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HIGHER EDUCATION FINANCE CHALLENGES: A STRUCTURAL EQUATION APPROACH

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ABSTRACT

The last few years have witnessed a high increase in students aspiring for professional courses in India, leading to a spurt in educational loans. Many public and private sector banks have forayed into Higher Education (HE) Finance Industry. These banks are increasingly boosting their education loan portfolios to serve the financial needs of the meritorious and deserving students. Banks are now having a direct tie-up with the educational institutions to cash in on the opportunity. Higher Education Finance Industry is the segment where banks can utilize assets for good return. However, the market competition in this industry poses many challenges for the bank managers. In this study we attempt to identify the challenges, primarily faced by managers in financing HE based on expert guidance from practitioners and consultants in this field. These challenges have been further classified with the help of factor analysis technique by using principal component analysis with varimax rotation. The various challenges have been logically classified into five categories as: credit worthiness, bank's policy on HE loan, reasons for borrowing, subsidization of HE loan, and the growth of HE finance. A confirmatory model was tested using structural equation modeling to prove hypotheses: H1: Understanding of credit worthiness challenges helps managers in making decisions relating to sanctioning of loans: H2: Understanding of subsidization of HE loan challenges helps managers in assessing student credit worthiness and deciding about collateral: H3: Understanding of reasons for borrowing challenges helps managers in assessing both, the credit worthiness as well as the need of government subsidy on HE finance: H4: Understanding of challenges relating to bank's policy on HE finance shall help managers in designing and practically implementing government's HE loan subsidization policy: H5: Understanding challenges of growth of HE finance shall help in understanding credit worthiness, subsidization of HE loan and reasons for borrowing. Taken together, all these challenges will guide managers in making well informed decisions relating to provision of funds for Higher Education. The data were collected from public and private sector banks operating in Punjab state of north India. All the results are validated using rigorous statistical analysis.

KEY WORDS: Financing higher education, financing higher education challenges, structural equation modeling, factor analysis.

INTRODUCTION

Student loans schemes are currently in operation in more than 80 countries around the globe. National student loan programs were first established in the 1950s in countries as diverse as Colombia, Denmark, Norway, Sweden, Japan, and the United States. There was a surge of interest in student loans in the late 1980s and 1990s, with new programs introduced in Australia, New Zealand, and the United Kingdom; several countries in eastern Europe and the former Soviet Union, including Hungary and Russia, considering introducing student loans for the first time; and some developing countries in Asia, Africa, and Latin America establishing or expanding student loan programs. Student loans are increasingly used to provide financial assistance for students in HE, in both industrialized and developing countries.

Financial assistance enables students from low-income families especially, to meet direct and indirect costs of education i.e. tuition fees, books, and living expenses. Hence in order to safeguard poor students from the rising costs of HE many developing and developed countries have established student loan programs to financially support students (Salmi, 1992; Tilak, 1997). However, in many developing countries, governments could not continue much needed spending on education (Mingat and Tan, 1986; Douglas and Adrian, 1992). Government funding on HE is being cut in many countries. While educators opine that the Government should not abandon its responsibility of liberal funding of higher education (Kaul, 2006). Poor and deserving students will not be able to get HE without government funding.

The education sector has experienced a steep growth after liberalization in 1991. Many MNCs have entered India in many sectors. Now, India is among the leading IT players. The job opportunities in the local and international market have prompted the students to acquire higher education. This opportunity is harvested by many commercial banks by financing higher education in India (Narayana, 2005).

The vast opportunities in this sector have attracted many national and international players for investment in HE Industry. The literature survey revealed the good work was done on HE in foreign countries but India lacks research in this field. In this research based on gap analysis an attempt is made to fill the gap.

Despite the opportunities this sector is full of challenges. In this research an attempt has been made to explore the challenges faced by Indian managers in context of HE finance. In this paper the challenges have been decided upon based on strong literature support in consultation with practitioners and consultants in the field of HE finance. Pre-pilot and pilot survey was done to improve the questionnaire. Later on full survey was conducted in the principal cities of Punjab and Chandigarh in India. The reason for selecting these cities was that these are the current and potential educational hubs, first and secondly, there exist tremendous demand for HE finance in these cities. Moreover, many players to finance HE, have come up in these major cities of Punjab state. The technique of factor analysis is applied to group the challenges and structural equation modeling is used to test and prove the hypothesis.

CHALLENGES FOR MANAGERS

Financing HE is liked with the job opportunities. In many countries it failed and worked well. In Hong Kong this system was launched in 1969 and operates efficiently (Bray, 1986). Many countries adopted policies to face the challenges of student loans. Weifang (1991) classified the challenges in Chinese higher education system and reformed it. Now the costs of higher education are shared by and recovered partially from the beneficiaries, and student. Loan programs have been set up for students from needy families. Shantakumar (1992) focused on: full employment, high private returns to higher education, and an efficient banking system and financial infrastructure for higher education in Singapore.

Tilak (1992) highlighted the declining public budgets for education on the one hand, and the need for more financial resources for HE in developing countries. Woodhall (1992) concluded that student loans are feasible, and can promote wider cost-sharing and help to generate additional resources for higher education, in Asia and English-speaking African countries. Tilak (1993) revealed that financing HE is a complicated problem due to theoretical and practical issues. Also the needs of the HE system have been growing rapidly but funding for higher education is insufficient, and sectors of mass education are starved of even bare needs. Johnstone (2006) and Mastrosov (2007) focused on risk due to the inevitable need of HE cost sharing. Francis (2008) focused on loan repayment issues and student bankruptcy/defaults. The main challenges faced by Indian managers are supported by literature as mentioned below in Table 1.

Table 1 : Literature survey on challenges for financing higher education

Author (s)	Challenges of Higher Education Finance
Kapoor (2011); Dukkipati (2010); Prakash (2007); Kaul (2006)	**Growth of HE Finance** • Need to increase public funding for HE • Use of private investment to raise status of HE • Enhancing Access Equity and quality offer more self-financing courses to be self-reliant • Cost recovery becomes difficult for academic institutions • Great need for financial innovation for HE sector • Need to develop a strong system of student loan financing as well as fiscal tax exemption/credits in case of loans
Oosterbeek & Broek, (2009); Booij, et al. (2008); Johnstone, (2006); Vossensteyn (2004);	**Reasons for borrowing:** • To pay for hiked tuition expenses • Hiked Cost of education being increasingly shifted from Government to parents & students • Lack of sufficient Parental Financial Support • Highly paying courses • Entering into reputed academic institutes • Earnings prospects influence borrowing decisions • Positive association between knowledge about loan conditions and borrowing
Serena,(2010); Voorhees, (2004); Salmi (2003); Tilak, (1992); Woodhall, (1987)	**Bank policy on HE loan:** • Need to set up centralized bank i.e. education development bank • Subsidization makes loan returns less attractive for banks • No well developed mechanism to fix loan amount due to different fee structures for different courses • Transparent eligibility criteria to ensure that any subsidy element be targeted to the most deserving students (academically and socially) • High default rates
Brown, et al. (2011); Gross, et al. (2009); Johnstone & Marcucci, (2009); Woodhall, (2004); Tilak (1992);	**Credit worthiness:** • Most of the student loan schemes treat the loans as expenditures rather than as assets • Need to Tap Private Capital for financing HE • Student loans are too frequently becoming NPA • High default rate & high administrative costs of recovery • Students from less wealthy backgrounds are less likely to finance education through loans due to debt aversion • Students' employment and income after college • How to define default and what default signifies: What is an acceptable rate of default? What factors contribute to default? • No reimbursed by the Government for the defaults in case of subsidized/unsubsidized student loans

Kaul, (2006); Sahin, (2004) Penalosa & Walde (2000); Chapman, (1997); Johnson (1984);	**Subsidization of HE loan;** • Makes education loan policy less attractive for private & foreign banks • Subsidization reduces rates of return for public sector banks even • Un-subsidization renders the student loans less effective for really needy & deserving students • Private lending institutions are generally reluctant to lend without suitable collateral, hence Govt. subsidies are necessarily required to support the needy students • Subsidy can actually decrease educational efficiency, if the government • Subsidizes students without making the subsidy contingent on their ability • Subsidization of the interest rate for students should be based on his and his family income

The discussion with bank managers and consultants the major Challenges of Higher Education Finance have been identified as follows:

Growth of HE Finance: Much of the progress especially in Higher education has been credited to various public institutions. The private education market in India is merely 5% although in terms of value it is estimated to be worth $40 billion in 2008 and will increase to $68 billion by 2012. India has increased its public expenditure on higher education from Rs.140 million in the first Five-Year plan to Rs. 15,000 million in the eighth Five-Year. There is an increment in higher education budget by 34% to US$2.9 billion for 2011-12. India currently spends around Rs.46, 200 crore on higher education. The government has set a target of achieving 30% GER (gross enrollment ratio) by 2020. Discussion with the bank managers revealed that growth in HE finance has been due to active policies of Government of India. They also added that banks are playing active role in promoting HE and its accessibility. Many authors also show growth pattern of public funding for HE (Kapoor, 2011; Dukkipati, 2010; Prakash, 2007; Kaul, 2006).

Reasons for borrowing: The primary reason for borrowing is the rapid and persistent rise in tuition fees since the last few years. Scholarships, grants etc. are not available to all the students. So, most of them have to rely on finance from banks for pursuing the courses of their own choice. Financing HE helps the needy and deserving students to complete their studies without asking for much monetary support from their parents. It also helps them to study in good institutes and getting admission in highly paying professional courses (Johnstone, 2006; Vossensteyn 2004; Woodhall, 2004).

Bank policy on HE loan: The discussion held with the bank managers and professionals involved in designing the policy on HE finance, reveals that they prepare guidelines for HE loan policy, conduct entry & exit interview of the students borrowers, charge marginal lending rates and, consider rating and type of the institute(government/private) before sanctioning loan. Despite these investigations they feel that extending credit without collateral is quite unsafe. (Sahin , 2004; Voorhees, 2004; Salmi 2003; Tilak, 1992; Woodhall, 1987)

Credit Worthiness: The discussion with the bank managers revealed that they sanction the HE loan after checking; credit worthiness, likely risk of default, reputation of the institute, loan duration, residential proof, courses opted, previous track record of the borrower and the financial condition of co-signatories to the loan deed. Though these points are taken care of before sanctioning loan but still some of the bank managers, especially in private sector, are reluctant to sanction HE loan. They say that students mostly borrow for pursuing education in abroad. This results in brain drain and loan recovery from such students too becomes a challenge for banks. Some have also developed policy measures to handle issues relating to creditworthiness and default risk (Brown et al., 2011; Gross et al., 2009; Johnstone and Marcucci, 2009; Volkwein and Szelest 1995; Tilak 1992; Greene 1989)

Subsidization of HE loan: During the discussion with the bank managers it is found that subsidies help needy students to complete their studies. Some of the managers favor that education loan should be treated like any consumer loan by making them unsubsidized and private. They also added that HE loan should be limited to advanced professional courses only such as medicine, management, engineering and law so that the recovery for banks becomes easy because student borrowers pursuing these courses, on completion of their studies will get good paying jobs (Kaul, 2006; Sahin, 2004; Penalosa and Walde 2000; Chapman, 1997; Johnson 1984).

DATABASE AND METHODOLOGY

This research is based on primary data. The primary data was collected from the bank professionals with the help of a questionnaire. The questionnaire was developed based on strong literature support in consultation of practitioners and consultants in the field of HE finance. The respondents were selected based on: Telephone Directory, PROWESS and Organization websites etc. The unit of analysis was the public and private sector banking organizations operating in the principal cities of Punjab and Chandigarh. The reason for selecting this state of India was due to, good in education and establishment of banks in large numbers. The pre-pilot and pilot survey was done to improve the questionnaire. Later on, large scale survey was done at the top, middle and lower level of public and private sector by randomly selecting respondents based on telephone addresses. The questionnaires were mailed after telephonic discussion and later on, followed for response. A total of 200 questionnaires were sent with receipt of 120 responses (Top=10, middle=110) yielding a response rate of 60%. The technique of factor analysis using principal component analysis with varimax rotation was applied to classify the challenges for financing HE loan. The technique of confirmatory factor analysis was applied to test the relationship among HE challenges for managerial decision making. This research intends to prove the research framework by developing and testing hypotheses as follows:

H1: Understanding credit worthiness challenges helps managers in decision making

It was evident from the literature survey and discussion with managers and consultants in the field of financing HE loan that bank considers challenges to form policy for sanctioning loan and subsidizing it. It is evident from the discussion that if the challenges are difficult then policy to sanction loan shall be more difficult and also the subsidization shall be less. It leads to:

H2: Understanding subsidization of HE loan challenges helps in managerial decision making for credit worthiness

Managers form bank policy to finance HE loan by understanding reasons to borrow. Once understood these challenges loan shall be sanctioned leading to growth of HE finance. It leads to:

H3: Understanding reasons for borrowing challenges helps in managerial decision making and challenges for credit worthiness and subsidization of HE loan

Nowadays there is perfect competition on financing HE loan. It is evident from the discussion with bank managers that it has lead to subsidization of HE loan. It leads to:

H4: Understanding challenges for bank policy on HE finance shall help in managerial decision making and understanding subsidization of HE loan

Considering the challenges and their interdependence managers consider reasons for borrowing to subsidize HE loan and form bank policy for the same. This leads to:

H5: Understanding challenges for growth of HE finance shall help in understanding credit worthiness, subsidization of HE loan and reasons for borrowing:

Scale Development

The thirty four items/statements were selected for HE challenges based on strong literature support in consultation of practitioners and consultants in the field of financing HE. Pre-pilot and pilot survey was done to improve the questionnaire. Based on survey comments many items were added and deleted yielding the effective HE challenges to 34. These items were rated on seven-point Likert scale on two time horizons to measure the variability in the recorded responses. Later on improved questionnaire was subjected to large scale survey.

Scale Refinement

The questionnaire so developed was tested through pre-pilot and pilot survey. Later on large survey was done. The improved questionnaire responses were subjected to rigorous statistical analysis as follows:

Table 2: Scale statistics, corrected item-to-total correlation, and communality for Challenges of Higher Education Finance

Code	Items/statements	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Alpha if item deleted	Communality	
						Initial	Extracted
A1	Growth of HE	174.8833	397.7678	.5760	.9218	1.000	.860
A2	Promotes HE	174.8917	402.7697	.5000	.9230	1.000	.744
A3	Enhancement	174.8750	403.8918	.5100	.9231	1.000	.792
A4	Active Role	174.8750	402.9674	**.5000**	.9228	1.000	**.678**
A5	Govt. Policies	174.9167	402.8165	.5000	.9234	1.000	.751
B1	Parental Contribution	175.4750	390.8565	.6063	.9212	1.000	.823
B2	Good Institutes	175.4333	391.7098	.6104	.9212	1.000	.937
B3	More Choice	175.4333	390.9199	**.6371**	.9208	1.000	.907
B4	Increased Borrowing	175.4500	394.4345	.5517	.9219	1.000	.854
B5	Professional Courses	175.4333	397.0039	.5133	.9224	1.000	.787
B6	Increase in Demand	175.4500	389.8966	.6290	.9209	1.000	.905
C1	Guidance Documents	176.7083	396.1243	.5000	.9229	1.000	.953
C2	Interview for Loan	176.7167	397.0451	.5000	.9230	1.000	.892
C3	Margin Money	176.7000	397.1193	.5000	.9230	1.000	.922
C4	Unsafe Credit	176.6750	397.9523	.5000	.9232	1.000	.953
C5	No Multiple Loan	176.7167	394.2552	.5035	.9225	1.000	.938
C6	Type of Institute	176.7250	395.6632	.5000	.9227	1.000	.890
C7	Type of Course	176.6917	395.9798	.5000	.9227	1.000	**.974**
D1	Credit Worthiness	175.4500	402.8042	.5000	.9233	1.000	.729
D2	High Risk	175.4083	404.2604	.5004	.9236	1.000	.853
D3	Institute Rating	175.4583	396.5697	.5466	.9220	1.000	.819
D4	Loan Duration	175.4417	396.2151	.5753	.9217	1.000	.883
D5	Residence Proof	175.4500	401.0899	.5002	.9229	1.000	.745

D6	Low Return	175.4250	402.1792	.5086	.9231	1.000	.870
D7	Loan Servicing	175.4167	402.0266	.5076	.9230	1.000	.857
D8	Unemployment	175.4667	399.3938	.5020	.9227	1.000	.746
D9	Loan Reluctance	175.4500	399.2244	.5097	.9225	1.000	.871
D10	Risk Pass	175.4500	399.0563	.5174	.9224	1.000	.824
D11	Income Source	175.4333	398.7350	.5368	.9222	1.000	.864
E1	Student Benefit	176.4333	391.9787	.5029	.9226	1.000	.942
E2	Unsubsidized Loan	176.4333	393.3401	.5044	.9228	1.000	.936
E3	Policical Pressure	176.4333	392.8359	.5022	.9226	1.000	.914
E4	Private Loan	176.4333	397.3737	.5005	.9237	1.000	.877
E5	Professional Courses	176.3917	398.0890	.5038	.9239	1.000	.942
N of Cases = 120.0 Statistics for Scale: Mean= 181.0917 Variance = 420.9747, Std Dev = 20.5177, No of Variables = 34. Reliability Coefficients Alpha = .9247							

Item and scale reliability analysis was performed to retain and delete the scale items for the purpose of developing a reliability scale. Here, scale reliability (Cronbach's Alpha), communality, item-to-total and inter-item correlation was applied. The items with low correlation were subject to deletion. The corrected-to-total correlation range from 0.5 to 0.6371, communality range from 0.678 to 0.974, and Cronbach's Alpha=0.9247. Here, it is pertinent to mention that communality $\geq$0.5, Cronbach's alpha $\geq$0.7, item-to-total correlation $\geq$0.5 and inter-item correlation $\geq$0.3 is good enough for doing research in social sciences (hair et al., 2009). In this phase all the requirements were met for conducting factor analysis as shown in Table 2 & 3.

Table 3 : Correlation for Challenges of Higher Education Finance

A1	1.																																	
A2	.75	1.																																
A3	.78	.69	1.																															
A4	.70	.60	.66	1.																														
A5	.75	.66	.69	.62	1.																													
B1	.39	.31	.24	.30	.33	1.																												
B2	.37	.32	.26	.33	.34	.85	1.																											
B3	.36	.32	.27	.35	.35	.82	.91	1.																										
B4	.33	.24	.19	.27	.27	.78	.86	.85	1.																									
B5	.26	.23	.20	.29	.27	.72	.82	.81	.78	1.																								
B6	.37	.31	.25	.31	.33	.84	.92	.89	.83	.78	1.																							
C1	.26	.23	.15	.26	.20	.48	.52	.55	.53	.45	.56	1.																						
C2	.20	.17	.09	.21	.14	.42	.47	.51	.49	.41	.51	.90	1.																					
C3	.20	.18	.10	.23	.14	.47	.53	.58	.56	.49	.56	.91	.88	1.																				
C4	.17	.16	.09	.23	.13	.42	.48	.53	.52	.46	.50	.93	.90	.94	1.																			
C5	.28	.24	.15	.25	.20	.49	.53	.56	.53	.44	.57	.94	.89	.90	.92	1.																		
C6	.27	.24	.15	.27	.20	.45	.49	.52	.50	.41	.53	.90	.85	.87	.89	.90	1.																	
C7	.22	.19	.11	.23	.16	.47	.52	.56	.54	.46	.55	.96	.91	.94	.96	.95	.91	1.																
D1	.24	.10	.20	.19	.09	.01	-.04	-.02	-.08	-.04	-.003	-.10	-.06	-.11	-.10	-.09	-.05	-.08	1.															
D2	.07	.00	.10	.11	.00	-.06	-.10	-.08	-.16	-.08	-.06	-.20	-.16	-.19	-.18	-.19	-.15	-.17	.75	1.														
D3	.31	.19	.25	.23	.17	.16	.10	.09	.01	.04	.15	-.09	-.08	-.14	-.15	-.06	-.05	-.09	.72	.77	1.													
D4	.30	.19	.27	.25	.18	.10	.04	.04	-.04	-.003	.08	-.05	-.03	-.09	-.09	-.03	-.01	-.04	.76	.82	.84	1.												
D5	.19	.09	.18	.18	.08	-.01	-.07	-.05	-.12	-.07	-.03	-.17	-.14	-.18	-.17	-.16	-.12	-.15	.77	.85	.80	.85	.1.	1.										
D6	.11	.01	.11	.12	.01	.01	-.03	-.01	-.08	-.01	-.007	-.11	-.06	-.10	-.09	-.10	-.06	-.08	.76	.85	.77	.83	.76	.85	1.									
D7	.31	.19	.26	.23	.17	.09	.03	.02	-.06	-.03	.08	-.06	-.04	-.10	-.11	-.03	-.01	-.05	.67	.72	.77	.79	.70	.75	.73	1.								
D8	.24	.12	.20	.18	.14	.05	-.01	-.01	-.08	-.04	.04	-.14	-.11	-.17	-.18	-.11	-.09	-.13	.76	.82	.83	.87	.78	.85	.82	.79	1.							
D9	.24	.13	.21	.20	.15	.12	.06	.07	-.01	.04	.10	-.13	-.10	-.15	-.15	-.11	-.08	-.12	.73	.80	.78	.82	.74	.82	.80	.74	.83	1.						
D10	.23	.12	.22	.22	.15	.05	.00	.01	-.05	.00	.03	-.09	-.06	-.10	-.09	-.08	-.04	-.07	.77	.84	.80	.84	.77	.85	.85	.75	.85	.82	1.					
D11	.32	.29	.23	.17	.19	.23	.20	.21	.19	.13	.18	-.08	-.04	-.07	-.08	-.01	-.05	-.07	.19	.25	.33	.34	.31	.26	.21	.23	.32	.31	.31	1.				
E1	.31	.29	.24	.18	.18	.19	.16	.18	.16	.10	.13	-.13	-.09	-.11	-.12	-.07	-.10	-.12	.22	.30	.35	.36	.34	.29	.25	.25	.34	.34	.35	.94	1.			
E2	.25	.23	.18	.13	.13	.21	.19	.21	.20	.15	.16	-.07	-.03	-.04	-.05	-.02	-.05	-.06	.22	.30	.33	.35	.33	.29	.26	.23	.33	.33	.35	.91	.90	1.		
E3	.25	.24	.20	.16	.14	.16	.15	.17	.16	.12	.10	-.11	-.06	-.07	-.07	-.06	-.08	-.09	.14	.23	.24	.26	.25	.21	.18	.13	.24	.25	.27	.87	.86	.85	1.	
E4	.16	.18	.14	.10	.08	.12	.11	.14	.13	.10	.07	-.17	-.11	-.12	-.11	-.12	-.14	-.15	.18	.29	.26	.29	.29	.26	.24	.16	.27	.29	.32	.91	.91	.90	.88	1

Factor Analysis for financing higher education challenges

The maximum scale score would be 238 if all the 34 items were rated as 7. However, the mean score (Table 2) of 181.0917 indicates that 76.08% of the items indicated in the questionnaire support their applicability in organized NLR. The factor analysis was done with principal component analysis using varimax rotation. The value for Kaiser-Meyer-Olkin(KMO) Measure of Sampling Adequacy was 0.961, Cronbach's Alpha for factors range from 0.9188 to 0.9872, the factor loadings range from 0.921 to 0.774, the vales for Bartlett's Test of Sphericity were: Chi-square=5484.762, degree of freedom=561, and level of significance(p)=0.005. Here, it is pertinent to mention that KMO≥0.7,

Cronbach's Alpha≥0.7, p≥0.05, and factor loading≥0.5 is good for the validity of factor analysis results (Hair et al., 2009). The results for factor analysis are shown in Table 4.

Table 4 : Scale reliability and factor analysis results for Challenges of Higher Education Finance

Items/Statements	Components				
	a(Credit worthiness)	b(Bank policy on HE loan)	c(Reasons for Borrowing)	d(Subsidization of HE loan)	e(Growth of HE finance)
Loan Servicing	.921				
Low Return	.920				
Loan Reluctance	.916				
Loan Duration	.915				
Income Source	.911				
High Risk	.906				
Risk Pass	.883				
Institute Rating	.874				
Credit Worthiness	.847				
Residence Proof	.845				
Unemployment	.844				
Type of Course		.943			
Unsafe Credit		.941			
Guidance Documents		.924			
No Multiple Loan		.919			
Interview for Loan		.914			
Margin Money		.904			
Type of Institute		.902			
Good Institutes			.900		
Increase in Demand			.869		
More Choice			.857		
Professional Courses			.842		
Parental Contribution			.841		
Increased Borrowing			.837		
Professional Esteem				.948	
Student Benefit				.932	
Unsubsidized Loan				.921	

Political Pressure				.919	
Private Loan				.917	
Growth of HE					.870
Enhancement					.867
Govt. Policies					.839
Promotes HE					.826
Active Role					.774
Scale Reliability Alpha	0.9188	0.9682	0.9872	0.9765	0.9776
Eigen Value	10.331	9.929	4.167	2.743	2.061
Variance %	30.385	29.202	12.256	8.068	6.062
Cumulative % variance	30.385	59.586	71.842	79.910	85.972
Kaiser-Meyer-Olkin Measure of Sampling Adequacy=0.961, Bartlett's test of sphericity: Chi-square=5484.762, DF=561, level of significance=0.000.,No. of items=34, Cronbach's Alpha=0.9247					

Explanation of Factor Analysis Results

Credit worthiness (a): This was the most important category covering eleven items- loan servicing, low return, loan reluctance, loan duration, income source, high risk, risk pass, institute rating, credit worthiness, residence proof, and unemployment. This category explains the percentage variance of 30.385% with Eigen value of 10.331. The factor loadings range from 0.921 to 0.844 with Cronbach's Alpha of 0.9188. The items covered are in consonance with the studies quoted in Table I.

Bank policy on HE loan (b): This was the second important category covering seven items-types of course, unsafe credit, guidance documents, no multiple loans, interview for loan, margin money, and type of the institute. It explains 29.202% of variance with Eigen value of 9.929 and Cronbach's Alpha of 0.9682. The factor loadings range from 0.943 to 0.902. The items covered here are also in consonance with the studies quoted in Table 1.

Reasons for borrowing (c): This was the third important category with 12.256% of variance, 4.167 Eigen value and Cronbach's Alpha of 0.9872. The factor loadings range from 0.900 to 0.837. The items covered-good institute,

increase in demand, more choice, professional courses, parental contribution, and increased borrowing are in consonance with studies quoted in Table 1.

Subsidization of HE loan (d): This was the fourth important category covering-professional esteem, student benefit, unsubsidized loan, political pressure, and private loan. These items with Eigen value of 2.743 explain 8.068% of variance with loading range from 0.948 to 0.917 and Cronbach's Alpha of 0.8068. The items covered here are also in consonance with studies quoted in Table 1.

Growth of HE finance (e): This was the fifth important category covering-growth of HE, enhancement, govt. policies, promotes HE, and active role. These items with Eigen value of 2.061 explain 6.062% of variance with loading range from 0.870 to 0.774 and Cronbach's Alpha of 0.9776. The items covered here are also in consonance with studies quoted in Table 1.

Confirmatory Factor Model for Challenges of Higher Education Finance and Organizational Performance

From our research framework, thirty four items/statements were selected for financing HE loan. These items were rated on seven point Likert scale. The proposed confirmatory structural model was tested using AMOS 4.0 version. The results for proposed confirmatory model are shown in the below tables.

Confirmatory Model Results

The confirmatory model loadings are shown in the tables. The result has: RMR=0.057, NFI=0.936, GFI=0.772, AGFI=0.739, NFI=0.938, RFI=0.931, IFI=1.0, TLI=1.0, CFI=1.0, RMSEA=0.00. The model needs modification as the RMR $\geq$0.05. The confirmatory model was modified based on the modification index. The new model has RMR=0.05, NFI=0.938, GFI=0.8, AGFI=0.8, NFI=0.938, RFI=0.938, IFI=1.0, TLI=1.0, CFI=1.0, RMSEA=0.00. All these values are acceptable to validate the model. Here, it is pertinent mention that values for fit indices: NFI, RFI, IFI, TLI, and CFI $\geq$ 0.8 RMR value$\leq$0.05 and

chi-square level of significance ≥0.05 is good enough for structural validity of the model (Hair et al., 2009). All the loading are significant and the effect estimates are shown in Table 6.

Table 5 : Model comparison

Chi-square	Level of Sig.	DF	Change in DF	Fit measures	Remarks
390.215	0.005	518	-	RMR=0.057, NFI=0.936, GFI=0.772, AGFI=0.739, NFI=0.938, RFI=0.931, IFI=1.0, TLI=1.0, CFI=1.0, RMSEA=0.00	RMR ≥0.05, model is not significant
377.893	0.005	516	2	RMR=0.05, NFI=0.938, GFI=0.8, AGFI=0.8, NFI=0.938, RFI=0.938, IFI=1.0, TLI=1.0, CFI=1.0, RMSEA=0.00	All fit indices are acceptable. Model is significant

Table 6 : Effect estimates for modified confirmatory factor model

	Effects	Manager's Decision Making (MC)	Credit worthiness (d)	Subsidization of HE loan (e)	Reasons for borrowing (b)	Bank policy on HE loan (c)	Growth of HE finance (a)	Remarks
Credit worthiness (d)	Total Effect	**0.383**	0.000	0.000	0.000	0.000	0.000	Hypotheses H1, H2, H3, H4, H5 are supported
	Direct Effect	0.383	0.000	0.000	0.000	0.000	0.000	
	Indirect Effect	0.000	0.000	0.000	0.000	0.000	0.000	
Subsidization of HE loan (e)	Total Effect	**0.159**	**0.415**	0.000	0.000	0.000	0.000	
	Direct Effect	0.000	0.415	0.000	0.000	0.000	0.000	
	Indirect Effect	0.159	0.000	0.000	0.000	0.000	0.000	
Reasons for borrowing (b)	Total Effect	**0.794**	**-0.070**	**-0.168**	0.000	0.000	0.000	
	Direct Effect	0.821	0.000	-0.168	0.000	0.000	0.000	
	Indirect Effect	-0.027	-0.070	0.000	0.000	0.000	0.000	
Bank policy on HE loan (c)	Total Effect	**1.011**	0.030	**0.071**	0.000	0.000	0.000	
	Direct Effect	1.000	0.000	0.071	0.000	0.000	0.000	
	Indirect Effect	0.011	0.030	0.000	0.000	0.000	0.000	
Growth of HE finance (a)	Total Effect	0.020	**0.295**	**0.218**	**-0.112**	0.000	0.000	
	Direct Effect	0.000	0.204	0.199	-0.112	0.000	0.000	
	Indirect Effect	0.020	0.090	0.019	0.000	0.000	0.000	

DISCUSSIONS, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCHES

The results indicate the loadings for the challenges for managerial decision making to sanction HE loan. The loading for credit worthiness has range from 1.00 to 0.86. All the loadings are significant. The loading for loan duration was set to 1.00. It is due to the facts that managers consider this factor for as an important to generate revenue for longer period of time. The next maximum loading is for institute rating (0.98). Here, it is pertinent to mention that many banks have signed agreements with leading institutes like IITs and IIMs where salary packages for the students are very high. The other challenges have loadings; income source (0.95), risk pass (0.94), unemployment (0.92), loan servicing (0.93), and residential proof (0.89), high risk (0.92), and credit worthiness (0.86). All the loadings in this category of challenges are significant indicating their contribution for managerial decision making.

The loading for bank policy on HE loan has range from 1.00 to 0.93. The maximum loading was set for no multiple loans (1.0). It is due to the fact that managers are reluctant to sanction multiple loans to avoid defaults. The next maximum loading is for guidance document (0.99). It shows that banks clearly explain the facts regarding HE loan to the students. The loadings for the other challenges; type of institute (0.94), unsafe credit (0.97), margin money (0.95), and institutes for loan (0.93), show their importance for this category of challenges.

The loading for reasons for borrowing has range from 1.0 to 0.83. Here, the challenges have loadings; parental contribution (0.93), good institute (0.99), more choice (0.0.96), increased borrowings (0.91), professional esteem (0.83), and increase in demand (1.0). The maximum loading is set for increase in demand shows that nowadays managers like to harvest profits by sanctioning HE loan. The next maximum loading for good institute (0.99) shows that banks

prefers to sanction loan to the institutes where more effort have been made for placements. It helps to recover loan. All other loadings indicate their significance for this category of challenges.

The loading for subsidization of HE loan has range from 1.00 to 0.74. The maximum loading (1.0) is set to the growth of HE. It is due to the fact that nowadays demand has increased for HE loan due to employment opportunities associated with HE. The challenges load; government policies (0.91), promotes HE (0.84), enhancement (0.85), and active role (0.74). All these challenges also show their significance for this category.

The loading for growth of HE finance has range from 1.00 to 0.98. The maximum loading is set to student benefit (1.0). It is due to the fact that interest charges are least for this category as compared to other commercial loans. The loadings for other challenges; unsubsidized loan (0.98), political pressure (0.94), private loan (0.89), and professional courses (0.94) show their contribution to this category of challenge.

The results total effect of confirmatory model (Table VI) show that credit worthiness challenges affects managers' decision making (0.383). Subsidization of HE loan also affects managers' decision making (0.159), and credit worthiness challenges (0.415). The reasons for borrowing also significantly affects managers' decision making (0.794), credit worthiness challenges (-0.07), and subsidization of HE loan (-0.168). The bank policy on HE loan significantly affects managers decision making (1.011), and subsidization of HE loan (0.071). The growth of HE finance significantly affects credit worthiness (0.218) and reasons for borrowing (-0.112). Taken all the challenges together this model shall help managers to sanction loan for financing HE.

However, despite the statistical sophistication of confirmatory technique more was needed to understand the challenges associated with financing HE for better organizational performance. Here, it is pertinent to mention that in

different stages of loan duration the stress level on the students and managers is different for different level of income. It shall be more interesting if challenges are correlated with income level, family background, and rural/urban divide. During survey it was found that urban students are more aware of HE loan as compared to rural students.

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