A Study On Performance Of Study Centers/Business Associates As Intermediaries In Open And Distance Learning Education

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ABSTRACT

Indian higher education sector is experiencing drastic changes. Universities are behind the learner rather than learners to be behind the University, which was unusual in the yore. Institutes across continents are competing to be successful due to liberalization and globalization of education sector. India is third populous country in the world with variegated geographical features, where education needs could not be alone catered by conventional education system, whereby becoming ODL necessary. The survival of these ODL institutions is in question due to so many factors. Offering right programs to the learner became almost a difficult task to any ODL institute which severely impacts admissions. Hence, the model like study centers or business associates become imperative, which may act as an intermediary, in pulling admissions from a particular region. Hence in this very context, this study attempts to affirm the feasibility and operability of study centers or business associates.

INTRODUCTION

The idea of study centers in open and distance learning is not a new phenomenon, but as old as the system itself. In fact, the very concept of open education is very much akin to providing sustained and viable education to public that is spread across the continents. (Mills, 2008) Due to the arrival of information and communication technologies (ICT), the subject of study centers became a matter of question. Prof. Mills foresees that the study centers will extinct in future. He attributes this extinction to proliferation of ICT. Of course, it might not be true for all economies, which are subjected to different pace of developments with respect to the said growth of ICT. But, it is also true that the arena of ODL in education sector experiencing tremendous changes due to proliferation of ICT. The ICT has brought huge changes in education sector in general and ODL in specific. There will be enormous of impact of ICT on open and distance learning organizations. As Yajnik quotes, the Indian education sector needs to be ready for emerging ICT trends and he also mentions about emergence of two new technical changes with respect to Internet (Yajnik, 2009). The new changes are; (1) the next generation Internet, (2) natural language interface. The first change is going to bring increased performance in certain applications like virtual libraries, digital libraries, continuous digital video and audio; it also can give real time interface to any consultant as in the form of video conference. The second change is natural language interface, by which a person can interact with a machine preferably a computer just as with any other person.

The question of this ICT and other associated technologies is in turn depends on proliferation of Internet and its use by people. Is India ready to respond to such changes? Will these technologies wipe of the study center phenomena? Perhaps much work needs to be done by both experts of the sector and academicians to address this problem. For instance, as per a joint report by IMRB and IAMAI on Internet use in rural India, estimates that the Internet use in rural India is going to rise 96 percent to touch 24 million by the end of December, 2011.

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The study also shows that there were approximately 15.2 million claimed Internet users in India as of December, 2010, and the same was 12.1 million for active users.

Mills again points that, in spite of ICTs growth, the access to Internet by average individual even in rich countries is observed poor. Hence, it can be construed that the extinction of study centers may not happen in immediate future but might happen in later years.

STUDY CENTER AS AN INTERMEDIARY IN ODL MARKETS

Operations and logistics in ODL are very much established and are at advanced levels of evolutionary stages. Many operations in ODL systems belong to the area of logistics and supply. Hence, possessing sufficient skills in logistics and supply chain management could determine competitive position in the market. From the beginning study centers in ODL are acting as intermediaries. Study center is a link in between the institution and the student. Study center is not only meant for the admissions but also cater several needs of the students like any other intermediary in business markets. Indeed, a study center can be a represent of an ODL institution besides offering library services, counseling, a lab for practicals, face-to-face contact programs and etc.

As far as taxonomy of study centers are concerned, it appears as there are three types of study centers as of now. They might be study centers maintained by (1) ownership, (2) financing, (3) collaboration between distance teaching institutions and others.

(Khvilon and et al, 2002) In one of the UNESCO reports on open and distance learning summarily states that study centers mostly will acts as inter-medium in between the learner and the institution. As the learners are geographically scattered, it needs someone who can assure and help a learner to accomplish his learning. Khvilon while stating various trends, policies and strategies also affirms most often about study centers and how it helps a learner. For instance, a study center/ resource center must be able to provide local support in the form of direct face-to-face interaction between the learner and the teacher apart from other learning resources, it is easy for students to meet each other and study together and these centers may also help them in using computers, Internet, libraries and etc.

In fact, while sanctioning Rs. 8 billions for 'Educational Development of the North-East and Sikkim' to IGNOU in 2000, the Ministry of Human Resource Development made it mandatory to develop sufficient number of regional and study centers to support the remote and far flung students. This makes it clear that the concept of study centers and imparting education through them is still not extinct in India, and also will continue to exist.

HIGHER EDUCATION MARKET IN INDIA

The higher education market, in fact, is one of the largest and third big markets in the world. The number of institutions in higher education is almost four times the number of institutions in both US and UK. There were hardly 20 universities and 500 colleges in India during the time of independence; the total enrollments were only 1.0 lakh. By the end of Xth five year plan India higher education sector grown to be one of the largest education systems in the world with 378 universities, 18064 colleges and approximately 5 lakhs faculty strength with estimated enrollments of 140 million. This gives us a thought that education needs are increasing with respect to growing population, and the same will remain as a challenge to policy makers and government. All this demand can not be satisfied by a existing universities and other institutes, where by making it compulsory for ODL to lounge in to the action. In spite of the growth in number of Universities and colleges, the GER remained very low at 11%, which is very low compared to world's average of 22% for Asian countries, 23.2% for countries in transition and 54.6% for developed countries. Hence, there is huge and untapped population which might be carving for education. A country like India needs geocentric educational policy rather than central. The central polity can only remain as a supervising authority, perhaps and at most, often acting to safe guard interest of the public in general. Distance educational institutions need to penetrate thorough each and every nook and corners to cater to the needs of education. Exactly, here study center model can work very handy to do this task.

The globalization waves brought so many changes in education sector. The education is not only a business but an international business. (Sanat, 2006)

The world's higher education market had reached 2 million enrollments, which is almost 2% of the 100 billion populations with USD 30 billion revenues in 2003. The higher education market has been growing at a steady pace of 7% from 1990. Sanat further states that the Universities snaring students with attractive marketing strategies, and also says that the student is now a customer or a client rather than a learner. In fact, in 1994, educational services became one of the tradable services by virtue of Global Agreement in Trade and Tariff (GATT), 140 countries signed the same.

There is cut throat competition for higher education in the world across the continents. The countries are competing with each in attracting more and more number of students from the other. In 2008, approximately 1, 00,000 students went abroad in search of foreign education, this number is further expected to increase further in forth coming years. Almost all aspirants, those who went abroad, went in search of engineering, business and management, computer science, mathematics and IT. In the same year there were almost 34, 000 students went to US, 24, 000 fresh students to UK, 34, 000 students to Australia respectively.

PROBLEM STATEMENT

Study centers act as an intermediary which pulls admissions from a particular location. The countries like India need to depend on this type of models owing to its geological variability. (Arun, In his recommendations from UGC golden jubilee seminars, Arun Nigavekar, the then chairman of UGC also affirms the same, as he puts it as "India being the country of the sub continental size with a population above 1 billion, the quantitative expansion of education is of paramount importance to mitigate disparities across regions, gender and social strata in the field of education. This should be given due consideration". The ever increasing population in India continues to depend on non-conventional education like open and distance learning due to its sheer commitment and spirit of imparting education incessantly despite of the logistical complexities. But to what extent these intermediaries are able to contribute to the system is in question. In general, certain questions like does study centers continue to exist? If it is, then, to what extent this model render sustainable returns to any ODL institutes? Do the populations in countries like India experiencing the changes ICT in ODL arena? Will ICT brings any change in the existing ODL systems? In this very context, this paper seeks to explore the contributions of study centers to ODL institute, with respect to admissions.

RESEARCH METHODS

This study is primarily characterized by an exploratory research; analysis was carried out on enrollment figures of SCDL in Pune for 2011. The data used for this analysis is secondary in nature, and the data is numerical.

DESCRIPTION TO DATA SET

The data set is a very simple 24X5 matrix with all rows as individuals, which means programs like PGDBA, PGDIT, PGDBF and etc. The columns represent variables, which mean regions, i.e., east, north, south and west. The data set is organized in such a way that the first four columns as regions and last column (5th) as individuals (programs) for data-import-export task.

SOFTWARE TOOLS

At first correlation analysis is carried out to test and know whether any significant relationship exists among variables (regions) and after ANOVA (Analysis of Variance) was applied on the same data to test the hypothesis. Apart from simple descriptive statistics, hierarchical cluster analysis is also employed on the said data set (enrollment figures) to test whether any latent traits exist among these individuals (programs). Rcmdr is used for statistical analysis and interpretation.

Objectives & Hypothesis

The following are the objectives of the study.

1. To assess the consistency of study centers with respect to admissions
2. To know about what programs are performing well with respect to admissions?
3. To explore if any latent traits exist among these programs.

The hypothesis is formulated with respect to programs and regions. It is believed that different regions tend to have different people with their educational needs. For example, engineering admissions in south is larger than other places in India. Hence, it is rational to state that admissions at one region may or may not be akin to admissions of the other regions. The study center/business associate

acts as an intermediary in between the institute and public, who apart from offering other services, could also bear certain influence on admissions of that particular region. Since, the study is in between programs and respective regions. Eventually, it leads to a conviction (which may later turn to be a proposition) that all the programs may not be same with respect to admissions from these regions. Hence, the null hypothesis for the study will be, there is no significant difference among programs with respect to admissions from different regions. The antithetical to this statement turns out to be alternative hypothesis. Substantiation of null hypothesis will leads to affirmation of the assumption, i.e., study centers/business associates are certain and consistent in their performance. As the only way to justify the performance is through admissions, finally the whole onus rest upon the ability to get admission from that very region.

Ho= There is no significant difference in between programs with respect to regions in terms of admissions.

Ha= There is significant difference in between programs with respect to regions in terms of admissions.

ANALYSIS

The analysis was done on 2011 admissions through business associates of SCDL. Correlation, regression and hierarchical cluster analysis techniques were used on the said dataset. The following were the observations of the analysis.

Observations from correlation and variance (ANOVA) analysis

The following is the correlation matrix for the four variables (east, north, south and west)

	Earth	North	South	West
East	1.0000000	0.9982874	0.9958507	0.9985347
North	0.9982874	1.0000000	0.9975133	0.9997435
South	0.9958507	0.9975133	1.0000000	0.9985475
West	0.9985347	0.9997435	0.9985475	1.0000000

Table1: correlation matrix of four variables (east, north, south and west)

From the above exhibit (table 1), it is clear that all variables perfectly correlate with each other. Which means they are sharing or characterized by the same variance, hence the behavior is the same? There is no significant difference in between regions with respect to admissions, i.e., all regions performing similar in terms of admissions related to different programs. How ever, there is slight difference with respect to their relationship, this difference can be observed from the below scatter plot;

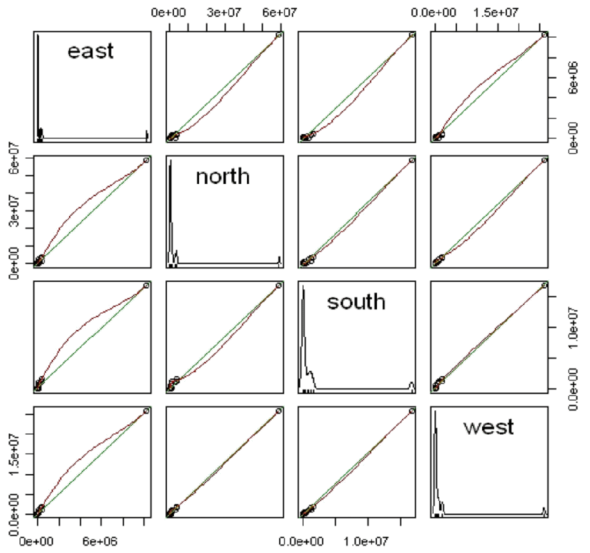

Fig. 1: scatter diagram of correlation matrix

From the adjacent figure it is clear that all regions are performing consistently each other. All the variables are perfectly correlated to each other, however, the variables (regions) are not totally agreeing with the east, this disagreement is apparent in the left most column (east). All the cells in the first column show slight deviation to respective other regions. There is perfect correlation among north, south, and west. The relationship in between north and west is the best relationship (the correlation coefficient for which is 0.9997435)

The following are the results of analysis of variance;

Call:
lm(formula = west ~ east + north + south, data = adm1)

Residuals:

Min	1Q	Median	3Q	Max
-119589	-28247	-5918	39467	106056

Coefficients:

Estimate	Std. Error	t value	Pr(>|t|)

(Intercept)	2.210e+04	1.574e+04	1.404	0.17639
east	3.628e-01	1.026e-01	3.536	0.00221 **
north	2.631e-01	2.305e-02	11.413	6.01e-10 ***
south	4.007e-01	5.228e-02	7.664	3.15e-07 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 59660 on 19 degrees of freedom
Multiple R-squared: 0.9999, Adjusted R-squared: 0.9999, F-statistic: 5.903e+04 on 3 and 19 DF, p-value: < 2.2e-16

Table 2: ANOVA results obtained from the data set

The above exhibit (table 2) is the ANOVA results obtained upon data set. The values are the summary of multiple regression analysis, there is linear relationship among variables. The variable west is taken as response variable and remaining variables (distributions) were checked for co-linearity (co-linearity is very high as Multiple R-squared is 0.9999). The relationship is linear and shows that all programs are significantly different with respect to admissions from different regions. The *p-value* is observed less than 0.05 hence, hence there is no sufficient evidence to accept null hypothesis, whereby, affirming alternative hypothesis.

CLUSTER ANALYSIS

Hierarchical cluster analysis is multiple factor analysis, which explores not only factors but also how these factors/dimensions will be sharing latent traits. Both correlation and regression methods operate upon the principle of co-variance, which is useful only to check association or linearity, at most ANOVA can be useful to prove or disprove hypothesis, but could not delve hidden tendencies or traits in between variables and individuals in study. Hence by the very glance at data one may check association even with out employing the techniques, but both the methods are considered to be frail to seek latent tendencies. So, cluster analysis was carried out to explore whether any latent tendencies exist among these programs (individuals).

At hierarchical cluster choice, only two clusters were chosen to keep the study lean and sleek. The analysis showed two latent dimensions (group of variables). The variables could explain over all 40% of variance. The dimension-1 was characterized by all the variables namely west, north, south and east. Illustration-3 could explain the strength of characterization with respective '*r*' and '*p*' values. All variables are very strongly correlated with dimension-1, except east (*r=0.996)* and contribution is statistically significant ($p < 0.05$).

	Correlation	p.value
west	0.9996028	4.850133e-34
north	0.9985666	3.431465e-28
South	0.9981857	4.068297e-27
east	0.9964232	5.027793e-24

Illustration -3: contribution of variables to dimensions

There are two clusters, the *first cluster* is comprising of PGDBF, SC, PGDSCM, CPCL, CPRTI, DTE, CPCPA, PGDIB, PDGHRM (1 year), PGDIT, PGDEA, CPENVC and PGDBA. The *second cluster* comprises of PGDID, PGDPTT, PGDIM, PGDCRM, PGDRM, DCW, PDGEXIM, PGDTW, CPCL and PGDBCL.

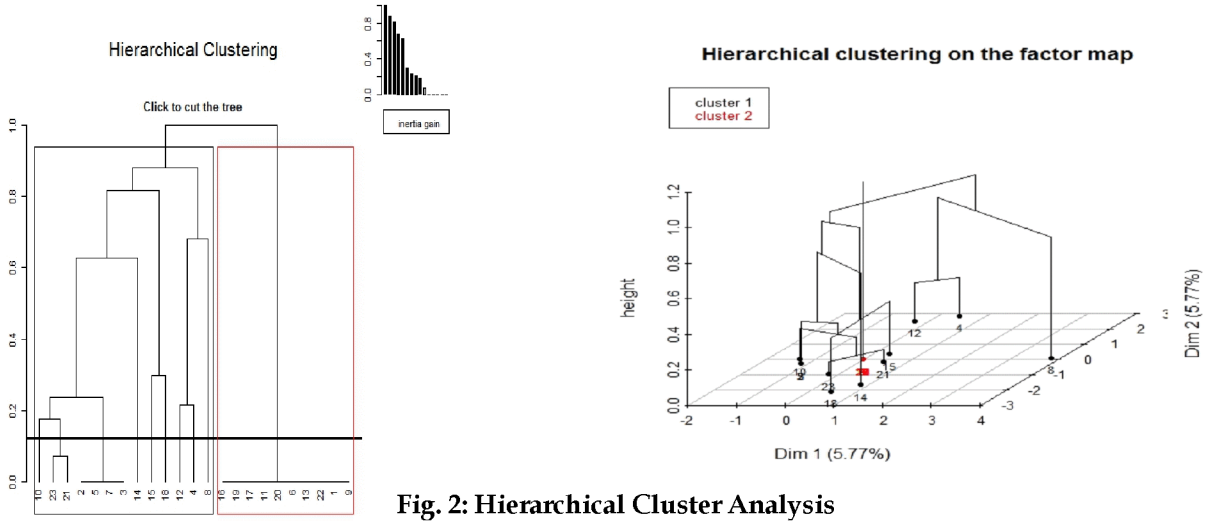

Fig. 2: Hierarchical Cluster Analysis

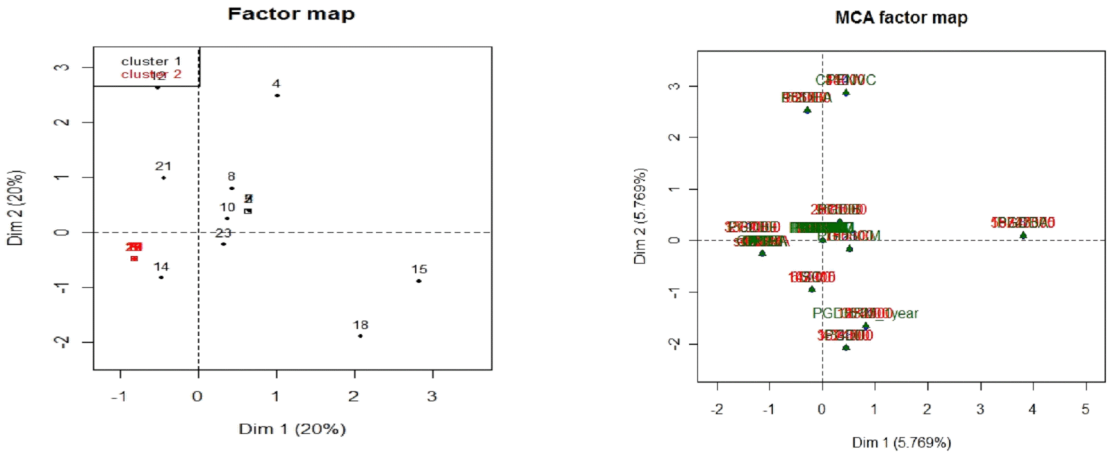

Fig. 3: individual's description with respect to dimensions

Interpretation to Fig. 2

All programs in second cluster are uncompromisingly similar. In first cluster CPCL, CPCPA, CPRTI, and DTE sharing same similarities again these programs share certain tendencies with PGDBF, PGDSCM and SC. In spite its outstanding performance; PGDBA also had been sharing similarities with PGDEA, CPENVC. In spite of being similar to PGDBA, PGDHRM shares performance similar to cumulative performance of PGDBF, PGDSCM, SC and others. SC remains as independent similarly like PGDBA and share tendencies with cumulative performance of PGDCRM, CPCL, CPCPA, PGDIT, PGDBF, PGDHRM and PGDHRM (1 Year).

Interpretation to Fig. 3

PGDBA, PGDBF, SC, CPCL and CPCPA are homogeneous in performance. As it was said before all most all programs in cluster two are uncompromisingly similar, this is again proved true in individual factor map. PGDIB and PGDHRM are highly consistent with respect to variance. But PGDHRM is highly agreeing with the variables that explain dimension-1, which is not the same with 14 (which near to origin). The program SC is not well explained by the both the dimensions and hardly consistant with any of the dimensions. PGDEA and CPENVC are highly influenced by dimensions, whose behavior is inconspicuous (not being clearly explained by the variables).

Results of principal component analysis

Principal component analysis is one of the inherent tools of hierarchical cluster analysis; it helps to find out important components and their unusual behavior. The following figures illustrate how individuals (programs) behave with respect to corresponding variables (regions). The Fig 4.1 shows how PGDBA is unusual being outstanding in the mob. Fig. 4.2 shows, how regions explain dimension-1, which means their strict association to latent trait, the skewed nature (leaning) of east with respect to remaining regions.

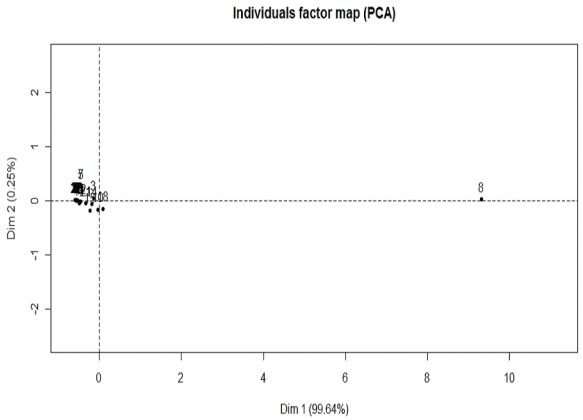

Fig. 4.2

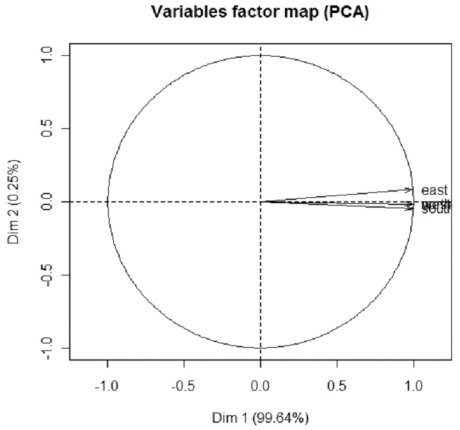

Fig. 4.1

CONCLUSIONS

By mere glance at the data it is very obvious that there are certain associations among regions with respect to admissions (in terms of total fee paid). But to what extent these regions perform compared to each other is a question, which is why some scientific analysis becomes imperative to assess the degree to which these regions are performing consistently with respect to programs.

In the study it was found that all regions, namely east, north, south and west are strictly correlated with each other. The association is very high with an '*r*' value being 0.999, but except east (0.996), which means the performance of study, centers/business associates from eastern region are not as consistent as other regions with respect to these programs.

The evidence is not strong enough to accept null hypothesis, i.e., there is no significant difference with respect to performance of business associates related to programs; is not acceptable. Hence, alternative hypothesis is accepted. Which summarily states that; there is significant difference among the performance of study centers/business associates with respect to admission (or fees paid)? In other words the performance of business associates is not certain in terms of programs.

In both multiple factor and cluster analysis, it is clear that there are certain hidden tendencies among the programs. It is observed that certain programs are performing similar to certain other programs. Most of the programs are homogeneous in performance, except PGDBA which is possessing anomalous behavior. The difference in performance might be due to certain aspects like regional difference in educational preferences, intermediaries' perception and attitude towards programs, influence of other ODL study centers at that particular region and etc. The behavior, which can not be ascertained by mere intuition or preceding analysis (correlation or variance analysis) was discovered by hierarchical cluster analysis.

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