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THE QUANTITATIVE ENTREPRENEUR: MAXIMIZING SMALL BUSINESS SUCCESS THROUGH ANALYTICS

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Abstract

Small business failures rates are highly dependent on industry type but even in the industries with the highest rates of success the 5-year survival rate of a new start-up barely exceeds the 50% threshold. Entrepreneurs typically wear many functional hats such as CEO, CFO and CMO. However, many forget to also be the Chief Analytics officers of their firm while their larger competitors are using their scale to invest heavily in analytics. This research will explore the hypothesis is that if more research was conducted prior to and during the early phases of a start-up there would be less small business failures and a better ability for small firms to compete in the marketplace against competitors both large and small.

 Keywords: Entrepreneur, start-up, business, analytics, research.

1.   INTRODUCTION

The literature on small business failures are numerous. Historically, small business failures have been on the increase. For example Cochran (1981) reported a 4 fold-increase in small business failures between the time periods 1949 to 1971. Everett and Watson (1998) studied the impact of macro-economic factors on small business mortality. Their findings suggest that economic factors appear to be associated with between 30 percent and 50 percent of small business failures, depending on the definition of failure used. More recently Vlad (2009) found statistical evidence leaning towards microeconomic and macroeconomic factors playing an important role on the bankruptcy level of the small business sector of the economy. Given this and especially noting that the Great Recession is still in memory and other factors related to the growth of manufacturing in Asia it has been a tough environment for small businesses and entrepreneurs across a multitude of sectors. This is reflected in the literature by Harner (2011) who in contrast to many studies coming out of the Great Recession focusing on large financial institutions and "too-big-to-fail" entities re-examined lessons gleaned from the recession in the context of smaller, entrepreneurial entities. Specifically, Harner (2011) analyzed how small business entrepreneurs might invoke principles of enterprise risk management to mitigate the long-term impact of financial distress on their business models.   Similarly, Monahan et al., (2011) discussed the successes and challenges small businesses face coming out of the Great Recession especially given their prominent role in creating jobs in the economy.

Entrepreneurial success factors are also a very well researched topic. Most reently Miettinen and Littunen (2013) studied success factors in newly established firms and discovered that founder's attributes were less important than others such

as funding attributes and competitive factors. This is contrary to previous research on the topic which highlighted founder's attributes as a criterion for success. For example, Owens et al., (2013) found ten attributes correlated with self-employed small business owners' success. The top four personality predictors of success were reported to be Goal-Setting, Social Networking, Emotional Resilience, and Work Drive.

A Bloomberg Research Services study (2011) did a comprehensive analysis of business analytics a few years back and discovered the following:

- Business analytics is still in its relative infancy. Many companies are still using old school techniques for analyzing data, such as spreadsheets.
- Intuition still plays a big role in decision-making, even in companies that have allegedly signed on to a business analytics strategy.
- How to work with all that data is still the number one challenge. Companies continue to struggle with data accuracy, consistency, and even access.
- Many organizations lack heavy-duty analytical talent.
- Companies are proceeding to adoption analytics, but often with a great deal of caution.

While these are interesting findings which can be utilized by any business large or small what they also discovered as a part of this study was that that 97 percent of enterprises with revenues over $100 million are using business analytics, and they also reported that the trend is trickling down to SMBs. This is a call to action for all SMBs especially those that compete with multinationals or large retail chains because they now can be sure that their competition is surely using business analytics to compete in the marketplace. The premise is that if the SMBs do not also respond in kind then this could certainly result in more business failures due to the inability to compete on the basis of analytics.

2.   ANALYSIS AND DISCUSSION

Based on the conflicting evidence of personality traits affecting small business success in comparison with other external factors maybe there are some other attributes which have yet to be measured. One particular factor to consider is the ability of entrepreneurs to conduct data analytics. This is an important consideration given the literature review above and also due to the fact that recent studies show (Accenture Competing on Business Analytics Survey, 2007), that about 40% of organizations still rely on their gut feeling, not data analytics, to make important business decisions. In this day and age entrepreneurs will have many opportunities to extracting information from the data they have available in their business and to use it to predict trends and behavior patterns to make better operational decisions. This becomes of even greater importance if they are competing with large national or international chains who are certainly investing in research and data analytics as a method of competing against the smaller competitors and use their size and scale to win. This is a familiar story repeated over and over again led by companies like Wal-Mart and McDonalds. Perhaps this will even increase the success rate of small business ventures as predictive analytics will help entrepreneurs analyze many factors to assess the risks and better understand how certain operational decisions can affect their entire business.

Fogarty (1995) in a quasi-experimental design at a small business tested the hypothesis that vividly presented information is impactful and persuasive is drawn upon by many advertisers in an attempt to sell their products. There are several properties that vivid information is presumed to have that can be expected to affect judgments by influencing emotional involvement, imageability, encoding and availability at recall. This research was a quasi-experimental approach to the exploration of the relationship between vivid advertising and judgments made immediately after message presentation. The experiments tested the impact of vivid advertising on the perceived persuasiveness of poster advertisements at a small business following early theories on a Vividness Bias developed by famed economists Tversky and Khaneman.. It

was discovered that perceived persuasiveness was increased and actually doubled sales in the small business when implemented over a fixed time period. Therefore, small business owners were informed they can increase sales if they create poster messages which utilize colors, concrete language and are more entertaining.   Just think if small controlled experiments could be done on a continuous basis in small businesses across the globe. The results would be staggering and one could certainly hypothesize that this could reduce the amount of small business failures.

Outside if the quantitative experiments highlighted above a survey was conducted for this study using a convenience sample of entrepreneurs residing in the Greater New York Metropolitan Area. These entrepreneurs were asked what they thought about the importance of business research and analytics to their company Most thought it was necessary but not a skill that they had comfort will applying as professionals. One entrepreneur outlined that in their current business that and any operational decision, either a new employee or a purchase of a servicing system, has to be well analyzed with data before a final decision is made. They view this as one of the key success factors in the marketplace.   Another entrepreneur who was interviewed acknowledged that small business managers need to understand the importance of business research and analytics to continue to educate staff and grow their organizations. She also acknowledged that when first opening her small business venture she felt the market was booming and the region stable for my business to have a decent chance at success. However, she also disclosed that had she taken the extra steps using business research for her region and what market factors would impact growth she could have avoided many setbacks along the way. Furthermore, she acknowledged that the information she gained would have allowed her to make educated decisions about products and services as well as a look at possible competition for her new business.

Given the application and impact of analytics to small business ventures and interviews with entrepreneurs outlined above it appears that we have evidence that applying business analytics to small businesses and new startups can prevent failures and ensure greater success.

3.   CONCLUSIONS

Given the potential of analytics to solve problems and be able to create sustainable competitive advantage at some of the world's largest businesses it would also hold-true sense to believe that it will also work in start-ups.   We have found direct evidence for this in the case study and survey research presented in this study

One additional case study where this has worked extremely well for a start-up is Netflix who were able to effectively use data analytics and a new digital distribution model to demolish the well-established and powerful competition in Blockbuster. Interestingly, Blockbuster was able to use better analytics in the past to demolish its former competition which were the mom and pop video stored which sprung up in the 1980s.

Another case study in this area is Pandora who in an environment where people were moving toward their own pool of music used analytics to exploit the niche of people who prefer their music to be chosen for them sometimes rather than purely making the choice on their own. In order to customize this for the person they chose to use analytics and develop a customer music preference algorithm. In effect, they were able to create custom radio stations for subscribers based on analytic algorithms.

An area for further research is to actually do more testing to ensure that this holds true over a greater number and types of small businesses. Perhaps these tests can be done in a way which allows the necessary research to be conducted but at the same time enables small businesses to benefit from the use of advanced research and analytics. It would also be interesting to actually measure the actual effect of analytics on small business failures similar to how analytics has been linked to the success of many large firms..

Applying these techniques to small business is not only promising but it is very exciting as we may be able to solve some vexing problems in our society in relation to reducing the risk to entrepreneurs whom we are so indebted to for taking the risk and creating more jobs in our economy. Small businesses account for over 60% of all new jobs created which highlights the vital importance of research in this area.

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