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Introduction to Volume 17(1)

Kirk C. Heriot

Columbus State University

The Introduction to an issue of a journal usually focuses on the content of the issue, but this introduction will go beyond that to offer a background to the publication of issues in the past few years. In October 2021, we lost a family member and it devastated us. I tried to continue to manage the *American Journal of Entrepreneurship*, but realized I needed to find a new managing editor. After a few attempts at that I came to the realization that I was going to have to return as the Editor of the journal. At that time, I also realized that it was becoming exceedingly difficult to publish articles on a bi-annual basis. As a result, we have decided to use a rolling acceptance process for papers that are accepted for publication. Basically, each year a new Volume will be published as soon as we have at least two papers are available. During the remaining calendar year we will add additional papers as they are accepted until the end of the calendar year. Volume 17(1) represents our first dedicated effort to change the way we publish manuscripts. We will continue to use a double-blind review process in order to maintain the quality of the journal.

Volume 17(1) consists of two papers. The first paper is a critical evaluation of the Small Business Development Center funding and programming on firm births and deaths. The study uses an unique data set of SBDC expenditure, by state, that has never been used in empirical research. This research evaluates ten different models to test the relationship between firm births or death and state SBDC funding. These results provide evidence that SBDC funding may be a factor in the percent of firm births and/or deaths between states and across time. This study provides a new perspective for the SBDC program by highlighting program funding on an annual basis which has not been considered in previous studies.

The second paper uses a unique design to describe the creation of a functional and flexible pedagogical curriculum. As the authors point out, emphasizing a broader view of entrepreneurship has been a recent trend. They argue that their approach is unique in practice. Their curriculum is centered around a short, four-course concentration. They emphasize problem solving, entrepreneurial thinking, and leadership of innovation. The course sequence emphasizes three levels of analysis: individuals, organizations, and communities.

Their analysis of the curriculum they created is refreshing because it allows us to look inside their four-course sequence. We have an opportunity to see not only what they cover but also how and why they chose to do so. One might argue that using a four-course concentration might have been influenced by the size of the College and the University. Nonetheless, the process they employed is instructive for other schools and colleges that want to create an entrepreneurship program that are constrained by the availability of faculty to teach the required courses.

Thank you for reading Volume 17(1) of the *American Journal of Entrepreneurship*. We hope you choose to submit your manuscripts and to serve as reviewers for the journal. Please feel free to contact me using our email address: ajentrepreneurship@gmail.com. We look forward to hearing from you!

The Small Business Development Center Program: Empirical Analysis of Federal Funding

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Abstract

There has been considerable research on the types of programming available for entrepreneurs in the United States, with some studies evaluating the impacts of different programming types on firm success. However, there have been few studies to evaluate the relationship of federal entrepreneurship programming on firm success over time. The primary federal agency tasked with helping small businesses is the US Small Business Administration (SBA). In this study, we critically evaluate Small Business Development Center funding and programming on firm births and deaths in states from 2000-2013. The study uses an unique data set of SBDC expenditure, by state, that had never been used in empirical research. This research evaluates ten different models to test the relationship between firm births or death and state SBDC funding. These results provide evidence that SBDC funding may be a factor in the percent of firm births and/or deaths between states and across time. The data are highly sensitive to heterogeneous effects and model testing highlights the need for fixed effects models. These results underscore the need for future research in this area and increase our understanding of the sensitivity of this research to both time and spatial effects.

Introduction

The role of small businesses in the American economy is well-established. Given their important role in our economy, numerous programs have been created to provide assistance to small businesses. Some of the more well known programs include Small Business Development Centers (SBDC), export assistance, SCORE, and the SBA Guaranteed Loan program. In a recent study,

Gu, Karoly, and Zissimopoulos (2008) identified as many as sixteen such small business assistance programs.

The primary federal agency tasked with helping small businesses is the US Small Business Administration (SBA). The SBA primarily assists small businesses through SBDC programs across the country, as well as the SBA 7(A) and 504 Loan Programs. A third SBA program, the Small Business Institute, was funded at the federal level between 1972 and 1995. The many programs identified by Gu, et al., (2008) serve the general population, as well as targeted groups such as small businesses seeking to export or small businesses pursuing government procurement contracts. While other studies have evaluated the relative value and impact of venture capital, angel investors, business incubators, and other entrepreneurial assistance, on small business creation and success; research focused on public sector programming is more limited. The SBDC program was evaluated by Chrisman, Hoy and Robinson (1987), Chrisman and Katrisha (1994), and Chrisman, McMullan and Holt (2012) in three papers evaluating the economic impact and costs and benefits of public sector small business assistance programs. These studies provide some evidence of the potential impact of SBDC programs: however, this research has methodological weaknesses and is relatively narrow in scope. A more recent study by Gu et al (2008) provides strong support for the need to renew this research stream with new questions and methodologies.

For this analysis, we focus on the SBDC program from a policy perspective, rather than a cost and benefit point of view. We evaluate the SBDC program using state level budgetary data obtained from the SBA from 2000 -2013. In the following section we will review the extant literature on small business assistance with a focus on the SBDC program. Next, we will analyze the relationship between annual federal funding of the SBDC program by state and critical outcomes for which the program was created. Describing several different model approaches, we specifically evaluate the impact of SBDC funding on percentage of firm births in a state and percentage of firm deaths in a state. We hypothesize that firm deaths may be equally as important for this research as the goal of the SBDC is not only to help new businesses begin but to also facilitate the ongoing success of already existing small businesses. We will conclude the study by highlighting our observations, discussing implications for policy makers, and proposing directions for future research.

2. Literature Review

Research has documented the importance of entrepreneurship for national economic growth and innovation (Reynolds, Hay and Camp 1999). The U.S. Small Business Administration (2005) highlights the importance of entrepreneurs for the generation of new ideas and innovations. The Organization for Economic Co-operation and Development (OECD) (2003) and the U.S. Census Bureau (Edmiston 2007) report that the majority of new jobs created in the U.S. and around the world are in small and/or medium sized firms. The dynamic nature of entrepreneurial activity allows for the creation of local jobs, wealth, the innovative use of local assets and resources, and enhanced local and regional economic growth.

Research documents the importance of entrepreneurship for local and regional employment growth (Birch 1987; Shaffer 2002; Shaffer 2006). Acs and Armington (2004) find a strong correlation between entrepreneurship and long-term regional employment growth. This relationship is confirmed for rural areas as well (Birch, 1987). Armington and Acs (2002) find an

association between firm formation rates and differences in human capital, local population growth, local income growth, and industry specialization. While Acs and Storey (2004) uphold the premise that entrepreneurship also improves the allocation of resources throughout an economy.

One of the ongoing questions in the entrepreneurial literature is how public policy can encourage and/or support new business creation and success. Christofides, Behr, and Neelakantan (2001) analyzed the types of state entrepreneurship programs that delivered the most significant local gains in employment, income, and number of establishments. Their results reveal that local business structure is largely the result of local and regional economic conditions. Literature suggests the following causal sequence; entrepreneurship is affected by business structure in a region, where business structure is largely a determinant of overall regional economic conditions (IIC 2006; Armington and Acs, 2002; Christofides et al., 2001).

Small business assistance programs have existed in the US for over 60 years and have continued to evolve as new trends and information emerge. Today state and local efforts include a wide range of programming types from financing options, management assistance, marketing advice, mentoring programs and networking linkages, technology development programs, business incubators, and others (Klein and Hadjimichale 2003; Pages 2006). Pages (2006) argues the Chinese proverb “Let a thousand flowers bloom” may be the most appropriate way to describe the current landscape of entrepreneurial policy across the United States. While there appears to be widespread support for policies aimed at business formation and growth, there is little consensus concerning the policy measures necessary to achieve these objectives. Pages (2006) argues that the “dominant trend is that there is no dominant trend (p. 4).” Additionally, this research documents the following entrepreneurial programs as areas that receive the most policy attention among states and localities: access to capital, business incubators and technology development, regulation, education, and entrepreneurial awards.

According to Gu, et al (2008) there are 13 major, national *small business outreach programs*. The most well-known of these programs are the SBDC, SCORE, and SBI. They are all affiliated with the Small Business Administration (SBA). The SBA was created in 1953 by an Act of Congress. Academic research on the SBA has focused predominately on three programs: SBDC, Guaranteed Lending, and SBI. The SBDC program was started as a pilot program in 1977 in eight states. It has since been expanded to all 50 US States, the District of Columbia, and US Territories. Gu, et al. (2008, p. 7) explain that “the SBDC and Service Corps of Retired Executives (SCORE) are two major programs offering counseling and training in all aspects of small business management.”

The SBA Guaranteed Lending program was created to address gaps in financial capital markets and improve efficiencies for small business access to capital. The SBA does not provide the loans directly but guarantees the loans through other financial institutions. Today the SBA has several guaranteed loan programs, with programs supporting start-ups, business expansion and microloans. (www.sba.gov).

The Small Business Institute program offered field-based consulting completed by college students, supervised by college faculty until 1995 when it was discontinued. The Small Business

Institute (SBI) program operated as a federally funded program between 1972 and 1995. This program provided grants to universities throughout the US. The grants were later converted into contracts. In exchange for this financial support, university professionals and students completed field-based consulting projects on behalf of the SBA (Heriot and Campbell, 2002). Students completed field-based consulting projects under the expert supervision of a faculty member, usually the Director of the SBI program. At its zenith, the SBI program had a \$3,000,000 budget and assisted approximately 6,000 small businesses across the country through the assistance of over 400 universities and colleges (Heriot and Campbell, 2004). Since its elimination as a federally funded program, SBI has been operated by an independent, not-for-profit organization, the Small Business Institute®, previously called the Small Business Institute Director's Association, an advisory group for the SBA.

Three seminal studies have evaluated the economic impact of SBDC's across the United States. Chrisman et al (1987) evaluated the economic impact of SBDCs in two states in the Southeastern United States in the early 1980s. A critical rationale for this research was the Reagan era movement to de-regulate and privatize a wide range of public programs. Business venture programming was no exception to the discussion surrounding privatization. Their research found a substantial number of firms went into business after utilizing SBDC services and that these firms survived long enough to generate tax revenues to their state in excess of the public cost of SBDC assistance. In both South Carolina and Georgia substantial job creation and sales revenues were created, in contrast to the public dollars spent on these programs. While this study does not prove effectiveness of programming, or that SBDC programming is the primary reason for these firms' success, it does indicate the potential for a positive contribution to firm success, along with a positive net return on public investments (Chrisman et al. 1987).

In a second study, Chrisman and Katrishen (1994) measured improvements in business performance for long-term SBDC clients. In this analysis, they surveyed over 2,500 established and pre-venture clients from 47 of 55 operational SBDCs around the country. Their analysis reveals a strong positive impact of SBDC counseling's services on both existing firms and entrepreneurs of newly created firms. The one year estimated impact was over \$3.7 billion in new sales and approximately 68,000 new jobs (Chrisman and Katrishen 1994). Based on these results, the estimated multiplier of SBDC services from 1990 to 1991 was \$2.61 for every \$1 spent on the entire SBDC program. These results reveal a substantial economic impact from SBDC programming and provide evidence that an updated and ongoing evaluation of the value of SBDC programming is important.

More recent research, also by Chrisman (2012), followed a similar methodology to the 1994 study. This research surveyed 60 of 63 SBDC's in the United States to determine annual changes in performance, with 17.3 percent of SBDC long-term clients receiving a survey. Outcomes for pre-venture and established clients were compared against the weighted average of changes in performance for United States firms over the year, 2010-2011. One limitation of this analysis is only clients who indicated that SBDC services were beneficial were included in the analysis of performance outcomes. This survey of long-term SBDC clients indicated almost \$7 billion in sales and 75,166 new full time employment opportunities were created as a result of SBDC assistance. Further, when compared against the costs of providing SBDC assistance, SBDC

counseling services resulted in taxes revenues in excess of the costs of counseling services by a ratio of approximately 5.0 to 1.0 (Chrisman, 2012).

While these studies provide an important foundation for this research stream, they reveal a number of methodological gaps for understanding the impact of SBDCs on new firm success. To begin, an economic impact analysis is a static methodological tool that while valuable does not identify the reasons for firm success. The first study is limited to two states and the second and third, while including a larger group of SBDC clients, is unclear about what states are represented and what the response rate is for each state. The second and third Chrisman studies, attempts to isolate the underlying value of SBDCs with a combined survey and economic impact study. These are useful tools and provide important information; however, these are snapshots in time, limiting our understanding of the dynamic nature of the firm creation process. Furthermore, self-reported survey instruments of client outcomes and perceptions of SBDC value have a range of methodological limitations.

More recent research provides a more comprehensive review of the literature on small business assistance programs. Gu, et al. (2008) are highly critical of the extant research on SBDCs specifically. They point out that of the 22 studies evaluated, 14 of them were devoted to evaluating the SBDC program. They describe the research methodology of these studies as lacking rigor, with 12 of 14 studies using a weaker mean comparison or simple descriptive methodology. While they uphold the potential importance of small business assistance programs for supporting and facilitating entrepreneurship in the United States, this research makes a strong argument for a more robust and focused research on the efficacy and outcomes of small business assistance, including SBDCs.

Overall, the literature to date reveals the potential positive impact of SBDCs on small business development and success. However, recent research by Gu et al (2008) underscores the importance of a more current and stronger methodological approach in evaluating SBDC programming. This study utilizes a different and stronger methodology testing several models for best fit and a longer series of data to provide for a more complete understanding of the impacts of SBDC assistance programs on firm success across the United States. The next section reviews the data and methods used in this analysis.

3. Data and methods

This research uses a panel dataset of the 48 contiguous states from 2000 to 2013. All variables were chosen and tested after a thorough review of the literature on the reasons for firm births and deaths. This data set is unique to the researchers. It was not generally available to the public. A Freedom-of-information Act request was required to obtain it. Table 1 provides a detailed description of the variables and data sources. Table 1 further illustrates the literature sources describing the relationships between firm births and deaths and the independent variable of interest.

Dependent variable data on firm deaths and firm births comes from the US Census Bureau; while data for independent variables comes from a wide variety of government sources, including the U.S. Department of Justice and FBI uniform crime reporting and the American Household Survey through IPUMS-USA for social and educational variables. Data on loans was acquired

from Federal Deposit Insurance Corporation and patent data from the United States Patent and Trademark Office.

To illustrate the scope of funding across states, Figure 1 illustrates the annual change in SBDC funding for the ten states with the highest 2000 SBDC funding corrected by the size of the working age population. Analysis reveals that the trend of declining SBDC funding is true across all states, while also illustrating the variability of funding in some states since the great recession. In Figure one, both North and South Dakota experience a large decline and increase in respective funding.

Using several different model estimations, including ordinary least square regression and panel regressions with fixed and random effects, this research examines ten different models; five using percent of firm births as the dependent variable and five using firm deaths. Model equations are illustrated below:

OLS regression

Model (1): $Y = \alpha + \beta x + \varepsilon$

Where Y is the dependent variable, x represents independent variables, β is the coefficient for independent variables, α is the intercept, and ε is the error term.

Panel regression with time-fixed effects

Model (2): $Y_{it} = \beta x_{it} + \alpha_t + u_{it}$

Where Y_{it} is the dependent variable, where i stands for entity (U.S. states) and t for time, x_{it} represents independent variables, β is the coefficient for the independent variables, α_t ($t=1 \dots n$) with a time-specific intercept (n intercept as time observations), and u_{it} is the error term for entity and time residuals.

Panel regression with entity-fixed effects

Model (3): $Y_{it} = \beta x_{it} + \alpha_i + u_{it}$

Where Y_{it} is the dependent variable, where i stands for entity (U.S. states) and t for time, x_{it} represents independent variables, β is the coefficient for the independent variables, α_i ($t=1 \dots n$) with an entity-specific intercept (n intercept as US states), and u_{it} is the error term for entity and time residuals.

Panel regression with random effects

Model (4): $Y_{it} = \beta x_{it} + \alpha + u_{it} + \varepsilon_{it}$

Where Y_{it} is the dependent variable, where i stands for entity (U.S. states) and t for time, x_{it} represents independent variables, β is the coefficient for the independent variables, α is the intercept, and the error term has two components, u_{it} which stand for between-entity error and ε_{it} for within-entity error.

TABLE 1
Variables' Descriptions Sources and Expected Relations

Dependent Variables	Description	Source		
firm_b_pct	Firm birth percent	US census bureau	Dependent variable	Dependent variable
firm_d_pct	Firm death percent	US census bureau	Dependent variable	Dependent variable
Independent Variables	Description	Source	Citations for Firm Birth	Citations for Firm Death
SBDC_wap	Amount of SBDC program deflected by 2000 prices and divided by state working age population	SBA	None to date	None to date
popden	Population density, us resident population in state j divided by km2 of the state j	Resident population US Census bureau; US Census Bureau for km2 states territories	Positive: Audretsch, 2002	Negative: Van Horn and Harvey, 1998 Shields, 2005
incpcap	Income per capita	US Bureau of Economic Analysis	Positive: Sobel, 2008	Uncertain (Dependent on activity sector): Chen and Williams, 1999;
unemprate	Unemployment Rate, seasonally adjusted	US. Bureau of Labor Statistics,	Positive: Kreft and Sobel (2005)	Positive: Chen and Williams, 1999; Everett and Watson, 1998
Solep	Non-farm proprietors employment (number of jobs)	Bureau of Economic Analysis		Negative: Star and Massel, 1981
Loans	Loans and Leases, FDIC-Insured Commercial Banks; Balances at Year End, 1934 - 2014, (Dollar amounts in thousands, divided by working-age population Federal Deposit Insurance Corporation	Federal Deposit Insurance Corporation	Positive: Chen and Williams, 1999	Negative: Campbell, et al. 2012; Liu, 2004
HSH	Percentage of working-age population (15-64) with high-school diploma	American Household Survey (IPUMS-USA)	Positive: Kreft and Sobel (2005)	Negative: Larson and Clute, 1979
BCH	Percentage of working-age population (15-64) with bachelor diploma or higher	American Household Survey (IPUMS-USA)	Positive: Sobel (2008). Negative: Kreft and Sobel (2005)	Uncertain: realation is not significant in Headd (2003) study
meadinage	Median age of working-age population (15-64) in state j	American Household Survey (IPUMS-USA)	Negative: Sobel, 2008, Kreft and Sobel (2005)	Negative: Headd, 2003
pmale	Percent male in working-age population (15-64) in state j	American Household Survey (IPUMS-USA)	Undetermined: Kreft and Sobel (2005)	
pwhite	Percent white in working-age population (15-64) in state j	American Household Survey (IPUMS-USA)	Undetermined: Kreft and Sobel (2005)	Positive: email Oct 27
propcrimerate	number of property crimes per 100.000 people in state j	2000-2012 (uniformed crime reported statistics, US Department of Justice), 2013 FBI-Uniform Crime Reporting	Undetermined (not significant): Kreft & Sobel, 2005	
Viocrimerate	number of violent crimes per 100.000 people in state j	2000-2012 (uniformed crime reported statistics, US Department of Justice), 2013 FBI-Uniform Crime Reporting		
Patents	number of patents per thousands of people in state j	United States Patents and Trademark Office	Positive: Lee, Florida, & Acs, 2004	Negative: Chen and Williams, 1999;

There is a detailed literature examining firm births and firm deaths in the United States. We incorporate key control variables in this analysis in an effort to isolate the impact of SBDC funding on firm births or deaths. Table 2 provides summary statistics of each variable utilized in the models.

We control for a range of state demographic characteristics by including six independent variables: the median age of the working-age population, the percent of high-school educated persons in the labor force, the percent of college-educated persons in the labor force, population density and the percentage of white adults and males in the working age population. Earlier research provides evidence of predicted relationships and patterns with key independent variables. For example, a state's low median age correlates positively with firm births rates (Kreft and Sobel 2005; Sobel 2008). However, It was found that the firm's success rates increased with owner age (Headd 2003) The share of the labor force with a high school degree and firm birth rates is posited to have a positive relationship, while some evidence indicates that a college education may result in less entrepreneurial activity (Kreft and Sobel 2005). Also, Larson and Clute, (1979) find that owners of companies who exhibit the "failure syndrome" are unlikely to enroll in classes that will enhance their knowledge of accounting, economics, finance, management, or marketing, while, Headd (2003) could not find a statistically significant relation between having a bachelor's degree or higher and firm closure rates.

Population density is a control measure for the degree of rurality in a state and research illustrates there are higher death rates for firms in rural settings (Van Horn and Harvey 1998; Shields 2005). Thus, we would expect to find a higher percentage of firm deaths in states with lower relative population density. Also, Audretsch (2002) argued, in part based on earlier studies (Storey 1991; Reynolds, Story, and Westhead 1994), that there is empirical evidence confirming higher population density and its positive impact on startup rates.

Gender and race are both relevant control variables. Female-owned firms have lower survival rates than male-owned businesses (Robb, 2002), so we expect a positive relation between the percent of males in the working age population and firm birth rates and the opposite trend in firms death rate. In Robb (2002) it is also revealed that minorities (Hispanic and African-Americans) fare worse than white-owned business. Bates (1997) used the Characteristics of Business Owners Survey (US Census Bureau) to show how the relationship between minorities and entrepreneurship is critically shaped by human and social capital. Due to this, he argues that some minority groups, such as African Americans, are negatively selected towards entrepreneurship and others positively selected, such as Asian-Americans. Thus, we expect a positive relationship between the percent of whites in the working age population and firm birth rates and the opposite for firm deaths rate.

Another set of independent variables is used to control for economic characteristics of the state. These include; industrial and commercial loans, the unemployment rate, mean establishment size and the number of sole proprietorships. Evidence suggests that increases in the volume of commercial and industrial loans extend firm survival, particularly in small firms (Liu 2004; Campbell, Heriot, Jauregui, and Mitchell 2012). Also, Chen and Williams (1999) found that as bank loans increase, small businesses, particularly in high-technology industries, experience

TABLE 2
Variables' Descriptive Statistics

	Mean	Standard Deviation	Maximum	Minimum
firm_b_pct	10.88	2.26	25.76	6.86
firm_d_pct	10.42	1.59	22.45	7.34
SBDC_wap	0.68	0.34	2.34	0.05
Population density	63.7	78.44	394.47	1.95
Income per capita	36398	7224	62738	21582
Unemployment rate	5.95	2.12	13.78	2.3
Sole proprietorship	667863	773343	5043350	63205
cilo_wap	12.56	42.8	528.77	0.16
HSH_2	60.28	3.73	69.1	51.02
BCH_2	23.77	4.57	36.66	13.95
Mean establishment size	17.1	1.9	20.5	11.4
median age working-age population	36.5	2.3	43	27
pmale_2	49.76	0.75	53.05	48.1
pwhite_2	80.26	10.31	97.17	57.26
propcrimerate	3173.23	783.37	5898.46	1735.28
Violent Crime Rate	392.35	165.99	828.1	78.2
Patents per thousand	0.28	0.21	1.37	0.03

higher survival rates. We, therefore, expect a positive relation between the level of loans and firm births and an inverse relationship between the level of loans in a state and firm deaths.

Kreft and Sobel (2005) found evidence that the unemployment rate has a positive impact on state entrepreneurship. Their argument is that fewer employment opportunities, correlating to a higher unemployment rate, would give more incentives for individuals to start new businesses. Given this, one would expect that higher levels of unemployment in a state would correlate with a higher percentage of firm births (Everett and Watson 1998; Chen and Williams 1999).

The comparison between rates of firm births and deaths across regions biases results upward in states with a relatively high mean establishment size and downward in areas with a relatively low mean establishment size. To control for this, we follow Audrestsch and Fritsch's (1994) suggestion to incorporate a measure of the mean establishment size along with other key explanatory variables. Sutuarua and Hicks (2004) found that larger mean establishment size is associated with faster rates of new firm formation, while Campbell et al. (2012) did not identify a significant relation between firm death rates and mean establishment size.

Sole proprietorships is another variable mentioned in previous studies as a proxy for the level of entrepreneurship in a region. Higher levels of sole proprietorships in an area are correlated with higher levels of firm births and higher percentages of survival rates (Star and Massel 1981).

Patents per thousands of people, violent crime rate, and property crime rates are other control variables included in these models. Patents per thousands of people are included based on the idea that patents are one of the most direct and visible outcomes of the innovation process, and firm births at a minimum should be impacted by patent development. (Lee, Florida, and Acs 2004). Chen and Williams (1999) estimates of the growth rate of patents per capita indicate a positive association between this variable and business failure rates for low- and high-technology industries.

Kreft and Sobel (2005) found a negative influence of crime on the growth of entrepreneurial activity. Thus, crime rates are expected to carry have a negative relationship with firm births rates.

4. Empirical results

The primary objective of applying and studying panel data is to capture unobservable heterogeneity across time or units of observation. This can be a valuable approach since this heterogeneity cannot be detected either with time series studies or only with cross-sectional analysis. The application of this methodology allows us to analyze two critical aspects of firm births and/or deaths in the United States: a) specific individual effects within states and b) temporal effects across states. Model results are illustrated in Tables 3 and 4. Table 3 illustrates the results for the dependent variable firm births.

5. Firm births

Five separate models were estimated using firm births as the dependent variable. In the OLS regression observations were not treated as time or state dependent. This model resulted in a goodness of fit statistic R^2 of 0.49, which is the lowest value across the models. The panel data models provide a much better fit overall in explaining the variance in the model, with the time-fixed effects models being the best estimations with an R^2 above 0.60 (model 3).

The size of SBDC budget does not show any positive effect on firm creation according to the states-fixed effects models (model 2). These models may not capture the importance of the time trends for firm births; although, the SBDC budget is also not significant for the panel regressions with random effects nor in the specification with state and year fixed effects.

Both the OLS regression and the fourth random effects model, illustrate a statistically significant negative impact of the SBDC budget on predicting firm births. Overall, the SBDC variable contributes to our understanding of differences between U.S. states in the creation of firms, but does not have any significant effect in explaining firm births over time. The comparison between the panel regressions and the OLS model suggest that most of the overall variation in our sample responds to the regional or spatial heterogeneity of firms births across states. While this may be a surprising result, we hypothesize that SBDC programming may be more important in contributing to the a reduction in firm deaths than being a substantial contributor to firm births across states.

Table 3
Outcome for Firms' Birth by model. United States, 2000-2013

	Model 1	Model 2	Model 3	Model 4
	OLS	Panel Fixed Effects (States)	Panel Fixed Effects (Year)	Panel Random Effects
SBDC_wap	-0.0441	-0.0023	-0.121**	-0.00943
	-0.0438	-0.104	-0.043	-0.0756
popden	0.217***	1.325	0.0712	0.278*
	-0.0504	-1.177	-0.0514	-0.116
incpcap	-0.241***	-0.146	0.0938	-0.231**
	-0.0697	-0.1	-0.0879	-0.0842
unemprate	0.218***	0.281***	0.400***	0.242***
	-0.0374	-0.04	-0.0613	-0.0356
solep	-0.0429	0.135	-0.0699	0.0302
	-0.0411	-0.182	-0.0377	-0.0909
cilo_wap	-0.0156	-0.0375	0.0102	-0.0318
	-0.0327	-0.0375	-0.0295	-0.0346
HSH	-0.396***	-0.669***	-0.296***	-0.599***
	-0.0856	-0.145	-0.0775	-0.127
BCH	-0.178	-1.151***	-0.201*	-0.498**
	-0.0917	-0.21	-0.0845	-0.155
medianage	-0.179***	0.00458	-0.186***	-0.133*
	-0.0447	-0.0697	-0.0414	-0.0612
Meanstsize	-0.222***	0.189	-0.280***	-0.158
	-0.0427	-0.172	-0.0394	-0.0928
pmale	0.324***	0.114	0.258***	0.234***
	-0.0513	-0.0699	-0.0484	-0.0635
pwhite	0.138*	0.382	0.079	0.419***
	-0.0647	-0.231	-0.0591	-0.119
propcrimerate	0.239***	-0.0602	0.212***	0.0596
	-0.0509	-0.0837	-0.0468	-0.0746
viocrimerate	0.227***	0.523***	0.167***	0.372***
	-0.0516	-0.123	-0.0468	-0.0892

pat_th	0.0592	-0.335***	0.0713	-0.168**
	-0.0393	-0.0738	-0.0367	-0.0615
Constant	-4.99E-10	1.34E-09	0.420**	-7.44E-10
	-0.031	-0.0225	-0.151	-0.0909
r2	0.368	0.264	0.502	
N	672	672	672	672

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Coefficients for year and state were omitted due to reasons of space

Population density is not significant in any of the models in explaining firm births. Income per capita is positively related to the birth rate of companies when looking at the differences between states but there is no effect when temporal variation is concerned. The unemployment rate is negatively associated with the creation of companies, and the significance of the effects in model comparisons suggests that this correlation predicts time trends more than inter-state differences.

According to our findings, neither differences across states nor across time are explained by non-farm proprietor's employment rate. However, this variable showed to be significant and positive in the random effects model (model 4). Commercial and industrial loans are significant and negatively related to percent of firm births in the time-fixed and random effects model (model two and four), indicating that these loans explain firm births over time and within states.

The percent of educated working-age adults in a state (high school diploma) has a negative effect on firm birth where inter-state heterogeneity is concerned (model 3). Working age persons with a bachelor diploma or higher (BCH) does not appear to be significant in any of the other models examined. Finally, the control variable for the median age of the working-age populations behaves like earlier studies have revealed.

Mean establishment size is significant and negatively associated with firm births across states in every estimated model, with the strongest association in model 2. The percentage of the male working-age population shows a positive relation with firm birth percent when looking across states in model 3. Finally, the share of Caucasians in the working-age population has non-significant effect in all of the estimated models. Finally, violent crime rates, property crime rates, and patents per thousand people are positively associated with firm births in all of the models.

While these models provide a range of results we were not surprised to find that SBDC funding does not exhibit as much significance with percent of firm births. Much of the funding from SBDC programming goes to already existing firms, albeit sometimes very nascent, they already exist. As such, a critical question for this research is focused on the impact of SBDC funding on firm deaths. It can be hypothesized that if funding is successful in supporting these firms, then states with these programs would have fewer firm deaths. With this in mind the next section of the paper reviews the results using the percent of firm deaths as a dependent variable.

6. Firm deaths

Similar to the models evaluated for firm births, the general OLS regression shows the poorest performance and points to the need to consider time and state unobserved heterogeneity through a panel data approach. The panel regressions with the best goodness of fit are, again, is the model accounts for time-fixed effects (model 3).

The SBDC budget shows a negative effect on firm deaths when the model addresses between state differences. These results illustrate that in the states where this program has a larger budget, firm deaths are reduced and the opposite happens in states with smaller SBDC budgets. SBDC funding, however, is only significant for the time fixed effects model (model 3). In considering the measurement of firm deaths, it is not surprising that the time model is the most significant for SBDC funding.

Population density was significant and positively associated with firm death percent in the random effects model, while income per capita was also significant but negative. The fact that both population density and income per capita were only significant in OLS and random effects regression may suggest that part of their effect is independent from the unobserved heterogeneity that may capture the year and state intercepts. Further the relationship between population density and firm death may represent more dynamic churning of firms and agglomeration of resources in dense areas. This may indicate a need for further analysis to accurately evaluate their relation to firm deaths.

The unemployment rate is positively associated with firm death percent in all four estimated models, with the strongest effect found in the third model. This suggests that this relationship contributes to the understanding of between-states differences in firm deaths.

According to our findings, neither differences across states nor across time are explained by non-farm proprietor's employment rate or commercial and industrial loans.

The percentage of the labor force with a high school education has a negative effect on firm death in all models, with the exception of the last model. Within-states heterogeneity in model three appears to be the most important model in assessing the overall correlation. Working age persons with a bachelor degree or higher (BCH) is also negatively associated with the percent of firm deaths. Additionally, the median age of the working-age population behaves like previously studied variables, but its effect is small and is not significant for our within state model (model 2). In general, there will be more firm deaths predicted the more educated and the higher the median age of the labor force.

Mean establishment size is significant and negatively associated with firm deaths across states (model 4). The percentage of men in the labor force has a positive relationship with percentage of firm deaths when looking at within state differences (model 3), as well as in the random effects model. Finally, the share of Caucasians in the working-age population has a positive impact only in the random effects model.

Table 4
Outcome for Firms' Death by model. United States, 2000-2013

	Model 1	Model 2	Model 3	Model 4
	OLS	Panel Fixed Effects (States)	Panel Fixed Effects (Year)	Panel Random Effects
SBDC_wap	-0.136***	0.0368	-0.0963*	-0.111
	-0.0392	-0.0805	-0.0381	-0.0635
popden	0.163***	0.791	0.0501	-0.022
	-0.0451	-0.914	-0.0455	-0.107
incpcap	-0.0508	-0.00213	0.190*	-0.0312
	-0.0624	-0.0778	-0.0779	-0.0677
unemprate	-0.339***	-0.575***	0.0549	-0.506***
	-0.0335	-0.031	-0.0543	-0.0283
solep	0.0367	0.218	-0.0281	0.208**
	-0.0368	-0.141	-0.0334	-0.0801
cilo_wap	-0.0202	-0.0790**	-0.005	-0.0811**
	-0.0293	-0.0291	-0.0262	-0.0273
HSH	-0.180*	0.0616	-0.197**	-0.0217
	-0.0767	-0.113	-0.0687	-0.103
BCH	-0.207*	0.207	-0.223**	0.0281
	-0.0822	-0.163	-0.0749	-0.13
medianage	-0.171***	-0.0862	-0.249***	-0.0708
	-0.0401	-0.0541	-0.0366	-0.0493
Meanstsize	-0.264***	-0.791***	-0.268***	-0.455***
	-0.0382	-0.133	-0.0349	-0.0812
Pmale	0.253***	-0.0298	0.257***	-0.00335
	-0.046	-0.0543	-0.0429	-0.0505
pwhite	-0.0442	-0.195	0.00294	-0.178
	-0.0579	-0.179	-0.0523	-0.103
propercrime	0.323***	0.212**	0.247***	0.258***
	-0.0456	-0.065	-0.0415	-0.0602
crimerate	0.125**	0.260**	0.138***	0.147*
	-0.0463	-0.0955	-0.0415	-0.074

pat_th	0.164***	0.114*	0.102**	0.135**
	-0.0352	-0.0573	-0.0325	-0.0502
Constant	-7.31E-11	2.21E-09	0.13	1.05E-09
	-0.0278	-0.0175	-0.134	-0.0876
R ²	0.493	0.579	0.609	
N	672	672	672	672

Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Coefficients for year and state were omitted due to space reasons.

Property crime rates have a positive effect on firm deaths in our between-states model, while violent crime rates are positively associated with firm death in every model performed. Patents per thousand people are negatively associated with percentage of firm death in all the models, except the between-states model (model 3).

Overall, these results provide evidence that SBDC funding may be a factor in the percent of firm births and/or deaths between states and across time. The data are highly sensitive to heterogeneous effects and additional research may consider alternative models. Further, Hausmann tests on models for both dependent variables provide strong evidence that time fixed effects are necessary and that the random effects models do not adequately account for heterogeneity across time and states.

Further, an additional model using a lagged dependent variable and controlling for both time and state fixed was examined and did not add to our overall understanding of these relationships.

Spatial models were tested with the above variables and did not add to our overall understanding of these relationships. However, firm deaths may be more an instructive dependent variable in comparison to firm births in terms of understanding the potential relationship with SBDC funding. These results confirm the potential positive impact of SBDC funding on firm success but continuing to understand these relationships is important for future research.

7. Conclusions and Future Research

These results build on prior work that looks at the importance of small business development funding and other training and education programs on the creation and destruction of new firms. While this research has evolved, this research builds on much earlier work by Chrisman, et al. (1987) that specifically examines the economic impact SBDC funding and its potential multiplier in terms of employment, income and tax revenues to society. Chrisman's work understanding the economic impact or relative value of these funding streams is important but does not emphasize the actual outcome. If the goal of these programs is to positively impact new firms, then understanding whether these funding streams result in fewer or more successful firms is a critical

question. Additionally, in Chrisman's (2012) later work only respondents who indicated a positive experience with the SBDC program are included in the results. By not including respondents with a more nuanced or even negative experience there may be a significant loss of understanding of this relationship.

Our results illustrate that SBDC funding may have a positive impact on reducing firm deaths and possibly stimulate firm births. Model estimations illustrate the importance of controlling for a wide range of independent variables that may impact firm's births and/or deaths. Further, these results reveal the importance of controlling for both changes across time and across states. In general, model three for both dependent variables is the strongest model overall, illustrating the necessity of controlling for time.

The SBDC program is a topic that is primed for additional research. Future research may want to consider a range of alternative approaches to understanding this issue. One area of analysis should consider methods to match clients of SBDC services with clients in other business programs or small business owners that receive no services but at similar points in their business formation. Matched pair studies have important benefits to untangling the impacts of programming and interventions like SBDC efforts. We recognize the challenge of this effort, but also see a strong need for this type of research in understanding the value of business development programming.

Further this research utilizes a 13 year data set, which is significant when compared to what has been done before, but in terms of the time it takes to start and create a stable firm this may not be long enough. A longer time series of data, along with the inclusion of variables that might control for state policy orientation related to entrepreneurship could be valuable. Additionally, this model did not specify the types of firm births or deaths. Future research would benefit if researchers were able to categorize one or both of these dependent variable categories by industry type. Even a broad characterization of the firm's sector could allow for a much clearer understanding of how the SBDC contributes to firm success or failure.

Given the importance of entrepreneurship to both our national and regional economies, evaluating the impact of entrepreneurial programming is an important and ongoing research question. This research question also has importance in an era where ensuring the return on public investment dollars is increasingly critical. While this research has not clearly proven the relationship between firm birth or deaths and SBDC funding it has extended our understanding by testing multiple models and documenting the importance of time and state effects. These results do, however, confirm evidence of this relationship and future research is important.

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INNOVATIVE CURRICULUM DESIGN: EQUIPPING ENTREPRENEURIAL STUDENTS VIA LEVELS OF ANALYSIS

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ABSTRACT

Creation activities occur at multiple levels of analysis and in a wide variety of contexts. As we sought to design a more functional and flexible pedagogical curriculum for students, we organized our course sequence around three levels of analysis: individuals, organizations, and communities. Our pedagogical scaffolding affords students the opportunity to explore an entrepreneurial mindset and practice entrepreneurial habits before moving on to address structures, strategies, and characteristics in organizations and larger ecosystems.

KEYWORDS: entrepreneurship, curriculum design, levels of analysis, entrepreneurial mindset, innovation management, ecosystem

JEL Codes: L26, A22

Introduction

Many parts of our society hold successful entrepreneurs in great esteem as they often solve problems, create jobs and wealth, and develop advancements offering to improve our world. Dating back to a single course held at Harvard in 1947, efforts have been underway to share the concepts and principles of entrepreneurship to students in higher education (Katz, 2003; Murphy *et al.*, 2019), helping to pave the way for more entrepreneurs. The development of entrepreneurship educational curriculum has increased and evolved in recent decades, following notable insights in opportunity recognition, entrepreneurial alertness, creativity, and many other scholarly contributions. These efforts have helped produce a variety of constructive outcomes, as recent research demonstrates that educating students on the basics of and the processes required for entrepreneurship increases students' intentions to be entrepreneurial (Bae *et al.*, 2014).

With more than 3,000 public and private institutions of higher education now bringing courses on entrepreneurship to their stakeholders (Morris and Ligouri, 2016), many new approaches are being explored, evaluated, and implemented. Curricula have been outlined (e.g., Brush *et al.*, 2003; Hylton *et al.*, 2020) and pedagogical analysis is directed at identifying and addressing current weaknesses (e.g., Carpenter and Wilson, 2022). Additionally, scholarly outlets have promoted and shared innovations related to entrepreneurship pedagogy, including entire journals (e.g., *Entrepreneurship Education and Pedagogy*) dedicated to advancing and disseminating knowledge on the processes of educating the next generation of entrepreneurs.

Much as entrepreneurship has been conceptualized as both an art and a science (e.g., Blenker *et al.*, 2013), so too has curriculum design (Resnick, 1975). It is not a one-size-fits-all approach, as faculty members and universities have unique strengths, constraints, and stakeholders. More specifically, curriculum design involves a comprehensive effort “which identifies the elements of the curriculum, states what their relationships are to each other, and indicates the principals of the organization and the requirements of that organization for the administrative conditions for which it is to operate” (Taba, 1962, p. 421). Therefore, it is important that curriculum is purposefully designed based on an understanding of contemporary scholarship, best practices, and contextual idiosyncrasies.

Background

Our university is a top-ranked, private university in the southeastern United States. We serve just over 6,000 students total (combined undergraduate and graduate). Specifically, the School of Business was established in 1965 and has been accredited by AACSB (Association to Advance Collegiate Schools of Business) since 1999. We operate annually with approximately 30 full-time faculty members, who deliver educational content for our six undergraduate majors: Accounting, Economics, Entrepreneurship, Finance, Management, and Marketing. There are more than 1,200 total (undergraduate and graduate) business students, with more than 300 students graduating annually. Ninety-seven percent of our undergraduates are employed or in graduate school within six months of graduation. There are currently over 8,500 alumni of the Business School working around the world.

2.1 A Deep Connection to Entrepreneurship

When our Business School was formally named in the late-2000s, the lead gift was offered by a long-time friend of the University, who was described in the official announcement as a “consummate example of the entrepreneurial spirit.” As part of the naming gift, there was an agreed upon goal to develop an “enhanced entrepreneurship emphasis as a key focus for the School of Business.” A key step in achieving this objective was to add faculty to support an entrepreneurship program, leading to expanded entrepreneurship curriculum, new research and scholarship opportunities, and enhanced partnerships and internships in the local community.

The Business School carried through on its agenda, hiring faculty and creating an award-winning curriculum. An Entrepreneurship major and minor were both developed, focusing on hands-on experiences and an integrated curriculum exposing student entrepreneurs to a broad spectrum of opportunities. Beyond the courses in the degree tracts, the School developed a corporate-sponsored business plan competition that featured both a freshman and open division. This competition spanned thirteen years and awarded over \$250,000 to aspiring entrepreneurs while

engaging the entrepreneurial community through service as preliminary, semifinal, and final round judges. Additionally, a micro-venture fund was created and affixed to a 300-level course where each student in the course was given \$100 to start and run a business during a fifteen-week semester. Students were allowed to work individually or partner with others in the course and were allowed to seek matching funding from outside sources. Early versions of the class awarded class-wide profits to three businesses based on ROI but subsequently, all students were allowed to keep their business profits after the micro loan was repaid. Lastly, an introductory “freshman experience” course was created, along with a wide variety of entrepreneurship fellowships, which offered students the ability to work in entrepreneurial organizations. The young program was recognized for its innovativeness, effectiveness, comprehensiveness, and sustainability by the United States Association of Small Business and Entrepreneurship (USASBE), the largest independent, professional, academic organization in the world focused on advancing entrepreneurship.

As the program continued to develop, new faculty were added, and additional co- and extra-curricular programming developed. A student-driven new venture incubator was established on campus, giving a physical location and limited seed funding to student entrepreneurs accepted into the program via a dedicated incubator program endowment. New partnerships were established in the community, allowing for student field trips, networking events, and mentoring programs to commence. One specific partnership of note has been the School hosting the Entrepreneurs’ Organization (EO) Global Student Entrepreneur Awards Pitch Competition in partnership with the local EO Chapter. Over the life of our Entrepreneurship program, we have had three individuals serve as Entrepreneurs-in-Residence, which helped build connections and provide direct external mentoring of students. In the most recent step to further entrench entrepreneurship as part of the campus and make it accessible to more students, faculty and administrators launched another curriculum enhancement, the addition of a concentration.

2.2 Developing a Concentration

On our campus, concentrations are abbreviated curriculum pathways that allow students to gain a deeper knowledge in a particular area of business. Concentrations are only available to students currently enrolled and accepted into the Business School. Our list of concentrations highlights the diverse alternatives that students have to augment their academic experience and currently includes the following: data analytics, professional sales, risk management and insurance, real estate, sports marketing, and social entrepreneurship.

Our decision to add to our entrepreneurship curriculum did not come lightly. We were seeking opportunities to continue increasing enrollment and excitement around our Entrepreneurship programming, as enrollments in the major and minor had somewhat plateaued, despite our Business School growing by 84 percent over the previous ten years. We continue to see admissions interest in the program but were not always successful in converting students via our existing major. Exit interviews with graduating students noted genuine interest in entrepreneurship, but a general concern for not having their “big idea” to join the incubator or graduate and start their own business. Others expressed typical anxieties associated with taking the leap into entrepreneurship, therefore seeking other curricula as a “safer” choice with a more clearly defined career path. Also noted was pressure from parents to develop “hard skills” (e.g., accounting, financial analysis, data analytics), as they were more likely to generate immediate

interest on the job market upon graduation. Participation in several of these other academic programs led to students having less credit hours available to pursue courses that fueled their entrepreneurial passions.

To alleviate these concerns, we aimed to develop a shorter curriculum path that emphasized a wide variety of contextual frameworks for entrepreneurship. Rather than simply accentuating traditional startups and small or family businesses, we wanted students to see entrepreneurial behaviors as something that spanned contexts and could be valued in most any environment. While this broader view of entrepreneurship has certainly been a trend in recent years on campuses, in journals, and at pedagogical conferences (Ferriera *et al.*, 2015), our approach to designing such a curriculum seems unique in practice. In developing a short, four-course concentration, centered on problem-solving, entrepreneurial thinking, and the leadership of innovation, we focused on building students' perspective by designing our course sequence around three primary levels of analysis: individuals, organizations, and communities.

Why Levels of Analysis?

Creation activities occur at multiple levels of analysis and in a wide variety of contexts (Brush *et al.*, 2003). Entrepreneurship research has followed such logic, with a long history of exploring entrepreneurial behavior at varying levels of analysis (e.g., Davidsson and Wiklund, 2001; Luke *et al.*, 2007; Shepherd, 2011). The broad exploration of discovery and creation involves research of individuals, teams, organizations, industries, and the community (Gartner, 2001; Harrison and Leitch, 1996), with increasing attention and assertion to distinguish and organize insights and scholarly progress around distinct levels (e.g., Saebi *et al.*, 2019; Wales *et al.*, 2020). This evolution and cumulative focus on levels of analysis framed our thinking as we designed a new pathway for entrepreneurship pedagogy on our campus.

Our approach to viewing things at different levels of analysis also allowed us to incorporate, albeit loosely, impactful frameworks on innovation. Innovation serves as the “heart” of entrepreneurship (Drucker, 2002) and shows up in different frameworks dissecting entrepreneurship such as entrepreneurial orientation (Lumpkin and Dess, 1996), which also spans several levels of analysis (Wales *et al.*, 2020). Work by Kahn (2018) breaks down innovation through three separate perspectives: mindset, process, and outcomes.

Innovation can be viewed as a mindset when internalized by individual members of an organization (Kahn, 2018). This includes examining entrepreneurs' cognitions, emotions, and behaviors (Kuratko *et al.*, 2021). An entrepreneurial mindset is demonstrated by those who are curious, empathetic, looking for opportunities, and adept at making connections (McGrath and MacMillan, 2000). Innovative individuals understand risks, tolerate ambiguity, and accept that failure is part of learning (Shepherd, 2004). Learning about, understanding, and practicing these personal aspects are effective in exploring entrepreneurship through the individual level of analysis (Kwapisz *et al.*, 2022).

Per Kahn (2018), innovation can also be viewed as a process. While some may dismiss innovation as a random “spark” of ingenuity, the more predictable and sustainable approach to innovation involves purposeful and intentional processes (e.g., Hornsby *et al.*, 1993; Moroz and Hindle, 2012). Organizations invest in systems and structures so that the best ideas are analyzed,

tested, and supported (Morris *et al.*, 2011). Establishing a culture that expects and encourages entrepreneurial thinking is critical for heightened financial performance and sustained organizational success in hypercompetitive environments (Kuratko and Audretsch, 2013). Analyzing the processes existing organizations use for new product development and in establishing or refining entrepreneurial strategic orientations helps build awareness for and knowledge of the successful execution of firm-level entrepreneurship.

Perhaps the most common view of innovation involves creative outcomes (Kahn, 2018). Hence, we can easily attach innovation with the introduction of new products or new services, or a wide variety of easily recognized outputs (Morris *et al.*, 2011; Sawhney *et al.*, 2006). We can track or measure entrepreneurial outcomes through new product or service introductions, intellectual property protection (e.g., patents), new process development, new business models, and the initiation of new marketing or communication concepts, among other potential metrics (e.g., Covin and Miles, 1999; Gault, 2018). Entrepreneurial ecosystems are networks of cooperative and competitive relationships that start, support, and fund new businesses in a particular community (Stam and Van de Ven, 2021). These ecosystems involve an interdependence of human and institutional actors, along with other contextual factors, that lead to entrepreneurial outputs, i.e., new value creation by agents (Acs *et al.*, 2017). Accordingly, while innovative outputs can come from any level of analysis, we can tie them to a discussion—or rather, an experiential element—of how entrepreneurial communities can work together to produce a wide variety of impactful outcomes.

Curriculum

The core of our new “Entrepreneurship and Corporate Innovation” (ECI) concentration is a three-class sequence that takes students through the individual, organization, and community levels of analysis that make up a typical entrepreneurial ecosystem. We also include an elective opportunity, offering students a wide assortment of courses to pursue their entrepreneurial interests and build needed skills for their specific entrepreneurial journey.

Individual Level (i.e., Cultivating the Entrepreneurial Mind)

The initial course in our ECI curriculum is focused on the individual and aiding his or her cognitive development as an entrepreneur. We operate in a continually complex, dynamic, and uncertain environment, so aiding students in gaining an entrepreneurial mindset can help address some of the challenges that come with this uncertainty. Though there are many definitions of entrepreneurial mindset in scholarly literature, the majority align around the entrepreneurial mindset as a way of thinking creatively, an ability to be adaptable, and the capacity to handle uncertain situations (Ireland *et al.*, 2003; McGrath and MacMillan, 2000). An entrepreneurial mindset is not only relevant for entrepreneurship, but also for the business environment in general. Uncertainty, failures, and complexity are standard in today’s competitive business world, so developing an entrepreneurial mindset can help prepare students for this inevitable landscape.

While early research on entrepreneurs at the individual level focused on traits and certain characteristics of entrepreneurs versus non-entrepreneurs, decades of criticism (e.g., Low and MacMillan, 1988) moved the focus towards looking at the behaviors of entrepreneurs.

Unfortunately, this lent itself to many entrepreneurial courses being taught as another version of management—a process of controlling, planning, and leading (Neck *et al.*, 2021)—and left many wondering what entrepreneurship curricula offers beyond typical business management curriculum (e.g., Klein and Bullock, 2006).

In light of this push back, scholars began focusing on entrepreneurship as the identification, evaluation, and exploitation of opportunities (Shane and Venkataraman, 2000). This resulted in a reemergence of the study and teaching of individual entrepreneurs, with less of a focus on traits and processes but rather taking a cognitive approach (Mitchell *et al.*, 2002; Neck *et al.*, 2021). Thus, this class focuses on cultivating an entrepreneurial mindset through practical exercises to aid students' cognitive development (Hylton *et al.*, 2020; Mawson *et al.*, 2023).

Class Objectives. The objective of this class is to explore the entrepreneurial mindset, gain experience through practical entrepreneurial activities, and develop skills through innovative, fast-paced exercises. This course is not lecture based, but rather activity oriented; it focuses on students taking ownership of their learning through a variety of thoughtful, disarming, and engaging exercises (Löbler, 2022). As such, the curriculum includes a collection of participatory assignments encouraging students to think more creatively and gain confidence and competence via hands-on experience. Learning occurs not through the content, but rather active participation and engagement (Moberg *et al.*, 2014). Activities are designed to inspire curiosity and allow students to practice specific skills necessary for entrepreneurial success, while developing these abilities into competencies (Fiet, 2001). While the assignments do not come easy, and for many the skills and activities are unfamiliar, the intent is to create a fun and introspective opportunity for personal development and for students to build confidence for professional endeavors.

Details of Curriculum. This first course has a focus on the individual to aid students in the development of an entrepreneurial mindset by focusing on entrepreneurial thinking and skills.

The class is all about *becoming entrepreneurial*. We begin at the individual level—with the mindset—and approach entrepreneurship as an everyday practice (Blenker *et al.*, 2011; Lackeus, 2020). Gaining this entrepreneurial mindset can provide empowerment and enrichment to everyday life and a higher contribution to society overall (Blenker *et al.*, 2011). While not an exhaustive list, we focus on the practice of empathy, the refinement of emotional intelligence, the routine of play, the importance of creativity, the need for experimentation, the inevitability of ambiguity, the value of failure, and the ritual of reflection. Through these skills and practices, individuals are better able to recognize and seize opportunities. This mindset serves them well as they learn about the subsequent levels of analysis demonstrated within our curriculum.

Implementation. Through several semesters of teaching this course, feedback from students has been promising. With the prior curriculum format students were suggesting “*this course would be better if it was earlier in my college career*” or “*I wish I had this class before* (another course in the Business School).” After a gradual implementation of this curriculum plan, we are hearing comments such as “*this class actually changes the way you think,*” “*this class has taught me other valuable skills I can use throughout my life,*” and “*I loved working with my classmates to develop my creativity and problem-solving.*”

Firm Level (i.e., Management of Innovation)

The next course in our sequence moves to the organization level of analysis. In it, we explore the domain of firm-level entrepreneurship, i.e., how established organizations maintain an entrepreneurial approach. While titled “Management of Innovation,” we explore a variety of topics, including the many forms of innovation, the inclusion of innovation in a firm’s vision and values, the reach and purpose behind corporate venturing, the processes of leading organizational change, and many components impacting organizational culture. It is a course on leadership that values entrepreneurial thinking and innovation as much as it is on teaching entrepreneurship (not coincidentally, it is co-listed and available as a course within our Management major as well).

Miller’s (1992) “Icarus paradox,” describes how organizations are prone to failure, as the source of their success often leads to their decline. It suggests that products and strategies which have led to success are amplified, while other activities are forgotten, deemphasized, or almost entirely extinguished. While all new businesses start with a spark of entrepreneurial behavior, many begin a transition from exploration to exploitation (Ireland and Webb, 2009; Swift, 2016). The result of such behavior is a less balanced approach, a deemphasis on innovation, and a possible trajectory of decline (March, 1991). It is the basis for discussion in our class: finding and maintaining a balance of strategic management and entrepreneurial behavior with an organization. The concept of *strategic entrepreneurship* is encouraged, offering an organizational agenda that values simultaneous opportunity-seeking and advantage-seeking behaviors (Hitt *et al.*, 2001; Mazzei, 2018).

Subsequent research supports the notion of strategic entrepreneurship in contemporary organizations, with positive relationships in developing competitive advantage, delivering profitability, creating wealth, and avoiding organizational decline (e.g., Kantur, 2016; Rauch *et al.*, 2009; Wang, 2008; Wiklund, 1999). Despite such evidence, there continues to be an ongoing struggle with firms in successfully executing an organizational strategy that embraces entrepreneurial activities (Kuratko *et al.*, 2014; Sharma, 1999). Without thoughtful organizational design and effective execution in building systems and developing (or acquiring) individual and organizational skills, the capabilities that deliver innovation and entrepreneurship can get stifled. Therefore, discussions in class center on the intentional seeking of an organizational equilibrium with regard to exploration and exploitation and an obvious investment in maintaining an entrepreneurial strategic orientation (e.g., Covin and Lumpkin, 2011; Wales, 2016). The concept of an entrepreneurial orientation is a manifestation of the many individuals of an organization embracing and acting upon an entrepreneurial mindset (Ireland *et al.*, 2003), demonstrating an effective scaffolding as we advance students through our curriculum.

Class Objectives. The objective of this class is to demonstrate and discuss the value of entrepreneurship inside existing organizations, which is generally referred to as *corporate entrepreneurship* in academic literature. The intent is to show students that entrepreneurship can occur in a wide variety of contexts, not just in startup ventures. We discuss entrepreneurship in firms of all size, and for both for-profit and non-profit organizations. We explore the highly consequential innovations within firms, as well as corporate venturing structures to invest in, acquire, or launch new businesses. The course is designed to continue practicing individual skills necessary for entrepreneurship (e.g., opportunity recognition, market assessment, resource assembly), while also providing knowledge around the paradigms, constraints, and benefits of innovative thinking and creative destruction inside established entities. We strive to make

entrepreneurship an entrenched and shared value across an organization and build leaders who understand the importance of innovation in organizational strategy and practice.

Details of Curriculum. This course focuses on the characteristics of entrepreneurial organizations. While the first course in our sequence demonstrates being entrepreneurial, this class addresses the notion of *staying entrepreneurial*. Hence, we discuss product and organizational life cycles, navigating organizational bureaucracies, and the need for renewal. Students learn about the various forms of strategic entrepreneurship, allowing firms to innovate products, processes, markets, business models, and organizational strategies (Covin and Miles, 1999). Further, a wide variety of organizational characteristics are discussed to give students consideration for how to maintain balance and encourage entrepreneurial behavior within existing organizations. Leadership style, organizational processes and design, rewards systems, human resource practices, and other topics are explored to examine how they contribute to innovation and the exploration of new opportunities. Case studies are utilized to observe and analyze successful and unsuccessful individual and firm outcomes. Class activities are designed to give students practice in identifying opportunities, pitching ideas, and securing resources. Guest speakers with corporate innovation experience join the discussion to share insights and personal stories of the hardships and prosperities of corporate entrepreneurship. These accounts help students see the purpose and value behind entrepreneurial investments in existing firms and how these investments help shape organizational success (Kuratko and Morris, 2018). Gaining an understanding of firm-level entrepreneurship affords students the ability to see innovation in the context of larger systems, paving the way for the third class in our sequence.

Implementation. This course was introduced to our entrepreneurship programming to help expand students' vision and definition of entrepreneurship. Students, by all accounts, have appreciated the discussion to explore entrepreneurship in different contexts. Comments from students include an appreciation for immediate practical application (*"this course has me thinking about how I can bring innovative thinking to my church and Greek organization"*) and in their overall career pursuits (*"I now see how I can have a career in larger organizations as a creative individual"*). Students have also been surprised when learning of the organizational cultures and widespread investment in innovation at many firms (*"I had no idea this company was involved in so many different businesses and markets"*).

Community Level (i.e., Experiencing Entrepreneurial Ecosystems)

The final course in our sequence is an experiential course that is designed to allow students an entrepreneurial journey of their own creation (Forster-Hult, 2021; Morris, 2020). Building on the encouraged characteristic of proactiveness highlighted in earlier courses in the sequence (and success from similar activities in the introductory course of our Entrepreneurship major), students are provided funding (\$100) to craft, develop, and execute an entrepreneurial venture for the semester. Students have the option to launch this venture as a sole proprietor or to partner with other classmates as a part of their experience. Unlike some other schools, ours does not take an equity position in the newly formed business, but rather provides the funding as a short-term, micro loan that must be repaid at the end of the semester. Experiential learning is particularly effectivity in entrepreneurship education (Fuchs *et al.*, 2008) and we believe having this structure as the final course the students are able to fully engage in this active learning.

Coursework is structured around the development of practical business plans and a well-communicated value proposition, with typical consideration afforded to topics such as product feasibility, marketing strategies, and financial estimates. A prominent nuance of this course is the deliberate attention given to building students' social network by bringing in an extensive list of guest speakers from the local entrepreneurial ecosystem. These connections bring additional resources and knowledge to the student entrepreneurs for the immediate experiential learning, as well as expose them to local resources for future entrepreneurial endeavors. This also allows our school to continue our previous commitment and financial support of offering entrepreneurial students funding to seed businesses in an immersive educational learning opportunity. We have moved this programming to more of a "capstone" experience (as was previously offered as an introductory experience) that now increases the likelihood of successful outcomes due to course sequencing. This allows a greater opportunity to apply an increased number of concepts and experiences (built across multiple semesters) to their entrepreneurial efforts.

Class Objectives. The course seeks to expose students to entrepreneurial processes and outcomes, offering immersive experiences into opportunity identification and exploitation while encouraging proactive innovative behavior through autonomous entrepreneurial engagements and devoted mentorship. This course seeks to build upon the skills and knowledge accumulated in prior ECI courses to offer an integrative and practical hands-on learning experience. In addition to providing the predominant experiential learning opportunity in the curriculum sequence, the course expands student knowledge of the local and regional entrepreneurial ecosystems. Entrepreneurial ecosystem participants serve as guest speakers to illustrate the myriad of institutional, governmental, advocacy, complementary, and developmental organizations that are involved in bringing an idea through all phases of the entrepreneurial life cycle. These guest speakers also work with students to acquire needed resources for their entrepreneurial projects while building relational social capital and network connections. In total, the course aims to build important entrepreneurial capabilities around networking, proactiveness, and self-confidence (Lee *et al.*, 2018).

Details of Curriculum. This course has two primary components, a micro-financed venture startup project and an extensive list of guest speakers to provide students with exposure to a variety of firsthand experiences from various corners of our local and regional entrepreneurial ecosystem. Weekly discussions address the variety of topics that make up traditional business plans (e.g., Abrams, 2004) and more contemporary business model frameworks, such as the Business Model Canvas (Osterwalder and Pigneur, 2010). Students develop their business ideas gradually as new topics and concepts are introduced, laboring to turn their \$100 micro loan into a viable business operation over the course of the semester.

Regarding our speaker lineup, we expose students to experienced entrepreneurs, including those at various stages of the entrepreneurial lifecycle, to hear valued guidance and lessons learned across different ventures and industries. We include numerous community partners that work with entrepreneurial startups, including those in financial, technical, and legal services. We meet with representatives of various funding agencies, ranging from startup to seed to high growth (including banks, buy- and sell-side mergers and acquisitions, private equity, and venture capital), to help students understand the complexities and challenges of entrepreneurial funding. Additionally, as our metro area is home to several well-regarded incubators, accelerators, and co-

working hosts, we connect these student entrepreneurs with a support network for emerging and aspiring entrepreneurs that may be beneficial beyond graduation.

At the end of the semester, students provide a presentation of their business-related activities to a panel of faculty and local entrepreneurs. They submit a detailed journal on their takeaways from their entrepreneurial experiences and classroom mentors/speakers. Students are allowed to keep their profits after the micro loan gets repaid. Students may, or may not, continue with the operation of their business after completion of the course, with no equity stake from the University or supervising faculty.

Implementation. This course has seen perhaps the most change when compared to the other courses in the sequence. In focusing on increased exposure to entrepreneurial ecosystems and the experiential nature of the micro-finance project the course now is much more externally focused than previous courses within our Entrepreneurship curriculum. We see this change positively as the preceding courses provide students with content, concepts, and skills that they bring to bear in this capstone course. Feedback from students on this course includes comments such as *“this class provides invaluable opportunities and experiences for students”* and has helped to teach *“what it means to be an entrepreneur and all of the challenges/successes that can come with it.”* Specifically related to the exposure to the local ecosystem, students have remarked, *“since entrepreneurship can be challenging, having a network of support and inviting outside perspectives in can be incredibly beneficial”* and *“I have learned more than things pertaining to entrepreneurship from our guest speakers.”*

Elective

As all our concentrations are twelve credit hours (i.e., four courses), we have a fourth class required to complete the ECI concentration. Largely based on the successes of our other concentrations, we focused on a three-class sequence to introduce some flexibility for our students to obtain an internship or take another course in our curriculum that would effectively serve their career pursuits (and still have to do with entrepreneurship and/or innovation, generally). A prominent option is to work with a firm as an intern (in-person or remote). Our Business School works to connect with many local entrepreneurs and alumni working in startup entities. Our typical internship requires 150 hours committed to the firm they are working with. For the ECI concentration, we work to find companies that offer our students a variety of tasks, including but not limited to operations, marketing, financials, and event planning. We often find alumni who want to serve as mentors and actively engage with their interns to discuss the processes and challenges of the entrepreneurial journey, making for an extremely meaningful experience and another valuable resource for the student. In select instances (e.g., where students continue with the business created inside the Experiencing Entrepreneurial Ecosystems course, are part of our student incubator cohort, or have some other operational business venture), students have even been allowed to intern inside their own company with faculty oversight. We do allow other options besides internships, too. There are a variety of courses that our students have already begun taking advantage of within the Business School that offer wonderful complements to our ECI curriculum. Options include courses on marketing research, customer journey/experience design, digital or social media strategies, project management, and social entrepreneurship/non-profit management. Occasionally, these students can take advantage of opportunities within other Business School concentrations to craft a unique educational design

that suits their individual entrepreneurial passions and interests. In these instances, their elective choice can help them complete another concentration (e.g., if they see themselves working in commercial real estate, taking a course that's part of the Real Estate concentration; taking a non-profit management course integrating the ECI concentration with our Social Entrepreneurship concentration). It is imperative to expand entrepreneurship education and research beyond just the business school (Liguori *et al.*, 2019), so we also provide opportunities outside the Business School if students express interest (and prerequisite coursework is not an obstacle). Example courses that might suit student interests could be wide ranging, but several we have openly discussed as viable options include computer programming, psychology, graphic design, and public relations. Our intent is to work with students to find an effective use of their final three ECI credit hours that would propel them forward on their entrepreneurial journey and round out any skills they feel are lacking. Table 1 provides an overview of our ECI curriculum, including a summary of the primary pedagogical skill scaffolding used in its design.

Conclusion

Organized around a progression through three levels of analysis, this curriculum provides a coordinated advancement of skill-building to enhance entrepreneurial thinking and innovative behavior, while keeping to a limited number of credit hours. Structured around individuals, organizations, and communities, this sequence allows students to generate numerous career paths and pursue individualized entrepreneurial interests. Our desire is to stoke students' interests in entrepreneurship and help build skills highly relevant for entrepreneurial behavior in a wide variety of professional contexts, all while maintaining flexibility for students.

Skills were purposefully scaffolded in the course sequence (Ghafar, 2020; Neergaard and Christensen, 2017), focusing on individual skills and behaviors, organizational capabilities and structures, and partner collaborations and community networking. Each course, however, embraces practical application and experiential learning as core to our Business School's pedagogical philosophy (Hagg and Kurczewska, 2020). Different institutions which all have distinctive objectives and mission will require tailoring of these suggestions to reach their own goals and desired outcomes (Barnard *et al.*, 2019). Our intent is not to suggest that any or all business schools should adopt such an approach or reframe their curriculum in a similar manner, but rather offer another stimulating development in entrepreneurship pedagogy upon which to reflect and consider as we seek to reach a larger population of students and encourage innovative thinking and behavior in a wide variety of contexts.

Table 1. *Overview of Entrepreneurship and Corporate Innovation core curriculum.*

Title	Level	Primary Focus	Example Student Feedback
Cultivating the Entrepreneurial Mind	Individual	The objective of this class is to explore the entrepreneurial mindset, gain experience through practical entrepreneurial activities, and develop skills through innovative, fast-paced exercises.	▪ “This class actually changes the way you think.” ▪ “This class has taught me other valuable skills I can use throughout my life.” ▪ “I loved working with my classmates to develop my creativity and problem-solving.”
Management of Innovation	Firm	The objective of this class is to demonstrate and discuss the value of entrepreneurship inside existing organizations, which is generally referred to as corporate entrepreneurship in the academic literature.	▪ “This course has me thinking about how I can bring innovative thinking to my church and Greek organization.” ▪ “I now see how I can have a career in larger organizations as a creative individual.”
Experiencing Entrepreneurial Ecosystems	Community	The course seeks to expose students to the entrepreneurial process, offering immersive experiences into opportunity identification and exploitation while encouraging proactive innovative behavior through autonomous entrepreneurial engagements and devoted mentorship.	▪ “This class provides invaluable opportunities and experiences for students.” ▪ “Since entrepreneurship can be challenging, having a network of support and inviting outside perspectives in can be incredibly beneficial.”

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