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# Supportive government policies, locus of control and student's entrepreneurial intensity: a study of India

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## Abstract

The study surveyed 1255 (Male = 847, Female = 408) University students who are pursuing professional courses. The multivariate analysis of variance (MANOVA) was applied to identify the relationship between Gender, Locus of control (LOC) and whether students consider government long term policies as a support to start their own business with Entrepreneurial Intensity of Students. Entrepreneurial intensity captures the combined effect of degree (proactiveness, innovativeness and risk taking) and frequency (number of times entrepreneurial act is repeated) of entrepreneurship. It was found that type of locus of control (internal or external) differs significantly on Proactiveness, frequency of entrepreneurship, innovativeness and Entrepreneurial Intensity of students. It was also found that if students consider government long term policies as support to start their business; they differ significantly on Entrepreneurial Intensity (both degree and frequency of entrepreneurship).

**Keywords:** Entrepreneurial intensity, locus of control, degree of entrepreneurship, frequency of entrepreneurship

## Background

Entrepreneurship is critical for the growth of any economy. The Industrial Revolution, the rise of the US to its paramount state, the recovery of Germany post-World War, and Israel's status of a developed economy have all been driven by entrepreneurship. To reach its goal to become a developed nation, India needs entrepreneurship. India has three factors going for it: the world's largest youth concentration, the hyper-aspirations of its youth, and their impatience with realising their goals, says Nandan Nilekani, chairman of the Unique Identification Authority of India (UIDAI) and co-founder of Indian Information Technology giant Infosys. Entrepreneurship can't be looked apart from the individuals who have the traits that are intrinsic. Entrepreneurship is defined by identification of the entrepreneur personality and understanding the basic traits of entrepreneurs. Unfortunately, the personality of an entrepreneur seldom comes into spotlight in governmental policies, assertions, initiatives and policy implementation. The understanding of some personality factors as they impact on success and failure of businesses is crucial to understand. Such variables as locus of control and gender have been shown in literature to have relationship with a number of other variables

(Collins, 1974; Phares, 1976; Lef Court, 1976; Ahmed, 1985 and Ajzen, 2002) and some of these have found specific link between locus of control and entrepreneurship. Locus of control is a psychological term first coined by Julien B. Rotter in 1954; which refers to how much individuals believe they can control events that affect them. Locus (a Latin word meaning "place" or "location") can be either internal or external. If you have an internal locus of control, you think you're in charge of your life. If you define yourself with an external locus of control, you believe anything except you is responsible for whatever happens to you.

Policies that seek to encourage entrepreneurship are largely ineffective as these often provide additional encouragement to people with the "wrong" personality traits for entrepreneurship (i.e., traits associated with lower entrepreneurial performance), rather than prompting individuals with personalities that would allow for success to start new firms. A study by Hamilton et al (2014) shows that the personality traits that make entrepreneurship the lucrative choice are not the personality traits that *ceteris paribus* (Latin phrase meaning "with other things the same") induce people to become entrepreneurs. Further, they show evidence suggesting that rather than obstructing productive business ideas from entering the market, credit constraints deter individuals who have less productive ideas, but would choose entrepreneurship since their earnings in paid employment are even lower. They assessed various policies that have been proposed to encourage entrepreneurship. They considered subsidies that essentially pay people to open their own business and examined tournaments, where a subsidy is offered to support the best business ideas. They concluded that these policies are largely ineffective.

The study explores whether Locus of Control has any predictive validity for Entrepreneurial Intensity (Degree and frequency of entrepreneurship) of students pursuing professional courses. The study also aims to find out if there exist any gender-specific differences in the choice of students to start their own business if the government frames long term policies to support their venture.

### **Review of literature**

The term Entrepreneurial Intensity (EI) refers to the degree and frequency of the entrepreneurial activity. Morris et al. (1994) established an input-output framework describing the intensity of entrepreneurship at the individual as well as organizational level. Frequency is understood as the number of entrepreneurial events undertaken. Degree is measured in terms of innovativeness, risk taking ability and proactiveness of an individual. Frequency and degree constitute the variables of entrepreneurial intensity (Heilbrunn, 2005). Innovativeness refers to the ability to generate ideas that will conclude in the creation of new products or services. Risk-taking involves the determination and guts to make resources available for assignments that have uncertain outcomes. Proactiveness specifies the attitude towards opportunities and confidence in pursuing enhanced competitiveness. The term Entrepreneurial Intensity therefore refers to the variable nature of entrepreneurship within an individual. The concept of "entrepreneurial intensity" (Morris, Kuratko, & Covin, 2008) was developed to assess the overall level of entrepreneurship in a company with degree and frequency considered together. Thus, a firm or a person may be engaging in lots of entrepreneurial initiatives (high on frequency),

but none of them are all that innovative, risky or proactive (low on degree). Another company or person may pursue a path that emphasizes breakthrough developments (high degree) that are done every four or five years (low frequency). Antoncic and Hisrich (2001: 198- 499) support Morris and Sexton's (1996): 7 view that Entrepreneurial Intensity is a function of degree and frequency of entrepreneurship. To better understand the entrepreneurial intensity (concept Morris et al. (2008) created a two dimensional matrix named "entrepreneurial grid". It has the number, or frequency, of entrepreneurial events on the vertical axis, and the extent or degree to which these events are innovative, risky, and proactive on the horizontal axis. It was emphasized that amounts and degrees of entrepreneurship are relative; absolute standards do not exist. Further, any given organization or individual could be highly entrepreneurial at some times and less entrepreneurial at others.

Social capital refers to the resources contacts possess and the structure of contacts in a network (Burt, 1992). In the entrepreneurial context, social capital differential refers to the uneven endowment of entrepreneurs with social resources in terms of network structure (Burt, 1997; Stam and Elfring, 2008), relations and contact resources (Batjargal, 2003; Lin, 2001).. An open and diverse social environment shapes individuals' mind and breeds the "creative class" (Florida, 2005). The presence of abundance and versatility in an entrepreneur's personal interest networks increase the resources of entrepreneurship, because they fill possible gaps in entrepreneur's training and experience (Johannisson and Spilling 1986). An affective state in learning has a role to play in entrepreneurial skill development. Affective states are mobilized in interactive learning process and play a role in learning, promoting or hindering the achievement of the instructional goals. An affective state in learning refers to the experience of affections in the learning process. The one that best addresses the role of affective states is proposed by Jarvis (2006). Jarvis adds the possibility of learning not only through reflection (cognition), but also through practice (action) and emotion, to take into account the different results of learning. The interplay between affective states and cognition has been discussed by many authors (Damasio, 1996; Lazarus, 1991; Phelps, 2006; Schachter and Singer, 1962; Zajonc, 1980, 1984, 1998).

Locus of Control of Reinforcement is related to expectation of success or failure in a judgmental task: judgments following earlier behavior. The theory states that human behavior is not only a function of reinforcement, but also depends on people's notion of Locus of Control of Reinforcement. An individual will attribute the reason for an incident either to themselves or to the external environment. Those who experience having control over incidents have an internal Locus of Control and will be referred to as internal (Rotter, 1966, 1971, 1975). Locus of Control is considered to be one of the learned characteristics (McClelland, 1990; Rotter, 1966), and previous research has shown that Locus of Control (Hansemark, 1998) can change over time and can be developed with the change of social context brought about by the entrepreneurial activity, for example, at the start of a new venture. Founders of new businesses have been found to have more internal Locus of Control than non-founders (Ahmed, 1985; Begley & Boyd, 1987; Mescon & Monanari, 1981). Neider (1987) measured Locus of Control in women entrepreneurs and found them to be more internally oriented. Entrepreneurs

with a successful venture show a significantly greater internal orientation of Locus of Control initially, than entrepreneurs in companies that had closed down; Brockhaus (1980). Individuals with a high level of perceived control (internals) have been associated with entrepreneurial behavior and a preference for innovative strategies (Boone et al., 1996; Brockhaus, 1975; Hansemark, 2003; Kets de Vries, 1977; Miller, 1983; Miller & Toulouse, 1986a, 1986b; Miller et al., 1982; Mueller & Thomas, 2001). Several empirical studies demonstrate that internal entrepreneurs prefer innovative strategies in order to exert control over their environment (Boone et al., 1996; Miller, 1983; Miller & Toulouse, 1986a, 1986b; Miller et al., 1982; Mueller & Thomas, 2001). Internal locus of control requires a high personal belief in an individual's ability to control their situation and is considered a necessary quality for the prospective entrepreneur (Cunningham and Lischeron 1991; Hisrich and Peters 1996). According to Brockhaus and Horwitz, 1986 strong internal locus of control is one of the "classic" personality characteristics of an entrepreneur. Without a high internal locus of control, individuals would be unlikely to risk exposure to the difficulties associated with the starting up of a new and unproved business venture. Gilad (1982, 1986) successfully links Rotter's psychological theory of LOC with Kirzner's economic concept (1973) of entrepreneurial alertness. From his survey of empirical psychological studies of the entrepreneur, Gilad concludes that an individual's locus of control is a key factor in determining his or her level of entrepreneurial alertness. It is because, internal LOC gives rise to sharp alertness which is necessary for incidental learning (i.e. the recognition of profit opportunities once they are encountered). If an internal disposition toward entrepreneurial outcomes is characteristic of successful entrepreneurs, the usefulness of the locus construct becomes all the more apparent.

Choo and Wong (2009) define entrepreneurial intention as the search for information that can be used to help accomplish the goal of venture creation. Individuals with the intention to start a business not only have an inclination to start, but in addition, adopt a rational behaviour to reach their goal. Henley (2007) suggest that entrepreneurship is an intentional activity, in that for many those intentions are formed at least a year in advance of new venture creation suggesting a link between entrepreneurship and intention. Turker and Selcuk (2009) point out that although researchers often indicate a link between entrepreneurial intention and some personality factors, such as self-confidence, risk-taking ability, need to achievement, and locus of control, however, a person is equally affected by widened range of cultural, social, economical, political, demographical, and technological factors. Therefore, personality traits cannot be isolated from these contextual factors to get into entrepreneurship. Scholars have emphasized that government policies, characteristics of the local context (e.g. availability of logistic infrastructure, financial investors, and externalities) and, more specifically, university support mechanisms influence entrepreneurial activities (Morris & Lewis, 1995; Fini et al., 2009). Governments may intervene with funding schemes, tax policies and other support mechanisms that are aimed at mitigating market inefficiencies and promoting entrepreneurship (Lerner, 1999).

Cross-country studies of economic growth have shown that much of the difference in the growth rates is due to entrepreneurial activity (Global Entrepreneurship 1999). Such findings have placed entrepreneurship as a key policy tool for regional development, economic growth, and job creation (Laukkanen, 2000; Rosa et al., 1996). Higher

education (HE) is producing an ever increasing number of graduates and government policy in many countries is seeking to promote self/small business employment as a practical career option, not least because of the fierce competition for “large firm” jobs in the graduate labour market. In the UK, for example, encouraging more graduates to pursue a career in self/small business employment sits comfortably with government aspirations for national and regional economic growth (Small Business Service – SBS, 2002; Yorkshire and Humberside Regional Development Agency, 2006). The UK government is working to build the UK, a society that is both inclusive and prosperous, with individuals able to develop the skills they need to remain employable and for businesses to be internationally competitive. The small Business Service and Business Link are UK government organizations designed to support the interests of small business by providing practical business information and advice. The Phoenix fund encourages entrepreneurship in disadvantaged communities and groups. It provides resources into community finance initiatives so that local organizations can help new and budding businesses (Department for Trade and Industry DTI 2002). In response to the increasing significance of the SME (Small and Medium Enterprises) sector, the Chinese government has launched a series of policy changes and support initiatives in an effort to create an entrepreneurship friendly environment (Chen, 2001; Di, 2002). A framework to a wide range of issues relating to the small business sector, including financial support, technological innovation, and business development systems was introduced. A pilot SME Loan Guarantee Scheme (LGS) was launched in June 1999 and by the end of the same year more than 80 cities in 28 provinces were reported to have established LGSs. The venture capital market, with full support from the government was also developed. In this process, higher educational institutions had an important part to play (Clarke, 1999). Chinese economy is still largely based on the state-owned enterprises (SOEs), so Chinese universities are paying attention to entrepreneurship programs. The Chinese Central Education Committee require universities to provide quite a few entrepreneurship courses such as Small Business Management, New Venture Creation, Service Industry Management, etc. simply because Chinese SOEs are faced with a serious unemployment problem (Li & Sebor, 2001). One major university in Shanghai has more than 300 doctoral students enrolled in its management school; where Entrepreneurship is a major study track for these doctoral students. In Northern Ireland because of relatively low-entrepreneurial activity, government launched its “Accelerating Entrepreneurship Strategy” in 2003 which sought to “promote entrepreneurship, innovation and creativity” and “encourage more people from all backgrounds” to think and behave in entrepreneurial ways (Invest Northern Ireland, 2003). In 2001, the Australian Federal Government released its innovations statement, “Backing Australia’s Ability”. This was a £1.33 billion, five-year initiative to promote innovation in Australia. Under the initiative, 2,000 additional university places were made available to foster a culture of “enterprise and innovation” as government deliberately sought to broaden access to enterprise education in Australian universities. Turkey’s Ninth Five-Year Development Plan included objectives and targets to improve the country’s business environment. In this role, it was charged with improving the training, financing and managerial skills of SME entrepreneurs (Republic of Turkey Ministry of Industry and Trade 2006). Managerial skills included the ability to manage personnel and maintain accounting records, whereas environmental conditions related to satisfactory

government support, access to capital, and support of family and friends. In a study of Turkish entrepreneurs, Kozan, Oksoy, and Ozsoy (2006) found that business management training and financing are significantly related to an SME owner's expansion plans.

## Methods

### Research design

In phase I a questionnaire was designed to measure the entrepreneurial intensity. Phase II included the validation of questionnaire from phase I by applying it on students pursuing professional education. Initially a sample size of 1500 students was planned (who are pursuing full time professional education in Delhi National Capital Region of India). A valid sample of 1255 was achieved with the response rate of 83.6 %.

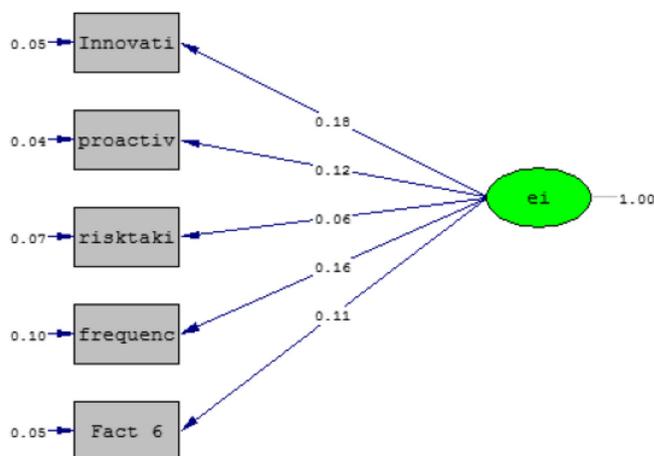
### Tools

A self-constructed questionnaire on three point Likert scale was developed with total 130 items measuring: Innovativeness (20 items), Proactiveness (20 items), Risk Taking (20 items), and Frequency of entrepreneurial activities (20 items). A set of situational questions have been generated to map the students on innovativeness, proactiveness and risk taking. To check the frequency of entrepreneurial intensity, a set of questions were asked to find out whether students have entrepreneurial inclination and how many times; have they been a part of entrepreneurial activities during their student life. After doing extensive literature review, two constructs were added for the study, i.e. Social Capital (25 items) and Affective States of Learning (25 items). The factor of Social Capital was dropped after applying Confirmatory Factor Analysis. According to Morris et al. (2012) cumulative exposure and reaction to a wide array of novel, distinctive events surrounding the entrepreneurial process serve to form the entrepreneur and influence development of an entrepreneurial mind-set. Since the study is dealing with student's entrepreneurial intensity; the factor of "affective states in learning" was chosen. The scale was administered on 144 entrepreneurs with full time post graduation and all the individual constructs were validated using LISREL 9.1.

In this study, the Entrepreneurial Intensity model was validated on these six constructs using confirmatory factor analysis (CFA). With regard to selecting model fit statistics to report, Kline (2010) recommends reporting the Chi-squared test, the RMSEA, the CFI, and the SRMR. Goodness of Fit Indices for Entrepreneurial Intensity is as follows:

$\chi^2$ (Chi-squared test)	1.29 p = 0.935	Acceptable (chi-square statistic's p value should be greater than .05 (chi-square is used here as a "badness of fit" statistic)
CFI (Comparative Fit Index)	1.00 > .90	Acceptable model fit is indicated by a CFI value of 0.90 or greater (Hu & Bentler, 1999).
GFI (Goodness of Fit Index)	0.993 > .90	A value of over .9 generally indicating acceptable model fit. Baumgartner and Hombur (1996).
SRMR(Standardized Root Mean Residual)	0.03 < .08	Ranges from 0 to 1, with a value of .08 or less being indicative of an acceptable model. (Hu and Bentler 1999).
RMSEA (Root Mean Square Error of Approximation)	0.000 < .06	Acceptable model fit is indicated by an RMSEA value of 0.06 or less (Hu & Bentler, 1999).

Construct reliability for the model was found to be 0.69, exceeding the recommended value of 0.50 for this statistic.



Chi-Square=1.29, df=5, P-value=0.93584, RMSEA=0.000

Note: Factor 6 is Affective State of Learning

The orientation of locus of control was assessed using Levenson (1973). The questionnaire consists of 24 statements scored on a scale of 1 to 5 (strongly agree to strongly disagree). High scores indicate internal locus of control and low scores indicate external locus of control. Reliability of Levenson's scale: For a student group Kuder-Richardson reliabilities are in the mid .60's and high.70's. Split-half reliabilities (Spearman Brown) for an adult sample are all in the mid .60's. Validity of Levenson's scale: In a college sample (N = 75) both the Powerful others and Chance scales are positively correlated with externality ( $r_s = .25, .56$ ), and the Individual control scale correlates negatively ( $r = -.41$ ). (Source: Levenson, H. (1973). Reliability and Validity of the I, P, and C Scales-A Multidimensional View of Locus of Control)

## Results and discussion

The multivariate analysis of variance (MANOVA) was applied to identify the relationship between Gender, Locus of control and current stream course with Entrepreneurial Intensity of Students. The technique of multivariate analysis of variance (MANOVA) has been found to be suitable to bring out systematic differences among the groups, as the study involved group comparisons based on a number of demographic variables. A significant multivariate F value allows one to conclude with confidence that the groups do indeed differ among themselves at least in some of the variables. Table 1 shows the sample distribution of the study. Out of 1254 students 847 were males and 408 were females. 1126 students had internal locus of control and 129 had external locus of control. 1041 students agreed to start their own business if government frames long term policies to safeguard their endeavour and on the contrary 214 were not very keen to do so. Table 2 shows the results of Three Way MANOVA – Gender, Locus of control and government policies for long term support, as independent variables and factors like Innovation, Proactiveness, Risk Taking, Frequency of Entrepreneurial Activities and Entrepreneurial Intensity as dependent variables. The three way MANOVA revealed

**Table 1** Sample distribution of the study

	Value Label	N
Gender	1 Male	847
	2 Female	408
Locus of control	1 Internal locus of control	1126
	2 External locus of control	129
Will you start business, if Government frames long term policies to support your venture	1 No	214
	2 Yes	1041

that Locus of control; Wilks Lambda (LOC) = .959, F value (5, 1.243) = 10.572, p value = .000; and government policies Wilks Lambda (government policies) = .988, F value (5, 1.243) = 3.063, p value = .009; impacted significantly on the combined dependent variables of entrepreneurial intensity. Also the interaction of Gender X Government policies; Wilks Lambda (Gender X Government policies) = .989, F value (5, 1.243) = 2.732, p value = .018 and Gender X LOC X Government policies; Wilks Lambda (Gender X LOC X Government policies) = .990, F value (5, 1.243) = 2.397, p value = .036 impacted significantly on combined dependent variables.

The further scrutiny of the ANOVA table (Table 3) according to each variable shows that students with internal and external locus of control differs significantly on Entrepreneurial Intensity, frequency of entrepreneurial activities, Affective States in Learning, Proactiveness and Innovativeness. The table of means for LOC (Table 4) show that the students having internal Locus of control are significantly higher than the students having external Locus of control on Entrepreneurial Intensity, Affective States in Learning, Innovation and Proactiveness. It is reasonable to expect that individuals who have confidence in their ability to control the events in their lives would be more motivated to actively seek new business opportunities instead of waiting for them to come. Those who are entrepreneurially inclined have greater innovativeness, Koh (1996). As suggested by Schumpeter (1934) and Mitton (1989), innovativeness is the focal point of entrepreneurship and an essential entrepreneurial characteristic. Evidence reported in the entrepreneurship literature shows that entrepreneurs are significantly more innovative than non entrepreneurs (Ho and Koh 1992, Robinson, Huefner and Hunt 1991 and Robinson, Stimpson et al. 1991). According to Mitton (1989) entrepreneurs prefer to take and hold unmistakable command instead of leaving things to external factors. Shapero (1975) found that entrepreneurs tended to score at the internal end of Rotter's Internal- External scale, indicating greater belief in the efficacy of their own behaviour, and discarding the influence of external factors such as destiny, luck or chance. Entrepreneurs are proactive and act before the changes have become real. Cooper (1981)

**Table 2** Summary of multivariate tests (Wilks Lambda) for innovation, proactiveness, risk taking and entrepreneurial Intensity on gender, locus of control and government long term policies

Effect	Value	F	Hypothesis df	Error df	Sig.
Locus of Control	.959	10.572	5.000	1.243E3	.000
Government long term Policies	.988	3.063	5.000	1.243E3	.009
Gender* Government long term policies	.989	2.732	5.000	1.243E3	.018
Gender*Locus of control *Government long term policies	.990	2.397	5.000	1.243E3	.036

**Table 3** Summary of analysis of variance for innovation, proactiveness, risk taking, frequency and entrepreneurial intensity on gender, locus of control and government long term policies

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
Locus Of Control	Entrepreneurial intensity	.148	1	.148	8.072	.005
	Frequency of entrepreneurial activities	.748	1	.748	8.959	.003
	Affective States in Learning	.845	1	.845	15.540	.000
	Proactiveness	2.044	1	2.044	32.315	.000
	Innovativeness	.207	1	.207	4.925	.027
Government Policies	Entrepreneurial intensity	.254	1	.254	13.866	.000
	Frequency of entrepreneurial activities	.461	1	.461	5.523	.019
	Risk Taking	.299	1	.299	4.717	.030
	Proactiveness	.228	1	.228	3.603	.058
	Innovativeness	.272	1	.272	6.480	.011
Gender* Govt.policies	Proactiveness	.522	1	.522	8.253	.004
Gender* LOC *Govt.policies	Proactiveness	.491	1	.491	7.761	.005

claimed that entrepreneurs 'feel' what changes are happening in a market and sense opportunities these changes create. Hills (1995) recognised that entrepreneurs were not searching for opportunities based on what had happened but on the basis of what was going to happen. Baron (1998) showed how entrepreneurs do not regret what has happened but set their sights on the future. In this study, a significant difference was determined in student's affective states in learning; based on Locus of control. This may stem from the fact that students with internal locus control are more active in the learning process (Yesilyaprak, 2004). They make use of learning experiences more and they are focused on the meaning of learning (Wang, 2005). Students having internal locus of control, know that their academic success depends on themselves and pay more attention to all the information in order to reach their target (Burger, 2006). Such students use time better and exhibit more constructive reactions against preventions (Yesilyaprak 2004). Thus, the results of the present study agree with the results of previous studies. Table 4 also shows that the students having external locus of control are significantly higher on frequency of entrepreneurial activities. Miller and Toulouse's (1986a, 1986b) correlation analyses suggest that internal entrepreneurs are more inclined to pursue major and incremental product innovations than their external counterparts. Externals, those who attribute the outcomes of events to chance, luck or fate, as under control of powerful others, or as unpredictable because of the great

**Table 4** LOC wise mean scores of students for entrepreneurial intensity, frequency of entrepreneurial activities, proactiveness and innovation

Dependent Variable	Internal LOC	External LOC
Entrepreneurial intensity	2.105	2.047
Frequency of entrepreneurial activities	1.560	1.692
Affective States in Learning	2.197	2.057
Proactiveness	2.382	2.165
Innovation	2.311	2.241

complexity of the forces surrounding them, show greater involvement with simple tasks in chance-dependent situations (Rotter, 1966; Spector, 1982). Thus students having external locus of control will get into entrepreneurial acts that are simple and can be repeated. Krovetz (1974) suggests that the internal person's effort decreases in chance-dependent situations, because then internals tend to perceive that their abilities are bounded. Individuals having internal LOC tend to perceive that at a certain threshold level; task outcomes become more dependent upon chance than effort when performing simple tasks in chance-dependent situations. And when it comes to chance, externals will always go ahead; thus they are high on frequency of entrepreneurial activities. The scrutiny of the mean table (Table 5) shows that students who are taking government's long term policies as support to start their own venture are significantly high on Entrepreneurial Intensity, frequency of entrepreneurial activities, risk taking ability, proactiveness and innovativeness than those students who are not taking these policies into consideration. Government policy has the power to influence entrepreneurial activity. A study by Choi and Phan (2006) provides evidence that entrepreneurial policy factors that vary over time can materially impact the variations in entrepreneurial intensity. Storey (2003) has identified several examples of different types of entrepreneurship policies which are increasingly at the state, regional, and local level. Direct subsidies for Research and Development, support of linkages between universities and the private sector, reflect and respond to the needs of specific localities or regions to be effective in encouraging innovation (Jacobides, Knudsen, & Augier, 2006; Langley, Pals, & Ortt, 2005). Government can affect innovation because government controls a number of policy instruments that can be used to foster innovation and to induce individual 'entrepreneurial events' that create the flock of entrepreneurs who promote economic development (Schumpeter 1969; Shapero and Sokol 1982). To develop innovation, government must strengthen and increase residual claims, or more generally the return to entrepreneurship. To increase residual claims, governments can either increase the return to entrepreneurship or reduce the risk. Leaving capital gains untaxed increases the payoff to entrepreneurship, and encourages entrepreneurial entry (Gompers and Lerner 1998). So, government policy indeed increases risk to become an entrepreneur. Proactiveness involves a wide variety of activities including identifying and assessing the strengths and weaknesses of opportunities, and forming squads capable of exploiting them (Kropp et al., 2006). By providing funding to encourage risky and innovative research and development, supporting incubator programs, providing liberal trade policy, practicing disciplined fiscal policy, increasing the availability and productivity of labour, and deregulating industries and privatizing state owned enterprises, governments can show lot of support for entrepreneurial activity (Morris, 1998; Wilken, 1979). The

**Table 5** Government policies wise mean scores of students for entrepreneurial intensity, frequency of entrepreneurial activities, risk taking, proactiveness and innovation

Dependent Variable	No	Yes
Entrepreneurial intensity	2.038	2.114
Frequency of entrepreneurial activities	1.575	1.678
Risk Taking	2.035	2.119
Proactiveness	2.237	2.310
Innovation	2.236	2.316

provision of this kind of support will definitely increase proactiveness in an entrepreneur; but also allow them to get into entrepreneurial acts again and again; thus increasing the frequency of entrepreneurial activities. The scrutiny of mean table (Table 6 and Table 7) shows that proactiveness in male and female students differ with respect to take government policies as a support system to be a part of the entrepreneurial venture. Males who do not consider government policies as support are higher in proactiveness and females who consider government policies as support are higher in proactiveness. Irrespective of the type of locus of control (internal or external); males who do not consider government policies as support are higher in proactiveness and females who consider government policies as support are higher in proactiveness. This behaviour can be explained through gender identification. Gender identification is the extent to which individuals identify with characteristics attributed to males or females (Schmader, 2002). This identification influences their attitudes toward stereotyped tasks (Nosek et al., 2002). Individuals who strongly identify with masculine characteristics (high self-masculine congruence) are likely to have higher entrepreneurial intentions compared with those who do not (low self-masculine characteristics congruence). Most studies find males have higher entrepreneurial intentions than females (Crant, 1996; Wilson, Marlino, & Kickul, 2004; Zhao et al., 2005). Males start businesses more often than females do (Reynolds et al. 2004) which points to support network and acceptable expectations regarding men's attention paid to operating their own businesses. Thus, females become more proactive when provided with supportive government policies; but most males identify entrepreneurship as masculine stereotyped task. Males don't wait for government policies to support them rather find their own ways to get into entrepreneurship.

## Conclusions

The importance of LOC within the field of entrepreneurship is valuable in that it may lend to a better understanding of the continuation of firms in early years of the start-up process when most nascent entrepreneurs face the biggest challenges. If an internal disposition toward entrepreneurial outcomes is characteristic of successful entrepreneurs, the usefulness of the locus construct becomes all the more apparent. According to a study by Littunen (2000), activities during the entrepreneurial process affected the personal characteristics of the entrepreneur. A study by Shaver (1995) suggests that if entrepreneurs are not born they can be "made". A study by Hansemark (1998) concluded that there is a possibility of increasing entrepreneurship in a society through stimulating psychological characteristics seen as vital for entrepreneurship activity. More specifically, how Locus of Control of Reinforcement, could be stimulated in an educational situation. As need for Achievement and Locus of Control are regarded as socially learned (McClelland, 1990; Rotter, 1966), these concepts should be made a compulsory part in the educational/ training programmes. During such programmes

**Table 6** Gender and government long term policies wise mean scores of students for proactiveness

Dependent Variable	Government long term policies	Male	Female
Proactiveness	No	2.332	2.143
	Yes	2.294	2.326

**Table 7** Gender, locus of control and government long term policies wise mean scores of students for proactiveness

Dependent Variable	Gender	LOC	Government long term policies	
Proactiveness	Male	Internal LOC	No	2.353
			Yes	2.405
		External LOC	No	2.310
			Yes	2.183
	Female	Internal LOC	No	2.356
			Yes	2.415
		External LOC	No	1.930
			Yes	2.236

Note: Only significant results are reported in each table

the students should be taught to make more favourable causal attributions such as learning to ascribe failure to insufficient effort, in order to lead students to interpret their success as due to internal qualities.

Chowdhury (2007) explains that political instability, corruption, lack of infrastructure facilities, education and training, lack of financial help, all pose as barriers to entrepreneurship in developing nations. Governments all across the world should frame policies to overcome these obstacles. Governments play a crucial role in enhancing the ability of individuals to act entrepreneurially. The influence of historical, cultural, economic, and societal factors on government policies results in suboptimal use of government assets, often evidenced by an inefficient regulatory environment (Frederking, 2004; Wade and Shipilov, 2002). Government support in all manners definitely increases proactiveness to be an entrepreneur. Government support with improved educational patterns can enhance the entrepreneurial status of any country whether developed or developing. Proactiveness is crucial to entrepreneurial behaviour because it is concerned with the implementation stage of entrepreneurship. Proactive individuals do what is necessary to bring their concepts to fruition and gain an advantage by being the first to capitalize on new opportunities (Sang and Peterson, 2000). According to Mansfield (1991) and Lissenburgh and Harding (2000), the growing role of the university in the new economy is well beyond providing industry and the state apparatus with trained personnel and engaging in research that provides a knowledge base for industry to draw upon. Instead, they should transform into an entrepreneurial university by promoting economic and social development through the commercialization of research results. Thus it may be concluded that changes in educational patterns along with reinforcement of intrinsic locus of control and government's long term support will facilitate the young energetic generation to exploit beyond the jobs that are available. Learned skill-sets and infrastructural support will allow youngsters to explore the world of entrepreneurship.

#### Competing interests

The authors declare that they have no competing interests.

#### Authors' contributions

DP, KC and SJ were involved with making a questionnaire on entrepreneurial intensity. DP did the survey. All the authors were involved with the analysis. DP drafted the manuscript. All authors read and approved the final manuscript.

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