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An empirical study of the consultancy services in the information technology firms in Bengaluru

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Abstract
The Information Technology Consulting is getting the dues it deserved long back. There is a serious consideration from the client Firms and the stakeholders concerned who are now having it a part of the overall system and procedures to disseminate and establish the solutions which are time tested and result-oriented. The organisations now are considering the consultancy as an integral part in the decision circles to bring expertise under the decision making.
The present study is empirical in nature where the data has been gathered from 4 IT companies who are into consultancy services. The study aims to introspect as to how and the extent to which consultancy services has yielded in the tangible results in the organisation and how it has translated into the overall achievement of the good results in the organisations.

Keywords: Bounded System, Consulting, Profits, Results

Introduction
The Indian management consulting industry is diverse, consisting of a wide variety of organizations, including global strategy firms, consulting arms of technology firms (such as IBM and Accenture) and the big-four accounting firms (such as PwC and KPMG), and a host of niche consulting firms (including Universal Consulting, Avalon Consulting, and Oliver Wyman). Malhotra (2013) estimated that around 500–600 high-value consulting assignments are awarded every year by Indian clients, catering to an US$250–300 million market, including about 30–40 projects worth over US$2 million each.

Indian clients, despite being value conscious, were willing to engage a variety of consulting firms to address specific concerns. It is not unlikely that multiple consulting firms could be working at the same time with a single client, engaged in different facets of the business. For instance, Deloitte Consulting considers India as a long-term play, where the key to success is to provide value innovation, leveraging their investments in big data and analytics (Das, 2013).

Over the past few years, the Indian management consulting industry has witnessed three major trends: increasing importance of high-end strategy consulting, evolution of greater market segmentation, and focus on the outcomes of the consulting assignment (Meritus Knowledge Center, 2012).

Historically, the Indian consulting industry was dominated by a demand for basic services such as market research, supply chain optimization, information technology implementation, and financial restructuring (including equity and debt funding). However, as the Indian economy opened up to foreign competition and with Indian corporations venturing into international markets, with deregulation, and the rise of the value-conscious middle- and lower-income customers (also known as the bottom-of-pyramid or BOP markets), firms have begun to realize the opportunity cost to the firm because of poor strategy.

Therefore, the demand for high-end strategy consulting has begun attracting global strategy consulting firms to India. Some of the early clients of these multinational corporation (MNC) strategy-consulting firms in India were traditional business houses, who used their services to restructure their diverse businesses and seek foreign resources/market access. The demand for strategy consulting has grown in smaller professional firms, as they compete with national and global competitors with their innovative products/services (Malhotra, 2013).

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Hypothesis Testing

The survey is undertaken in four Information Technology Firms which render consultancy services to the clients. The data is mustered from the IT Consultancy Firms and Client Firms. The data is received from the respondents in the IT Consultancy Firms and Client Firms. The questionnaires were circulated and the responses received and have been statistically treated. The Results for hypothesis are as under

Hypothesis 1

H1:	The strategic issues of the IT client firms are not combated by the consultancy firms
H1a:	The strategic issues of the IT client firms are combated by the consultancy firms

The consulting in IT industry has bestowed the client firms with the strategic issues in the upfront providing them a competitive edge over the competitors. The scores are collected through responses for variables under consideration as applicable to Hypothesis 1. The analysis and interpretation are given as under.

Conclusion 1	The data responses from the sample responses indicate that each variable shows that the calculated values for each identified variable is more than the table value
Conclusion 2	There seems to be a significant and strong association between the variables for the said hypothesis

The strategic issues of the Information Technology client firms are combated by the consultancy firm's strategic issues of Information technology client firms consultancy firms

Key to the variables

H1F1	Launching of the product
H1F2	Implementing the system to pay the suppliers
H1F3	Running the Department by managing functions

Chi-Square Test
Test Statistics

	H1F1	**H1F2**	**H1F3**
Chi-Square	19.333[a]	12.590[b]	34.205[a]
Df	4	3	4
Table Values For various significance Levels			
Significance Levels	**Table Values**		
0.99	0.297	0.297	0.297
0.95	0.711	0.711	0.711
0.90	1.064	1.064	1.064
0.75	1.923	1.923	1.923

Analysis and Interpretation

Correlation between strategic issues of it client firms and consultancy firms

The study establishes the relationship between the traders ease of doing business with that of the Tax. The correlation coefficient values are as under Table

Correlations				
		H1F1	**H1F2**	**H1F3**
H1F1	Pearson Correlation	1	.963[**]	.921[**]
	Sig. (2-tailed)		.000	.000
	N	39	39	39
H1F2	Pearson Correlation	.963[**]	1	.918[**]
	Sig. (2-tailed)	.000		.000
	N	39	39	39
H1F3	Pearson Correlation	.921[**]	.918[**]	1
	Sig. (2-tailed)	.000	.000	
	N	39	39	39

**. Correlation is significant at the 0.01 level (2-tailed).

The variable Launching of the product shows high positive correlation with Implements the system to pay the suppliers. There were significant inter-correlations among the independent variables with three items. The result indicate high of positive correlation among variables

One-sample kolmogorov-smirnov test

One-Sample Kolmogorov-Smirnov Test				
		H1F1	**H1F2**	**H1F3**
N		**39**	**39**	**39**
Normal Parameters[a]	Mean	3.97	4.08	4.23
	Std. Deviation	1.135	1.085	1.038
Most Extreme Differences	Absolute	.253	.290	.309
	Positive	.183	.198	.229
	Negative	-.253	-.290	-.309
Kolmogorov-Smirnov Z		1.578	1.809	1.931
Asymp. Sig. (2-tailed)		.014	.003	.001
a. Test distribution is Normal.				

Conclusion

	Null Hypothesis	Test Statistic	Table Values	Null Hypothesis Conclusion
H1F1	Same	3.97	1.578	Reject
H1F2	Same	4.08	1.809	Reject
H1F3	Same	4.23	1.931	Reject

The 2 tailed test of one sample indicate that the distribution in respect the three variables is normal Launching of the product, and implementing the system to pay the suppliers, and Running the Department by managing functions

Factor analysis
The factor analysis is done to see which parameters figures more important than the others.

Communalities

	Extraction
H1F1	.967
H1F2	.965
H1F3	.936

Extraction Method: Principal Componenet Analysis

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.868	95.605	95.605	2.868	95.605	95.605
2	.095	3.152	98.757			
3	.037	1.243	100.000			
Extraction Method: Principal Component Analysis.						

The factor analysis extracted the H1F1 parameter namely Launching of the has strong product bearing under the study.

Component Matrix[a]

	Component
	1
H1F1	.983
H1F2	.982
H1F3	.968

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Anova

		Sum of Squares	df	Mean Square	F	Sig.
H1F1	Between Groups	42.136	4	10.534	52.377	.000
	Within Groups	6.838	34	.201		
	Total	48.974	38			
H1F2	Between Groups	39.660	4	9.915	65.976	.000
	Within Groups	5.110	34	.150		
	Total	44.769	38			

Analysis & Interpretation
The ANOVA test between the launching of the product and Implement system to pay the suppliers. The influence of launching of the product and Implement the system to pay the suppliers is found to be insignificant.

Hypothesis 2

H[1b]:	There is no relationship between the management consultancy and value creation of sample IT firms
H[1c]:	There is a relationship between the management consultancy and value creation of sample IT firms

The consulting in IT industry provides varied consultancy services on various fronts to the client firms. The scores are collected through responses for variables under consideration as applicable to Hypothesis 2. The analysis and interpretation are given as under.

Key to the variables

H2F1	Analytical skills
H2F2	Communication skills
H2F3	Strategic skills
H2F4	Operational skills
H2F5	General business skills
H2F6	People skills
H2F7	Financial skills

Chi-square test
Test statistics

	H2F1	H2F2	H2F3	H2F4	H2F5	H2F6	H2F7
Chi-Square	46.358[a]	45.604[a]	44.755[a]	44.094[a]	28.340[a]	44.000[a]	39.283[a]
Df	4	4	4	4	4	4	4
Table Values For various significance Levels							
Significance Levels	Table Values						

0.99	0.297	0.297	0.297	0.297	0.297	0.297	0.297
0.95	0.711	0.711	0.711	0.711	0.711	0.711	0.711
0.90	1.064	1.064	1.064	1.064	1.064	1.064	1.064
0.75	1.923	1.923	1.923	1.923	1.923	1.923	1.923

The Chi-Square test analysis was applied to the 2 second hypothesis The results for the above Test are as under

Analysis and Interpretation

Conclusion 1	The data responses from the sample responses indicate that each variable shows that the calculated values for each identified variable is more than the table value
Conclusion 2	There seems to be a significant and strong association between the variables for the said hypothesis

Correlation between the management consultancy and value creation for the sample it firm

The study establishes the relationship between the values creations for the sample Information Technology firm The correlation coefficient values are as under Table.

Correlations		H2F1	H2F2	H2F3	H2F4	H2F5	H2F6	H2F7
H2F1	Pearson Correlation	1	.988**	.977**	.963**	.952**	.983**	.975**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	106	106	106	106	106	106	106
H2F2	Pearson Correlation	.988**	1	.987**	.973**	.951**	.993**	.976**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	106	106	106	106	106	106	106
H2F3	Pearson Correlation	.977**	.987**	1	.979**	.952**	.993**	.981**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	106	106	106	106	106	106	106
H2F4	Pearson Correlation	.963**	.973**	.979**	1	.956**	.979**	.980**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	106	106	106	106	106	106	106
H2F5	Pearson Correlation	.952**	.951**	.952**	.956**	1	.953**	.964**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	106	106	106	106	106	106	106
H2F6	Pearson Correlation	.983**	.993**	.993**	.979**	.953**	1	.981**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	106	106	106	106	106	106	106
H2F7	Pearson Correlation	.975**	.976**	.981**	.980**	.964**	.981**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	106	106	106	106	106	106	106
**. Correlation is significant at the 0.01 level (2-tailed).								

Correlations			H2F1	H2F2	H2F3	H2F4	H2F5	H2F6	H2F7
Kendall's tau_b	H2F1	Correlation Coefficient	1.000	.983**	.969**	.943**	.930**	.979**	.972**
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000	.000
		N	106	106	106	106	106	106	106
	H2F2	Correlation Coefficient	.983**	1.000	.985**	.958**	.927**	.995**	.970**
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000
		N	106	106	106	106	106	106	106
	H2F3	Correlation Coefficient	.969**	.985**	1.000	.970**	.923**	.990**	.967**
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000
		N	106	106	106	106	106	106	106
	H2F4	Correlation Coefficient	.943**	.958**	.970**	1.000	.926**	.963**	.966**
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000
		N	106	106	106	106	106	106	106
	H2F5	Correlation Coefficient	.930**	.927**	.923**	.926**	1.000	.928**	.945**
		Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000
		N	106	106	106	106	106	106	106
	H2F6	Correlation Coefficient	.979**	.995**	.990**	.963**	.928**	1.000	.974**
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.000
		N	106	106	106	106	106	106	106
	H2F7	Correlation Coefficient	.972**	.970**	.967**	.966**	.945**	.974**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.
		N	106	106	106	106	106	106	106
Spearman's rho	H2F1	Correlation Coefficient	1.000	.989**	.981**	.964**	.964**	.988**	.987**
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000	.000
		N	106	106	106	106	106	106	106

H2F2	Correlation Coefficient	.989**	1.000	.991**	.974**	.960**	.999**	.984**
	Sig. (2-tailed)	.000	.	.000	.000	.000	.000	.000
	N	106	106	106	106	106	106	106
H2F3	Correlation Coefficient	.981**	.991**	1.000	.982**	.956**	.993**	.979**
	Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000
	N	106	106	106	106	106	106	106
H2F4	Correlation Coefficient	.964**	.974**	.982**	1.000	.957**	.976**	.977**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000
	N	106	106	106	106	106	106	106
H2F5	Correlation Coefficient	.964**	.960**	.956**	.957**	1.000	.961**	.971**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.000	.000
	N	106	106	106	106	106	106	106
H2F6	Correlation Coefficient	.988**	.999**	.993**	.976**	.961**	1.000	.985**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.000
	N	106	106	106	106	106	106	106
H2F7	Correlation Coefficient	.987**	.984**	.979**	.977**	.971**	.985**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.
	N	106	106	106	106	106	106	106
**. Correlation is significant at the 0.01 level (2-tailed).								

There were significant inter-correlations among independent variable with seven items. The variables are Analytical skills, Communication skills, Strategic skills, Operational skills, General business skills, People skills and financial skills.

There tends to congruence between the correlations calculated between Pearson Kendall and of as well as Spearman.

The IT consultancy is a very vast industry which includes a wide range of factors in consulting. Right from Analytical skills, communication skills, strategic skills, operational skills, General Business skills, people skills and financial skills and many others.

There exists a high degree of correlation between the Analytical skills and people skills with r=1.993 and also between strategic skills and people skills tend to exhibit high correlation. There is a high degree of positive correlation from among the seven variable identified under considerations.

There tends to congruence between the correlations calculated between Pearson Kendall and of as well as Spearman.

The correlation values computed show high degree of positive correlations. This indicates that the correlation exhibit consistency under all the measurement models

Factor Analysis
The factor analysis is done to see which parameters figures more important than the others.

Factor Analysis
Various variable identified under hypothesis2 are subjected of the variable from among the seven parameters

Communalities		
	Initial	Extraction
H2F1	1.000	.977
H2F2	1.000	.986
H2F3	1.000	.986
H2F4	1.000	.975
H2F5	1.000	.946
H2F6	1.000	.990
H2F7	1.000	.982
Extraction Method: Principal Component Analysis.		

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.840	97.711	97.711	6.840	97.711	97.711
2	.069	.989	98.700			
3	.041	.581	99.281			
4	.021	.295	99.576			
5	.017	.240	99.816			
6	.008	.120	99.936			
7	.005	.064	100.000			
Extraction Method: Principal Component Analysis.						

Component Matrixª	
	Component
	1
H2F1	.988
H2F2	.993
H2F3	.993
H2F4	.987
H2F5	.972
H2F6	.995
H2F7	.991

The first variable, namely, Analytical skills tend to play dominance on other variable under consideration. The identified variable shows a strong bearing on the other parameters.

One-Sample Kolmogorov-Smirnov Test		H2F1	H2F2	H2F3	H2F4	H2F5	H2F6	H2F7
N		106	106	106	106	106	106	106
Normal Parameters[a]	Mean	3.93	3.92	3.91	3.89	3.72	3.91	3.85
	Std. Deviation	1.080	1.110	1.167	1.174	1.278	1.142	1.194
Most Extreme Differences	Absolute	.225	.230	.231	.244	.210	.227	.219
	Positive	.162	.166	.174	.171	.158	.169	.167
	Negative	-.225	-.230	-.231	-.244	-.210	-.227	-.219
Kolmogorov-Smirnov Z		2.316	2.367	2.383	2.509	2.165	2.339	2.258
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
a. Test distribution is Normal.								

Conclusion Null test statistic table value null the

Conclusion

	Null Hypothesis	Test Statistic	Table Values	Null Hypothesis Conclusion
H2F1	Same	2.316	3.93	Reject
H2F2	Same	2.367	3.92	Reject
H2F3	Same	2.383	3.91	Reject
H2F4	Same	2.509	3.89	Reject
H2F5	Same	2.165	3.72	Reject
H2F6	Same	2.339	3.91	Reject
H2F7	Same	2.258	3.85	Reject

Anova Analysis

Anova		Sum of Squares	df	Mean Square	F	Sig.
H2F1	Between Groups	117.077	4	29.269	541.398	.000
	Within Groups	5.460	101	.054		
	Total	122.538	105			
H2F2	Between Groups	123.566	4	30.891	535.114	.000
	Within Groups	5.831	101	.058		
	Total	129.396	105			
H2F3	Between Groups	137.663	4	34.416	644.439	.000
	Within Groups	5.394	101	.053		
	Total	143.057	105			
H2F4	Between Groups	139.446	4	34.862	677.717	.000
	Within Groups	5.195	101	.051		
	Total	144.642	105			
H2F5	Between Groups	160.603	4	40.151	371.826	.000
	Within Groups	10.906	101	.108		
	Total	171.509	105			
H2F6	Between Groups	132.059	4	33.015	667.265	.000
	Within Groups	4.997	101	.049		
	Total	137.057	105			

The Anova test from among the six variables indicates that there is significance in the influence of the identified variables. The variable exhibit the tendency to have significant influence between and within the Groups identified therein.

Conclusion

The results indicate that the null hypothesis rejected and alternate hypothesis is accepted. Consultancy has acquired a new dimension in the Competitive era of today. The organisations are looking beyond the factual data. The Consultancy services have made a big difference in the modern organisations.

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