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AN EMPIRICAL STUDY ON PRIVATE EQUITY FUND MANAGER'S DECISION MAKING CRITERIA'S AND ITS IMPACT ON THE SELECTION OF INVESTMENT PROPOSALS

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ABSTRACT

This study focuses on identifying, investigating and analyzing the criteria's, and their inter relationship impacting a fund managers decision of private equity firms in India. We have used a sample of 63 private equity firms in India with identified criteria's in the past studies. To analyze the result we have used principal component analysis in which we extracted 4 important factors like Product, Entrepreneur, Management team's capability and finance. In multiple regressions result of the model is significant.

Keywords*: Private Equity, Investment Decisions, Portfolio Company.*

Introduction:

India could become the second-largest economy in the world by 2050. The main growth drivers are investments in infrastructure, domestic consumption, and a hub for global outsourcing. Even the growth oriented government policy does support investment in all these industries. This is further supported by growth oriented policies by the government. The favorable environment has led to the growth of the private equity market. India needs private equity more than ever to push forward the structural agenda. But to be most effective, the right partnerships are critical to seize market opportunities, open up new markets, share market knowledge and learning.

PE Firm receives many investment proposals to choose from for the investment and so to find out how PE fund managers take decision on the investment in a proposal is topic of concern. Several past studies have tried to analyzed the criteria's that considered by PE fund manager's decision making. And PE firm's success in selecting best investment proposal depends on the PE fund manager's evaluating process of investment proposal and their decision making style.

Literature Review:

There are many criteria's affecting the decision making process like capabilities and past performance of management team (MacMillan, et al, 1985; Fried & Hisrich, 1994; Khanin, 2006; Khanin, et al, 2008; zinecker & bolf 2015; Vikas uberoi, 2014). Articulated approach, attention to detail, realistic objective by management team (MacMillan, et al, 1985; Knight, 1994; Khanin, et al, 2008). Commitment and determination of management team is also important (Wells, 1974; Tan, et al, 1997; Fried & Hisrich, 1994; Knight, 1994; Khanin, 2006; Khanin, et al, 2008; zinecker & bolf 2015; Vikas uberoi, 2014; MacMillan, et al, 1985). Other researcher have emphasized on entrepreneur's personality (MacMillan et al., 1985; Justin, 2002; Knight & Gilbertson, 1994), experience (MacMillan et al., 1985; Justin, 2002; Knight & Gilbertson, 1994; Fried, et al, 1993; Rakhman & Evans, 2005), reputation (MacMillan et al., 1985; Justin, 2002; Knight & Gilbertson, 1994; zinecker & bolf 2015; Fried, et al, 1993; Rakhman & Evans, 2005; Nahata & Rajarishi, 2007) and leadership qualities (MacMillan et al., 1985; Justin, 2002; Knight & Gilbertson, 1994; Fried, et al, 1993; Rakhman & Evans, 2005) all these have a direct impact on management skills and credibility of portfolio company. There are extant of studies which has cited product's existence (MacMillan et al., 1985; 1987; Knight, 1994; Khanin, et al, 2008; Rakhman & Evans, 2005), Competitive advantage available for Portfolio Company than the

competitors (Fried and Hisrich, 1994; Zacharakis and Meyer, 1998; Macmillan et al, 1985). And market acceptance, demand of the product growth potential (Macmillan et al, 1985; Fried, 1993; Knight, 1994; zinecker & bolf 2015; Rakhman & Evans, 2005; Khanin, et al, 2008). Degree of completion in the company market (Knight, 1994; zinecker & bolf 2015; Khanin, et al, 2008) is important as well as life cycle stage of company product (zinecker & bolf 2015). If we conclude on profit side than profit margin of the product is also important (Knight, 1994). PE's will also seek high absolute returns (MacMillan et al., 1985; 1987; Knight, 1994; Fried, 1994; Khanin et al, 2008; zinecker & bolf 2015). Abundant research have demonstrated that PE's are very much concerned about whether the projected returns from investment in a portfolio company will be sufficient to justify the interest cost (Poindexter, 1975) and the level of return expectations compared to risk and other performance matrices like IRR, profitability Index of proposal, tax benefit, follow up investments and low monitoring cost (Knight, 1994; Ick, 2005; Rakhman & Evans, 2005; Smolaraski &Yang, 2011).

To find out impact on managers decision pre validate scale has been used from Pasewark, W. R., & Riley, M. E. (2010).

As can be concluded from literature review that there are many factors or criteria's influence PE fund manager's investment decision making for selecting investment proposal for Portfolio Company.

Objectives of the Study and Research Methodology:

The main objective of this study is to identifying and analyzing the investment criteria's and finding their influence on PE firm's manager's investment decision making for selecting proposal for Portfolio Company. Intense literature review has been carried out to first indentify and obtain various information on various criteria's for investment decision making of private equity firms managers in India. An attempt has been made by researchers to study relevance and impact of the same criteria on overall decision making for selecting investment proposal with special focus on Entrepreneur, management capability, product and finance's importance while making PE firms investment decision in India.

Research Methodology:

This study attempts to crystallize the understanding of various investment criteria that has impact on and influencing PE firms' manager's investment decisions. The conclusion of this study infers the most important criteria and will guide the way forward for the future studies in the private equity industry in India. The factors identified by the current empirical studies are behavioral and qualitative primarily because the objective is to find out and analyzed criteria's affecting PE fund manager's decision. This requires knowing the perception of the PE fund managers and so the data has been collected from the primary sources using structured questionnaire from PE firm's managers.

The content validity of the questionnaire was done by getting consent of two seniors from the PE industry in India. After validating questionnaire was finalized having 20 criteria's. All of these criteria's have been already investigated by past studies (Knight, 1994; Elango et al, 1995, Tan, et al, 1996, bolf 2015; Khanin, et al, 2008 etc). To collect the responses a five point likert scale was used with 1 being 'Not at all important' and 5 being 'Highly important'.

The respondents were identified and selected using published database of private equity firms and their managers from the website of PE/VC circles and its directory India. Total 63 private equity firms were identified as the sample population out of which 320 managers were selected. All these managers were given questionnaire in paper form.

After getting the response the data analyzed for the reliability and validity of construct by using Cronbach's Alpha which measures the consistency of the result when measured each time for the same subject under the same condition. If the value measures closure to 1 than greater the reliability and a value of 0.70 and higher is acceptable for the reliability and validity of the questionnaire.

After reliability test the responses were analyzed using different statistical tools in two levels of analysis. First factor analysis was done and multiple regression was done to know the impact of each criteria's on investment decisions of managers of private equity firms.

Analysis and Discussion:

The pretested questionnaire was used for the purpose of collecting data. The questionnaire has general information of the respondents; investment decision scale for managers and 20 criteria's identified from the review of literature and validated by pilot study and expert opinion. The questionnaire was circulated to 63 private equity firm's 350 managers out of which 320 found appropriate.

Respondent's Profile:

In the above table the profile of the investors who has been surveyed is mentioned in which the male respondents are more than 81.3% (i.e. 260) and female respondents are near by 18.8% (i.e. 60). From the data given in the above table it can be infer that the maximum of the respondent who has been surveyed are in the age category of 36 to 45 years and amongst them 15% belongs to the category of 25 to 35 and 46 to 55. Out of the total sample surveyed the maximum

of them (i.e. 90) which is almost 28.1% are in the category of 500,000 to 10,00,000 and the maximum (i.e. 71.9%) 230 respondents rate of annual Income are ranging from more than 20,00,000.
From the above sample it can be infer that the sample is very diverse and so can be consider as representative of population.

Reliability of the survey questionnaire:

In order to assess reliability, Researcher has used Cronbach's alpha to determine the degree of consistency amongst the multiple measurements of each factor. A value higher than 0.6 is normally treated as satisfactory in research for the use of a scale (Robinsonet al., 1991). In the research the value of Cronbach's Alpha of all 20 factors is 0.812 which is higher than acceptable level indicating a very good overall consistency.

Factor Analysis:

Testing Appropriateness by KMO Statistic and Bartlett's test of sphericity:
Another useful statistic is Kaiser-Meyer-Olkin (KMO) measure of Sampling Adequacy which quantify the degree of inter correlations among the variables and appropriateness of factor analysis. MSA value greater than 0.60 is desirable. Bartlett's Test of Sphericity is 190 and the significance value is 0.000.
After finding the KMO Value, Factor Analysis was used to reduce the number of factors using principle component analysis and then they were separated to form different dimensions. The importance of this tool is of identification of different factors that form different dimensions and confirming that respondent's rate importance of factors in each dimension consistently. If we try to define it in other words than respondents who rate one factor at certain level, will also rate the other factors in the same dimension at the same level.
The dimensions identified from the survey are as follows. By using principle component analysis, four dimensions have been identified which accounts for 71% of the variance. These different components are derived using varimax method of rotation.
The top four criteria's which explains the maximum variance within the respondents rating can be categorized as following factors

Product:

In this factor criteria's like The growth potential of the product's market, The product is already developed, The market size of the co's product, The degree of competition in the co's product market, The life cycle stage of the product/service, The profit margins of the product, The product/service has proven to be a success and The developed production capabilities are there and so the factor has been named product.

Entrepreneur:

The criteria within this factor are the experience of the entrepreneur, The reputation of the entrepreneur, The leadership skills of the entrepreneur and The personality of the entrepreneur. All these criteria cite the importance of entrepreneur and that is why named as an entrepreneur. So managers are considering this aspect important.

Management team's Capability:

The criteria's in this factor are The realistic objectives set by management team, The articulated approach about the investment, The capability of intense, sustained effort by management team and The attention to detail by management team. Because all the criteria in this dimension are representing what management team capable of the factor has been named as management team's capability.

Finance:

In this dimension criteria's like The tax benefit in financing the investment, The high internal rate of return (IRR), The follow up investment is not required and The low monitoring and administration costs are there and so the dimension has been named finance.

Result of Factor Analysis:

Multiple Regressions:

Multiple regression is an extension of simple linear regressions. Generally we use it find out the impact of more than one independent variable on the dependent variable.

Hypotesis Testing:

H0: There is no significant impact of product of Portfolio Company on investment decision by managers of private equity firms.
H1: There is significant impact of product of Portfolio Company on investment decision by managers of private equity firms.
H2: There is no significant impact of entrepreneur of Portfolio Company on investment decision by managers of private equity firms.
H3: There is no significant impact of management team of Portfolio Company on investment decision by managers of private equity firms.
H4: There is no significant impact of financial situation of Portfolio Company on investment decision by managers of private equity firms.

Research Model:

Result of table 1 shown ANOVA model result that confirms model significant at 1 per cent level ($F=22.201$, $p = 0.000$).Thus, further analysis is carried out for understand impact of Product, Entrepreneur,

Management team's capability and Finance on investment decisions of PE fund managers in India. Table 2 represents model summary, which clearly indicating that 22 percent of variance in investment decision by PE firms managers was explained by Product, Entrepreneur, Management team's capability and Finance.

Further to understand multi co-linearity and impact of individual factor on investment decisions of PE fund managers in India coefficient summary was presented in Table 3. Table 3 confirms non multi co-linearity between independent variable as VIF value is between 1 and 2.

Also, it indicates that all three four null hypothesis established in research methodology were rejected. So, one can interpret result as on an average if product is not appropriate than the chances of rejection of that proposal is 0.129 % if fiancé of the portfolio is not proper than rejection of the proposal is by 0.626 %, if entrepreneur found appropriate then chances of rejecting that proposal is 0.113 % and if management team found good then chances of rejecting the proposal is 0.367 percent.

Model can be shown in equation form as follow:

Investment decisions= 71.613 – .128 * product -0.626 * Finance + 0.113 * Entrepreneur-0.367*management teams capability.

Conclusion:

PE industry has evolved and grown more mature within last few decades. The mst critical factors considered by the investment managers in this industry are product, management team, finance and entrepreneur. This infers the significant paradigm shift in investment decision sense of managers in India. Such change may be attributed to many economic changes. Or we can say that with the change of time the factors like product and market have emerged as a very important aspect for taking investment decisions. And the other reason can be development of private equity industry.

From the paper one can infer that product, finance, management team and entrepreneur are important criteria considered by managers and they all have significant impact on the decision making of managers.

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TYPE		Frequency	Percent
Gender	Male	260.00	81.3
	Female	60.00	18.8
	Total	**320.00**	**100.00**
Age	25-35 Years	50.00	15.6
	36-45 Years	180.00	56.3
	46-55 Years	50.00	15.6
	>56 Years	40.00	12.5
	Total	**320.00**	**100.00**
Qualifications	Post Grasduate	220.00	68.8
	Professional Degree	100.00	31.3
	Total	**320.00**	**100.00**
Designation	Top Level	130.00	40.6
	Middle Level	190.00	59.4
	Total	**320.00**	**100.00**
Annual Income	5,00,001-10,00,000	90.00	28.1
	More Than 20,00,001	230.00	71.9
	Total	**320.00**	**100.00**

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.812	20

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.712
Bartlett's Test of Sphericity	Approx. Chi-Square	5846.166
	Df	190
	Sig.	.000

Factors	Items	Loading	Eigen Values	Cron's alpha	Var exp'd
Product	The growth potential of the product's market	.745	5.442	0.871	27.212%
	The product is already developed	.737			
	The market size of the co's product	.669			
	The degree of competition in the co's product market	.743			
	The life cycle stage of the product/service	.743			
	The profit margins of the product	.674			
	The product/service has proven to be a success	.708			
	The developed production capabilities	.675			

Factors	Items	Loading	Eigen Values	Cron's alpha	Var exp'd
Entrepreneur	The experience of the entrepreneur	.950	4.227	0.933	28.384
	The reputation of the entrepreneur	.917			
	The leadership skills of the entrepreneur	.881			
	The personality of the entrepreneur	.848			
Management team's capability	The realistic objectives set by management team	.891	2.753	0.883	13.76
	The articulated approach about the investment	.831			
	The capability of intense, sustained effort by management team	.825			
	The attention to detail by management team	.778			
Finance	The tax benefit in financing the investment	.948	1.880	0.895	9.402
	The high internal rate of return (IRR)	.911			
	The follow up investment is not required	.831			
	The low monitoring and administration costs	.635			

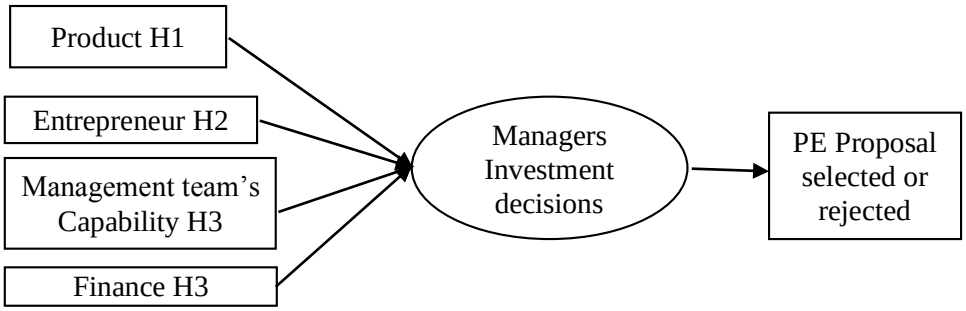

Table 1

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	1784.660	4	446.165	22.201	.000[b]
	Residual	6330.340	315	20.096		
	Total	**8115.000**	**319**			
a. Dependent Variable: Invetsmentdecision						
b. Predictors: (Constant), CapabilityofManagementteam, Product, Enterpreneur, Finace						

Source: Output from SPSS 20.0

Table 2: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.469[a]	.220	.210	4.48289
a. Predictors: (Constant), Capability of Managementteam, Product, Enterpreneur, Finance				

Source: Output from SPSS 20.0

Table 3

Coefficients[a]								
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
1	(Constant)	71.613	2.597		27.574	.000		
	Product	-.129	.049	-.138	-2.617	.009	.886	1.128
	Finace	-.626	.068	-.511	-9.261	.000	.813	1.231
	Enterpreneur	.113	.067	.089	1.680	.094	.889	1.124
	CapabilityofManagementteam	-.367	.088	-.229	-4.189	.000	.829	1.206
a. Dependent Variable: Invetsmentdecision								

Source: Output from SPSS 20.0

Communalities		
	Initial	**Extraction**
The personality of the entrepreneur	1.000	.787
The experience of the entrepreneur	1.000	.929
The reputation of the entrepreneur	1.000	.913
The leadership skills of the entrepreneur	1.000	.846
The articulated approach about the investment	1.000	.757
The realistic objectives set by management team	1.000	.846
The attention to detail by management team	1.000	.730
The capability of intense, sustained effort by management team	1.000	.719
The tax benefit in financing the investment	1.000	.924
The high internal rate of return (IRR)	1.000	.863
The low monitoring and administration costs	1.000	.629
The follow up investment is not required	1.000	.751
The product is already developed	1.000	.615
The market size of the co's product	1.000	.544
The growth potential of the product's market	1.000	.649
The degree of competition in the co's product market	1.000	.670
The life cycle stage of the product/service	1.000	.569
The profit margins of the product	1.000	.496
The product/service has proven to be a success	1.000	.603
The developed production capabilities	1.000	.512
Extraction Method: Principal Component Analysis.		

Total Variance Explained									
Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	5.442	27.212	27.212	5.442	27.212	27.212	4.290	21.451	21.451
2	4.277	21.384	48.595	4.277	21.384	48.595	3.641	18.204	39.655
3	2.753	13.767	62.362	2.753	13.767	62.362	3.232	16.159	55.814
4	1.880	9.402	71.764	1.880	9.402	71.764	3.190	15.950	71.764
5	.943	4.714	76.478						
6	.853	4.265	80.743						
7	.630	3.152	83.896						
8	.598	2.992	86.888						
9	.517	2.585	89.473						
10	.426	2.132	91.605						
11	.334	1.668	93.273						
12	.295	1.474	94.746						
13	.245	1.227	95.974						
14	.207	1.033	97.007						
15	.187	.934	97.941						
16	.177	.887	98.828						
17	.125	.624	99.452						
18	.052	.262	99.714						
19	.031	.154	99.868						
20	.026	.132	100.000						
Extraction Method: Principal Component Analysis.									

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
The growth potential of the product's market	.775			
The degree of competition in the co's product market	.743			
The life cycle stage of the product/service	.743			
The product is already developed	.737			
The product/service has proven to be a success	.708			
The developed production capabilities	.675			
The profit margins of the product	.674			
The market size of the co's product	.669			
The experience of the entrepreneur		.950		
The reputation of the entrepreneur		.917		
The leadership skills of the entrepreneur		.881		
The personality of the entrepreneur		.848		
The realistic objectives set by management team			.891	
The articulated approach about the investment			.838	
The capability of intense, sustained effort by management team			.825	
The attention to detail by management team			.778	
The tax benefit in financing the investment				.948
The high internal rate of return (IRR)				.911
The follow up investment is not required				.831
The low monitoring and administration costs				.635
Extraction Method: Principal Component Analysis. **Rotation Method:** Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				

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