WHAT DETERMINES ENTREPRENEURIAL SUCCESS? — A PSYCHOMETRIC STUDY OF RURAL ENTREPRENEURS IN INDIA

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Abstract

We investigated what determines entrepreneurial success by studying the characteristics of rural kiosk operators in India, specifically kiosks run by Drishtee. We constructed a questionnaire to collect data on various psychological factors from existing kiosk operators in two states: Assam and Uttar Pradesh (UP). We related these factors and questions to performance measured by log sales of the kiosk. A significant degree of performance variation can be explained by psychological characteristics, in particular, self efficacy, achievement motivation and average psychological aptitude for entrepreneurs in Assam. However, performance variation of UP's entrepreneurs is explained by age and prior experience in borrowing in addition to the psychological characteristic of achievement motivation. We identify specific questions as well and find that performance is significantly related to the questions relating to self-efficacy and locus of control for both states. Finally, we employ these findings to build a model for the selection strategy of rural entrepreneurs.

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I INTRODUCTION

"My son is now an 'entrepreneur'. That's what you're called when you don't have a job."

—Ted Turner, broadcasting entrepreneur

What is entrepreneurship? Who are entrepreneurs? How are they different from non-entrepreneurs? Is entrepreneurship is just another career option? Drawing from research, people choose entrepreneurial careers because of the perceived greater economic and psychological rewards than regular employment. The definition of an entrepreneur has evolved in last three centuries, from someone who bears risk by buying at a low price and selling at a higher price; to the creation of new enterprises of which the entrepreneur is the founder (Financing Microenterprises, Theory and Practice)

Considerable effort has gone into understanding the psychological and sociological wellsprings of entrepreneurship; and some common characteristics like the need for achievement, locus of control, orientation toward intuitive rather than sensate thinking, and risk-taking propensity of entrepreneurs have been suggested. This begs the question: can these traits be generalized across countries and culture? In the current scenario, we have a broad spectrum of different countries with respect to the economic structure as well stage of economic status they are in.

In India, small firms contribute considerably to economic growth and employ a very large number of people, second only to agriculture. The concentrations of these firms are mostly in the urban areas while rural areas have failed to seize the opportunities unleashed by economic reforms. Different models of rural entrepreneurship are being attempted by various government and private agencies to tap the potential of human sources as an engine of growth. However, little is know about the characteristics of rural entrepreneurs who take up entrepreneurship mostly because they do not have a better opportunity and only incidentally due to their interest.

Empirical literature analyses the characteristics of entrepreneurs, which found direct relationships between the need for achievement, locus of control and risk taking propensity with success in most cases. Again, the entrepreneurial characteristics required to launch a business successfully are often not those required for its growth and even more frequently not those required to manage it once it grows to considerable size. In other words, the role of the entrepreneur needs to change with the business cycle as it develops and grows.

Keeping in mind these constraints, the objective of this paper is to identify and, eventually, provide a model for selection of rural entrepreneurs for the different rural entrepreneurship based businesses. In particular, the existing rural entrepreneurs of Dirshtee have been analysed for their psychometric characteristics, thus laying the foundation to building a model for their selection strategy. The database of sales performance provided by Drishtee and questionnaires proved to be the key to understanding the psycho-

metric traits of these kiosk operators. Although Drishtee's data has been used and focus is on the Drishtee's selection case, it could also be useful as a methodological tool for other rural entrepreneurship based businesses interested in a set of criteria for selecting entrepreneurs.

In reaching the above-mentioned objectives, the structure of this paper is as follows. Section II introduces Drishtee, as an organization and the importance of rural entrepreneurs for their business. Section III provides detail of data; sample construction, construction of variables, questionnaire and sample description. In section IV, we describe the methodology and results obtained. We recommend to Drishtee a selection model in section V. Lastly section VI concludes the paper.

II WHY ENTREPRENEURS OF DRISHTEE ARE IMPORTANT?

Drishtee is a for profit rural network of information centers which provides information and services to the village community. These centers are called Drishtee Soochnalaya or Information Kiosks and they are the main interface where customers can avail the services offered by Drishtee. The kiosks are small shops equipped with a complete set of computers and other accessories such as web cameras, photocopy machines, etc which are required for the delivery of services. Drishtee selects and appoints people to run these kiosks on a service-delivery based revenue model. More than 1,020 kiosks of Drishtee are operating in seven states of India[1].

Drishtee's kiosks also function as retail outlets for the products and services of its partners[2]. Some of the popular services include agri-queries, insurance products, computer courses, and English Proficiency courses while batteries, reading glasses, books and mobile recharge coupons are some of the product lines sold at kiosk. Drishtee has recently collaborated with other organizations to diversify into microfinance, e-health, women's empowerment and promotion of rural artisan.

The backbone of this business is its huge network of kiosks operated by people acquainted with the local area. Though business opportunities are offered by Drishtee in form of loans for basic infrastructure, the people are also required to invest a certain part of capital. This model looks attractive given the abundance of human capital in India. However, little is known about the critical components required to make such kiosk venture successful. For Drishtee, kiosk operators (KOs) are entrepreneurs because they put their money in the venture and take the risk of operating in an uncertain environment. Given the current employment scenario in the country, there is a large pool of applicants who would like to become KOs in villages. It is a challenging task for Drishtee to screen out persons who have a greater probability of success in this venture. At present,

[1]Currently in seven states-Bihar, UP, Assam, Haryana, Punjab, Madhya Pradesh and Rajsthan.
[2]Microsoft, Intel, ICICI Prudential, ICICI Lombard, Scojo Foundation, Amaron, HCL, CEEP, Quiver Infoservices Ltd.

there is no reliable method to objectively measure the characteristics that separate an entrepreneur from a non-entrepreneur.

Although personality characteristics are viewed as a vital component of entrepreneurship, situational circumstances and social functions are also important to the process of becoming an entrepreneur. Under similar situational circumstances certain people will set up in business while others will not: it takes a special kind of person to set up business on their own. Setting up alone is not as important as becoming successful in the venture. It requires a completely different set of skills to manage resources, foresee opportunities and stay ahead of time. For Drishtee it is crucial to know how social factors, educational background, heredity along with personality features play a role in defining a successful entrepreneur.

Kiosk operators of Drishtee are from different social and educational backgrounds but most of them are villagers. The opportunity to become an entrepreneur is being given by Drishtee: an induced phenomenon. It is possible that a KO would not have become an entrepreneur and would have opted for some other profession if Drishtee had not offered. In other words, the choice to become a KO for Drishtee may not be a voluntary pursuit of opportunity but instead a reflection of the necessity to engage in entrepreneurship; in the absence of other employment opportunities (Block & Wagner 2006). Despite the fact that the selected ones could be necessity entrepreneurs, it is very important for Drishtee to filter out the best among those available.

We have tried to objectively define personal characteristics indicative of entrepreneurship and identify a set of factors influencing the success of these entrepreneurs.

In following section we discuss the data - sample construction, variables that determine entrepreneurship traits and the questionnaire and sample that was used. Section IV contains methodology and results obtained. Finally based on the findings we suggest a model to be used by Drishtee for their selection strategy.

III DATA

A SAMPLE CONSTRUCTION

A simple approach when trying to determine the various psychometric traits important for an entrepreneur would be to identify the traits established from previous studies, design a psychometric test and administer it to the selected sample. However, this would mean an implicit assumption that other factors of social and economic background are constant across the observed samples. We selected 100 KOs for our sample from two different states: 45 from Assam and 55 from Uttar Pradesh (UP). One obvious problem with this is that the two states selected are different with respect to education level, socio-economic status and culture. Hence we did not merge our samples from the two states.

To track the performance of the KOs over a period of time we use sales figure from Drishtee's database. The same KO's were interviewed and administered a psychometric

test to find the correlation, if any, that existed between performance and the psychometric traits of the KO's. We also tried to discover if a significant relationship can be found between performance and the psychological characteristics of KOs. As discussed earlier, we objectively identified certain psychological characteristics indicative of entrepreneurs. Based on these characteristics, we then constructed the variables. From there, we move on to formulate a questionnaire to measure these variables.

B CONSTRUCTION OF VARIABLES

The variables are constructed to measure the psychological characteristics of KOs important for their success. Earlier studies by other researchers list a number of characteristics; we restrict our attention to psychological traits, time preference, risk aversion, intelligence quotient and background.

1 Psychological traits

a) Achievement Motivation (AchM)

The need for achievement is a distinct human motive which can be defined as a need for success or attainment of excellence. Individuals satisfy their needs through different means, and are driven to success for reasons both internal and external. McClelland asserted that while most people do not possess a strong achievement-based motivation, those who do, display consistent behaviour in setting goals. Achievement-motivated individuals are different from gamblers or risk takers. They set achievable goals which they can influence with their effort and ability. This results-driven approach is almost invariably present in the character make-up of all successful business people and entrepreneurs (Cassidy and Lynn 1989). The questions (Hermans 1970) used to indicate achievement motivation is Q3, 7 and 19 of main survey part 1. (See Table 1)

b) Locus of Control (LC)

A person's perception of the source of his or her fate is termed as a locus of control, i.e. the degree to which people believe they are master of their own fate. Individuals who believe that they control what happens to them are 'Internals' or internally motivated and have an *Internal Locus of Control*. Those who believe that outside factors such as luck or chance controls their fate are 'Externals' or externally motivated and have an *External Locus of Control* (Robins 2003)

Empirical evidence (J. and Tewary 1979) shows that internals are more suited for jobs which require initiative and independence of action. People with high internal scores on Rotter's (I-E) (Rotter 1966) scale are more likely to be successful entrepreneurs. Internals believe that they personally are in control of their destiny and that luck and fate have only a modest influence on the outcome of events. For internals, personal destiny comes from within and therefore they tend to be self-reliant and independent.

Questions (Levenson 1974) 1, 5, 11 and 14 from part 1 of the main survey have been used to measure Locus of Control. (See Table 1)

c) Meta- Cognitive Activity (MC)

Simply defined, meta-cognition is thinking about thinking (Jennifer A. Livingston, 1997). It refers to the higher order thinking that involves active control over the thinking processes involved in learning. It consists of two basic processes occurring simultaneously: monitoring our progress as we learn, and making changes and adapting our strategies if perceived that we are not doing so well (Winn and Snyder, 1998). It's about self-reflection, self-responsibility and initiative, as well as goal setting and time management. Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are meta-cognitive in nature.

"Metacognitive skills include taking conscious control of learning, planning and selecting strategies, monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies and changing learning behaviors and strategies when necessary. " (Ridley *et al.* 1992) A successful entrepreneur should be a good learner with meta-cognitive skills. The questions (Rybowiak et al 1999) constructed to measure meta-cognitive activity include, 2, 9, 12 and 16. (See Table 1)

d) Need for Dominance (ND)

In society, the relative position of an individual is determined by structure of the society and the relative importance given to various occupations. Domination is the condition of having control or power over people or things. Like many other needs of humans, the need for dominance is a motive to acquire a dominating position in society. An entrepreneur controls his or her work and is perceived to have relatively more power over the events in their life than a salaried person. Also, people who don't want to be in subordinate position or don't want to take orders from anyone else tend to work for themselves. High need for dominance could be a key characteristic of an entrepreneur. Thus we have selected need for dominance as one of the variables which is measured by questions (Steers and Braunstein, D. N. 1976) 10 and 13. (See Table 1).

e) Passion for Work (PW)

An individual's passion for his or her work comes from self motivation to work more-driving to achieve the goal. It creates an insatiable hunger for excellence. However, many people do not enjoy their work and do it to earn a livelihood, rather than out of interest. For entrepreneurs, being passionate about their work is not only important but crucial because it directly affects their business. They constantly need to discover new ways to sustain and expand their business, maintain their client base and look for

new opportunities. If they are not enjoying the work they are doing, it may result in failure. Do entrepreneurs of Drishtee have passion for work and whether it affects their performance? This variable, passion for work has been measured by questions (Locke 1993). Q5, 15 and 18. (See Table 1).

f) Self- Efficacy (SE)

Self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura 1997). Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Entrepreneurs are perceived as having a high level of assurance in their capabilities and who approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities (Bandura 1997). They set themselves challenging goals and maintain strong commitment to them. When met with failure, they heighten and sustain their efforts and quickly recover their sense of efficacy after it. Also they attribute failure to insufficient effort or lack of knowledge and skills which they think can be acquired. This approach produces personal accomplishments, reduces stress and lowers vulnerability to depression. We perceive that entrepreneurs should have self-efficacious attitude towards life and measure this through questions (Schwarzer et al 1997). 4, 8, 17 and 20 in part 1 of the main survey. (See Table 1)

2 Cognitive Reflection (IQ), Risk Aversion and Time Preference

a) IQ

People with higher cognitive ability (or "IQ") differ from those with lower cognitive ability in a variety of ways. Entrepreneurs as perceived should have high cognitive ability because it is suppose to influences judgment and decision-making ability. It is logical for us to select IQ as one of the personality traits of a successful entrepreneur. We have used questions 5 and 6: 5 for IQ1 and 6 for IQ2 from the main survey part II for measuring IQ. And we sum both of these to get SumIQ. (See Table 1)

b) Risk Aversion (RA)

Entrepreneurship is historically associated with risk bearing and hence risk attitude is widely believed to affect the selection of individuals for entrepreneurial positions. The process of being an entrepreneur may increase the desire for higher levels of risk. We propose risk-aversion as one of our variables because an entrepreneur is required to take risky decisions in uncertain environments and hence more risk-averse individuals are less likely to become entrepreneurs. Like IQ, we have two variables RA1 and RA2 for risk-aversion which is measured by Q4 in main survey part II.

Table 1

Variables detail

Psychometric Variables		Questions (Main Survey)	Formula used[a]
Achievement Motivation		3, 7, 19	$\{A3 + A17 - A19\}/3$
Locus of control		1, 5 (6 for Assam), 11, 14	$\{A1 + A5 - Q11 - A14\}/4$
Meta- cognitive activity		2, 9, 12, 16	$\{A2 + A9 + A12 + A16\}/4$
Need for dominance		10, 13	$\{A10 + A13\}/2$
Passion for work		5, 15, 18	$\{A5 + A15 + A18\}/3$
Self-efficacy		4,8,17,20	$\{A4 + A8 + A17 + A20\}/4$
Sum IQ[b]	IQ1	5 (1 to 4)	Sum of A$(5.1 + 5.2 + 5.3 + 5.4)$
	IQ2	6 (1 to 4)	Sum of A$(6.1 + 6.2 + 6.3 + 6.4)$
RA[c]	RA1 sum	4 (1 to 12)	Sum of A$(RA1 + RA2 + RA3 + RA4 + RA5)$
	RA2 sum	4(1 to 16)	Sum of A$(RA1 + RA2 + RA3 + RA4 + RA5 + RA6 + RA7)$
TP	TP1	1a	A to 1a
	TP2	2d (1 to 11)	Sum of A (no of a's)

Notes

a. A stands for Answer
b. Sum IQ is sum of IQ1 and IQ2
c. RA1 and RA2 have been used in the whole document for RA1 Sum and RA2 Sum.

c) Time Preference (TP)

In addition to IQ and Risk Aversion, there is also a notion that entrepreneurs need to be more patient. When the time element is involved, they go thorough lot of consideration in taking decision. They devalue or "discount" future rewards less. Similar to IQ and RA we have constructed TP1 and TP2 as the variables (Time preference) measured in the main survey part II, by questions, 1 & 2d respectively (Frederick 2005). (See Table 1)

C QUESTIONNAIRE

We have constructed a questionnaire which attempts to measure the above mentioned variables. The whole questionnaire is divided into three parts. The first part consists of background classification questions like age, education and business background of the KO's. The main questions in this section are about age, the level of education, social connections, general experience and knowledge of business (own or others), and knowledge of financial aspects of business. During data analysis they have further been grouped into Background and Business Background questions.

The second part is the main survey questionnaire which has been used to measure entrepreneurial characteristics. It comprises of 20 questions where the psychological characteristics are measured on several scales. A brief summary of psychometric variables with their respective questions is illustrated in the Table 1. In addition to the

main questionnaire, respondents completed another set of questions to measure cognitive traits (IQ), Time Preference, and Risk Aversion.

D SAMPLE DESCRIPTION

Table 2 present means and standard deviations for all the psychological variables of the entrepreneurs from UP and Assam. It also presents the means and standard deviations for the scores they obtained for IQ, age and average education. The first two columns report summary statistics for UP and the last two columns for Assam. The last row of the Table 2 contains the sample size for each state.

We observe that KOs score high in meta-cognition and passion for work and low in locus of control for both the states. Further, their score is average in self-efficacy, average aptitudes and achievement motivation for the two states but the score in need for dominance is high for Assam and low for UP. Overall the scores for Assam are lower than UP. We also see that the average age of KO's in Assam is more than that of UP. They score very poor in IQ in both the states, with Assam scoring less than UP.

Table 2

Descriptive Statistics[a]

	UP		Assam	
	Mean	St. Dev	Mean	St. Dev
Locus of Control (LC)	2.16	2.10	1.49	2.01
Self Efficacy (SE)	3.22	1.64	2.85	1.52
Achievement motivation (AchM)	3.04	1.68	2.82	1.48
Meta Cognition (MC)	4.10	1.06	3.42	1.20
Passion for work (PW)	4.02	1.30	3.76	1.18
Need for dominance (ND)	2.42	3.25	3.14	2.04
Avg Apt (AA)	3.14	0.95	2.91	0.99
Sales	44017.74	86067.05	33914.78	42237.67
Age	28.79	6.55	30.04	5.63
SumIQ	2.96	1.60	2.56	1.18
Sample Size	55		45	

[a]Notes:

a. Each of the above variables was measured on an 11 point scale. (-5 to 5) and then transformed to 5 point scale.

b. 5 denoting the extreme positive attribute while -5 the extreme negative. For example, $+5$ for locus of control would mean, the person has extremely internal, while -5 meaning exact opposite. Similarly, High belief of self- efficacy, high achievement motivation, high meta-cognition, passionate about work, high need for dominance would score $+5$.

c. Average aptitude is the average of all the six aptitudes.

d. SumIQ is sum of IQ1 and IQ2. The total score is 8.

Table 3 is the correlation matrix for psychometric characteristics for both the states. As we can see from the table, average aptitude is highly correlated with all the other variables for Assam but for UP, it shows significant correlations only with locus of control and self-efficacy. Locus of control and self-efficacy are significantly correlated for UP while in Assam only self efficacy shows high correlation with other variable but not with locus of control. Achievement motivation has very significant correlation with other variables for Assam. Meta-cognition activity and passion for work are correlated with a few variables, while locus of control and need for dominance don't show much correlation with other variables.

Table 3

Correlation matrix for Assam and UP[a]

	Assam								
	LC	SE	AchM	MC	PW	ND	sales	Avg Apt	log sales
LC	–								
SE	0.06	–							
AchM	0.14	0.51	–						
MC	0.16	**0.44**	**0.27**	–					
PW	0.20	**0.55**	**0.47**	**0.45**	–				
ND	0.01	**0.37**	**0.35**	0.19	**0.41**	–			
Sales	0.03	**0.27**	0.21	0.06	0.19	−0.02	–		
Avg Apt	**0.46**	**0.72**	**0.69**	0.59	**0.75**	**0.65**		–	
Log sales	0.19	**0.30**	**0.41**	0.11	**0.24**	−0.01		**0.31**	–
	UP								
LC	–								
SE	**0.43**	–							
AchM	**0.56**	**−0.34**	–						
MC	**0.53**	**−0.24**	−0.07	–					
PW	**0.43**	−0.21	−0.06	−0.12	–				
ND	**0.34**	**−0.24**	−0.02	−0.03	−0.08	–			
Sales	**0.33**	**−0.25**	−0.05	−0.05	−0.10	−0.07	–		
Avg Apt	**0.42**	**−0.25**	−0.10	−0.10	−0.14	−0.11	−0.13	–	
Log sales	**0.33**	**−0.25**	−0.07	−0.10	−0.14	−0.10		−0.11	–

		LC	SE	AchM	MC	PW	ND	sales	Avg Apt	log sales
Assam	SE		–	**0.51**	**0.44**	**0.55**	**0.37**	**0.27**	**0.72**	**0.30**
	Avg Apt	**0.46**	**0.72**	**0.69**	**0.59**	**0.75**	**0.65**		–	
	AchM		**0.51**	–	**0.27**	**0.47**	**0.35**		**0.69**	**0.41**

UP	LC	–	**0.43**	**0.56**	**0.53**	**0.43**	**0.34**	**0.33**	**0.42**	**0.33**
	SE		–	**−0.34**	**−0.24**		**−0.24**	**−0.25**	**−0.25**	**−0.25**

[a]Notes:

a. Product moment correlations are shown in Table 3. Correlations greater than an absolute 0.24 are shown in bold letters.

b. The last two tables show separate significant results for Assam and UP.

It is expected that for entrepreneurs, self-efficacy (SE) and locus of control (LC) should be positively correlated and the result is in sync for UP but not in Assam.

SE and LC don't show statistically significant correlation. A very striking feature can be observed here in case of UP- SE is negatively correlated with all other variables except LC.

We also check the correlation for individual questions in the correlation matrix given in Tables 4 and 5 in appendix. In a separate analysis which is not reported here, we also check for correlation between questions of variables from other group of TP, RA, IQ but no significant correlation was found.

Table 4 reports the correlation matrix for Assam. Q 3, 5, 7, 8, 10, 13, 15, 17, 18, 19, and 20 show significant correlations with other questions in the group. We also observe here that, questions which make up SE are in high correlation with questions of LC. Later during regression analysis we have identified SE as a significant psychometric trait for KO's of Assam.

We observe similar pattern for UP in Table 5, though the extent of correlation is not that prevalent as in Assam. We found significant correlation between questions of SE and LC for UP as well.

Because of the high correlation of SE with LC, we can say that those who have strong belief in their ability would also think that fate has only a modest influence on whatever happens to them. And hence they would be more self-dependent and reliant and possibly be related to less incidents of failure. Interestingly other important traits for Assam, achievement motivation questions (3, 7 & 19) don't show much correlation within themselves but they are highly correlated with other questions.

In the next section, we write the methodology and results. We report for each state the variables which worked and then the individual questions having significant relation with the performance.

IV WHAT MAKE ENTREPRENEURS?

A METHODOLOGY

We want to find out what make successful entrepreneurs. In doing so, we have tried to find out how to select kiosk operators who could be successful entrepreneurs. We have followed a strategy to identify statistically significant relationships between the selected variables by first finding the correlation between different variables and then we use a set of multiple regressions to find out relations between variables. We have already reported the correlation results in previous section.

For the sake of simplicity, we have chosen log-linear (independent variable is linear) as the functional form for all of our regressions. The simple logarithm of sales data is the dependent variable for all estimated regressions.

We propose to estimate the following regression for each of the combinations.

$$Y_i = \alpha + \beta_{i1} X_{i1} + \beta_2 X_{i2} + \cdots + \beta_{in} X_{in} + E_i \ldots \tag{1}$$

Y_i stands for log of sales, α is the constant or intercept term, X_i represents the independent variables, β_i represents the slopes or the coefficients corresponding to each X_i and E_i is an error term.

First we grouped each of the psychometric variables with aptitude variables and background variables. This gives us a set of combinations for each psychometric variable.

For example; with Achievement Motivation, one combination of variables is time preference, risk aversion and IQ. A second combination would be with time preference and risk aversion. Similarly, in another combination, there is background and business background. A single regression is also there to check the independent effect of achievement motivation on sales performance. This strategy gives a large pool set of regression results.

From the above set of regressions we were able to identify variables which have significant relation with performance. Here it is important to mention that the datasets for UP and Assam were kept separate. All the above regressions were done separately for both the states. The reason for not merging the data for the two states, as mentioned previously, was that the two states are different in many parameters, and the regression results were not similar for these two states. Merging in one dataset may have resulted in the loss of significant result for a particular variable.

Because we wanted to study separately the individual questions bearing any significant relation, we performed another set of regressions where questions have been taken as independent variable while the dependent variable remained the same as in the log-linear model.

Finally and most importantly Drishtee would be interested in developing a model based on which they can orient their selection strategy. We have developed a model to suggest to Drishtee separately for UP and Assam.

B RESULTS

We have presented the result in two sub-sections one each for identification of important of variables and questions.

1 Variables

Table 6 and 7 show our results from the estimation of equation (1) for different sets of combination of variables as discussed earlier. We find that three psychometric variables are statistically significant for Assam, in contrast with UP which has one significant psychometric variable. There are other factors like age and 'other knowledge of borrowing' (OK*Borrowing) which are instrumental in driving the performance of KOs in UP. We now discuss the results of regression analysis in greater detail.

From each set of regressions, we report only those variables for which coefficients are significant in each combination in that set. Thus we have identified three variables, all psychometric which show statistically significant relations with sale performance for Assam: average aptitude, achievement and self-efficacy. Moreover, we don't observe any significant variables from other group variables- background, business background, time preference, risk aversion.

In Table 6, for UP, only one psychological factor, achievement motivation, is statistically significant. 'Other knowledge of borrowing' and age are the other two factors from background and business background group of variables which seem to drive sales performance in UP.

Overall, the findings in Tables 6 and 7 suggest that, both the states are different with respect to factors influencing sales performance. KOs in Assam are more driven by internal factors, achievement motivation, self-efficacy and average of all psychological

Table 6

Psychometric Variables that worked for Assam and UP[a]

	Assam			UP
Regression combinations	**Average Aptitude**	**Ach Motivation**	**Self Efficacy**	**Ach M**
Regr1	0.477	0.427	0.301	−0.322
	(0.040)	**(0.005)**	**(0.048)**	**(0.025)**
	[0.073]	[0.147]	[0.066]	[0.074]
Regr2	0.419	0.390	0.274	−0.306
	(0.104)*	**(0.015)**	**(0.077)**	**(0.037)**
	[0.064]	[0.138]	[0.076]	[0.087]
Regr3	0.466	0.386	0.312	−0.307
	(0.072)	**(0.015)**	**(0.050)**	**(0.049)**
	[0.083]	[0.144]	[0.096]	[0.023]
Regr4	0.474	0.383	0.326	−0.310
	(0.086)	**(0.018)**	**(0.059)**	**(0.049)**
	[0.059]	[0.122]	[0.074]	[0.005]
Regr5	0.488	0.389	0.192	−0.346
	(0.042)	**(0.017)**	**(0.112)***	**(0.016)**
	[0.046]	[0.086]	[0.068]	[0.123]
Regr6	0.544	0.393	0.453	−0.284
	(0.062)	**(0.024)**	**(0.028)**	**(0.058)**
	[−0.059]	[−0.009]	[−0.015]	[0.153]

[a]Notes:

a. Each entry in this table corresponds to a different regression.
b. The columns show the variables that worked for each state; first three columns are for Assam and the last one is for UP.
c. Column 1 shows various combinations of the independent variables. The dependent variable is the same for all regressions. For example Reg1 for the entire column has only one independent variable which is psychometric variable in that column. Reg2 includes TP1, RA1 and Sum IQ with the psychometric trait that column. Similarly other combinations are depicted.

Independent variables

Reg1	Reg2	Reg3	Reg4	Reg5	Reg6
Psychometric characteristics	Psychometric characteristics + TP1, RA1, SumIQ	Psychometric characteristics + TP2, RA2, SumIQ	Psychometric characteristics + TP2, RA2, IQ1, IQ2	Psychometric characteristics + Background	Psychometric characteristics + Business background + Bacground

d. Background and business background contains other variables of those groups.
e. The first number in each cell is the estimated coefficient of the regression, the second number is the estimated p value (in round brackets) and the third number is the estimated R2 (in squared brackets).

factors, whereas age of KO's and some knowledge of borrowing along with internal motivation for achievement seem to affect the performance in UP. Next we analyze the results of both the states separately.

a) Assam

In Table 6, Regression1 shows the result when only one independent variable is used. For Assam, the coefficient of the three psychometric variables is significant at p value of, 0.04, 0.005 and 0.048 for average aptitude, achievement motivation and self efficacy respectively. However when time preference1 (TP1), risk aversion1 (RA1) and cognitive traits (Sum IQ) are included in Reg2, the significance of the coefficient of average aptitude drops to an insignificant 10.4%. The other two also show a decline to 1.5% and 7.7% respectively. In four successive sets of regressions with TP2, RA2, SumIQ; TP2, RA2, IQ1, IQ2; Background and Business Background, the coefficients of average aptitude and achievement motivation are significant at below 8.6% and 2.4% respectively. Self efficacy is also significant for all regressions at below 7.7% except with background where it drops to 11.2%.

b) UP

The last column of Table 6 focuses on UP and it presents result for achievement motivation. When it is regressed individually, the significance level is at 2.6% and subsequently decreases to 3.7%, 4.9%, 4.9% and 5.8% with the addition of effects of TP1, RA1, SumIQ; TP2, RA2, SumIQ; TP2, RA2, IQ1, IQ2 and Business Background. However inclusion of background increases the significance level of achievement motivation coefficient to 1.6%.

Table 7 reports our result for variables Age and Other Knowledge of borrowing of KOs in UP. The first column presents the results of all the sets of regression of psychological traits with background in which age coefficient is significant. It can be observed that age is significant in each of these regressions at below 5.7%. Similarly the last two columns show the regression results of all the psychological traits when background and business background are taken together. The results indicate that OK*Borrowing is significant for AA, PW, LC, SE and MC at 7.5%, 3.1%, 4.6%, 3.1%

and 3.9% while Age is significant for PW, LC, SE and MC at 5.9%, 9%, 8.4% and 6.9%respectively.

Table 7

Other Variables that worked for UP[a]

	UP		
	Background	**Background and Business Background**	
	Age	**Age**	**OK*Borrow**
Avg Apt	0.086	0.045	1.670
	(0.055)	(0.422)*	**(0.075)**
	[0.017]	[0.140]	
ND	0.083	0.060	1.433
	(0.057)	(0.318)*	(0.199)*
	[−0.064]	[0.079]	
PW	0.092	0.087	1.600
	(0.032)	**(0.059)**	**(0.031)**
	[0.113]	[0.228]	
Ach M	0.085	0.081	1.044
	(0.046)	**(0.090)**	(0.202)*
	[0.123]	[0.153]	
LC	0.086	0.087	1.611
	(0.057)	**(0.084)**	**(0.046)**
	[0.006]	[0.077]	
SE	0.086	0.077	1.721
	(0.056)	(0.118)*	**(0.031)**
	[0.009]	[0.115]	
MC	0.086	0.090	1.632
	(0.052)	**(0.069)**	**(0.039)**
	[0.042]	[0.114]	

[a]Notes:

a. Similar to Table 6, each entry corresponds to different regressions. First column shows regression of background variables with each of the psychometric variable.
b. Each entry in the last two columns depicts result of a single regression.
c. The first number in each cell is the estimated coefficient of the regression, the second number is the estimated p value (in round brackets) and the third number is the estimated R^2 (in squared brackets).
d. Significant p values are shown in bold.

One important observation for both states is that none of the variables from the group of time preference, risk aversion and cognitive traits are significant. These results at first glance may seem to be contrary to the conventional wisdom that an entrepreneur is required to make risky decisions in an uncertain environment and hence only those persons who are able to bear higher risks should perform well. However, we have measured risk taking propensity of established KOs or at least who are experienced in running the kiosk for sometime which might be different from that of a new or aspiring KO (Brockhaus 1987).

Also, IQ and time preference are generally perceived to be two important drivers of entrepreneur performance. Surprisingly, our results say that KO's need not be very high on IQ and being patient is not an important factor for their performance.

A tentative explanation for these results is as follows: most KOs of Drishtee are from a rural background[3] with poor education[4] who have opted to become entrepreneurs not because it was their dream, but because they lacked other opportunities of regular employment in a salaried job.

It seems intuitively appealing for us to expect KOs to possess all the typical characteristics expected from entrepreneurs but they are not entrepreneurs in the accepted sense. Previous studies have considered *successful entrepreneurs* as their subject based on which these characteristics have been identified. Further these studies are mostly representative of the characteristics of those entrepreneurs who despite of having other options of employment, opt for own enterprise because of a strong wish to follow their passion. On the other hand, our study is focused on UP and Assam, two underdeveloped states of India where literacy and employment are major problems. Drishtee's KOs from both the states score poorly on IQ which could be one reason why no significant relationship between risk aversion or time preference with performance was found for them (Frederick 2005).

[3]Average villages populations 26171.87 for UP and 8491.11 for Assam
[4]Education average: UP 0.84 and Assam 0.44 (2 is for M.A and -1 for study till class X)

Thus, of the wide variety of factors selected for this study, only few are identified as statistically significant and relevant characteristics of successful KOs. The identification of such factors provides us with a platform for making selection criteria for them.

We proceed in our study to find out which questions in the survey seem to have a significant relationship with sales performance of KO's.

2 Questions

Table 8 presents the results of the regressions in similar fashion as we did for psychometric traits. We estimated equation (1) having independent variables as individual questions and dependent variables as the log of sales for the two states separately.

The results found reinforce the results obtained in trait identification. As expected, the important questions found for the two states are not the same. Though questions relating to the KO's psychometric traits are found to be related to performance in Assam, only four questions (numbers 13, 16, 17 and 19) are found to be significant. On the other hand, UP has five significant questions (5, 10, 17, 19 and 20) from the psychometric group even though we have only one psychometric trait, achievement motivation, as an important factor for performance. Now we explain the details of questions for the two states.

a) Assam

Assam has four questions, one each from the groups ND, MC, SE and AM. Questions 17 and 19 are from SE and AM respectively which has already been identified as important factors. But question 13 and 16 of ND and MC respectively emerge from nowhere in our analysis and have not been identified earlier. The importance of these two questions from different traits can be understood because of the reason that Assam's KOs are more influenced by psychometric traits than other factors.

Table 8

Significant Questions identified for Assam and UP[a]

	Assam				UP				
	Q13	**Q16**	**Q17**	**Q19**	**Q5**	**Q10**	**Q17**	**Q19**	**Q20**
Reg1		−0.586		−0.15	−0.256		0.272	0.181	−0.702
Q1−5, 15−20		**(0.026)**		**(0.028)**	**(0.015)**		**(0.005)**	**(0.009)**	**(0.002)**
		[0.235]			[0.242]				[0.242]
Reg2						0.086			
Q1−15						**(0.054)**			
						[−0.022]			
Reg3	−0.15		0.334	−0.157		0.077	0.156		0.224
Q6−20	**(0.105)**		**(0.025)**	**(0.041)**		**(0.081)**	**(0.023)**		**(0.055)**
	[0.186]								[0.151]
Reg4						0.172			
Q1−10						**(0.0128)**			
						[0.073]			
Reg5	−0.171		0.320	−0.174			0.351	0.129	−0.479
Q11−20	**(0.042)**		**(0.019)**	**(0.016)**			**(0.014)**	**(0.084)**	**(0.033)**
	[0.2372]								[0.1494]
Reg, SE			0.232				0.175		−0.573
			(0.08)				**(0.078)**		**0.0086**
			[0.045]				[0.1033]		
Reg, AchM				−0.161				0.1403	
				(0.0145)				**(0.035)**	
				[0.177]				[0.049]	

[a]Notes:

a. Similar to table 6, each entry corresponds to a different regression. First five columns of results are for UP and the last four columns for Assam.
b. The first column is shows the questions used in regression. For example, Reg1 use questions 1 to 5 and 15 to 20. Similarly, Reg2 has questions 1 to 15. The last two columns contains the questions from the group of SE and AchM
c. The first number in each cell is the estimated coefficient of the regression, the second number is the estimated p value (in round brackets) and the third number is the estimated R2 (in squared brackets).
d. Significant p values are shown in bold.

b) UP

Surprisingly, UP has more significant questions than Assam. Out of five identified as significant, two questions, Q17 and 20 are from SE and one question, Q5 is from LC. It appears that though SE was not identified as an important trait of the KO's from UP, it does in fact play a role in performance for UP as well. LC shows positive correlation with SE for both the states and finally one of the important questions for UP comes out from LC. Similar to Assam, one question, Q10 is from ND but there is no question from MC like the one for Assam.

V RECOMMENDATION

Finally we come back to the equation (1) to suggest a model for the two states based on the analysis so far. As we have already seen, the variables as well as the questions that worked for Assam are different from UP. Hence while selecting KOs in two states; the variables to look for should be different. Based on the results, we suggest that the level of sales performance is a function of the different variables and questions and Drishtee should use this as a model to test the aspiring entrepreneurs to forecast about their sales performance in future.

For Assam, the variables driving performance are: average psychometric aptitude, self-efficacy and achievement motivation. And the questions which show significant relations are 13, 16, 17 and 19.

Selection Model for Assam

$$\begin{aligned}\mathrm{Ln(Sales)} = \alpha &+ 0.477 * \mathrm{Avg\ Apt} + 0.427 * \mathrm{AchM} + 0.301 * \mathrm{SE} \\ &- 0.171 * \mathrm{Q13} - 0.586 * \mathrm{Q16} + 0.32 * \mathrm{Q17} - 0.174 * \mathrm{Q19}\end{aligned}$$

Similarly for UP, the important variables are: achievement motivation, age and other knowledge of borrowing. UP has five questions significantly related to the sales performance.

Selection Model for Assam

$$\begin{aligned}\mathrm{Ln(Sales)} = \alpha &- 0.322 * \mathrm{AchM} + 0.092 * \mathrm{Age} + 1.6 * \mathrm{OKB} - 0.256 * \mathrm{Q5} \\ &+ 0.172 * \mathrm{Q10} + 0.272 * \mathrm{Q17} + 0.181 * \mathrm{Q19} - 0.702 * \mathrm{Q20}\end{aligned}$$

VI CONCLUSION

The primary objective of this paper is to document systematic behavioural differences that affect the performance of successful entrepreneurs, specifically rural entrepreneurs. We have developed an empirical framework for KOs of Drishtee to analyze the importance of various factors and questions to sales performance. We found considerable heterogeneity across entrepreneurs from two different states. The performance appears

to be systematically driven by psychological factors for Assam; it is dependent on age and knowledge of borrowing in addition to the psychological factors in UP. We also found some questions which have a strong relation with performance of KO's. Moreover, entrepreneurs with high sales performance, score high on certain questions for the two states. Thus, the selection criterion is also different for two states and a selection strategy has been developed based on these findings. While the framework we follow is quite extensive, it doesn't allow us to estimate the causal effect of Drishtee's policies on performance. Thus, although the findings of the paper focus on the Drishtee case, the analysis and methodology developed could have a much broader interest for organizations involved in rural entrepreneurship.

As for further research, we come across issue of variation in the entrepreneurial traits with respect to culture, geography and also macro economic status of the country. For those involved in selection activities, it would be important to know whether they prefer entrepreneurial qualities over managerial skills or a balance of both. And further the role of training for grooming of skills required for sustaining over business cycles.

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Appendix A: Correlation Matrix for Questions

Table 4

Correlation matrix for question for Assam

	Assam																			
Q	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***	***16***	***17***	***18***	***19***	***20***
1	–																			
2	0.01	–																		
3	0.25	0.05	–																	
4	0.24	0.08	0.20	–																
5	0.23	0.21	0.28	0.26	–															
6	0.21	0.10	0.05	0.44	0.41	–														
7	0.02	0.09	0.33	0.30	0.25	0.36	–													
8	0.05	0.17	0.27	0.39	0.33	0.32	0.42	–												
9	0.16	0.19	0.50	0.05	0.19	0.10	0.08	0.19	–											
10	0.21	0.08	0.28	0.17	0.53	0.21	0.20	0.17	0.43	–										
11	0.10	0.27	0.12	0.13	0.13	0.09	0.25	0.16	0.11	0.01	–									
12	0.06	0.04	0.29	0.15	0.29	0.11	0.01	0.46	0.24	0.23	0.09	–								
13	0.01	0.02	0.09	0.14	0.23	0.15	0.30	0.19	0.04	0.40	0.06	0.02	–							
14	0.24	0.04	0.08	0.08	0.06	0.13	0.16	0.18	0.18	0.05	0.48	0.17	0.07	–						
15	0.07	0.31	0.12	0.05	0.24	0.05	0.29	0.12	0.36	0.30	0.26	0.05	0.17	0.21	–					
16	0.03	0.18	0.29	0.07	0.42	0.06	0.20	0.12	0.27	0.32	0.27	0.24	0.20	0.10	0.40	–				
17	0.25	0.16	0.20	0.06	0.33	0.25	0.43	0.42	0.16	0.30	0.06	0.08	0.53	0.05	0.23	0.29	–			
18	0.10	0.09	0.58	0.20	0.40	0.27	0.46	0.15	0.32	0.31	0.06	0.24	0.19	0.11	0.42	0.24	0.32	–		
19	0.09	0.24	0.05	0.13	0.13	0.12	0.02	0.14	0.10	0.09	0.36	0.16	0.21	0.08	0.19	0.09	0.20	0.03	–	
20	0.11	0.43	0.35	0.14	0.51	0.32	0.59	0.44	0.43	0.23	0.03	0.24	0.31	0.08	0.48	0.50	0.60	0.49	0.18	–

Table 5

Correlation matrix for questions for UP

	UP																			
	1	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***	***16***	***17***	***18***	***19***	***20***
1	–																			
2	0.04	–																		
3	0.07	0.13	–																	
4	0.38	0.02	0.18	–																
5	0.05	0.36	0.16	0.19	–															
6	0.11	0.15	0.06	0.05	0.19	–														
7	0.07	0.06	0.03	0.25	0.12	0.26	–													
8	0.16	0.08	0.16	0.28	0.31	0.26	0.14	–												
9	0.05	0.21	0.39	0.13	0.24	0.05	0.07	0.06	–											
10	0.09	0.21	0.17	0.19	0.15	0.14	0.14	0.01	0.03	–										
11	0.27	0.11	0.25	0.23	0.04	0.06	0.04	0.15	0.29	0.01	–									
12	0.10	0.13	0.11	0.22	0.41	0.19	0.08	0.13	0.01	0.10	0.14	–								
13	0.19	0.26	0.17	0.12	0.22	0.36	0.14	0.10	0.03	0.62	0.01	0.06	–							
14	0.36	0.19	0.02	0.34	0.27	0.10	0.20	0.23	0.31	0.15	0.42	0.02	0.17	–						
15	0.02	0.12	0.06	0.05	0.12	0.01	0.07	0.05	0.18	0.01	0.08	0.24	0.13	0.04	–					
16	0.04	0.17	0.02	0.22	0.09	0.05	0.06	0.15	0.02	0.07	0.00	0.27	0.03	0.06	0.57	–				
17	0.03	0.11	0.08	0.25	0.22	0.32	0.07	0.36	0.03	0.22	0.10	0.72	0.27	0.05	0.20	0.27	–			
18	0.19	0.09	0.22	0.44	0.33	0.07	0.23	0.41	0.07	0.02	0.29	0.27	0.00	0.14	0.02	0.04	0.17	–		
19	0.18	0.13	0.09	0.27	0.05	0.12	0.17	0.05	0.10	0.15	0.02	0.29	0.26	0.06	0.26	0.39	0.17	0.28	–	
20	0.27	0.13	0.00	0.48	0.10	0.14	0.06	0.32	0.24	0.08	0.06	0.28	0.13	0.37	0.05	0.29	0.25	0.24	0.16	

Appendix B: Questionnaire

I. Background Information

Name of respondent: _____ Name of surveyor: _____		
Date of survey [MM/DD/YYYY]	At what time did the interview begin?	At what time did the interview finish?

(1) What is the highest grade that you completed? ?

1…….None 2…….If Grade 1-10, till which grade? 3…….Class 12 passed 4…….Graduate 5…….Bed 6…….M.A 7…….M.A Bed 998….Refuse to answer	

(2) What is the occupation of your father?

---

(3) What was your occupation before you became a kiosk operator?

---

(4) What is the distance of your village from the nearest town?

----------kms

(5) What is the approximate population of your village?

---

(6) What is the proportion in which you sell Drishtee to Non Drishtee products?

---

(7) How often, if ever, did you work or help in a small business immediately before starting your own?

1..... Regularly; at least once a week 2..... Irregularly; less than once a week 3..... Never; did not help in any small business 998…Refuse

(8) How many businesses have you managed in total in your entire life? _____

- Which were those businesses?

_____

(9) When you were 16 years old, did your mother or father (or a person that you considered to be your mother or father) manage or run a business?

1…...Yes	2……No

998…Refuse

Examples?

(10) Before you started business, did you know well friends or relatives who had managed or run a business?

1…Yes 2……No
998…Refuse

(11) Did anyone among your acquaintances – parents, friends or relatives - help you start your first business with concrete actions or recommendations?

1……Yes 2……No
998…Refuse

Such as?

(12) Did starting your first business (if not the computer kiosk) require initial financing?

1……Yes 2……No
998…Refuse
3…….Does not apply

(13) If Answer is Yes in (7), then how much initial financing was required? Rs. _____

(14) If Answer is Yes in (7), then did the initial financing involve borrowing money?

1……Yes 2……No
998…Refuse

II. Main Survey – Part I

Please indicate the extent to which the following statements are true or false.

(1) It is chiefly a matter of fate whether or not I have few friends or many friends.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(2) When my way of running the business is not successful, I experiment with new different ways of running the business.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(3) Working hard is something I like doing very much.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(4) It is usually easy for me to stick to my aims and accomplish my goals.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**

false ***true***

(5) I accomplish a lot at work because I love my job.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(6) When I get what I want, it is usually because I worked hard for it.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(7) When I am working, the demands I make upon myself are pretty high.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(8) I am confident that I could deal efficiently with unexpected events.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(9) I closely monitor the areas where I need more practice.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

(10) I seek an active role in the leadership of groups that I am part of.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

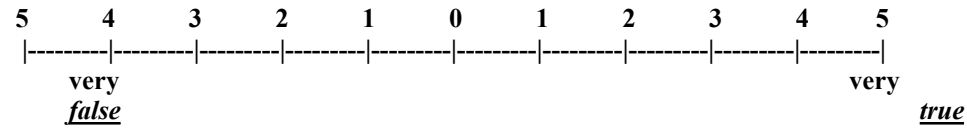
(11) Its not always wise to plan too far ahead since many things turn out to be a matter of good or bad fortune.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

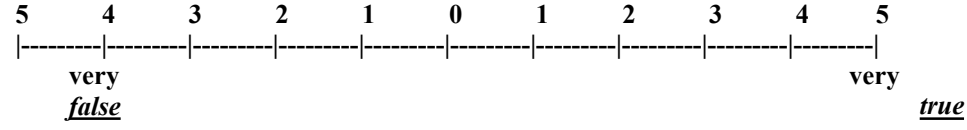
(12) I set goals for myself in order to direct my activities for making the business a success.

5 4 3 2 1 0 1 2 3 4 5
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
very **very**
false ***true***

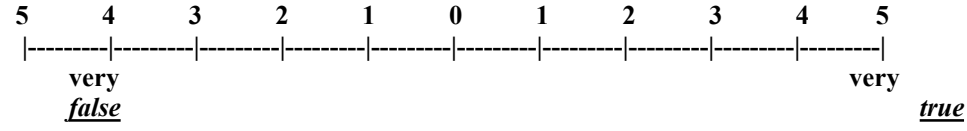
(13) When working in a group, I prefer being "in command" rather than being a follower.



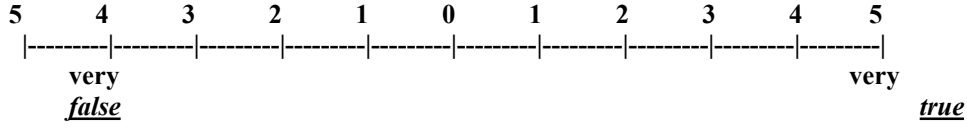
(14) Most leaders have reached their positions because they were lucky enough to be in the right place at the right time.



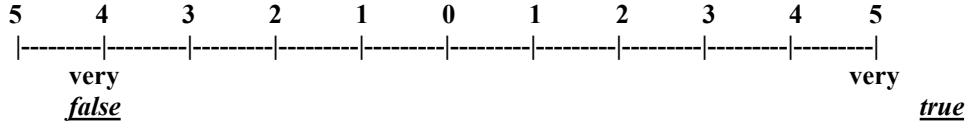
(15) I look forward to returning to work when I am away from my work.



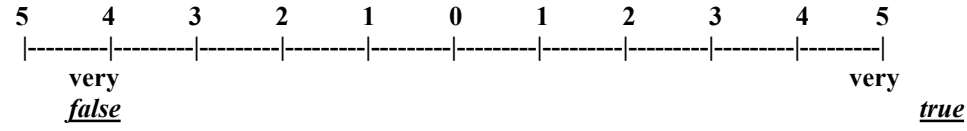
(16) I figure out which things I do not understand well and adjust my strategies accordingly.



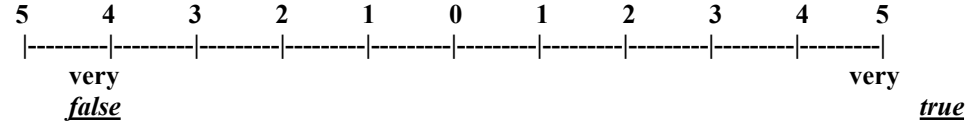
(17) I can remain calm when facing difficulties because I can rely on my coping abilities.



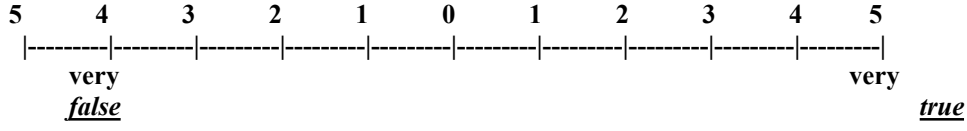
(18) Most of my life's satisfaction is derived from my work.



(19) Other people think I don't work very hard.



(20) When confronted with a problem, I can usually find several solutions.



III. Main Survey – Part II

(1) Please give us your best answer for each question below.

- I would be indifferent between getting Rs. 40 right now or getting Rs. _____ in 10 years.
- If a young mango tree is currently two feet tall, how tall will it be in 10 years?

  _____ feet tall
- The average price of gasoline in India is currently Rs.50 a litre. What will its price be in 10 years?

  Rs._____ a litre.
- In 10 years, I will have _____% of what I need to retire.

(2a) Do you currently have any money saved or invested? (This might include savings accounts, mutual funds, stocks, bonds, or anything else you consider an investment.)

YES NO

- Do you have any land holdings or anything else that you consider as saving?

  YES NO

(2b) If you received Rs.100 today and you saved it for one year in a savings bank account, approximately how much would you expect it to be worth?

About Rs._____

(2c) If you borrowed Rs.100 today and paid it back in one year, approximately how much would you have to repay?

About Rs._____

- Is this borrowing from a formal or informal source?

(2d) For each of the eleven options below (a through k), circle which option you would prefer to receive. (Assume that the money would be received with certainty.)

Rs. 1000 today OR

a) Rs.1000 in one year b) Rs.1050 in one year

c) Rs.1100 in one year d) Rs.1150 in one year

e) Rs.1200 in one year f) Rs.1250 in one year

g) Rs.1300 in one year h) Rs.1350 in one year

i) Rs.1400 in one year j) Rs.1450 in one year

k) Rs.1500 in one year

(4) For **each** of the 16 choices in the table below, please circle the option you prefer.

Choice 1	Banana	Oranges
Choice 2	Rs 3400 this month	Rs 3800 in two months
Choice 3	Gulab Jamun	Rasmalai
Choice 4	a 15% chance of Rs.1,000,000	Rs.500 for sure
Choice 5	saving money	spending money
Choice 6	Rs.100 for sure	a 50% chance of Rs.300
Choice 7	Lottery ticket	Ice-cream
Choice 8	an 80% chance of Rs.20	a 10% chance of Rs.150
Choice 9	being successful	having fun
Choice 10	flip a coin and *win* Rs.200 for "HEADS", but *lose* Rs.100 for "TAILS".	Rs.5 for sure
Choice 11	Cricket	Soccer (Football)
Choice 12	*win* Rs.100 for sure	get a 75% chance to *win* Rs.200
Choice 13	Amitabh Bachchan movie	Shahrukh Khan movie
Choice 14	*lose* Rs.100 for sure	take a 75% chance to *lose* Rs.200
Choice 15	Potato chips	Chocolate
Choice 16	25% chance of Rs.3,000	20% chance of Rs.4,000

(5) Below are several problems that vary in difficulty. Try to answer as many as you can.

1) A bat and a ball cost Rs 1.10 in total. The bat costs Rs. 1.00 more than the ball. How much does the ball cost?

_____ paise

2) If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

_____ minutes

3) In a lake, there is a patch of lilypads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

_____ days

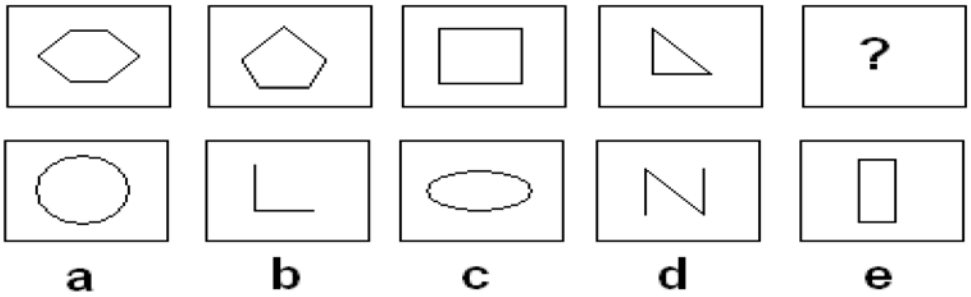
4) If you flipped a fair coin 3 times, what is the probability that it would land "Heads" *at least* once?

_____ percent

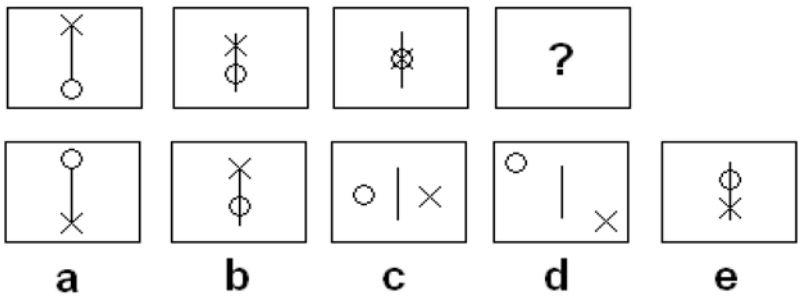
(6) (i) Look at the given series of boxes and fill the Empty Box with one of the pictures from (A) to (D) below.

(A) (B) (C) (D)

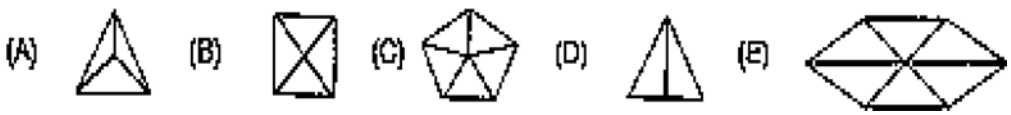
(ii) Please find the figure from (a) through (e) that continues the following series



(iii) Please find the figure from (a) through (e) that continues the following series



(v) Which one of the five designs (A) through (E) is least like the other four?



(7) Compared to the average person taking this survey today, how **seriously did you take this survey**?

5 4 3 2 1 0 1 2 3 4 5
much less than average — about average — much more than average

(8) Compared to the average person taking this survey today, how **much do you like taking risks**?

5 4 3 2 1 0 1 2 3 4 5
much less than average — about average — much more than average

(9) Compared to the average person taking this survey today, how **much money do you have in your wallet or purse right now**?

5 4 3 2 1 0 1 2 3 4 5
much less than average — about average — much more than average

(10) Compared to the average person taking this survey today, **how much do you trust people?**

5 4 3 2 1 0 1 2 3 4 5
much less than average — about average — much more than average

(11) Compared to the average person taking this survey today, how **happy are you**?

5 4 3 2 1 0 1 2 3 4 5
much less than average — about average — much more than average