FACTORS IMPACTING CHOICE OF INSTITUTION IN CANADA: AN ECONOMETRIC ANALYSIS

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Abstract

India stands second in the world after China, where the number of students from India moving to other countries for higher studies is concerned. In the last fourteen years the number of children being sent from India has increased four times. The present study tries to explore the factors responsible for migration of Indian youth to Canada using the technique of factor analysis. The survey conducted revealed that the major factors affecting the choice of institutes in Canada by Indian students were Student Friendly Nature of the Institution, Linkage Factor, Ease of admission in Institutes and Prominence of Institutes.

Keywords: Punjab, Higher Education Institutes, Canada, Exploratory Factor Analysis, Confirmatory Factor Analysis.

JEL Classification: A23, A29, F22, I23.

I.   Introduction

Economic models of choice of higher education institutes are based on assumption that the choice is a rational process, and that the students do what is best for them (McFadden,2001). Worldwide, the decision to invest in higher education is treated as an investment decision and therefore a lot of attention is being paid to marketing of higher educational institutes. The market for higher education has changed significantly and competition for attracting students (being treated as consumers) has forced the institutions to focus on diverse areas as their strengths along with their academic achievements (Mazzarol and Soutar, 2012).

Research on the choice of an institute shows that the perspective students short list and evaluate attributes like tuition fees, institutional quality, reputation of the

institutes etc. which they consider important while choosing the institute (Hossler and Gallagher, 1987). Lancaster (1966) in his research concluded that expected earnings after graduation, distance from home, compliance of the program with personal interests, influences perspective student's probability to enroll at a particular institute. Manski and Wise (1983) found that the students enroll in that higher education institute where they feel they would have maximum utility. Hossler and Gallager (1987) found various social and individual factors such as parental encouragement, peer pressure and academic performance lead to selection of an institute.

On the other hand, Kane (1996) and Heller (1997) found that cost of opportunities post the completion of studies influenced students' choice while higher expected earnings were considered as critical factor by Soutar and Turner (2002). Price et.al. (2003) found that facilities offered by an institute (such as computer and library equipment, university accommodations) played a commanding role during the selection of higher education institute. Location of industry was considered as dominant factor by Foskett et.al. (2006). Clark (2007) and Stephenson et. al (2016) found the decision of the students is usually based on reputation and ranking of higher education institute in World University Ranking. Ahmed et.al (2010) were of the view that factors such as reliability, responsiveness, assurance, and empathy can be considered as the key factors by the students to figure out the higher education institute for them. They extended the views in 2013 by examining the role of quality assurance and accreditation of the institutes and concluded that these factors are gaining importance in attracting the students. Kunwar (2017) found that financial factors, university specific factors, location specific factors and social life related factors are also responsible for the selection of HEI's while Seetah (2019) revealed that physical environment, transitional support and word of mouth have positive influence on the student's decision while educational and support facilities do not have a significant effect on the student's choice. Walsh and Cullinan (2020) in their study, highlighted the importance of peer, sibling and parental influence on this decision along with course reputation and availability of work placement. Moody (2020) found that role of social media was critical in choice of higher education institute, when it was combined with the other factors such as size of institution, scholarship offerings and geographic regions.

For Indian students, Brein et. al. (2007) in their paper found that decision of the students is based on the factors like programme content, international reputation, funding, job prospects and quality of education being provided. Singh and Shrivastava (2018) found that apart from quality of education and international reputation of higher education institute, prospective students' safety is also one of the critical factors affecting the choice.

Acquiring a particular degree is not only a signaling factor in the labor market but from where it is acquired also plays a crucial role in the job market. With regard to India, there is a general belief that acquiring degrees from abroad is better than acquiring an equivalent degree from the home country. This is due to the multifaceted challenges especially inadequate provision of training resulting in insufficiency of market ready skills for the youth in Indian HEI's (Tambi,2018). In a Report by Ministry of Overseas, Government of India (2019), it has been observed that there is a serious mismatch between demand and supply in case of higher education which has resulted in enrolment rate in higher education being as low as eighteen percent indicating tremendous increase in the student migration (AISHE, 2019). The total number of migrating students from India was 1702788 in 1995, which increased to 5085159 in 2019 showing an increase of 298 percent in these fourteen years (UNESCO Institute of Statistics,2019).

The preference of Indian students, with regard to choice of an institute abroad for higher education has changed from time to time. Till the earlier twenties, institutions in United States were the most preferred destinations, because the degrees provided by these institutes were not only accepted internationally but they also provided support facilities such as organization of workshops, web-based classes, computer-based tests etc. Open Doors Report, 2019 reported a decline in the number of Indian students because of revisions made in H1-B visa and global financial crisis after 2001 (Open Doors Report, 2019). The major beneficiary of these policies was Canada where the number of Indian migrants increased at compound annual growth rate of 51.38 percent during the period of 2002-2020 (UNESCO Institute of Statistics, 2020). Indian students chose institutes in Canada not only because of the academic excellence of its Institutes but also due to the liberal immigration policies of its government and opportunity to work while learning.

From the above discussion, it becomes abundantly clear that multiple factors influence the choice of the higher education institutes. Indian students are preferring to choose an institute in far off countries like Canada rather than study in their own country, but there are dearth of studies reflecting the reasons of their choice. The present study is an attempt to examine the factors responsible for choosing a particular institute in Canada by migrating Indian students.

For this, the study has been divided into four sections including the present one. Section II gives the data source and methodology used for the present study. Section III analyses the results and Section IV concludes the findings and derives the policy implications.

II. Database and Methodology

The choice of higher education institute is considered to be the discrete choice of students, which is consistent with the qualitative choice. In order to examine the factors influencing student's decision to study in Canada following null hypotheses was framed:

H_0: There is uniformity in factors affecting choice of higher education institute in Canada among students from Indian Punjab.

In order to test the above hypothesis, a structured questionnaire was prepared and responses of 157 students belonging to Punjab and currently studying in different institutes of Canada were collected through Google forms. The response to the questionnaire was based on the five-point Likert scale which were 5 (Strongly Agree), 4 (Agree), 3 (Neutral), 2 (Disagree), 1(Strongly Disagree).

Based on responses, following variables have been selected to reflect factors influencing choice of institutions.

A_1: Quality of education being provided by the institutes

A_2: Prestige of a Degree/Diploma provided by the Institute

A_3: Cost of studying at the Institute

A_4: The amount of financial support offered by the Institution concerned.

A_5: Prior knowledge about the Institute through the acquaintances

A_6: The availability of a particular program in the selected Institution.

A7: Effectiveness of communication by the Institutes

A8: The size of Institute

A9: Location of the Institute

A10: Speed of admission process in the particular institute

A11: Institute Ranking as per TIMES and QR ranking.

It was observed that since the variables selected were highly correlated among themselves, it would result in the problem of multicollinearity. This would lead to inaccurate and unreliable results in case regression analysis was applied (Kalpana and Shibu 2014). Therefore, statistical technique of Factor Analysis has been used. This technique is used to identify and isolate the variables which affect and cause the variations in choice of Higher Education Institutes. It is the interdependence technique under which all the variables are considered simultaneously which are related to each other. (Ozturk, 2011). This analysis assumes that the inter-correlation occurs because of few basic factors are shared in common by different variables in different degrees. It attempts to analyze the value coefficient of regression where factors are regressed on the factors (Mehra & Nanda, 2012).

Before the application of Factor Analysis, in order to indicate the suitability of the data, structural detection KMO (Keyser-Meyer-Olkin) measure was done. It indicates the proportion of variance in variables that may be caused by underlying variables. The Bartletts of sphericity was applied to test the hypothesis that the correlation matrix is an identity matrix or not. If it is an identity matrix, it indicates that the variables are not related and therefore unsuitable for structure detection. If the value is less than 0.05 of the significance levels then factor analysis is useful. The technique of Factor Analysis was done in two stages. In the first stage, Exploratory Factor Analysis was conducted using SPSS version 26.0. It was done to find the factors which generally influenced migrating students' choice of the institute. The factor loading of each item above 0.50 indicates the meaningfulness of the questionnaire. Eigenvalues and scree plot highlighted variance contributed by each factor and the values with eigenvalue less than 1.0 are removed from the list.

The second stage of analysis was the Confirmatory Factor Analysis which was done using AMOS 18.0. It was applied on the sub-sample and goodness of fit in CFA was

evaluated at x^2 (p>0.05), Comparative Fit Index (CFI>0.90), Tucker Lewis Index (TLI>0.90) and Root mean square error of Approximation (RMSEA<0.08). After the Cronbach's alpha coefficient was calculated to test the reliability of the total and the sub-constructs. Alpha values above 0.60 are considered to be satisfactory.

Results and Discussions

Based on the responses received from a sample of 157 students the following results were derived.

Student Profile Characteristics

- Of the 157 respondents, 63.5 percent of the respondents were male and 36.5 respondents were female, reflecting the desperation of Indian families to send their wards specially males abroad.

- Most of the respondents (71.2 percent) were from the age group 21-25 years which highlighted that India is unable to retain its youth due to lack of employment opportunities in the State and therefore questioning its Demographic Dividend story of the country.

- Of the total sample, 97.5 percent of the respondents were pursuing full time courses of which large proportion (63.05 percent) were pursuing Diplomas, 26.5 percent pursuing undergraduate degree and 10.45 percent of the respondents were pursuing post-graduation in the institutes of Canada. This dominance of perusal of mainly diplomas, clearly shows that the main motive of the *Indian* youth was to settle abroad and not obtaining quality education.

Table 1 gives the responses of the students regarding their decision influencing the choice of institute in Canada on five-point Likert scale (in percentage)

Table I: Influencers of choice of institutes in Canada. (in percentage)

Coding of Factors	Factors Underlying Students Choice of Institution Scale	5 Strongly Agree	4 Agree	3 Neutral	2 Disagree	1 Strongly Disagree	Total Percentage
A_1	Quality of Education	19.3	19.3	22.9	25.3	13.3	100
A_2	Prestige of Degree/Diploma	13.3	10.8	18.1	30.1	27.7	100
A_3	Cost of Studying	19.3	37.3	26.5	8.4	8.4	100
A_4	Financial Support Offered	16.9	27.7	31.3	13.3	10.8	100
A_5	Knowledge about the Institute	3.6	13.3	28.9	22.9	31.3	100
A_6	Availability of Programme	3.6	14.5	33.7	20.5	27.7	100
A_7	Effective Communication	34.9	30.1	12.0	8.4	1.2	100
A_8	Size of Institution	4.8	24.1	24.1	22.9	24.1	100
A_9	Location of the Institute	16.9	30.1	26.5	15.7	10.8	100
A_{10}	Fast Admission Process	13.3	33.7	31.3	12.0	9.6	100
A_{11}	Foreign Ranking of the Institute	1.2	16.9	50.6	27.7	3.6	100

Source: Based on online survey.

(A_1) Quality of Education: It is observed from the Table that quality of education was dominant factor for only one third (38.6 percent) of the respondents which was equal to the number of respondents disagreeing with this view and one fifth of the respondents were neutral. This clearly indicated that quality of education being provided by institutes did not play an important role in scheme of choosing an institute for admission by Indian tudents.

A_2 Prestige of Degree or Diploma sopted by the students was not considered to be an important factor as only 24.1 percent of the total respondents have chosen the institute for its prestige while for more than half of the respondents (57.8 percent) did not subscribe this view and one fifth of the respondents were neutral.

A_3 Cost of Studying which included the tuition fees charged by a particular institute and the living expense in respective country influenced the decision greatly, 56.6 percent of the respondents considered cost as an important factor while only 16.8 percent were not taking cost into consideration while choosing an institute. This highlighted the fact that student preferred going to those institutions which were economical and affordable to them.

A_4 Financial Support in the form of scholarships being offered by concerned institute to the international students attracted them while making a choice, as 44.6 percent of the respondents agreed to this view while, 31.3 percent of the respondents had a neutral response regarding this factor.

A_5 Knowledge about the Institution prior to the admission process was very less as it was found that majority of students i.e., 54.2 percent of sampled respondents were not aware about the institute and had taken admission on the advice of agents. Only 16.9 percent of the respondents gave an affirmative response regarding this variable indicating that they had explored the options before the admission process.

A_6 Availability of Particular Program did not play an important role in the selection of an institute, as only 18.1 percent of the respondents had taken admission in a particular institute for a specific programme while, 48.2 percent of the respondents disagreed with the particular perception. This again highlighted the fact that the main motive of the students was just for the purpose of settling permanently in Canada.

A_7 Effective Communication: Communication strategies of the institution through seminars and social media were the major influencers for the student's choice as it was found that around 65 percent of the respondents were influenced by the advertisements and offers provided to them by institute and only 9.6% of the respondents did not agree with this variable.

A_8 Size of the Institution was also a minor element influencing the choice as the size of the institution, when the response of the students was gathered in this respect it was found that only 28.9 percent of the respondents subscribed this view while, 47 percent of the respondents gave negative response.

A_9 Location of the Institution was an important factor responsible for the migration of students to a particular area, with 47 percent respondents giving weightage to this variable agreeing to this view. It was observed that the majority preferred going to

institutes located in the province of Toronto and British Columbia where living conditions were favorable and there was availability of part-time work opportunities.

A_{10} Fast Admission Process played a dominant role in selection of an institute as 47 percent of the respondents preferred going to that institute where that admission process was faster as compared to the others while one fifth of the respondents ignored this variable in their decision.

A_{11} Perception regarding the Foreign Ranking of Institution: Above Table shows that the ranking of the institution does not affect the decision of the students as 50.6 percent of the respondents gave neutral response regarding this variable while 31.3 percent of them did not agree that this variable effected their choice of Institute.

Table II: Results of Factor Analysis

Dimensions	Items	Communality	Eigen Values	% of Variance	Components 1	2	3	4	5
FACTOR- 1	A_3	0.737	2.225	20.230	0.737				
	A_6	0.774			-0.774				
	A_7	-0.636			-0.636				
	A_{10}	0.740			0.740				
FACTOR- 2	A_8	0.748	1.523	11.846		0.748			
	A_9	-0.782				-0.782			
A_{11}		0.505							
FACTOR- 3	A_1	-0.520	1.258	11.345			-0.520		
	A_4	-0.709					-0.709		
FACTOR- 4	A_2	0.746	1.092	9.923					0.746
	A_5	0.608	1.001	9.096					0.608

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax and Kaiser Normalizations
Source: Author's Calculations based on survey

Stage I: Exploratory Factor Analysis

The KMO value was identified to check significance level of statistical criteria. It was found to be 0.628>0.50 indicating adequacy and high reliability of each factor.

In addition of KMO, Bartlett's Test of Sphericity was calculated (X^2=91.062 and p value< 0.002). This value also showed statistically significant results and also indicated that data was significant for Factor Analysis.

The technique of Principal Component analysis was performed using SPSS 26.0. Table II reveals the results of Factor Analysis. From the data, four factors were extracted accounted for the total variance of 55.345 percent. The values of communalities were greater than 0.5 and varied between 0.50 to 0.74. The eigen values of the factors were greater than one ranging from 1.092 to 2.224.

The first Factor was named as *'Student Friendly Nature of the Institution'* and explained the variance of 20.230 percent of total variation. It includes variables like cost of studying (A_3), availability of programme (A_6), effective communication (A_7) and fast admission process of institutions (A_{10}).

The second factor is a bipolar factor showing the variance of 11.846 percent and can be named as the *'Linkage Factor'*. The variables having positive factor loading is size of institution (A_8) and Ranking of the institute (A_{11}). Location of Institute (A_9) has negative factor loading as students going to Canada prefer going to places like Winnipeg, Alberta etc. where the living conditions are harsh but chances of permanent residency are high than in provinces of Toronto, British Columbia and Ontario.

The third factor is again a bipolar factor which variance 11.345 percent.it includes variables like Quality of Education (A_1) and Financial Support Offered (A_4) and is named as *'Ease of admission in Institutes'* and Effective Communication (A_7) and is named as 'Student Friendly Nature of Institution'. The variable financial support offered showed negative factor loading indicating that the students prefer going to institutes which gives them scholarships as compared to quality of education provided.

The fourth factor explains the variance of 9.940 percent and is named as *'Prominence of Institutes'*. It includes variable like prestige of degree or diploma being pursued by them (A_2) and prior knowledge about the institute (A_5).

Stage II: Confirmatory Factor Analysis.

The Principal Component Analysis suggested that five factors responsible movement of Indian students to the Canadian Institutes were Student Friendly, Ease of Admission in the Institutes, Linkage Factor and Prominence of Institutes. In order to confirm these results, Confirmatory Factor Analysis was done and provided fitness of the model suggested by Exploratory Factor Analysis.

Table III: Model Specification for Post Hoc Confirmatory Factor Analysis

Parameter	Coefficient
X^2	96.350
P-Value	0.001
Degree of Freedom	55
X^2/DF	1.752
RMSEA (Root Mean Square Error of Approximation)	0.096
GFI (Goodness of Fit Index)	0.804

Source: Based on Author's Calculations

The CFA model was compared using X^2 ,CFI, GLI, and RMSEA. Table III represents the model specification for post hoc CFA. The literature on CFA reveal that standardized loadings should be larger than -0.3 or 0.5 because if loadings are higher, then the Model is considered to be good. The data supports the above four factor model with fit indices out of 11 variables i.e. four factors have high factor loading more than 0.50.

Figure II: Finalized measurement of Confirmatory Factor Analysis
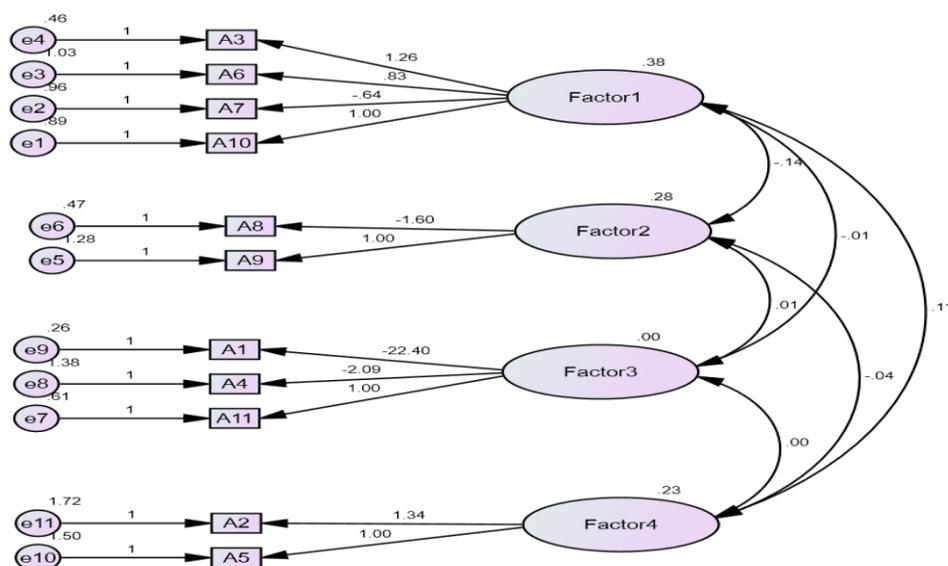
Source: Based on Author's Calculations

The result of standardized loadings of path diagram show that the first factor consists of four variables and all the items of this factor have high factor loadings ranging from -0,64 to 1.26. Among the four variables, cost of studying in the institute has the highest factor loading of 1.26.

The second factor includes two items one with negative factor loading and one with positive factor loading. The loadings of these factors range from 1.00 to 1.60.

The third factor includes three variables having factor loading more than 1.00. quality of education provided (A_4) by the institute had the maximum factor loading. This factor has overall highest factor loading.

The fourth factor included two variables also having high factor loadings. The loading od this factor ranged between 1.00 to 1.34.

Table IV: Reliability Analysis of the Factors

Construct	Sub- Construct	Alpha Values	Overall Cronbach Alpha
Factors Chosen by Students for Canadian Institute	Student Friendly	0.937	0.923
	Marketing Factor	0.901	
	Reputation Factor	0.931	
	Linkage Factor	0.911	
	Prominence of Institutes	0.951	

Source: Based on Author's Calculations

Reliability means the stability and consistency of the scores obtained. A measure of reliability id measured as internal consistency through Cronbach's alpha, frequently referred as the alpha coefficient of reliability or simply alpha. The reliability values of the variables are shown in the above table IV i.e., student friendly (0.937), marketing factor (0.901), reputation factor (0.931), linkage factor (0.911), prominence of institutes (0.951). Overall Cronbach's alpha reliability coefficient was found to be 0.923 for the entire sub-construct. The sub construct values exceeded the desirable standard of 0.60, which indicating high internal consistency.

Summary and Conclusion

From the above discussion it becomes clear that the non-availability of quality education resulting in unmet demand coupled with privatization of higher education and mushrooming of low-quality institutes generally in India has resulted in the phenomenon of student migration and Canada has become the favorite destination for migrating students because of its welcoming attitude and liberal policies. The survey conducted revealed that the major factors affecting the choice of institutes in Canada by *Punjabis* were Student Friendly Nature of the Institution, Linkage Factor, Ease of admission in Institutes and Prominence of Institutes.

Individually this rising mobility of students from India enhances the job prospects and cross pollination of ideas for the students, but for state as a whole it has major negative ramifications. This mass migration of Indian students is resulting in both in capital and brain drain. According to a Report by United Nations Development Programme (2019), Indian students going abroad for their higher studies costs India a foreign exchange outflow of $10 billion annually indicating human capital flight. Though it is not possible for the policy makers to stop the process of migration in a republican setup like India, but the need of the hour is to reverse this process by analysing the factors responsible for the migration of students, This can help government and institutes to frame their policies in such a way that they are able to help their students to stay back in their country.

The suggestive measures which can focus on increasing government funding towards the critical sector i.e., education are:

- Provision of opportunities for return migration to the students as it would lead to technical progress in the home country as the migrated students will contribute valuable skills and knowledge to their country.
- Formulation of sandwich training model should be formulated by lowering the costs at home institutes and increasing the returnee rate in order to encourage the students to stay in their home country combined with encouragement to cross border provision by increasing partnership among the Institutes and foreign providers combined with the provision of joint programmes through e learning and distance learning.

- Following a blend of government and private funding should be made effective for educational institutes which aims at providing students the best facilities to lure them back at home.

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