

The Impact of College Entrepreneurial Education on Entrepreneurial Attitudes and Intention to Start a Business in Uganda

Paper submitted to
Entrepreneurship in Africa Conference
April 1 – 3, 2010
Syracuse, NY

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Abstract

This paper reports results of a longitudinal study that focused on the impact of entrepreneurial education and societal subjective norms on entrepreneurial attitudes and intentions to start a business of university students in Uganda. Data were collected in two waves: Wave I before the entrepreneurship course and Wave II after the entrepreneurship course - four months later. The sample composed of college students pursuing business oriented courses. Analyses included tests of significance of changes in the attitudes and intentions of students after the entrepreneurship course and the mediating role of attitudes and moderating role of employment expectations. The results show small but significant changes in attitudes and a significant mediating role of attitudes – perceived feasibility and perceived desirability but non- significant role of perceived feasibility on the relationship between societal subjective norms and entrepreneurial intentions. Contrary to expectation the study did not find evidence to support a moderating influence of employment expectations on the relationship between the attitude variables and entrepreneurial intentions. There are lessons to be learnt for policy makers and more questions for researchers.

Key words: entrepreneurial intentions, entrepreneurial attitudes, social subjective norms.

Introduction

The subject of entrepreneurship continues to attract interest from both academicians and policy makers to the extent that many business schools at universities now include entrepreneurship studies as part of their graduate and undergraduate curricula. Similarly empirical research studies exploring the extent to which entrepreneurial education influences the decision to become an entrepreneur are steadily increasing. Such studies include among others Autio, Keeley, Klofsten and Ulfstedt (1997), Peterman and Kennedy (2003), Audet (2001), Kennedy, Drennan, Renfrow and Watson (2003), Franke and Luthje (2004), and Tounés (2006).

In all these studies, the recent shift in the domain of entrepreneurship research from investigation of entrepreneurial characteristics from ex-post facto perspectives to investigating ex-ante influences on entrepreneurial behavior is evident. This shift is important particularly to curriculum designers and policy makers if the intention of including entrepreneurship studies on university curricula is to augment post education incidence of entrepreneurship. To paraphrase Kennedy et al. (2003: p. 2), if programs and policies are to be developed to enhance entrepreneurial behavior, then a keen understanding of the factors that influence and shape an individual's intentions to go into entrepreneurship is critical.

The studies referred to above, draw from Ajzen's (1991) social psychology theory of planned behavior and Shapero and Sokol's (1982) intentions theory, developed specifically for entrepreneurship. Briefly stated, Ajzen's theory posits that three variables, namely (1) attitude towards a given behavior, (2) subjective norms and (3) perception of control over the behavior precede the formation of intention. For their part, Shapero and Sokol posit that the intention to go into entrepreneurship is predicated on perceived desirability and feasibility of entrepreneurship as a career resident in an individual and his or her propensity to act.

Following Shapero-Sokol's lead, some studies have concentrated on the influence of perceived desirability and feasibility on entrepreneurial intentions but neglected the role

of subjective norms emphasized by Azjen (e.g. Audet, 2001). Other studies (e.g. Davidsson, 1995) have assumed that subjective norms are embedded in perceived desirability. In Ajzen's model, subjective norms refer to the perceived social pressure to perform a behavior (Autio et al. 1997). The presumption is that the more favorable the social norm, the greater will be the inclination to perform the behavior. There is anecdotal evidence to suggest that Ugandan society expects their educated young to seek paid employment in large private corporations, government companies or the traditional civil service. In other words, the social norm does not favor choice of an entrepreneurial career after university education. There does not appear to be any credible empirical study as yet in Uganda that has investigated the effect of such unfavorable social norms on the entrepreneurial intentions of university students about to enter the world of work. This study investigated both the role of entrepreneurial education and social norms as collateral or concomitant factors in shaping attitudes that lead to entrepreneurial intentions.

Another set of factors that have the potential to account for some of the variation in intention to opt for an entrepreneurial career is situational factors. Kennedy et al. (2003) found significant statistical evidence of a moderating influence of envisaged unemployment and family commitments on entrepreneurial intentions. Evidence of similar tendencies in Uganda may be found in recent Global Entrepreneurship Monitor reports (GEM, 2003; 2004) which indicate that for the general population, choice of an entrepreneurial career is dictated more by push (or necessity) than pull (or opportunity) factors although the GEM Uganda report shows similar start-up incidence for both opportunity and necessity enterprises.

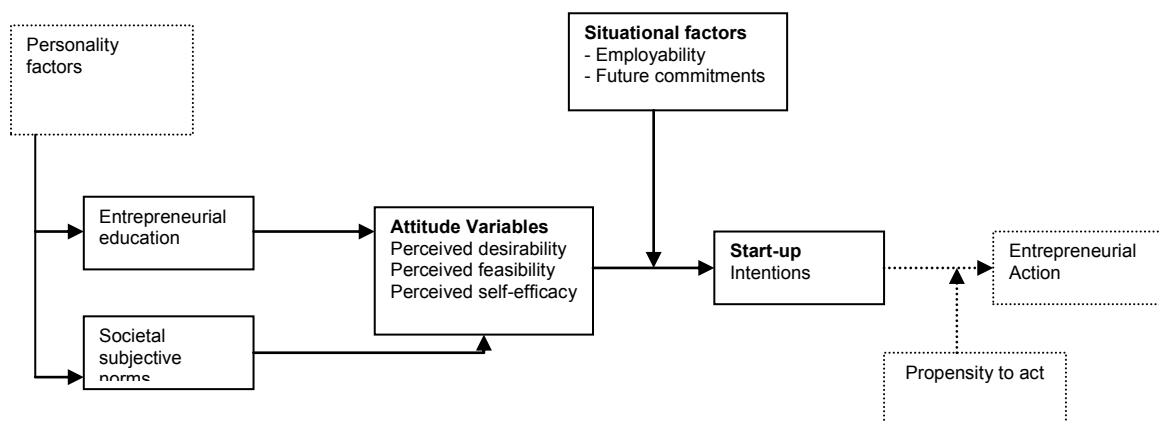
All the studies quoted above save for Peterman and Kennedy (2003), focus on university students who have been exposed to entrepreneurial education courses. The Peterman-Kennedy sample was taken from secondary school students but covered similar ground. The present study focused on college students because their time to join the work market was eminent and thoughts about their future careers were more focused. Moreover, from a policy perspective, we believed that a group about to embark on new careers is more

responsive to suggestion. This belief was informed by Autio et al.'s (1997) observations that career preferences of college students can be influenced and that students will tend to opt for the more fashionable choices available.

Research question

In recognition of the importance of entrepreneurship as an economic growth and national prosperity driver (Hindle & Rushworth, 2000), business schools at universities now offer entrepreneurial education as part of their curricula. The assumption is that this entrepreneurial education will influence students' career choices towards entrepreneurship by positively swaying their perceptions of its desirability and feasibility and the students' self-efficacy to perform. The effectiveness of entrepreneurial education in influencing career choice in favor of entrepreneurship is a subject that is still undergoing empirical testing. Calls for papers on the subject in the various global entrepreneurship conferences and the focus on entrepreneurship education and training in GEM 2009 are testament to this. Additionally, the possibility that in developing countries like Uganda, there are other antecedental and moderating factors that combine with entrepreneurial education to influence entrepreneurial attitudes and subsequently entrepreneurial intentions has not yet been investigated or tested. Anecdotal influence suggests that such influences include, among others, societal expectations of the educated and situational factors such as employability and perceived family commitments and perceived opportunities in the economy.

Conceptual model and hypothesized relationships[†]



[†]Dotted lines represent variables or relationships to be investigated in a future study

Current theorizing about entrepreneurial action, while not discounting the importance of personality factors, is more towards the way in which an individual perceives his or her current circumstances as leading to a desired state (Ajzen, 1989; Reitan, 1996). In short, if starting and running an entrepreneurial business is the desired state, then, the individual will base the decision to become an entrepreneur on perceived desirability (by self and society) of entrepreneurship as a career, perceived feasibility of the entrepreneurial venture, and perceived self-efficacy (Audet, 2003; Wong, Wong & Lu, 2004; Per Davidson, 2004).

The conceptual model used in this study singles out entrepreneurial education, societal subjective norms and situational factors (specifically availability of paid employment and perceived future family commitments) from the wider spectrum of environmental factors and explores their influence as collateral or concomitant factors in shaping student attitudes towards entrepreneurship careers.

The study hypothesized that (1) entrepreneurial education and societal subjective norms will have a significant influence on graduates' attitudes towards entrepreneurship as a career of first choice; (2) if attitudes to (a) the intrinsic value of entrepreneurship (desirability), (b) its chances of success given the balance of supporting and constraining contextual influences (feasibility) and (c) the confidence of the individual to bring it off successfully (self-efficacy) are positive, then there will be stronger inclination towards entrepreneurship as a career of choice (entrepreneurial intention); and (3) situational factors will moderate the relationship between students' entrepreneurial attitudes and their intention to become entrepreneurs.

As part of future research direction, the model includes an "entrepreneurial action" box. The question that this box as well as the "propensity to act" box represents is the extent to which entrepreneurial intentions of graduate students translate into entrepreneurial action after they leave school. This is a subject for future inquiry.

Theoretical Background

Change in locus of entrepreneurship research

Entrepreneurship research has for a long time focused on issues surrounding the founding of new firms; in particular who starts new firms, in what situations and for what reasons (Autio et al. 1997; Gartner, 1988; Low & MacMillan, 1988). Early research concentrated on psychological factors. Whereas this research did not produce a typical entrepreneurial profile, it highlighted several significant influences associated with successful entrepreneurship. Among these factors are: a high need for achievement, a desire for autonomy, a proclivity for moderate risk taking, aggressive competitiveness, an internal locus of control and a flair for innovation (Gartner, 1989; Reynolds, 1995; Timmons, 1999; Timmons and Spinelli, 2004). While researchers are cognizant of the contribution of personality factors to the explanation of the incidence and success of entrepreneurship, extant research focus has shifted to the exploration of causal factors.

Another stream of past research dealt with personal circumstances and the social environment of the entrepreneur. Hisrich and Peters (1989) and Krueger (1993) provide an understanding of the impact of personal factors such as general education, gender, prior experience and family background on the development of perceptions and consequently intentions of going into entrepreneurship. While this stream of research contributed to better understanding of successful entrepreneurs, it too did not demonstrate causality (Krueger and Brazeal, 1994). As Gartner (1989) observed, to show causality, it is necessary to study individuals before the entrepreneurial event i.e. individuals in the process of enterprise formation (Reynolds, 1995; Gartner et al. 2004; Davidsson, 2006). One approach that has been used to examine pre-entrepreneurial event behavior is to focus on entrepreneurial intentions by applying the theory of planned behavior (Ajzen, 1991; Kim and Hunter, 1993; Krueger, 1993; Shapero and Sokol, 1982). According to Ajzen (1991) and Krueger (1993), intentions are a good predictor of planned behavior. By definition, entrepreneurial action falls into the category of intentional behavior (Shapero, 1982; Bird, 1988; Kim and Hunter, 1993; Orser, Hogarth and Wright, 1998; Armitage and Conner, 2001).

Research on intentions

There are several conceptual models of entrepreneurial intentions in literature (Shapero and Sokol, 1982; Bird, 1988; Krueger and Carsrud, 1993; Krueger and Brazeal, 1994; Davidsson, 1995; Reitan, 1996; Autio, 1997) but as Peterman and Kennedy (2003) and Krueger, Reilly and Carsrud (2000) have pointed out, there is little difference in the approaches of these models. By and large, they are all founded on Azjen's (1987, 1991) theory of planned behavior, Shapero and Sokol's (1982) model of intention in entrepreneurial situations, Bandura's (1986, 1997) self-efficacy and social learning theory, and Reitan's (1996) combination of the Azjen and Shapero models.

The Theory of Planned Behavior (TPB)

Azjen's (1987, 1991) theory of planned behavior (TPB) maintains that there are three predictors of intention: attitude toward the behavior, subjective norms, and the degree of perceived behavior control.

Attitude towards a behavior is a reflection of the individual's appraisal of the behavior. The appraisal may be placed along a continuum running from favorable to unfavorable. According to the theory, the more favorable the appraisal the greater the intention. The second predictor, subjective norms, refers to the degree to which family, friends, peers and society at large expect or pressure the individual to perform the behavior in question. In terms of the present study, the expectation is invariably linked to the prestige and respect accorded to entrepreneurship as a career choice by society (Audet, 2001). The TPB model suggests that the greater the expectation or pressure, the greater the gravitation towards the behavior.

Perceived behavioral control refers to the extent to which the individual feels capable of performing the behavior. It is based on the individual's know how and experience and his or her appraisal of likely obstacles to performing the behavior. The greater the feeling of behavioral control the stronger will be the intention to perform the behavior (Autio et al. 1997). Perceived behavioral control is alternately called self-efficacy (Davidsson, 1995; Krueger, 2003; Bandura, 1997)

According to Krueger and Carsrud (1993), TPB has been used with success both in research and in practical settings. Intentions have been shown to explain 30% of the variance in behavior; better explanatory power than trait measures which typically explain about 10% of the variance (Autio et al. 1997). Attitudes variables have been shown (Kim and Hunter, 1993) to explain up to 50% of the variance in intentions.

Entrepreneurial intentions

Shapero (1975) proposed that entrepreneurial intentions emanate from perceptions of feasibility, desirability and the propensity to act on opportunities. The model was tested by Krueger (1993) and found to have 50% explanatory power. Davidsson (1995) and Reitan (1996) followed with slightly revised models. Davidsson proposed an economic-psychological model that combined aspects of previously used models (e.g. Azjen's three antecedental factors) with a specific focus on entrepreneurial intent. Davidsson's contribution was the introduction of the concept of conviction (a product of general and specific attitudes) as the primary determinant of intention.

Reitan (1996) combined Azjen's and Shapero's models and added situational variables. The combined model was tested on short-term (within two years), medium term, and long-term (at some point in time) intention to start a new venture. The model explained 63% of the variation in intention to start a business. Further more, Reitan found that situational factors play a more significant role in short term than long term intentions but that the model had lower explanatory power in the short term ($R^2 = 0.22$ in Autio et al. (1997) for a one-year period) than in the medium term ($R^2 = 0.30$ in Reitan, (1996) for a two-year period).

The role of education in entrepreneurial intentions

One construct in the intentions theory that has not featured enough in literature is entrepreneurial education. The effect of general education has been explored (Hisrich and Peters, 1989; Gartner *et al.*, 2004) but only a few studies have looked at entrepreneurial education, particularly at university and tertiary institution level. Exceptions include Audet (2003), Wong, Wang and Lu (2001), and Autio *et al.* (1997). These studies have however not used similar measures for entrepreneurial education. The temptation has

been to capture entrepreneurship education as a dichotomous yes/no variable. The dissimilarity stems from the lack of a universally accepted definition of entrepreneurship. Definitional differences have meant equally different perspectives of what constitutes the construct space for entrepreneurship and by extension, entrepreneurial education. Researchers who view entrepreneurship merely as the starting of a business venture are only concerned about the logistics of a start up. Others see entrepreneurship education from a broader perspective. For example, Drucker (1994), Bygrave and Zacharakis (2004), and Timmons and Spinelli (2004) believe that entrepreneurship education should create a capacity for imagination, flexibility, creativity, willingness to think conceptually, and the art to see change as an opportunity. This should be in addition to the basic skills of starting and managing a business. This qualitative distinction in entrepreneurial education was emphasized Tounés (2006) study done in French universities.

The role of subjective norms in entrepreneurial intentions

Subjective norms constituted the second construct in Azjen's (1987, 1991) TPB model but subsequent entrepreneurial intentions models either neglected it (e.g. Krueger-Shapero model, Krueger, Reilly and Carsrud, 2000) or combined it with perceived desirability (e.g. Davidsson, 1995). Moreover, contrary to TPB theory, Krueger et al. (2000) did not find subjective norms to have a significant influence on entrepreneurial intentions. On the other hand, Reitan (1996) found subjective norms to be an important moderating and mediating variable albeit difficult to separate from perceptions of feasibility. The contribution of subjective norms to entrepreneurial intentions are therefore not clear-cut and hence their inclusion in this study.

Situational factors

Shapero (1982), Learned (1992) and Kennedy et al. (2003) contend that situational factors converge with attitudes to determine entrepreneurial intentions. Shapero (1982) described situational variables as "life path changes" and subsequent research has classified them as push factors that extrinsically lead people into entrepreneurship. The focus of the present paper was on employability and perceived future family commitments but other push factors that have received considerable research attention,

albeit not of interest in this study are forced emigration (Hisrich and Peters, 1989), ethnicity, and minority status (Gartner et al. 2004).

Although according to Lawrence (1997), Gartner et al. (2004) and others unemployment is considered as a major factor leading to self employment and in spite of Hisrich and Brush (1984) and Aldrich and Cliff's (2003) findings that family commitments were a major influence on self employment decisions, situational factors have not received much attention in entrepreneurial intentions models (Kennedy et al. 2003). Because employability is tied to market conditions as the individual perceives them, some researchers (e.g. Storey, 1991; Reynolds 1995) have asserted that the effect of unemployment on entrepreneurial intentions is subject to debate. In the same vein, Davidson (1995) found a relatively weak relationship between employment status and entrepreneurship activity. Similarly, Autio (1997) in a multinational study of university students found no significant relationship between employment status and entrepreneurial intentions. However, this study perceived employment status and perception of employability, the variable of interest in this study, to be conceptually different from the constructs already investigated with potentially different consequences for entrepreneurial intentions.

Envisaged future family commitments may also influence intentions to go into entrepreneurship (Kennedy et al, 2003). Boden Jr. (1999) found a significant relationship between family commitments and self-employment for women but the relationship did not hold for men. Kennedy et al. (2003) on the other hand found no gender differences. The present study tested the belief that perceived future family commitments moderate the relationship between entrepreneurial attitudes and intentions.

Research Hypotheses

Extant research on entrepreneurial intentions suggests positive relationships between intentions and behavior and between attitudes and intentions (Bird's model, 1988; Boyd & Vozikis, 1994; Davidsson, 1995; Autio et al, 1997; Tounés, 2006). On the other hand there are mixed findings regarding the effect of subjective norms and situational factors

on attitudes and intentions (Reitan, 1996; Krueger, 2003). Additionally, the bulk of these findings relate to developed economies. Hardly enough empirical research has focused on developing countries - a fact that makes the following hypotheses of interest to this study.

In Uganda,

H1 (a): College level entrepreneurship education will significantly impact perceptions of the desirability and feasibility of entrepreneurship as a career of choice.

H1 (b): College level entrepreneurship education will boost students' self-confidence in entrepreneurial performance.

H2 (a): Societal subjective norms about the suitability of entrepreneurship as a career choice for college students will significantly impact students' perception of the desirability and feasibility of entrepreneurship.

H2 (b): Societal subjective norms will significantly affect students' perceived self-efficacy about entrepreneurship.

H3: Perceptions of desirability, feasibility and self-efficacy will have a significant influence on college students' intention to become entrepreneurs.

H4: Perceptions of desirability, feasibility, and self efficacy will mediate the relationship between societal subjective norms and entrepreneurial intentions.

H5: Perceptions of employability and future family commitments (situational factors) will moderate the relationship between students' perceived desirability, feasibility, and self-efficacy and entrepreneurial intentions.

Methods

Sample

The target population of the study was college students in universities in Uganda. The study followed a longitudinal design in which college students responded to a questionnaire before and after they undertook an entrepreneurial education course. The sample constituted of undergraduate students registered for business courses at three Universities in Uganda. An attempt to create a control group constituted of non-business courses failed because at one of the Universities all students were required to take an

entrepreneurship course. The questionnaires were distributed in class but it was made clear that participation was voluntary.

Of the 750 questionnaires that were returned, only 167 were found usable. The rest were discarded either because they were incomplete or because the researcher failed to match the respondents' background information in the first wave to the second wave.

Study design

The study followed a longitudinal design. This was thought appropriate since one of the objectives of undertaking the study was to assess the influence of entrepreneurial education on attitude variables – perceived desirability, feasibility and self-efficacy and consequently entrepreneurial intentions. The variables were measured before and after the education stimulus. The longitudinal approach is regarded as superior to cross sectional designs in capturing behavioral changes after a stimulus (Scott & Mitchell, 1976). As in common in studies of this nature, it was not possible to sequester the subjects in a controlled environment in order to single out the impact of the entrepreneurial education stimulus.

Measurement of variables

Many of the variables in the model under study have been investigated at one time or another although not all of them have standard measures (i.e. measures that have been used by three or more researchers in separate works). This, as indicated earlier, probably emanates from differences in the definition and the universe that the constructs are assumed to cover. Entrepreneurship research has only recently shifted focus from the study of personality factors as antecedents of entrepreneurial action to attitude variables as the determinants of future behavior. Consequently, many of the measures used are still under development and may suffer, albeit not too greatly, from problems of external validity.

Perceived desirability, perceived feasibility and perceived self-efficacy

In this study perceived desirability was defined as the individual's assessment of the intrinsic value of entrepreneurship; perceived feasibility was defined as the individual's assessment of the chances that entrepreneurial activity will succeed given the balance of

supporting and constraining contextual influences; and perceived self-efficacy was defined as the individual's confidence that they can successfully engage in entrepreneurial behavior.

Shapero (1982, 1984), Krueger (1993) Krueger and Brazeal (1994), Davidson (1995) Bullvag (1996), Autio (1997), Audet (2003), Reitan (1996) and Kennedy and Peterman (2003) have all used more or less similar instruments for measuring perceived desirability and perceived feasibility with Cronbach's coefficient alpha values ranging from 0.63 to 0.83. Similar items were adopted for this study on both variables. However to capture more from the entrepreneurship feasibility construct space, questions regarding the respondents' perceived chances of success given the state of the economy and the perceived opportunities therein were added. Resulting reliability was $\alpha = 0.71$. Similarly for perceived self-efficacy, there exists a standard instrument in literature (Schwarzer, 1993) whose questions were only slightly modified to suit the peculiar circumstances of the Ugandan population. Resulting reliability was $\alpha = 0.82$.

Societal Subjective Norms

Societal subjective norms are defined in this study as expectation or pressure exerted by family, friends, and society at large on graduate students to pursue certain employment careers and not others.

The societal subjective norm variable was measured using five items on a five-point Likert scale. The items were intended to capture the influence of family, friends, peers, role models, and press coverage on individuals' entrepreneurial intentions. The items are a combination of those used by Autio et al (1997; $\alpha = 0.39$) and Kennedy et al. (2003) with additional questions about role models (e.g. *people in my country who have been successful at starting new businesses have a high level of status and respect*) and the role of the press (e.g. *news of successful new ventures frequently appear in the news media*). Cronbach's α was 0.62.

Situational Factors (employability and perceived future commitments)

In this study, situational factors were defined as environmental circumstances, in particular, employment opportunities and welfare demands from family that may exert influence on an individual's intention to pursue an entrepreneurial career.

These were measured using three items on a five-point Likert scale (strongly disagree – strongly agree e.g. *I expect to start a business because there won't be jobs available when I graduate*). Kennedy et al. (2003) used similar items. Cronbach's α for this study was 0.67.

Entrepreneurial intention

This is the criterion variable. It was defined as an individual's cognitive inclination to pursue an entrepreneurial career after graduation.

Five multiple choice items were used to measure entrepreneurial intention. The items focused on the probability that the respondent will start a new business at some time in the future. Peterman and Kennedy (2003), Kennedy et al (2003, $\alpha = 0.80$) and Audet (2001) used similar items. For this study, Cronbach alpha was 0.72.

Data collection

Data were collected through a self-administered questionnaire. The questionnaires were distributed and collected in one sitting both at the beginning and at the end of the entrepreneurship course.

Data analysis

A major focus of the analysis was to determine there is a difference in entrepreneurial intentions of college students after undertaking an entrepreneurship course. The expectation was that this would be achieved through changes in the attitude variables – perceived desirability, feasibility, and self-efficacy. Analysis therefore tested for change in these attitude variables and their mediating role in changing the entrepreneurial intentions of the students. Furthermore, tests were done to establish whether the relationship between the attitude variables and entrepreneurial intentions is moderated by

situational factors, namely respondents' perception of availability of paid employment after graduation, expectation of future family obligations, and assessment of availability of opportunities in the external environment.

Differences in entrepreneurial intentions and the attitude variables after the entrepreneurship course were tested using the paired samples t-test and the incidence of mediation and moderation was tested using linear multiple regression techniques as recommended by Baron and Kenny (1986) and Kenny (2006). Mediation was also subjected to the Sobel Test.

Results

Paired sample test results were as shown in Table 1 below:

Table 1: Paired Sample Statistics

	Mean1	SD1	Mean2	SD2	Paired Corr	sig	N
1. Intention	4.01	.72	3.71	.46	.05	.496	167
2. Perceived Feasibility	3.44	.68	3.58	.60	.46	.000	167
3. Perceived Desirability	4.08	.84	4.23	.70	.33	.000	165
4. Perceived Self-Efficacy	3.27	.55	3.36	.45	.33	.000	166
5. Societal Norms	4.43	.79	4.29	.86	.36	.000	166
6. Situational Factors	3.11	.67	3.17	.54	.46	.000	167

It would appear from these results (Table 1) that the anticipated change in entrepreneurial intention after the entrepreneurship course did not take place. The mean was lower in wave 2 (3.71 compared to 4.01 in wave 1). The correlation coefficient is marginal and not statistically significant.

Table 2: Paired Samples Test: Paired Differences

	Mean	SD	SE	t	df	sig
1. Intention 1-2	.29	.84	.06	4.556	166	.00
2. Perceived Feasibility 1-2	-.14	.68	.05	-2.668	166	.01
3. Perceived Desirability 1-2	-.15	.90	.07	-2.121	164	.04
4. Perceived Self-Efficacy 1-2	-.09	.57	.05	-1.952	165	.05

The attitude variables however portray a different picture. The means are higher in wave 2; the correlations are moderate and significant. This provides evidence that attitudes toward entrepreneurship as a career of choice changed during the period the students

were subjected to entrepreneurship education. The picture is repeated in Table 2 which displays results of the t-test for paired differences. Although the change in entrepreneurial intentions is statistically significant, it is not in the direction that was envisaged a priori. On the other hand, all the attitude variables show statistically significant positive changes after the entrepreneurship course. Accordingly, hypotheses H1_a and H1_b are supported.

Hypothesis two (H2_a and H2_b) stated that societal subjective norms (SSN) about the suitability of entrepreneurship as a career of choice would have a significant influence on the attitude variables. Results shown in Table 3a indicate statistically significant effect of SSN on perceived feasibility and perceived desirability albeit with marginal explanatory power. The regression coefficients were both positive meaning that when SSN is positive, perceived feasibility and desirability are also positive. Hypothesis H2_a is accordingly supported. On the other hand, the study did not find sufficient evidence to uphold the hypothesis that SSN positively improved student self belief in carrying out entrepreneurship successfully. Hypothesis H2_b was therefore, not supported.

In hypothesis three (H3), we posited that perceptions of desirability, feasibility and self-efficacy have a significant influence on college students' intention to become entrepreneurs. The results are displayed in Table 3 below.

Table 3: Regression of EI on Attitude variables

	R ²	B	SE	t	sig
1. Perceived Feasibility	.22	.51	.08	6.56	.00
2. Perceived Desirability	.10	.33	.08	4.11	.00
3. Perceived Self-Efficacy	.05	.29	.10	2.79	.01

N = 167; Dependent variable is Entrepreneurial Intentions (EI).

H3 was supported. The study also found that perceived feasibility had the greatest influence on entrepreneurial intentions.

Mediation

The results of tests for mediation and moderation in line with hypotheses two (H4), and five (H5) were as follows.

We posited that the three attitude variables under study would mediate the relationship between societal subjective norms and students' entrepreneurial intentions. To test for mediation,

- (1) We regressed each of the attitude variables – perceived desirability (PD), perceived feasibility (PF), and perceived self-efficacy (PSE) on the independent variable – societal subjective norms (SSN);
- (2) We regressed the dependent variable – entrepreneurial intentions (EI) on SSN;
- (3) Finally, we regressed EI on SSN, PD, PF, and PSE.

To establish mediation, SSN should be significant in both regressions (1) and (2), the attitude variables should be significant in regression (3), and the effect of SSN on EI should be less in regression (3) than in (2) (Baron & Kenny, 1986).

Table 4a: Regressions 1 and 2

	Regression (1) Mediator (Me) on IV (SSN)				Regression (2) DV (EI) on IV			
	R ²	Beta	SE	Sig	R ²	Beta	SE	Sig
SSN	-	-	-	-	.03	.148	.068	.030
PD	.036	.154	.064	.018	-	-	-	
PF	.045	.167	.062	.007	-	-	-	
PSE	.022	.097	.052	.063	-	-	-	

N = 166

Table 4b: Regression 3

	Regression (3) DV on Me and IV			
	R ²	Beta	SE	Sig
SSN		.102	.067	.130
PD	.112	.309	.082	.000
SSN		.467	.063	.290
PF	.223	.495	.080	.000
SSN		.124	.068	.070
PSE	.068	.261	.104	.013

N = 166

Tables 4a and 4b also show that the conditions for mediation are met in the cases of perceived desirability (PD) and perceived feasibility (PF) but are not in the case of

perceived self efficacy (PSE). These results are confirmed by the Sobel Test shown in Table 5 below.

Table 5: The Sobel Test for Mediation

Variables	A	SE _A	B	SE _B	Sobel Test Statistic	Prob (one tail)	Prob (2 tail)
SSN/PD	.154	.064	.333	.081	2.0767	.019	.038
SSN/PF	.167	.062	.513	.078	2.4926	.006	.012
SSN/PSE	.097	.052	.289	.103	1.5534	.060	.12

According to these findings, hypothesis four (H4) is partially supported. Perceptions of the feasibility of entrepreneurship as a career of choice as well as perceptions of desirability mediate the relationship between societal subjective norms and entrepreneurial intentions of college students. Counter intuitively, we did not get enough evidence to show that perceptions of self-efficacy mediate the relationship.

Moderation

We posited in hypothesis four (H5) that situational factors – perceptions of employment opportunities after graduation and anticipated future family commitments would moderate the relationship between the attitude variables and entrepreneurial intentions. The moderation hypothesis was not supported. Evidence of moderation requires IV x Mo to be significant while controlling for IV and Mo. All the three cases - SF x PD, SF x PF, and SF x PSE were not significant at 0.05 level. H5 “Perceptions of employability and future family commitments (situational factors) will moderate the relationship between students’ perceived desirability, feasibility, and self-efficacy and entrepreneurial intentions” was therefore not supported.

Discussion

One of the key objectives of this research was to establish whether college entrepreneurship training increases the intention of college students to start businesses. Results did not provide sufficient evidence to sustain this claim. A possible explanation is suggested by Tounés (2006) in his discussion of the need to emphasize qualitative facets in the measurement of entrepreneurial education. Similarly, Timmons and Spinelli (2004)

suggest that entrepreneurship education is effective when it enables participants to develop higher capacity for imagination, flexibility, and creativity as well as developing ability to think conceptually and to perceive change as opportunity. These are lofty standards that many university programs do not achieve. Many times, university social science programs emphasize theory at the expense of practical approaches. This is still the case in the Uganda Colleges where the sample was drawn. In the case of entrepreneurship education, theoretical approaches deny participants the opportunity to perceive doing business as a career of choice. The situation is not helped by the fact that friends and relatives do not expect college students to go into business after graduation. Questions in the study about whether family and friends expected students to pursue a business career both have a mode of 1 (not true at all) and a median of 2 (moderately not true).

As a second key objective of the study, we posited that societal subjective norms influence entrepreneurial attitudes which in turn influence entrepreneurial intentions of college students. Past research has not been consistent on the relationship between subjective norms and entrepreneurial attitudes. While Reitan (1996) found subjective norms to be an important mediating and moderating variable on intentions, Krueger et al (2000) did not find subjective norms to have a significant influence on entrepreneurial intentions. Krueger, Reilly, and Carsrud (2000) neglected the factor altogether, Davidsson (1995) regarded it as part of perceived desirability, while Reitan (1996) commented that it was difficult to separate subjective norms from perceptions of feasibility. Tounés (2006) included a subjective norms variable but measured it using entrepreneurial characteristics such as need for achievement, autonomy, risk taking propensity, and knowledge of entrepreneurial models as opposed to family, friends, peers, and societal influences used in this study. This research did not investigate subjective norms as a variable that mediates or moderates intentions relationships but as an antecedent factor that affects intentions through its influence on entrepreneurial attitudes. The direct relationship between subjective norms and entrepreneurial intentions was statistically significant but explained only 3% of the variation in intentions. Inclusion of attitude variables as mediating factors improved the explanatory power of the model to

26.8%. The study did not find undue collinearity between subjective norms and perceived desirability or perceived feasibility as to regard them as indistinguishable.

For a long time, anecdotal evidence in Uganda has indicated that entrepreneurship was not an esteemed career option for individuals with college education. We expected this negative societal bias to manifest itself in the relationship between subjective norms and perceived desirability of entrepreneurship. According to Azjen's (1991) theory of planned behavior, the greater the expectation or pressure from society, the greater the gravitation towards the behavior in question. Indeed, in the current study, the relationship was positive meaning that positive norms enhance perceived desirability of entrepreneurship as a career. Since Ugandan society would not expect or pressure a college graduate to opt for entrepreneurship as a first choice career it was not surprising that perceived desirability had very few high values (right-skewed).

The surprising finding in our study was the lack of significant finding for the moderating influence of situational factors on the relationship between entrepreneurial attitudes and intentions. Learned (1992), Kennedy et al (2003), and Aldrich and Cliff (2003) found that family commitments were a major influence on self-employment decisions while Boden (1999) found a significant relationship for women. One reason that comes to mind for our lack of significant finding is that at college level, students are able distinguish between necessity and opportunity entrepreneurship. Situational factors such as lack of employment opportunities and family commitments push people towards self-employment even when they are not intrinsically suited for it. There is therefore a kind of discrepancy in the minds of college students between choosing entrepreneurship as a preferred career and being forced into it by external circumstances.

Implications for policy

There are lessons for policy makers to learn about the contribution of entrepreneurship education in the making of entrepreneurs. The curriculum of entrepreneurship education needs to be restructured in ways that demonstrate the feasibility of entrepreneurship as a career. From the study, it is clear that of all the variables investigated it is perceived

feasibility that drives entrepreneurial intentions more than the others. It is instructive that societal subjective norms influence attitudes and explain a portion of variance in entrepreneurial intentions. As Kennedy et al (2003) pointed out, students perceptions about the desirability of entrepreneurship as a viable career option can be influenced. Deliberate steps to highlight entrepreneurial success stories in news media would have an impact on student attitudes. We also believe that the use of local case studies in the teaching of entrepreneurship would be instructive about the feasibility of entrepreneurship as a career. In the same breath, role models and the publication of their stories have positive implications for perceptions of desirability, feasibility and self-efficacy.

Future Research

As earlier indicated it will be interesting to carry this research further to enrich our understanding of the extent to which intentions are converted into entrepreneurial actions. This requires a follow up of individuals in this study who indicated a high likelihood of starting businesses of their own in the next three years to see if they actually did. Equally interesting lessons would be learnt from those who have not realized their intentions. It would be interesting for both policy makers and entrepreneurship course designers and instructors to learn the extent to which reasons for not starting or delaying to start their own businesses are external or internal to the individual. For example, one internal variable suggested by Shapero and Sokol is the individual's propensity to act. The general belief is that intentions lead to behavior (Ajzen, 1987, 1991; Bird & Vozikis, 1994) but it would be interesting to know what mediates or moderates this relationship in a country where there is a large presence of necessity entrepreneurs (see GEM Uganda reports: 2003, 2004, 2009).

It would also be interesting to explore the situational factors variable further to learn why it is significant in some samples and not in others. As indicated in the previous section it is possible that distinguishing between pull and push factors will clarify the discrepancy.

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