Budgetary Challenges of Higher Education: Evidence from Bangladesh

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Abstract
This study strives to ascertain the financial and nonfinancial challenges of higher education budget for human resources development (HRD) based on both primary and secondary sources of data. Inadequate budgetary support from the government and inappropriate implementation of the same due to nonexistence of good governance and inefficient utilization of allocated amount due to session jam, unemployment, and job nature of the graduates are the major challenges of higher education budget in Bangladesh. Similarly, poor planning and inefficient implementation, slavish national politics in higher educational institutions, priority of political attachment and even political slavery over merit in selecting and promoting academic faculties and nonacademic staff and assigning different duties to them, abuse of public university autonomy, absence of quality research, mismatch between expected and actual study area and discipline, and also mismatched between expected and actual job are the noteworthy indirect challenges of higher education budget.
Keywords: Budgetary, Challenges, Higher Education, Bangladesh.

1. Introduction
Education is the spine of a nation and higher education (HE) is obvious for human resource development (HRD) because it aims at generating new knowledge, exploring research on contemporary technical, social and development issues, and looking forward to the needs of the economy and society. HE transforms a limited number of people into skilled human assets in different areas of knowledge considering the need of a country as well as global perspective to get highest human dividend i.e. financial and non-financial return from them. It contributes to individual development as also to the development of the economy, democracy and culture. As such HE influences all the main components of national development and consequently, the cost of HE is a highly profitable investment. In this context, universities are to produce human resources (HR) with skills and technical know-how to expedite economic and social development of a country (UGC, 2006, p.11). According to UNESCO, "higher education is no longer a luxury; it is essential to national, social and economic development" (Bhatia & Dash, 2010, p.138). Bangladesh is a densely populated developing with country ample opportunities for HRD through massive investment in HE. So HE should be planned in a way that can produce skilled human assets, which have high demand in national and international job market. Over population is not a problem in any way if Bangladesh can transform them into human assets instead of burden through appropriate planning and world class education. This sector needs huge investment, but the country has its inherent financial limitation to support HE and research. Most of the higher educational institutions especially public universities have acute shortage of teaching learning aids and infrastructural facilities due to low budgetary provision. The Government has given topmost priority on HRD though education and as such it is imperative to analyze budgetary challenges of HE with special emphasis on budget allocation and implementation as well as utilization of the same.

The study has both theoretical and practical value and is important for several reasons. First, findings of the study will add value to the existing literature on education research especially education budget with evidence from a hitherto unexplored country like Bangladesh. Second, the findings of this study will help the education policy planners as well as the budget allocation and implementation level authorities to make suitable policy measures to address direct and indirect budgetary challenges of HE in Bangladesh.

2. Literature Review
This section presents review of related available literature at home and in abroad to find out the research gap, formulating research questions and to limit the scope of the present research. The substance of the literature review is summarized below keeping an eye on the above needs.

Education is one of the powerful instruments for economic development where quality assurance in HE is an important issue that meets the need of corporate organizations and society (Bhuiyan, Ahmmed, & Molla, 2009). There is a long run relationship between economic growth and HE (Chaudhary, Iqbal & Gillani, 2009). HE contributes to national development through dissemination of specialized knowledge and skills (Rao, 2006).

Many countries in the Asian region are not able to accord due priority to HE, South Asian countries lag far behind than other Asian countries. HE systems in many developing as well as developed countries in the Asia Pacific region are characterized by enduring crises such as overcrowding, inadequate staffing, deteriorating standard and quality, poor physical facilities, insufficient equipment and declining public budgets (Tilak, 2003). Low investment in HRD is one of the major problems and with the current level of investment in education and skills development, the South Asian countries cannot develop their workforce to be competitive in the global market and enhance the productivity (Khan, 2009). The participation of women is not more than 40 percent in any SAARC country; the quality of education is substandard and spending on education ranges from 2 percent to 4 percent of the gross national product (GNP), which is less than UNESCO standards of 4 percent for developing nations (Chauhan, 2008). Budgetary allocations for education especially for development expenditure need to be enhanced (Husain, Qasim & Sheikh, 2003).

Public sector HE in Bangladesh is nearly free and public expenditure on education was only 2.4 percent of GNP lays a lower contribution among the SAARC countries (Chauhan, 2008). Since independence in 1971, Bangladesh has not been fulfilling the recommendations of different education commissions, 4 to 5 percent of GDP/NI to be allocated for education. Government budget allocation on HE is 1.0 percent of National budget in Bangladesh. This budget allocation is not enough to meet the minimum demand of public universities (UGC 2012). The cost of HE in Bangladesh is mostly financed by government and it is one of the lowest in the world (Islam, 2012). All the public universities in Bangladesh are running with deficit budget. They are forced to cut down even essential expenditure such as procurement of books, journals, equipment, chemicals for laboratories, research, maintenance etc (Khatun, 2003). Major part of the revenue budget of public universities in Bangladesh has been exhausted for salary of the employees and a small part has been spent for education contingencies (UGC 2010). Funding from the government for HE and research is not at all adequate in Bangladesh and UGC has clearly failed to provide funds according to the needs of the universities (Mobasser & Muhammad, 2010). Universities in Bangladesh are viewed mostly as teaching institutions with no prospect or incentives for research (Rizvi, 2009), they are not promoting research works due to shortage of fund (Iqbal, 2011), though research could help increase the level of HE quality (Mehmood, Khan, Raziq, & Tahirkheli, 2012). Insufficiency of teaching aids, library facilities, availability of books and journals, research facilities, and laboratory facilities are the main challenges of quality HE in public universities in Bangladesh. Budgetary provision and utilization of the same are two major limiting factors to develop those facilities (Sarkar, Rana & Zitu, 2013). HE consumes a large portion of public and private funds to ensure economic development, but due to existing job pattern in Bangladesh and requirements placed in recruitment, contribution from HE is not satisfactory. Doctors, agronomists, and engineers are working in different careers not relevant to their respective fields (those of policing, administration, foreign affairs, and banking for instance) testimony that investment for producing these graduates is ill-advised (Alam, Khalifa, & Shahjamal, 2009). Real spending on education in Bangladesh have increased but remains low relative to several other low income countries since 2000 (CREATE, 2007). There is high political pressure/ influence while recruiting 4th class employees to Vice Chancellor and or Pro- Vice Chancellor especially faculties in the entry level in public universities in Bangladesh (Jahangir, 2012, in the daily Prothom Alo). Students and guardians' are financially victimized due to session jam and therefore, a big amount of social and state assets are misused (Hasan, , 2013, in the daily Prothom Alo).

After review of literature it is evident that some research works have been done on HE giving emphasis on quality of HE, problems and challenges of HE, economic development through human development, investment in physical and human capital, unemployment of educated people, return on education, etc. Most of the studies mentioned that HE in Bangladesh has been suffering from fund crises and some of the study emphasized on undesirable use of public budget, session jam, etc. But no in-depth study has yet been conducted on budgetary challenges of HE in Bangladesh using field level data. The limiting factor may be insufficient budget or its inappropriate utilization or any other issue which is not yet identified. It should be detected through scientific procedure and as such the present study is an attempt to fill this gap.

3. Higher Education in Bangladesh

Higher Education begins after the completion of Higher Secondary Certificate (12 years schooling) or equivalent degree. HE in the public sector is a legacy of the British colonial education system in Bangladesh. There are different fields of HE in Bangladesh such as general education (includes arts, science, commerce/ business); technical education (engineering, medical, and agricultural); madrasha (Muslim religious) education etc. There are now 114 universities in Bangladesh of which 34 are public, 2 are international and the rest 78 are in the private sector (The daily Prothom Alo, 2013, p. 3). Out of 34 public universities, 32 universities are teaching university having classroom, residential accommodation and other physical facilities in their own campus, and the remaining two are different in nature. Of which, one is the National University (NU), an affiliating university, affiliates all degree colleges, conducts examination etc and other one is Bangladesh Open University (BOU), which offers distance mode of education.

The overall control of educational administration and management in Bangladesh is under two ministries namely- Ministry of Primary & Mass Education (MOPME), and Ministry of Education (MOE) in association with the attached departments and directorates as well as a number of autonomous bodies (BANBEIS, 2007, p.61). The education system in Bangladesh is operationally categorized into two streams: one is the primary education (Grade I-V) managed by the MOPME and the other is the post-primary education which covers all other levels from junior secondary to HE under the administration of the MOE.[1] MOE is the apex body to manage HE in Bangladesh in collaboration with University Grants Commission (UGC) and Directorate of Secondary and Higher Education (DSHE). Public and private universities are offering HE with prior approval from the UGC. HE is also offered through different colleges. The DSHE is financing the colleges, but this directorate in collaboration with NU jointly manages those colleges (BANBEIS, 2007, 14).

There are mainly three types of higher educational institutions based on ownership - public, non-government, and fully private institutions in Bangladesh. Budgetary system of those educational institutions also differs. Maximum (about 90 percent) budget of public higher academic institutions are supported by the government and a small part (about 10%) are from self generated fund such as tuition fees and others, purely private higher academic institutions arrange their total budget from own revenue sources, and budget of non-government (affiliated) educational institutions are partly supported (about 60 percent) by the government and partly (about 40 percent) by their own revenue income such as tuition fees and others. Though the sources of budget are different, but the spending categories such as salaries and pension, general contingencies, education contingencies, repair & maintenance and procurement of assets etc of private universities, public and private colleges, and others higher educational institutions are like public universities. However, ratio (percentage) of expending in different categories differs but heads of expenditure are almost similar.

4. Methodology

All the public universities in Bangladesh were considered as study population because government provides budget for public universities. The study population did not include private universities because private universities prepared their budget from own sources of income. Colleges were also excluded from the study because their budget is not identical with public universities and they only involve in teaching, not in research. The study was based on both primary and secondary sources of data. Primary data was collected from 557 alumnae of the public universities who were in the jobs required non-technical[2] educational entry qualifications and 63 faculties from four categories of universities. Bangladesh Civil Service (BCS) general cadre, non-cadre government officers, and officers of Bangladesh Bank and government owned commercial & specialized banks were selected as study population in alumnae category. Total 1050 questionnaires were distributed among the alumnae. Out of them, 839 respondents returned the questionnaire with their valuable opinions. Responses of 557 respondents were selected as valid response. Faculties of four categories of universities - general, agricultural, engineering, and science & technology - were purposively selected as population in faculty category. About 140 faculties were randomly selected on the basis of availability and their willingness to provide information as respondents and distribute questionnaire among them. Out of them 63 respondents returned the questionnaire with their valuable opinions.

Secondary data for the study was collected from the annual reports of the UGC during the period 2000 to 2012, different publications of UGC, Bangladesh Bureau of Education Information and Statistics (BANBEIS), Bangladesh Bureau of Statistics (BBS), different publications of the government of Bangladesh, Bangladesh Bank publications, books and journal articles, print media, related web sites, etc.

The collected data was analyzed by using Statistical Package for Social Science (SPSS) version 15 and Microsoft Excel. In the course of analysis, frequency, percentile, mean, mode, standard deviation (SD), co-efficient of variation (CV), range, minima and maxima have been adopted. Constant financial value of Taka was converted into current value of 2013 by using Consumer Price Index (CPI).

5. Results and Discussion

In this study an attempt was made to find out the real challenges of HE budget for HRD in Bangladesh. The researcher tried to find out the challenges from three sources – (i) challenges acknowledged through review of available related literature, (ii) challenges identified through analysis of secondary data, and (iii) challenges exposed through analysis of primary data. It should be mentioned here that some challenges that were indirectly related to HE budget and or its utilization have also been documented.

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[1] http://www.banbeis.gov.bd/es_bd.htm
[2] Open to apply from graduates of all disciplines of study. A candidate has graduation and post graduation degrees or only graduation from any discipline of any university is eligible to apply.

5.1. Challenges of Allocation and Implementation of HE Budget

The budgetary challenges of allocation and implementation of HE were exposed through dividing them into challenges of budget allocation and challenges of budget implementation.

5.1.1. Challenges of Budget Allocation

Funding from the government for HE and research is not at all adequate (Mobasser & Muhammad, 2010) because public expenditure on education in Bangladesh is only 2.4 percent of GNP and the country occupied the third lowest position among the SAARC countries (Chauhan, 2008). Inadequate budgetary provision and inappropriate utilization of the same are two major limiting factors in the way to improve education infrastructure as well as teaching and research facilities in higher academic institutions (Sarkar, Rana & Zitu, 2013). UGC has obviously failed to provide funds according to the needs of the universities (Mobasser & Muhammad, 2010). Consequently, public universities in Bangladesh cannot promote world class research works due to shortage of fund (Iqbal, 2011).

It is evident from table-A.1 (Appendix) that in relative term, budget allocation on education and for HE has been decreasing gradually. Public expenditure on education (mean 2.37 percent of GDP or 13.01 percent of govt. expenditure) and HE (mean 0.28 percent of GDP or 1.65 percent of govt. expenditure) as percentage of GDP and government expenditure have not yet reached the recommended level by different Education Commissions since independence of the country. It has been far below the recommended norms of 4 to 5 percent of GDP or 20 to 25 percent of government expenditure on education and 0.75 percent of GDP or 3.75 percent of government expenditure for HE. It is also far below than the UNESCO standard (4 percent of GDP), UNDP's benchmark, and the practices of South Asian countries. Spending for research, fellowships and scholarships is also extremely insignificant (average 0.182 percent of revenue budget of the universities) though creation & dissemination of new knowledge through research on different contemporary issues are the main objectives of higher academic institutions.

It is evident from the analysis of primary data that the HE budget is positively associated (mean score of alumnae opinion is 3.27 in the scale of 5.00 and 77.8 percent of faculties) with HE quality. It indicates that budgetary constraints are the main limiting factors of quality HE in Bangladesh. It is also recognized in table-A.3 (Appendix) that majority of the respondent faculties (about 70 percent) opined that insufficient budget allocation is one of the major challenges of HE in Bangladesh.

5.1.2. Challenges of Budget Implementation

It is observed from the analysis of financial data that poor governance of public universities make it possible for them to spend a notable amount from undisclosed or unidentified or unexplained sources (mean 3.4 percent of revised budget), which is a big challenge to budget execution and compliance of budget manual. A common phenomenon of public university budget is that the actual expenditure always exceeds the revised budget in salary & pension contingencies (3.07 percent of revised budget) and in non-education contingencies (9.10 percent of revised budget) whereas rate of under implementation of education contingencies is more than over implementation. It is also evident from field survey that inappropriate implementation of HE budget is a challenge to HRD. Most of the respondent faculties (about 64 percent) opined that inappropriate implementation of allocated budget is one of the big challenges of HE budget in Bangladesh (Table-A.3 in Appendix).

5.2. Challenges of Utilization of HE Budget for HRD

Challenges of utilization of HE budget for HRD are identified from review of literature, andanalysis of secondary and primary data.

5.2.1. Financial Burden of Unemployed Higher Educated People

The unemployment of huge products of education implies that education is not effective and relevant for their absorption in appropriate jobs in Bangladesh (Islam, 2008, p.146). Government and guardians of the unemployed higher educated people have been spending a big amount of money to educate the unemployed graduates.Table-A.5 (Appendix) shows their short-term unemployment period in different categories of universities. In general universities students were unemployed for 10.01 months, agricultural universities 9.42 months, engineering universities 7.29 months and science & technology universities 9.40 months before getting their first job. On account of unemployment problem, total investment of the government and guardians was idle investment for the period of unemployment. Similarly, investment for life time unemployed people is totally idle investment.

5.2.2. Financial Consequences of Session Jam

It is evident from table-A.5 (Appendix) that due to session jam a big amount of money was spent both by the guardian and the government for a student to complete his/her graduation and post graduation. It is found from the statistical computation that per student extra expense was highest (BDT 230,801) in engineering universities, followed by agricultural universities (BDT 211,846), general universities (BDT 209,794), and science & technology universities (BDT 179,293) in that order. In relative term general universities consumed 25.77 percent, agricultural universities consumed 13.86 percent, engineering universities consumed 23.84 percent, and

science & technology universities consumed 21.68 percent extra expenses due to session jam.

5.2.3. Financial Involvement of Employment Nature

It is evident from Table-A.6 (Appendix) that around 13.6 percent of non-technical jobs were occupied by the graduates in the field of agriculture including Veterinary Doctors and 7.7 percent were occupied by highly technical engineering graduates. Per student yearly expenditure in agricultural universities was around 3.5 times higher than general, and science & technology universities. When an agricultural graduate joins in a non-technical job then around 88 (Table-A.5 in Appendix) percent of expenses for that graduate from government fund should be treated as unproductive expenses because the objective of producing technical graduates is to utilize their expertise in their field of specialization.

5.2.4. Mismatched between Actual and Expected Study Areas

Enrollment pattern reflects interdisciplinary imbalance in favor of liberal arts and social science than pure science, agricultural science and technical areas (Islam, 2008). It is evident from literature that most of the tertiary level students did not get admission into their interest area.

Against this backdrop, table-1 demonstrates that most of students at the tertiary level did not get chance to study in their expected discipline and in expected study area. Only 36.6 percent got chance to study in their expected discipline and 49.4 percent got chance in their expected study area. Remaining students did not get chance in their expected discipline and expected study area.

Table-1 Mismatched between Expected and Actual Study Area & Discipline

Category	Studied in Expected Discipline		Studied in Expected Study Area	
	Frequency	Percentage	Frequency	Percentage
Yes	204	36.6	275	49.4
No	353	63.4	282	50.6
Total	557	100.0	557	100.0

Source: Analysis of primary data collected from alumnae through semi structure questionnaire

5.2.5. Consequences of Mismatched between Expected and Actual Study Area & Discipline

Consequences of unmatched admission at the tertiary level are analyzed in light of expected study area with actual study area as well as expected discipline with actual discipline.

Their interest in HE was decreased due to the gap between their expected study discipline/or study area and actual study discipline/ or study area (mean score was 3.13 in the scale of 5.00).

5.2.6. Mismatched between Expected and Actual Job

There is always a gap between education system and employment pattern in Bangladesh. Contribution from HE is not satisfactory due to existing job pattern, requirements placed in recruitment, job advertisement and selection procedure (Alam, Khalifa & Shahjamal, 2009). Consequently, right person is not placed in right position. The unemployment of huge products of education implies that education is not effective and relevant for their absorption in appropriate jobs (Islam, 2008).

Most employees cannot get their expected job due to job crises and defective recruitment system and as such it is a matter of great concern and issue of discussion and debate in seminars, symposia, and social gathering. It is evident from the table-2 that 7 out of 10 (69.5 percent) HE graduates did not get their expected job. Consequently, they could not get job satisfaction to the highest level. The mean score was 3.41 in the scale of 5.00.

Table-2 Mismatched between Expected and Actual Job

Category	Get Expected Job	
	Frequency	Percentage
Yes	170	30.5
No	387	69.5
Total	557	100.0

Source: Self constructed from analysis of primary data collected from alumnae through questionnaire

5.3. Other Challenges of HE in Bangladesh

A number of challenges have been identified from literature review and analysis of field level data from faculties and alumnae. Mentionable challenges are discussed below.

5.3.1. HE Quality in Bangladesh

Quality of HE in Bangladesh has declined steadily, in some areas quite alarmingly, over the last two decades and such fall in quality has indeed become a core concern of the government and other major stakeholders (Aminuzzaman, 2011). UGC has miserably failed to play its role as a guardian of public universities and as a promoter of quality (Chauhan, 2008). Commercialization of education is a big challenge to quality education (Rahman, 2010).

Against the above backdrop, table-A.2 (Appendix) reveals that the majority of the respondent faculties

(about 69 percent) opined that HE in Bangladesh is not standard enough to meet local demand and nearly all the faculties (about 85 percent) opined that quality of HE cannot meet international demand as well. Similarly, about 64 percent respondents opined that HE quality in Bangladesh is not up to the mark. They also gave mixed opinions whether HE quality in Bangladesh is improving or declining or remaining unchanged over the period.

It is also observed in table-3 that the mean score of opinions of the alumnae under the study on standard of HE in Bangladesh to fulfill local demand is 2.71 in the scale of 5.00 and mode 2.00, and to fulfill international demand is 2.22 in the scale of 5.00 and mode 2.00. The results suggest that the standard of HE in Bangladesh is not satisfactory at all.

Table-3 Standard of HE in Bangladesh

		Standard of HE to fulfill local demand	Standard of HE to fulfill international demand
N	Valid	557	557
	Missing	0	0
Mean		2.71	2.22
Mode		2	2

Source: Analysis of primary data collected from alumnae through semi structure questionnaire

5.3.2. Teaching Aids and Other Facilities

Insufficiency of teaching aids, library facilities, books and journals, research and laboratory facilities are the main challenges of quality HE in public universities of Bangladesh (Sarkar, Rana & Zitu, 2013).

Against the backdrop, it is observed from table-A.4 (Appendix) that there are some challenges associated with teaching and other facilities. Respondent faculties believed that lack of infrastructural facilities (49.9 percent), limited library facilities (38.1 percent), and limited laboratory facilities (38.1 percent) are among the challenges of HE in Bangladesh.

5.3.3. Government Initiative and Plan

Problems of HRD through educational institutes in Bangladesh have been originated mainly due to lack of government initiative, infrastructure, useful arrangement, quality, coordination, investment, trained instructors, facilities, communication, and improper licensing (Shamsuddoha, Quadir & Kabir, n.d.).

In this context, the responses of the faculties in table-A.4 (Appendix) confirm that lack of proper planning (about 70 percent), lack of proper implementation of plan (46 percent) and nonuse of appropriate steps by the government (19 percent) are also the challenges of HE in Bangladesh.

5.3.4. Political Impediments

The responses of the faculties in table-A.4 (Appendix) also demonstrate that the influence of slavish national politics in higher educational institutions (about 91 percent) and reflection of political identity while recruiting faculties (about 80 percent) over academic qualifications and competence are two major political hindrances for HE in Bangladesh. Besides, they also spoke against the consideration of political identity for promotion of faculties in higher position (42.9 percent), posting (58.7 percent) and recruitments in all levels (46.0 percent) in public universities. Similarly, about half of the respondent faculties opined that the influences of political activities such as hortal, strike, unscheduled vacation, etc in higher educational institutions of Bangladesh are direct external political challenges.

5.3.5. Malpractices of Public Universities Autonomy

It is evident from table-A.4 (Appendix) that 46.0 percent respondent faculties believed that malpractices of autonomy in public universities is also a challenge to HE in Bangladesh, because this lead to slavish political activities in higher educational institutions especially in public universities.

5.3.6. Salary Structure of Faculties

Poor salary structure of university faculties in Bangladesh is one of the reasons for dissatisfaction in their jobs (John, 2011). Against this background, table-A.4 (Appendix) discloses that 84.1 percent faculties under the study alleged that unattractive salary structure of public university faculties is a major challenge to HE in Bangladesh because job satisfaction mostly depends on financial benefits and productivity usually depends on job satisfaction.

6. Conclusion

From the above analysis and interpretation it can be concluded that inadequate budgetary allocation due to limited resources, inappropriate implementation of budget due to poor governance, and unproductive utilization due to session jam, unemployment, unmatched between expected and actual study area as also study discipline and job, slavish national politics, malpractice of public university autonomy, poor planning and inappropriate implementation of the same are the main challenges of HE budget in Bangladesh. Besides, importance of political identity over merit and less priority on academic credentials and quality research while recruiting faculties, promoting them to higher position and assigning them additional responsibilities are some indirect challenges of HE budget in Bangladesh.

To defeat direct and indirect budgetary challenges and to ensure quality higher education, the volume of budgetary provision ought to be increased to a coherent level as well as implementation of the same following budget manual and efficient utilization through appropriate academic and human resource planning need to be ensured.

To defeat direct and indirect budgetary challenges and to ensure quality higher education, the volume of budgetary provision must be increased to a coherent level following the recommendations of different education commissions and the practices of rapid growing developing countries, and also to ensure appropriate implementation of the same following budget manual to cope with the challenges of the new millennium due to globalization of HE and job market. Besides, efficient utilization HE budget is essential to keep pace with the academic standard and HRD of the first growing developing nations. More importance should be given on productive utilization of HE budget through reducing session jam, unemployment, and bring to an end of shifting technical graduates into non-technical jobs. Merit and quality should be the only criteria for appointment, promotion and posting of academic and nonacademic staff at higher educational institutions. Time is matured enough to address all the direct and indirect challenges of HE budget for HRD so as to derive high level of financial and nonfinancial dividend from human asset.

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Appendix

Table-A.1 National Education Budget, University Budget and Expenses (Fig. in %)

Year	Edu. Budget to National Rev. Budget	Edu. Budget to National Dev. Budget	UGC Grants to Revised Budget	Actual Exp. to Revised Budget	Salary & Pension to Total Exp.	Education Exp. to Total Exp.	Salary Budget Achieved	Education Budget Achieved	Non-education Budget Achieved
2000-01	18.3	12.9	91.6	106.2	71.5	12.6	105.33	110.22	106.77
2001-02	18.1	12.9	90.8	106.1	71.7	12.0	110.86	103.92	110.71
2002-03	16.3	14.4	90.7	101.4	70.4	13.1	96.15	108.37	106.10
2003-04	14.2	11.7	90.0	101.8	68.6	12.1	102.54	93.01	105.09
2004-05	13.8	9.7	89.4	105.1	65.5	14.4	100.02	113.71	118.42
2005-06	15.0	12.8	88.2	105.0	69.7	12.5	103.72	98.70	119.73
2006-07	13.2	12.8	86.4	105.5	71.9	10.9	106.52	91.81	114.49
2007-08	9.0	12.4	86.3	100.8	70.4	12.9	100.97	94.25	108.87
2008-09	9.3	12.3	85.1	99.4	71.5	11.4	99.82	87.43	107.15
2009-10	7.6	14.4	82.8	103.4	70.8	11.7	105.46	96.96	100.20
2010-11	8.2	12.3	85.8	103.4	74.0	10.2	102.82	97.80	103.34
2011-12	-	-	84.7	102.7	72.9	10.5	102.57	95.45	108.29
Mean	13.0	12.6	87.7	103.4	70.7	12.0	103.07	99.30	109.10
SD	3.9	1.3	2.8	2.2	2.2	1.2	3.77	8.06	5.87
CV	30.0	10.3	3.2	2.1	3.1	10.0	3.66	8.12	5.38
Range	10.7	4.7	8.8	6.8	8.5	4.2	14.71	26.28	19.53
Minima	7.6	9.7	82.8	99.4	65.5	10.2	96.15	87.43	100.2
Maxima	18.3	14.4	91.6	106.2	74.0	14.4	110.86	113.71	119.73

Source: BANBEIS (2011), Publication No. 404, p. 214-216 and University Grants Commission of Bangladesh, Annual Report 2001 to 2012.

Table-A.2 Higher Education Quality and Economic Development through HRD

SL No.	Statement	Yes (%)	No (%)	Others (%)	No Comment (%)	Total (%)
1	Bangladesh higher education is standard enough to meet local demand	13 (20.6)	43 (68.3)	1(1.6)	6 (9.5)	63 (100)
2	Bangladesh higher education is standard enough to meet international demand	4 (6.3)	53 (84.1)	1 (1.6)	5 (7.9)	63 (100)
3	Quality of higher education in Bangladesh is increasing gradually	31 (49.2)	25 (39.7)	1 (1.6)	6 (9.5)	63 (100)
4	Quality of higher education in Bangladesh is declining gradually	28 (44.4)	28 (44.4)		7 (11.1)	63 (100)
5	Quality of higher education in Bangladesh is remain unchanged	4 (6.3)	36 (57.1)		23 (36.5)	63 (100)
6	Quality of higher education in Bangladesh can meet the demand of the time	12 (19)	40 (63.5)	1 (1.6)	10 (15.9)	63 (100)

Source: Analysis of primary data collected from faculties of public universities through semi-structured questionnaire

Table-A.3 Allocation and Implementation of Higher Education Budget

SL No.	Statement	Yes	No	Others	No Comment	Total
1	Inappropriate implementation of higher education budget is an impediment to HRD	53 (84.1)	2 (3.2)		8 (12 .7)	63 (100)
2	Higher education quality is positively associated with higher education budget	49 (77.8)	6 (9.5)		8 (12.7)	63 (100)

Source: Analysis of primary data collected from faculties of public universities through semi-structured questionnaire

Table-A.4 Challenges of Higher Education Budget in Bangladesh

Sl. No.	Description	Frequency	Percentage
1	Insufficient budget allocation	43	68.3
2	Inappropriate budget implementation	40	63.5
3	Lack of proper planning	44	69.8
4	Lack of proper implementation of plans	29	46.0
5	Malpractices of public university autonomy	29	46.0
6	Influence of slavish national politics in higher educational institutions	57	90.5
7	Emphasis on political identity over merit while recruiting faculties	50	79.4
8	Consideration of political identity while upgrading faculties to higher level	27	42.9
9	Consideration of political identity while assigning tasks to the faculties	37	58.7
10	Consideration of political identity in all levels of recruitment at public universities	29	46.0
11	Unattractive salary structure of public university faculties	53	84.1
12	Lack of sufficient infrastructural facilities	27	49.9
13	Limited library facilities	24	38.1
14	Limited laboratory facilities	24	38.1
15	Non-performance of appropriate steps by the government	12	19.0
16	Impact of slavish political activities (*hortal*, strike, etc)	30	47.6

Source: Analysis of primary data collected from faculties of public universities through semi-structured questionnaire

Table-A.5 Information on Unemployment, Session Jam and Job Nature

Particulars	Categories of Universities			
	General	Agricultural	Engineering	Science & Technology
	Mean	Mean	Mean	Mean
1. Duration of university degree (in Year)	4.96	5.49	4.71	5.07
2. Duration of short-term unemployment (in Months)	10.01	9.42	7.29	9.40
3. Duration of session jam (in Months)	20.65	10.6	17.71	16.84
4. Per student per year government expense (BDT)	49320	170988	72003	47074
5. Per student per year guardian expenses (BDT)	72594	68838	84384	80688
6. Per student government expense in schedule time(BDT) (1×4)	244436	939009	339443	238665
7. Per student govt. expenses for session jam (BDT) {(3×4)/12}	84872	151039	106264	66061
8. Per student govt. expenses both for schedule time & session jam (BDT) (6+7)	329307	1090049	445707	304726
9. Per student guardian expenses in schedule time (BDT) (1×5)	359785	378035	397810	409088
10. Per student guardian expenses for session jam (BDT) {(3×5)/12}	124922	60807	124537	113232
11. Per student guardian expenses both for schedule time & session jam (BDT) (9+10)	484707	438842	522347	522320
12. Per student total expenses in schedule time (BDT) (6+9)	604220	1317044	737253	647753
13. Per student total expenses for session jam (BDT) (7+10)	209794	211846	230801	179293
14. Per student total expenses (govt.+ guardian) (BDT) (12+13)	814014	1528891	968054	827046
15. Govt. expenses for session jam as percent of govt. total expenses (%) {(7/8) ×100}	25.77	13.86	23.84	21.68
16. Guardians' expenses for session jam as percent of total guardian ex. (%) {(10/11) ×100}	25.77	13.86	23.84	21.68
17. Expense for session jam as percentage of total expenses (%){(13/14) ×100}	25.77	13.86	23.84	21.68
18. Per student extra expense in general universities (including session jam) due to job nature (BDT)	0	714877	154040	13032
19. Per student extra expense in general universities (including session jam) due to job Nature (%)	0	87.82	18.92	1.60
20. Per student extra expense in general universities (excluding session jam) due to job nature (BDT)	0	712824	133033	43533
21. Per student extra expense in general universities (excluding session jam) due to job nature (%)	0	54.12	22.017	7.20

Source: Self calculated based on both primary and secondary data

Table-A.6 Study Area of the Alumnae

Study Area	Frequency	Percent
Arts	86	15.4
Social Science	113	20.3
Business	88	15.8
Science	138	24.8
Engineering	43	7.7
Technology	4	.7
Agriculture	76	13.6
Law	7	1.3
Education	2	.4
Total	**557**	**100.0**

Source: Analysis of primary data collected from alumnae