers are jobs. Though small businesses make up 99.7% of all employer firms, only 20.1% of all small firms have any employees which means that 79.9% never employ anyone other than the owner (Small Business Administration, 2014). Only 15.8% of all startups are employer firms (Fairlie, 2014). The trend in new employer firm creation has been down over the past few years (Decker, Haltiwanger, Jarmin, & Miranda, 2014). In fact, employer firm deaths have exceeded employer firm births (Small Business Administration, 2014; Hathaway, Litan, 2014)). A more extensive gauge is business dynamism which measures firm births, deaths, expansions, and contractions. Business dynamism has been linked to productivity and sustained growth. Alarmingly, business dynamism has been on the decline for the last few decades in all areas of the country (Hathaway, Litan, 2014). Much of the decline can be linked to the lower rate of business startups (Decker, et al., 2014). Fortunately, employer firm death rates slow with firm age. In fact, 49.3% remain after 5 years, 34.7% after 10 years, and 26.9% after 15 years (Bureau of Labor Statistics, 2014a).

A bigger consideration is the job creating ability of the surviving employer firms. There is growing evidence that firm age rather than size is more closely related to job creation (Haltiwanger, Jarmin, & Miranda, 2013). About 16.6% of all gross job creation can be attributed to new firms and another 16.6% can be traced to new establishments by existing firms (Decker, et al., 2014). The main issue is whether the new jobs created will last. About 50% of the initial jobs created by an entering startup cohort are lost to business exits within the first 5 years. The job losses as a result of business deaths, however, are offset to an extent by the growth of the surviving firms in the cohort so that by end of the first 5 years, 80% of the original employment contribution still exists (Decker, et al., 2014). Decker et al. (2014) also found that job growth slowed as the firm aged. Another important finding was that most of the job growth came from a small number of high-growth firms (defined as firms expanding employment by more than 25% per year). Kunkle (2013) found that steady growth was more important for long-term job creation than growth spikes and that high-growth firms were found in all industry classifications. Overall, high-growth firms represent about 2.4% of all startups including employer or non-employer firms. Therefore, for every 100 startups only about 2 to 3 will be high-growth firms.

One final disturbing trend is the number of employees in the average employer firm. All establishments in 2007 averaged 16.4 employees which dropped to 15.2 by 2014. In 2007 there were an average of 5.3 employees per establishment less than one year old and by 2014 the number dropped to 4.4 employees (Bureau of Labor Statistics Data, 2014b). Overall employer firms are getting smaller.

While firm age is more important to job creation than firm size (Haltiwanger, Jarmin, & Miranda, 2013), employment trends based on establishment size are still interesting. Drawing on the Your Economy (2015b) database, self-employed (1 employee) firms have seen a -4.4% average annual decline from 2007-2013, stage 1 (2-9 employees) firms a 2.1% employment gain, stage 2 (10-99 employees) a 0.9% gain, and stage 3 (100-499 employees) firms a 1.0% gain. The larger stage 4 (500+ employees) firms saw an average annual employment gain of 1.2%.

What does all of this mean to community and economic development leaders? Most job creation is driven by a small number of high-growth firms; steady job growth is better than spikey growth; job creators are found in all industry classifications; job growth can come from both stand-alone startups or startup establishments by existing firms; and business dynamism

which measures startup, exits, expansions, and closures, has been in decline over the last few years.

Another concern is job quality. Job quality includes both wage levels and available benefits. Table 1 provides some comparison data concerning wages and access to different benefits by firm size.

Table 1 COMPARISON OF WAGES AND ACCESS TO BENEFITS BY FIRM SIZE				
Wage & Benefits	Firm Size (Number of Employees)			
	1 - 49	50 - 99	100 – 499	500 or more
Average weekly wage*	$813	$943	$1,117	$1,556
Per Cent of Employees with access to:** Health care	54%	70%	80%	90%
Retirement plans	46	65	79	86
Life insurance	36	55	71	85
Paid sick leave	51	58	68	85

Sources: *(Bureau of Labor Statistics, 2014c); **(Bureau of Labor Statistics, 2014d)

When it comes to job quality, size does matter. The larger the firm-size, the higher the wages and the better the access to benefits. Therefore, it would be good to encourage firm employee growth to improve the quality of jobs created.

WHAT ABOUT BUSINESS OWNER INCOME?

A source of individual and family income that is often overlooked is income from business ownership. If the goal of economic development is increased per capita incomes, then this source needs to be considered. Data and definitions at the individual or family level are often difficult to analyze. For example, someone can be only self-employed; self-employed in a sideline business and work for an employer; be a part-owner of business but not be active in the business; or own and actively manage a business (Cagetti & De Nardi, 2006). In fact, the income from many small businesses may be a supplement to employment income or a primary income for one member of the family while other members are employed. It is not uncommon for one spouse in a family to be self-employed and the other spouse to be employed because of the family need for a steady income and benefits. Therefore, the impact of business ownership income on individuals and families can range from a small supplement to the primary source.

As previously mentioned, 72% of all small firms are sole proprietorships (Small Business Administration, 2014). In 2011, the latest data available, the Internal Revenue Service (IRS) stated the average reported annual pretax net income for sole proprietorships was $14,285 which is a slight decrease from the 2007 level of $14,490 (Internal Revenue Service, 2014). This means that in 2011 an average of slightly less than $1,200 per month of pretax net income was generated. This may not seem like significant income, but for a struggling family, it could mean the difference in financially meeting the family's needs each month. From another viewpoint, a 10 year monthly cash flow of $1,200 at a 5% discount rate would have a present value of $113,138 representing additional family financial wealth.

At the family level, 11.7% of families in 2013 reported having business ownership, which is a drop from 13.6% in 2007. The median value of the ownership in 2013 was $67,500 as compared to $103,500 in 2007. The mean value was $973,900 in 3013 and $1,062,500 in 2007 (Federal Reserve, 2014). The huge skew between the median and mean indicates that most family business equity is relatively small, but there are some families with substantial business ownership value. Both the median and mean, however, are substantially down over the past few years.

Switching to income, families that report that the head of household is self-employed had a median income of $70,800 in 2013 versus $85,000 in 2007. The mean reported income was $213,100 in 2013 and $215,400 in 2007. The skew apparent in the value of business ownership is also apparent in income levels. Families with an employed head of household reported median income of $56,800 and mean income of $86,700 in 2013 and median income of $63,500 and mean income of $93,300 in 2007 (Federal Reserve, 2014). Both families with a self-employed head of household and those with an employed head of household have seen a decrease in median and mean income levels since 2007. But what is very apparent is that families with a self-employed head of household have substantially higher median and mean incomes than families with an employed head of household for both time periods. Business ownership appears to financially benefit families.

In examining family net worth, the median for self-employed household heads is $358,900 with a mean of $2,167,500 in 2013 down from $436,500 and $2,204,900 respectively in 2007. The median net worth for employed households heads is $62,000 with a mean of $314,700 in 2013 which is also down from $105,600 and $395,200 respectively in 2007 (Federal Reserve, 2014). Again, the positive impact on net worth for self-employed household heads is dramatic.

For community and economic developers, the data indicate the average startup or small business produces limited income and wealth for the overall community, but a few businesses produce a great deal of income and wealth. For the individual family, however, even the smallest business can have a positive impact. Trends in family business ownership, the average value of the firm, income produced, and family net worth are declining.

CONCLUSION

In order for community leaders or economic developers to make intelligent public policy decisions and resource allocations concerning support for entrepreneurship and small business, it is necessary to have realistic expectations about their economic impact. Do we commit substantial resources to support entrepreneurship and small businesses or do we exercise caution as suggested by Shane (2009) and limit support. Shane's argument was centered on the limited economic impact provided by most startup and small firms. What do the current numbers indicate?

Though entrepreneurial and business activity can vary greatly from location to location, if the community fits the national startup rates and other national numbers, the following can be expected. For every 10,000 adults in the community, 336 business will be started each year; of these, 242 will be sole proprietorships which will provide an average net income of $14,285; about 53 of the initial startups will be employer firms creating about 233 jobs; of the 233 initial jobs, only 117 will remain after 5 years; considering growth and expansion of the survivors of the 53 initial employer firms, however, 186 net jobs will still exist after 5 years; most of the job growth will come from the 8 high-growth firms in the initial cohort; and these 8 high-growth

firms probably grew at a steady pace over the 5 year time period. As the survivor firms mature, both job gains and losses will become less. Of the 53 initial employer firms, 26 will remain after 5 years, 18 after 10 years, and 14 after 15 years. Finally, the startup rate of 336 businesses per year will continue to drop each year if current trends continue.

At the family level, entrepreneurship and business ownership, despite recent negative trends, continue to benefit both income levels and total net worth. Families that report self-employment as the occupation of the head of household have average incomes about 2.5 times those households with an employed head of household and about 5.5 times the net worth. Despite the skewed nature of the averages because of a few very high income and wealthy self-employed head of households, the median income is still 1.2 times and median wealth is 5.8 times the net worth of households with employed head of households. Entrepreneurship and/or business ownership continue to be an income and wealth builder for families. Even the sole-proprietors who average about $1,200 income per month could find the extra income helpful.

What do the data and trends mean for those interested in economic development? Most economic development activities are grouped into three areas: encouraging business startups; promoting existing business retention and expansion, and attracting new firms to a community (Swager, 2000; Blakely & Leigh, 2010). Business attraction still remains a focus of many in economic development, but the numbers of new expansions and relocations have been depressed for the past few years (LeRoy, 2013). Therefore, there is much competition for a reduced number of new expansions and relocations. Consequently, many smaller communities do not have the capacity to attract firms. The two most viable alternatives for these communities is to encourage business startups and to promote existing business expansion and retention.

From an economic and community development perspective, the current data indicate most startups are small and may have limited economic impact on the community. In fact, most will be non-employer firms with limited income potential. Business startups, however, are important to family financial health and community growth, but priorities need to be set for the commitment of economic development resources.

An analysis of the current data and trends show that economic development activities may best be focused on supporting the small number of high-growth employer firms rather than on encouraging mass business startups. The biggest return on the investment of economic development resources will likely come from the growth of the few high-growth employer firms.

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THE EFFECT OF LEGISLATION ON THE INTELLECTUAL PROPERTY SUPPLY CHAIN FOR ENTREPRENEURS

Angela L. Tidwell, Howard University

ABSTRACT

This paper examines the effect of the Leahy-Smith American Invents Act on the intellectual property supply chain for entrepreneurs. The legislation is comprised of multiple facets; the most famous is the first-inventor-to-file system that was enacted to make U.S. laws align with other competitive countries. By examining the changes in the quantity of patents granted since the implementation of AIA, entrepreneurs will have insights on how to develop their intellectual property strategies. Data from the U.S. Patent and Trademark Office is analyzed using SPSS to compare the number of pre-AIA and AIA allowed patents. The results showed that there is a significant decrease in the number of utility patents granted to entrepreneurs identified as small entities at the USPTO.

INTRODUCTION

The United States Patent and Trade Organization (USPTO) defines intellectual property (IP) as imagination made real. The phrase "intellectual property" is fairly young. The earliest use occurs in the title of the United Nations' World Intellectual Property Organization, first assembled in 1967 (Vaidhyanathan, 2003). IP is the ownership of a dream, an idea, an improvement or, an emotion that we can touch, see, hear, and feel. The IP supply chain is comprised of multiple stakeholders that include: inventors, agents, assignees, examiners and patent assertion entities (PAEs). While many inventors have been awarded protection of their creations, the outcome for those unfamiliar with the IP supply chain has been daunting due to the process (see Figure 1) and stakeholders in the process.

Similar to other types of property, intellectual property needs to be protected from unauthorized use (uspto.gov). There are three ways to protect different types of intellectual property: patents, trademarks, and copyrights. Patents provide rights for up to 20 years for inventions. Trademarks protect words, names, symbols, sounds, or colors that distinguish goods and services. Trademarks, unlike patents, can be renewed forever as long as they are being used in business.

Copyrights protect works of authorship, such as writings, music, and works of art that havebeen tangibly expressed. The Library of Congress registers copyrights which last the life of the author plus 50 years. It is essential to understand that copyright in the American tradition was originally meant as a narrow federal policy that granted a limited trade monopoly in exchange for universal use and access (Vaidhyanathan, 2003).

In the context of IP law and policy, the term "innovation" is most often used during discussions of patents, while creativity is more typically mentioned along- side copyrights. This discourse results from the mistaken belief that patents are the most (or only) relevant IP right with respect to science and technology, while copyrights are the most (or only) important right in cultural industries.

The emerging reality is that patents, trade secrets, copyrights, trademarks and other forms of IP protection are relevant across sectors, and that most industries are impacted by all of these issues. A recent development in IP law will affect entrepreneurs.

Figure 1
PATENT APPLICATION PROCESS
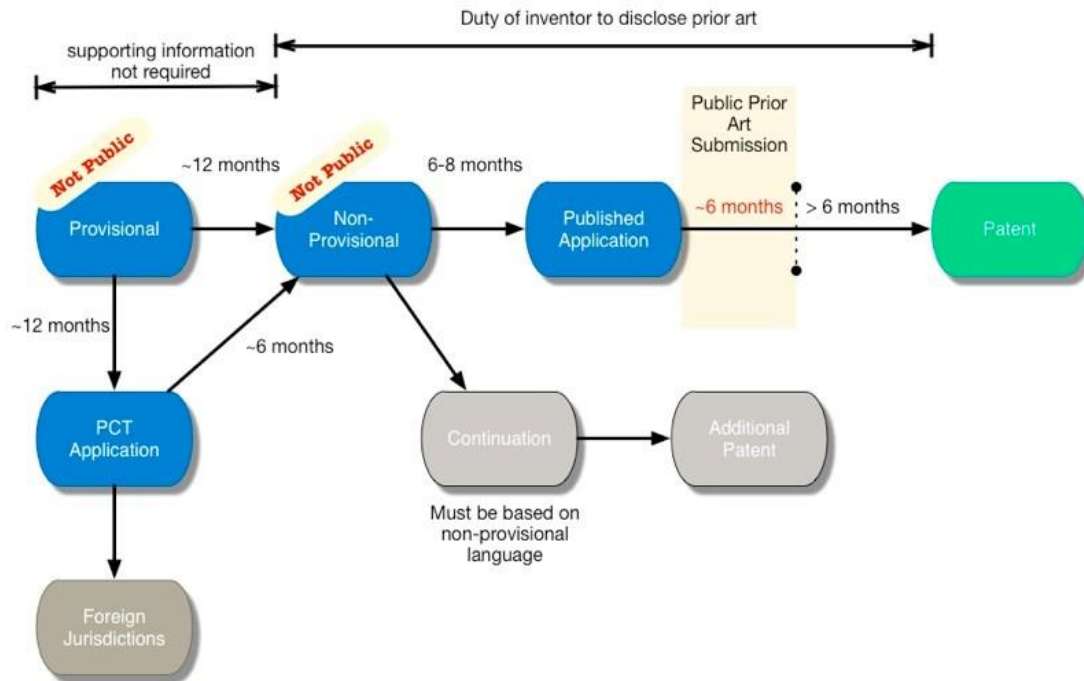
President Barack Obama signed the Leahy-Smith America Invents Act (AIA) on September 16, 2011. The law represents the most significant change to the U.S. patent system since 1952 through its attempt to harmonize the U.S. patent law systems with the rest of the world (CITATION). AIA contains numerous facets that have changed the process and requirements for requesting and obtaining a U.S. patent. Some of the most salient facets are: first inventor to file; inventor grace period; and expanded definition of prior art.

The U.S. transitioned from a first to invent patent system to a system where priority is given to the first inventor to file (FITF) a patent application instead of the first to invent the claimed invention. Second, under the new inventor grace period, publication of a claimed invention by the inventor less than 1 year before the filing of a patent application may not act as prior art. Figure 1 shows the patent application process. Furthermore, the law expanded the definition of prior art; the scope of prior art to be applied against a claimed invention is simplified to make the U.S. patent system more consistent with its economic competitors.

The USPTO is now enforcing all aspects of AIA. From the most mundane (permitting the patent owner to file for a patent as the assignee and trivializing full compliance with the requirement for an "inventor's oath"), to the most profound (banishing the concept of "deceptive intention" from the patent statute and affording patent owners a remedy for correcting all errors and omissions made in the original examination of a patent through the new supplemental examination), to the most substantive (elimination of all subjective and non-transparent tests for patentability in favor of a patent law in which the validity of a patent is assessed through information available to the public), the AIA did not shirk from working reform where the consequence would be greater transparency, objectivity, predictability, and simplicity in the operation of the U.S. patent system (uspto.gov).

These and other reforms are estimated to impact U.S. patents subject to pre-AIA, AIA, and even a combination of pre-AIA and AIA treatment until 2034 (Herzfield, 2013). As a result, Congress has required the Small Business Administration, in consultation with the USPTO, to study the effects of switching to a first-to-file patent system on small entities. To qualify as a small entity you must either be an individual, a small business concern having no more than 500 employees (or affiliates), a university, or a 501(c)(3) nonprofit organization. Furthermore, the USPTO introduced the term micro entity in 2013.

According to the USPTO, to qualify as a micro entity, the patent application filer must be a small entity and must meet the following criteria: (1)The applicant has not been named as the inventor on a total of more than four utility patents (regular utility patents, not provisional patent applications), design patents or plant patents. This also does not include certain international PCT applications and applications owned by a previous employer. In addition, the applicant had to have had a gross income in the previous year of less than three times the median household income reported by the Bureau of the Census. In 2014, the applicant would had to have earned less than $155,817. In the event that the patent application has been assigned, the assignee had to have a gross income of less than three times the U.S. median household income; or (2) the majority of the patent filer's employment income is from an Institution of Higher Learning, or the applicant has assigned, or is obliged to assign the patent to an Institution of Higher Learning. An Institution of Higher Learning is a public or non-profit accredited institution that admits post-secondary students for programs of not less than 2 years (Stim, 2013).

Table 1

Year of Application or Grant	Utility Patent Applications, U.S. Origin	Utility Patent Applications, All Origin Total	Total Patent Applications *	Utility Patent Grants, U.S. Origin	Total Patent Grants
2014	n/a **	578,802	615,243	144,621	326,033
2013	287,831	571,612	609,052	133,593	302,948
2012	268,782	542,815	576,763	121,026	276,788
2011	247,750	503,582	535,188	108,622	247,713
2010	241,977	490,226	520,277	107,791	244,341

LITERATURE REVIEW

Small businesses run into a variety of problems when starting up a business, or in conducting business. The first problem arises in starting a business. Intellectual property rights raise the costs of starting a business because entrepreneurs should conduct "clearance" searches to find a n y existing intellectual property rights that their products or services may infringe (Kuczma, 2009). Furthermore, the costs associated with conducting a clearance search may be outside of the entrepreneur's budget because such clearance searches can be costly. In addition, even if the entrepreneur conducts such a search, finds existing intellectual property rights, and seeks to create a design that does not infringe on those rights, moving forward may be too costly for a small business (Cockburn and MacGarvie, 2006).

Researchers have analyzed the impact of intellectual property legislation on business strategies over recent years (Karshtedt (2015); Sorensen (2015); Sisman (2012); Silverstein (2009); and Gunderman and Hammond (2007). Patent assertion entities (PAE) have also grown as a result of such legislation, often enforcing IP rights against less powerful businesses (Taylor (2015); Xun, 2013); (1992). The legislation impact may vary by industry (Ganske, 2015). The pharmaceutical industry strategic focus includes patent terms, patent extensions (Clancy, Geradin, and Lazerow, 2014); higher education includes technology transfer (Feldman (2015); Valoir (2014); Berman, 2008; and Markel (1980)); and the high-tech industry includes short product life cycles (Fernandez-Bibas, 2010; Ghafele and Graham 2015; Seamoan, 2015; and Vetter, 2015.

In 2010, Shane argued that the decline in the share of patents being awarded to small entities over the past decade and a half should be a cause for policy makers' concern. That study analyzed the number of patents awarded to small entities over the last decade. The results showed a significant decline in the percentage of patents granted to small entities.

He further states that the trends are probably worse than the figures show. Because the USPTO classifies universities and other non-profits as small entities (as long as their patents have not been assigned to a large entity), the small entity numbers overstate the share of patents being assigned to small entities. Shane's (2010) study noted the importance of IP rights for small entities.

More recent studies have shown the importance of small entities using IP strategies as a competitive advantage (Shane and Prakash, 2004). Thoma and Bizer (2013) found evidence that choosing both intellectual property rights (IPR) - and non-IPR-oriented appropriation strategies can prove to be effective in achieving company goals. In their study firm performance was measured using innovation effects. Small entities may choose to sell, lease or barter their IP rights to support their strategy.

Hsieh (2013 presents a hybrid method of assessing patent value and determining strategy in the early stage of commercialization. It can be used for long-term strategic planning, such as strategic foresight and corporate foresight. However, Paik and Zhu (2013) found that as patent wars intensify, firms shift their business foci to markets with weak intellectual property protection due to increased litigation risks. This shift is attenuated for firms with stronger technological capabilities, and is more pronounced for firms whose home markets have weak IP systems.Cheng (2013) found previous empirical studies dealing with patent enforcement strategies and proposed a framework. Cross-border trade disputes are highlighted and insights from various empirical studies are synthesized into an integrative framework that addresses the cost of litigation, characteristics of patentees, value of patent and innovation activities, the studyhas significant implications for firms dealing with patent assertion entities.

Buchanan and Wilson (2014) found that creators reap substantial profits when IP is protected, and that rampant pirating is common when there is no IP protection, but IP protection in and of itself is neither necessary nor sufficient for generating wealth from the discovery of knowledge goods. Rather, individual entrepreneurship is the key. Grimpe and Husinger (2014), based on a sample of more than 1100 German manufacturing firms, showed that firms engage in in-licensing as a reaction to pre-empted patents and in cross-licensing if their protected IP was infringed upon.

Link et al. (2014) found that firms attracting private equity investments are significantly more likely to license and sell their technology rights and engage in collaborative research and development agreements. Results suggest that private equity investments accelerate the development and commercialization of research-based technologies, thus contributing to economic growth. Both public and private investments have a positive effect on innovation performance. Conversely, Bell and Parchomovsky (2014) proposed a self-tailored patent system that would give each innovator a basic package of intellectual property rights and enforcement powers and then allow her to add more rights and legal remedies in exchange for a few. Their model proposed to reduce wasteful litigation while encouraging wider dissemination and more extensive use of inventions and expressive works.

While the existing research has examined the effect of legislative acts on small businesses, the influence of AIA on such entities is still in its infancy due to its enactment in 2011. This paper contributes to the literature by exploring the effects of AIA on the number of patents granted to small entities since the enactment of the legislation. Such patents awarded between 2012 and 2014 are analyzed to detect potential trends that may ultimately affect how small-entity entrepreneurs develop their intellectual property strategy. The author hypothesizes that in the short term, AIA legislation will significantly decrease the number of allowed patents to small entities. The following sections describe the relevant literature, the method for assessing problem solving, results of the study, conclusion and future research.

METHODOLOGY

This study used USPTO publicly available data to analyze the effect of AIA on the number of patents granted. There are three major types of patents: utility; design and plant. Utility patents protect useful processes, machines, articles of manufacture, and compositions of matter. Design patents guard the unauthorized use of new, original, and ornamental designs for articles of manufacture. Plant patents are the way we protect invented or discovered asexually reproduced plant varieties. The scope of this study is limited to utility patents granted to small-entities between 2004 and 2014. Furthermore, only the FITF facet of AIA is considered. Data was analyzed using a single-factor one-way ANOVA.

The data in Table 1 shows the total number of utility patents granted annually between 2004 2014. This data provided the historical background to forecast 2011-2014. The forecast model was developed using SPSS. With a small error, the model predicted the number of utility patents to small entities for the years 2011-2014. The model takes into account the time series data as shown in Table 1. The data was analyzed to detect a relationship between the time period (t = 1,2…n) and the number of small entity utility patents granted. The model is limited because it is not able to provide long-term forecasts. However, the limitation of the forecasting technique is offset given that the FITF phase wa effective in 2012. Therefore, only applications filed under AIA since 2012 will be compared against the forecast model.

According to the USPTO, utility patents comprise on average 44% of total patents, while small entities comprise 20% of total patents. The data in Table 2, based on publicly available information from uspto.gov) shows the total number of utility patents granted to small entities between 2004 and 2014. A single factor ANOVA was used to analyze whether there is a significant difference between the pre-AIA and AIA data

RESULTS AND LIMITATIONS

The results in Table 2 show the projected number of utility patents granted to small entities between 2010-2014. The number of utility patents was predicted to increasingly decrease as a percentage of total utility patents. The table also shows the actual data for the same time period. The actual data shows that the number of utility patents granted to small entities between 2010-2014 increasingly decreased as a percentage of total granted utility patents.Finally, the table shows the difference between the forecasted and actual utility patents granted to small entities. The analysis shows a significant (p< .05) difference between the two groups in years 2012-2014.

Table – 2

Year of Grant	Actual Utility Patent Grants, U.S. Origin	Actual % of Total Patents	Forecasted Utility Patent Grants, U.S. Origin	Forecasted Percentage of Total Patents (%)	Mean Absolute Percentage Error (%)	Total Patent Grants
2014	21418	19.87%	33263	23%	55%	326,033
2013	21507	19.80%	32062	24	49	302,948
2012	24592	20.32%	30257	25	23	276,788
2011	27449	20.54%	28242	26	2.9	247,713
2010	28158	19.47%	29104	27	3.3	244,341

Limitations of this study include the short duration in which AIA has been in effect. Longitudinal data studies will provide a more accurate account of the legislative impact. Furthermore, there is a backlog of applications with pre-AIA dates.

The patent application date determines which law applies. The pre-AIA data represented patent applications that were submitted to the USPTO prior to September 2011. The AIA data is for all other patent applications.There are applications that have claims on one application where pre-AIA and AIA laws apply. This study did not examine such applications.

CONCLUSIONS AND FUTURE RESEARCH

The purpose of this research was to examine the effect of AIA legislation on small businesses. AIA is the first major revision to U.S. patent law in over fifty years. It is imperative for small entities to be knowledgeable of such legislation that may be around for another fifty years. While AIA contains many facets, the FITF aspect has been controversial, mostly because of its disparate impact on small businesses. Critics have argued that small entities do not have the resources to compete by filing provisional patents as expeditiously as larger entities. Existing literature has examined the effect of AIA on business strategies and industries, but the literature specifically related to AIA is limited due to its recent enactment.

This paper contributes to the literature by providing a comparison of the number of utility patents granted to small entities prior to and after AIA. The results support the hypothesis that AIA will decrease the number of utility patents granted to small businesses. This study provides insights to small entities for understanding intellectual property strategies and the dynamics involved in successfully navigating the IP supply chain after the implementation of AIA. By understanding IP and AIA, the IP protection process will be more accessible to current and future entrepreneurs classified as small entities.

Future research will include collecting longitudinal data on the number of patents granted to small entities as well as micro entities; examining other types of granted patents (design and plant); and examining non-legislative factors that may impact the number of patents granted to entrepreneurs in the micro-entity classification. Additional research should examine the effect of international treaties and acts that have an adverse impact on small businesses. The Anti-Counterfeiting Trade Agreement (ACTA) is a groundbreaking initiative by key trading partners to strengthen the international legal framework for effectively combating global proliferation of commercial-scale counterfeiting and piracy. It would be of great interest to learn if ACTA has a disparate impact on small businesses in the U.S.

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ASSESSING CREATIVITY IN SHARK TANK ENTREPRENEURIAL PITCH MEETINGS: EXTENDING DUAL-PROCESS JUDGMENT THEORY

JAMES A. WARD, REGENT UNIVERSITY

ABSTRACT

The present research evaluated a decision making model in entrepreneurial pitch meetings to extend the dual-process model of creativity judgments (Elsbach, & Kramer, 2003). The dual process theory was developed in Hollywood to define the creativity decision process between 'pitchers' and industry experts ('catchers') in pitch meetings (Elsbach, & Kramer, 2003). The creativity decision process of the entrepreneurial pitch meeting has not been defined in literature; it requires phenomena investigation (Carland, Hoy, Boulton, & Carland, 1984; Elsbach, & Kramer, 2003). The concept of creativity decision in entrepreneurial pitch meetings has been theorized but not proven in studies to date (Elsbach, & Kramer, 2003). The Shark Tank taped television episodes (Fox, 2012) and face-to-face interviews provided data and insights that were quantitatively analyzed using a critical lens and grounded theory. The results show that dual-process theory explains the creativity judgment process in the entrepreneurial pitch meeting. Finding an effective framework for entrepreneurial pitch decision making is important based on the large amount of capital and businesses involved. A new dimension is proposed for the dual-process model, pitcher commitment or 'skin in the game'. It is a new decision point measuring dedication and resolve. Future research is proposed to develop decision making models to address effective entrepreneurial deal making. The model proposed would allow for more effective decision making to facilitate better allocation of limited resources.

Keywords: creativity, entrepreneurial pitches, dual-process theory, decision-making

ASSESSING CREATIVITY IN SHARK TANK ENTREPRENEURIAL PITCH MEETINGS

This study tested the dual-process theory of creativity judgments in Shark Tank TV entrepreneurial pitch meetings. It extends the work of Elsbach and Kramer (2003) assessing creativity in Hollywood film pitch meetings to entrepreneurial pitch meetings. Entrepreneurs are identified by Elsbach and Kramer (2003) as a group where similar sociological and psychological creativity assessment processes may exist. How creativity impacts effective decision making and group performance is the subject of much sociological and psychological research (Kelley, 2001). Elsbach and Kramer (2003) posited that one way to increase productivity and creativity is to find ways to identify people with creative potential. Kelley (2001) stated employee track records are one source of picking creative people. Personality tests are also another readily available measuring stick to identify persons with potential creativity (Kelley, 2001). But these measuring sticks are not usually available in creativity assessment meetings like the Hollywood pitch or the

entrepreneurial pitch meetings (Elsbach, & Kramer, 2003).In creating a systems view of creativity Csikszentmihalyi (1999) posited that the creative environment has a cultural aspect called the domain; and a social aspect called the field."Creativity is a process that can be observed only at the intersection where individuals, domains, and fields interact, to occur, a set of rules and practices must be transmitted from the domain to the individual.

The individual must then produce a novel variation in the content of the domain. The variation created by the individual, then must be selected by the field for inclusion in the domain" (Csikszentmihalyi, 1999, p.315).Creativity is likely perceived in Hollywood pitches when a person makes a change to the knowledge domain. Certain pitchers have personal qualities or the good fortune to be well positioned with respect to the domain to impact creativity assessments (Csikszentmihalyi, 1999).Industry decision makers and experts have long sought the touchstone schema of identifying and promoting creative persons to lead roles (Carland, Hoy, Boulton and Carland, 1984). They suggest an intuitive cognitive process is used and known by industry insiders as 'you will know them when you see them' but this has not been quantified (Carland, Hoy, Boulton, & Carland, 1984). With a great deal of money involved in Hollywood deals and entrepreneurial pitches a logical decision methodology would provide experts a framework for more efficient decisions (Elsbach, & Kramer, 2003). Elsbach and Kramer (2003) posit industry executives decision making processes in the film industry and entrepreneurial creative pitches would be enhanced by the development of logical decision criteria matrices.

Pitchers are often judged in a process that is unspecified in literature based on personality and perceived economic potential in the pitch meeting (Elsbach, &Kramer, 2003). Elsbach and Kramer (2003) conclude that there are many commercial applications for a decision making matrix for determining creativity in 'pitch meetings'; but none is readily available. There is little agreement among experts on a framework for a decision-making model to identify creative entrepreneurial potential (Ensley, Carland, and Carland, 2000).

EXISTING THEORY AND RESEARCH ON PITCH ASSESSMENT

The research on pitch creativity assessment focused on personality traits and the use of social judgment theory until the development of the dual-process theory of creativity judgment (Elsbach, & Kramer, 2003; Ensley, Carland, & Carland, 2000). The dual-process theory is based on two social and cognitive processes whereby experts make decision on pitchers creativity. In the first process catchers determine pitchers creativity based on personal categorization and prototype matching to one of several perceived creative prototypes (Elsbach, & Kramer, 2003). Each of the prototypes was perceived as a cognitive model that reflected the levels of expected creativity (Elsbach, & Kramer, 2003). The second process of dual-judgment creativity assessment involved relationship categorization and prototype matching. The second process involved catchers sensing internal cues and feelings to evaluate their relationship to the pitcher (Elsbach, & Kramer, 2003). Industry experts who reviewed the model stated the self- perceptions and relationship evaluation were important parts of their decisions (Elsbach, & Kramer, 2003).

The social and cognitive perception theory is built on the concept that creativity is not the product of single individuals, but of social systems making judgments about the individual's products (Csikszentmihalyi, 1999); as much a cultural and social decision as it is a psychological event. Elsbach and Kramer (2003) adopted this systematic view that creative fields are composed of 'catchers' or gatekeepers who evaluate the creativity of idea generators.

In this integrative system perspective the interaction of creative individual, society and its gate keepers reside in a domain where creativity exists. Creativity may be evaluated based on the persuasive communication of the pitcher in conveying the innovative idea (Csikszentmihalyi, 1999; Kasof, 1995).

Literature provides a comparable system for the entrepreneurial pitch process assessment. The process of identifying entrepreneurial creativity was found to have key elements used in a system of judging a person's creative potential (Ensley, Carland, & Carland, 2000). The entrepreneurial pitch involves the effective communication of an emotional vision to the group evaluating the idea (Carland, & Carland, 2000). The creative ideas of the entrepreneur need to be convincing to the group receiving them or they are not recognized as creative (Elsbach, & Kramer, 2003; Ensley, Carland, & Carland, 2000). The mechanisms by which entrepreneurs are evaluated by industry experts were partially developed in the study of Fortune 500 CEO's (Ensley, Carland, & Carland, 2000). Macro-entrepreneurial firms provided a framework concept that was statistically significant for identifying the entrepreneurial creativity. In summary the entrepreneurial literature provides data from surveys and laboratory experiments but offers only limited examples of in the field creativity assessments.

RATIONALE AND SETTING

The research of Elsbach and Kramer (2003) provides the basis for this study to extend dual-process theory to entrepreneurial pitch meetings. Their work was set in actual Hollywood pitch meetings with pitchers and catchers. Using the systematic theory of creativity (Csikszentmihalyi, 1999) it is argued that entrepreneurial pitch meetings involve all the major system and psychological decision issues of dual-process creativity judgments. In particular I argue that the entrepreneurial pitches involve similarly motivated business decisions and issues with interpersonal evaluations using real time judgments of pitcher creativity. The two dual-process judgment theory components of creativity evaluation and relationship development occur during the entrepreneurial meetings (Elsback, & Kramer, 2003; Ensley, Carland, & Carland, 2000).

The entrepreneurial setting (of the Shark Tank) provides the same dynamic real time interactive creative pitcher and catcher processes well suited to analysis (Elsback, & Kramer, 2003; Lee, 1999). As in the Elsbach and Kramer research this experiment falls within the nomological network area of theory elaboration to develop basic emergent models. Qualitative research has been adapted by researchers for organizational and entrepreneurial business research on group interactions (Creswell, 2007; Elsbach & Kramer, 2003). This research is an exploratory procedure collecting data through multiple means; analyzed multiple ways to gain understanding of a psychological and sociological phenomenon (Creswell, 2009).First the researcher observed videotaped pitches, and then in person interviews. The researcher was in actual pitch meeting to enter the informants world to ascertain informants' meanings (Creswell, 2009).The qualitative methods of idiographic interpretation will focus on particulars and details (Creswell, 2009) with multiple insights on perspectives in entrepreneurial pitches. As in the Hollywood pitches there were no scripts or personal introductions of the pitchers. The initial evaluations of the catchers were based solely on the pitch itself.

ENTREPRENEURIAL PITCHES AND SHARK TANK

The Fox TV show, Shark Tank, has been wildly successful averaging 6 million viewers per episode (Nielsen, 2012). The productions are for television but provide a realistic learning tool for

those desiring to learn about the venture capital process and entrepreneurial pitches (Liew, 2012). Liew (2012) contends those wishing to pitch sharks can learn a great deal from analyzing the dynamic pitches on the TV show.

One difference in this research and the Elsbach and Cramer (2003) study was the later focused on one-on-one, single pitcher to single catcher presentations. In the Shark tank the pitches were presented to multiple sharks (usually five).This is an area of difference but using the systematic theory of creativity (Csikszentmihalyi, 1999) it is argued that entrepreneurial pitch meetings involve the same elements, and domain issues as the Elsbach and Cramer (2003). In fact the Elsbach and Cramer (2003) study proposed entrepreneurial pitches as an area that needed to be explored using their theory.

PITCHES AND PARTNERING ON SHARK TANK

The in-person entrepreneurial pitch had the same psychological dimensions for creativity assessment decisions as evaluated by the systemic theory of creativity (Csikszentmihalyi, 1999). This systems approach was applied to the decision process because Shark Tank participants (pitchers) are looking for partners (catchers) in their enterprises. The catchers perception of a 'connection and emotional commitment' of the pitcher was used by the catchers in the real time judgments of pitcher creativity. These catchers' judgments lead to actual decisions about whether the catcher wanted to commit their personal capital to partner with the pitcher. In fact, it is argued that it may be more important to the entrepreneurial pitch based on the psychological need of the pitcher (Csikszentmihalyi, 1999).

In the entrepreneurial pitch a decision to partner means the shark will own a portion of the pitchers company necessitating a longer term working relationship. Both parties would therefore want good chemistry in a partner and in a mentor for entrepreneur. There are no scripts used in the pitches.

METHODS

Participants

Participants for the tape recorded interviews were from various business backgrounds all chosen for their creative product or business to be pitched to a celebrity panel of catchers (Fox, 2012). The six pitches were selected from the 2012 TV season of Shark Tank. Two live interviews were conducted with an experienced pitcher and a catcher to provide further data for analysis of the theory of Elsbach and Kramer (2003). The pitcher selected is an inventor and entrepreneur with two inventions adopted by department of defense applications and cash awards for creativity.The catcher is a serial venture capitalist and catcher with numerous business ventures and partners. Additionally off-air taped interviews of the Shark Tank catchers' methods and processes were available.

Observation of Pitches

The pitches occurred Feb 3, 10, 17 February, 2012 in episodes 303 – 305. The six pitches evaluated in this research analysis were taped Fox television episodes of the Shark Tank season three. Nielsen stated the viewership for those episodes exceeded 5.2 million viewers per episode. In the Elsbach and Kramer (2003) study approximately half of the pitches were taped the remainder

were live pitches. The addition of the two live interviews to this present research approximates the data used in the Elsbach and Kramer (2003) study.

The catchers in the shows were all venture capitalists with over 20 years of entrepreneurial and venture capital experience (Liew, 2012). The catchers were four males and one female. The catchers all invested personal private funds in the ventures they selected to partner with. The catchers had broad areas of expertise as provided in the Fox information provided on the show. The success rate of these pitches was 40% due to the selection of likely candidates by the show's producers. This was not seen as a validity issue for the present research as the study was on the decision and psychological decision schemas which are in the domain theory (Csikszentmihalyi, 1999).

The pitchers came from varying backgrounds and areas of entrepreneurial processes. The pitchers varied in age from 20s to 60s and some had both pitcher and previous catcher experience. The in-person interviews were with a pitcher 48 years old and a catcher 68 years old. In the Elsbach and Kramer (2003) study equivalent experience by the pitchers (relatively unknown) and the catchers provides for equivalent basis of comparison.

Qualitative Research Paradigm

As research to develop and extend dual-process theory on the creativity decision making phenomena, a qualitative longitudinal study design is proposed. The catchers will be followed for a one month period to monitor their decision making process on the Shark Tank. The one month period was chosen as this allowed for multiple exposure of the decision making process in the interval of each week to study consistency and depth of effects. The study will begin with the dual-judgment process theory (Csikszentmihalyi, 1999; Elsbach, & Kramer, 2003) of entrepreneurial creativity (Timmons, 1994). This approach was chosen based on theory; qualitative research can begin with related theory foundational to a basis for the suggested approach (Creswell, 2010). The pitcher-catcher interviews on Shark Tank conducted over the period allowed an evaluation of consistency of phenomena over an extended period.

As qualitative research the focus was on the catchers' perceptions and schema used to evaluate creativity of the entrepreneurs. The attempt was made by the researcher to understand multiple perspectives on creativity assessment and the realities of the pitchers and catchers (Creswell, 2009). The taped TV shows provide for repeated viewing to develop a fuller richer understanding of the data, using grounded theory systematic steps (Corbin & Strauss, 2007) to generate categories of information or open coding; selecting categories one at a time the positioning in the theoretical model to pull the story from the connections in the data. The grounded theory approach in the single analysis method of Winston, Fields, and Cabanda (2011) was chosen as appropriate for the researcher sought to understand how the catcher's decision processes worked. The researcher went from data to interpretation and then back to data as needed. Idiographic interpretation was used or the protocol will focus on particulars rather than generalizations (Merriam, 1988).

THE RESEARCHER'S ROLE

The role of the researcher as data collector and an instrument in qualitative research called for the revealing of personal beliefs. The researcher is a micro- entrepreneur as defined in Ensley, Carland, and Carland (2000); who views positively the process of entrepreneurship by individuals and teams. The researcher's experience includes pitching ideas and operations and visioning of

future developments. This entrepreneurial experience enhanced awareness of entrepreneurial team under analysis in this research. Previous experience as an entrepreneur may lead to certain biases that are present in my observations. An effort will be made to proceed objectively. A third party researcher will review my coding and analysis to ensure it flows logically and potential biases identified.

BOUNDING THE STUDY SETTING

The proposed study used taped Shark Tank Season 3 TV shows for analysis and observation and additional face-to-face interviews were used for clarification. The objective was to expand the limited dual process creativity judgment theory to entrepreneurial theory.The longitudinal approach of evaluating interview processes over several weeks afforded multiple process observations to seek new understanding.The objective of the present research was to gather new insights into the phenomena of entrepreneurial creativity assessment using dual-process judgment theory (Elsbach, & Kramer, 2003).

ANALYSIS

Inductive data analysis was used in the research to verify patterns, categories and themes from the bottom up. The catcher's meanings were evaluated with the observations. The design was tailored over the period. Critical- inquiry method lenses were used to empower pitchers over the constraints placed upon them (Creswell, 2009; Liew, 2012). Critical-inquiry was used because the entrepreneur theory needs to be developed. The research sought to capture the interrelation of the social, psychological and domain theory factors involved in the creativity judgments. Grounded theory in its abbreviated form is appropriate as it will meet the goal of gaining theory from the participant's data (Winston, Fields, &Cabanda, 2011). The researcher will go back and forth between data collection and analysis in repetitive order to find pattern, themes and eventual theory.

ETHICAL CONSIDERATIONS

The TV episodes are in the open internet domain and on copyrighted DVD. The names of the pitchers will not be used in this research. The rights and values of the informants will not be violated. Since the TV shows are in the public domain, the informants were contacted directly to obtain written permission. No copyrighted information will be published by the author of this research. For the in-person interviewees, rights will be foremost and written permission to proceed was sought.

DATA COLLECTION STRATEGIES

The expert interviews were face to face recorded interviews. The in-person Interview protocol was based on the recommended agenda of Creswell (2009):
- Instructions for conducting the interviews
- Heading, date and time information
- Five open-ended questions
- Space to record responses
- A thank-you statement for their time (Creswell, 2010, p 183).

The creativity judgment observations included a data recording protocol with notes each day. The researcher kept a formatted form for each period with questions, area to record responses and thank-you statement for the interviewees time (Creswell, 2010).

DATA ANALYSIS PROCEDURES

The process of analysis involved creating associations and understandings from the text and observation data. This study used grounded theory to develop a detailed understanding to modify existing entrepreneurial group theory (Ensley, Carland, & Carland, 1996). The researcher started with the codes from the dual-process judgment theory, then reflected on any cues of social judgment and any unusual themes or codes. The analysis started with generic data analysis for unusual themes or perspectives, and then to validate the five themes of dual-process judgment.

In following the research methods of Elsbach and Kramer (2003) a four stage process was used. In stage 1 the analysis looked for cues of creativity and terms like passionate, committed, or indications of emotional reactions. The analysis used grounded theory with systematic steps (Corbin & Strauss, 2007). The validation of the dual process codes was in accordance with the eight steps posited by Creswell (2009, p. 186) to create chunks of information so phenomena meaning can be seen form the informants' understanding. Stage 2 looked for pitching prototypes that relied on the cues that were found in stage 1. The cues in stage one closely approximated that of dual-process theory. The named prototypes of Elsbach and Kramer were used to categorize the pitchers on Shark Tank. Typical of successful pitches were the artist or story teller prototypes.

Stage 3 catchers emotional and psychological cues were evaluated for excitement, passion, of changes in posture of a positive nature. If the catcher asked positive questions and was involved in discussions of how to improve the product or process, this was taken as a positive sign of creativity assessment. But if the catcher frowned, smirked or made disparaging lecturing comments this was seen as a negative for the creative assessment and relationship of the catcher and pitcher. These cues led to analyses of the developing relationship between the pitcher and the catcher. Among the six episodes reviewed there were 22 positive cues of relationship building indicated by possible interest in the product and working with the creator. One major difference in stage three was the emerging theme of 'skin in the game'. The term was used by the catchers to describe if the pitcher had invested their own time and money in the project and if they would work for low pay in the future. This skin in the game was a measure of the commitment level of the pitcher. This was an additional cue for the entrepreneurial component of the dual-decision making process of the entrepreneurial pitch.

Finally, Stage 4 coding took place that in the entrepreneurial pitches the dual-process judgment theory and self-perceptual cues were used by the catchers. In this stage one-on-one interviews were conducted with an experienced pitcher and a catcher. Both interview analyses agreed that the relationship component and the 'skin in the game component were involved in acceptance of the pitch and a positive creativity assessment. The data was then re-coded for analysis of the commitment of the entrepreneur or 'skin in the game'. There were 19 instances of catcher cues to commitment of the pitcher.

VERIFICATION OF DUAL-PROCESS CREATIVITY JUDGMENT

In ensuring internal validity the process involved repeated viewing of the pitches and interviews; immersion by reasonably long observation periods; peer review as mentioned in the

process section above. The researcher's objective was to create a rich thick description of the entrepreneurial pitches for dual-process judgment of creativity.

RESULTS

After coding the results of the analysis the dual-judgment of creativity process fit the themes developed. Table 1 describes the cues of pitchers that were used to assess creativity. An additional decision/gate process in the entrepreneurial process was the question of did the pitcher have 'skin in the game'? The skin in the game was used to assess pitcher commitment and dedication to their project. That raised the question of how it was related to the creativity assessment. The dedication to the entrepreneurial venture decision was an additional decision process, not directly explained by the dual-judgment process.

In episode 28, for example two men who created and operate a tea beverage company and a couple of years were asked 'what skin they had in the game'. The pitchers served their tea to the sharks in a seemingly informal presentation. The sharks were engaged with the pitchers. The catcher, O'leary, said they were a perfect pitch with relationship to the catchers and the business was flourishing. The pitchers stated they were committed to the business and truly belied in its potential. They were successful on this show negotiating a 35% investment from the sharks. A second shark states "I like these guys they have a good story'.

The next pitch was for a pillow for woman to rest on comfortably at night. The pitch was mechanical and followed what seemed a rote method that the sharks gave cues they felt unengaged, not motivated. One shark said of the pitch that it lacked commitment. One shark said 'I am out', before even listening to half the pitch. The shark felt there was no connection and the pitcher was inexperienced. All of the sharks passed on this project.

In the next episode a product, 'Show-no', bathing attire was offered. The pitcher was excited and passionate, asked for a $50,000 capital infusion for a 25% stake in the business. The sharks have an intense debate among themselves. This was a sign of interest in the product and interest in the creativity of the pitcher. The sharks started making financial offers on the spot. The pitcher is a good listener who tailors her responses to the shark's feedback. In the Hollywood assessments industry expert interest and question asking of the pitcher was a cue that the pitcher was perceived as creative (Elsbach, & Kramer, 2003).

The Show-no pitcher was passionate and seems committed to the product. These were positive cues coded as creativity indicators for the sharks. Two of the sharks comment, "they like the pitcher" and wanted to invest in the pitcher more than the business idea. In an after show interview the sharks were asked what got them excited about the deals? They state that if the pitcher seems passionate and dedicated to their business and has vision, they often want to partner on those reasons alone. Two of them remark they see the pitcher as a person more than a business dollar and cents decision, and evaluate if they want to have a long term relationship with the pitcher. These cues listed in Table 1 led to the themes of the catchers' person dual-categorization process decision:

Table 1
PERSON CATEGORIZATION

| PROTOTYPE	CUES	PERCEIVED CREATIVE	EXAMPLES
Jockey	Listener, motivated, determination	High	"I do not like the business plan but I want to invest in the entrepreneur". " It is the jockey I watch and partner with not the horse"
Passionate Entrepreneur	Passionate, single minded, laser	High	"Good business idea, focused on the right essentials"
Neophyte	Unstudied, unfocused presentation, lack of experience	Med	"Not sure who he thought he was pitching that to"; "Presentation did not make sense to me, was she pitching two ideas or one?"
Needy	Focused on wants. Does not listen, desperate	Low	"The sharks are interested in what the concept is and how much skin the pitcher has in the game." "If you only have a small idea you do not need a big cash investment."
Amateur	Good idea no plan, Not engaged. Are they invested?	Med	"This person has little experience, few sales; will they be committed long enough to get past the challenges that will come?"
Journeyman	Some desirable traits, Copy- cat, others ideas	Low	"Formulaic business concept and business plan. Is there a long range vision for a big business?" "Can I get behind this business and grow it?"
Non-entrepreneur	No real business innovation, no wide appeal,	Zero	"Doubt over whether this person gets it?" "Are they hearing us, I tried to tell them … but they did not hear me."
Sophomore	Know it all, only one way, my way	Zero	"Why did they come on the show they did not want to listen and deal make with the sharks?"

Table 2

RELATIONSHIP CATEGORIZATIONS

CATCHER- PITCHER RELATIONSHIP	CUES	PERCEIVED CREATIVE POTENTIAL	EXAMPLES
Creative Collaborators	Pitcher and catcher exchange ideas, catcher actively involved, asks questions; tries to improve or extend the concept	High	Good energy in presentation; sharks ask questions almost immediately; This guy gets it, smiles and head nodding; asks what if questions; could you do xyz questions
Expert-incompetent pair	The pitcher has little experience or seems unpolished; Catchers were all experienced veteran sharks. Catcher lean back look away, acknowledge they are not interested	Low	Sharks ask question about a facet of the product; the pitcher fails to deal with the objection. Pitcher fails to deal with issues of competition or commitment. Shark asked, 'why did this guy come on the Shark Tank? Didn't he ever watch the show before?"

TOWARD A MODEL OF ENTREPRENEURIAL DUAL-PROCESS THEORY

The results revealed that the dual-process creativity judgment process explained the entrepreneurial pitch but needed an additional decision process to capture the perception of the pitcher's commitment factor. Figure 1 shows the decision making process in the Shark Tank entrepreneurial pitches. The first two blocks to the left represent the dual-judgment process of creativity (Elsbach, & Kramer, 2003). The next block in the center of figure 1 represents a new evaluation point for the catcher about the pitcher's creativity and in particular the elements of commitment and dedication to their business. The cue of 'skin in the game' was a catcher's measure of how badly the pitcher wanted to make the business idea a reality. The shark's remarks included; are the catchers committed, are they hungry enough to see this venture to completion.

Figure 1

MODEL OF CREATIVITY IN ENTREPRENEURIAL PITCHES
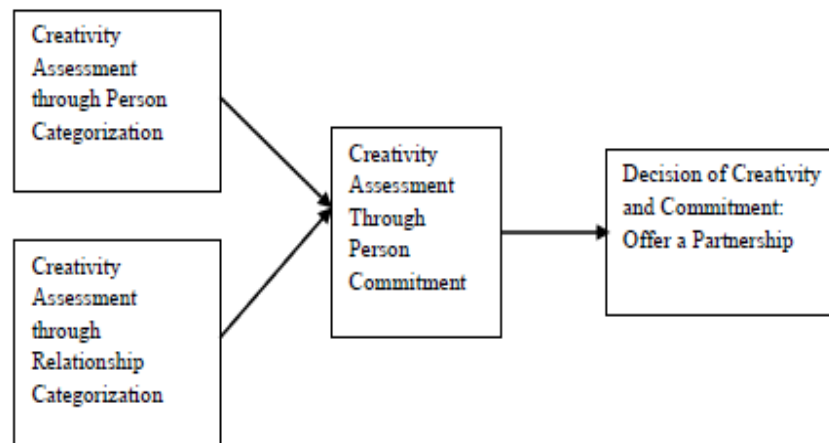
Source: The first two blocks from the left are taken from the dual-judgment process of creativity Elsbach, & Kramer (2003). The two blocks to the right are the decision steps discovered in the Shark Tank analysis.

If the sharks decided there was a great deal of commitment in the middle block of the model they could proceed to the final block on the right of the model. The final decision block for a catcher/ shark provided the opportunity to offer a dedicated pitcher a potential partnership agreement. The pitcher's reaction and responses to those offers of partnership were assessed by the sharks as reasonable or unreasonable leading to a deal or no deal. This represented a third part of the decision making process in the entrepreneurial pitch. As figure 1 indicates, the categorization processes of the first two blocks on the left side strongly influence the shark's assessment of the target's creativity as in the Elsbach and Kramer model. In summary what is added in the entrepreneurial version in figure 1 is the decision point (center block) of commitment and dedication.

DISCUSSION

This study tested the dual-process theory of creativity judgments in entrepreneurial pitch meetings. It extended the dual-judgment theory of Elsbach and Kramer (2003) to entrepreneurial pitch meetings. As Elsbach and Kramer (2003) posited, one way to increase productivity is to identify people with creative potential. The existence and discovery of dual process judgment was developed using the concept of a creative environment with a cultural aspect or domain where ideas reside; and a social aspect where interaction occur called the field (Csikszentmihalyi, 1999). "A set of rules and practices must be transmitted from the domain to individual… so that the experts may catch the idea and accept it for inclusion in the domain" (Csikszentmihalyi, 1999, p.315).

This study of dual-judgment process in entrepreneurial pitch meetings suggests that catcher judgments are a complex process including two distinct categorization processes followed by a measure of commitment and dedication to the creative idea. The first process seems to rely on cues similar to those in the Elsbach and Kramer research. The current data show support for previous research. Importantly, though is the observation that the decision making schema of the catcher is complex and has multiple facets likely to be discovered in the future.

With the Shark Tank and similarly the Hollywood film study only a small number of projects can be funded. The costs of funding the entrepreneurial businesses lead the industry experts to develop decision making models. As Elsbach and Kramer noted, "… given the steep opportunity costs, it is better to be safe than sorry and to choose writers and projects about which one can feel considerable passion and commitment" (p.299). This current research found support for the dual-judgment decision making model in entrepreneurial pitches. Further this research proposed an additional decision element, pitcher commitment and dedication to the project, which guided the industry experts.

The sample used in this study was small; therefore the results may not be generalizable to all entrepreneurial pitches. Based on the importance of the entrepreneurial pitch in businesses and the amount of money involved, further research seems warranted. The additional cues discovered and the proposed entrepreneurial model (figure 1) provided an extension to previous theory. As explained in the literature review, this research is underpinned with multi-disciplinary research that indicated social, cognitive, psychological, and entrepreneurial theory (Csikszentmihalyi, 1999; Elsbach, & Kramer, 2003) are involved in the creativity dual-decision making process in entrepreneurial organizations. It is a very complex schema that could be benefit from a multi-discipline research approach. Development of an effective schema for decision making in entrepreneurial dual process decision settings would allow for more effective utilization of limited resources. As Elsbach and Kramer suggested in their Hollywood pitch findings, effective decision making and creativity are topics that seem to interest all contemporary businesses.

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