

## What Makes a University Capable of Offering Doctor of Philosophy?

Muhammad Anwarul Islam\*

**[Abstract:** An important role of the universities, whether private or public, is creating new knowledge through research. Since 1993, the private universities (PvU) in Bangladesh have made remarkable improvement in providing quality education and established themselves as reputed centres of research and excellence. Some have acquired expertise, capabilities, and research-base to create new knowledge by offering PhD or doctoral degrees. Currently, there is no set of 'Key Capability Indicators (KCIs)' for evaluating the suitability of PvU for offering a PhD. As such it is crucial to identify the capability indications i.e., what really makes a university capable of offering PhD. Therefore, research question is; what are the capabilities which contribute for acquiring research ability towards offering PhD degrees by a university? The research objective of this study is to identify a set of KCIs towards offering PhD. The study evaluates the research capabilities of top PvU to contextualize the capabilities of Bangladeshi PvUs towards offering PhD.]

**Keywords:** Private Universities; Key Capability Indicators; PhD or doctoral degrees; Private University Act.

### 1. Introduction

Ever since the establishment of the first university in the world, its primary role has been creation, dissemination, and application of knowledge for the services of the global community (Krishna, 2019, p.1). On behalf of the community, higher education institutions, especially the universities, take the responsibility of setting-up moral standards, creating social awareness, crafting a sustainable future by developing the educated workforce, and most importantly, providing moral leadership to the country during the national crisis (Anthony, 2003, pp.15-22). Universities contribute significantly to establishing self-identity, universal rights, and values in society and take the lead role in overall national

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development. Ahmed et al. (2018, p.5) believe that the role of creating new knowledge remains crucial for the competitive advantage of the human resource and accelerating economic growth where the universities play the most important role. The vision of a country is to a great extent translated to a reality through the enlightened citizens, which the universities create for the society.

The reason for overall economic development of Bangladesh can be attributed to the growth of human resources, and this trend is likely to continue in the coming days. A closer look at the country's overall economic condition as published in Bangladesh Economic Review of Ministry of Finance (MOF, 2019, p.204) suggests a greater demand and contribution of the universities towards education, primarily through research-based higher education. As a result, there is an increasing sector-wise demand for educated university graduates with knowledge and skillset to take the economy forward (Haque, 2014, p.1).

The increasing need for university graduates was felt in the early nineties. The public universities alone were unable to fulfill the very high demand from the society created by economic development (Ahmed et al. 2018, pp.1-5), thus the Private University Act (PUA) was enacted, and the private universities came into being in 1993.

Since then, the PvU in Bangladesh has been an innovative and effective academic institution to create and supply qualified human resources for the market (FES, 2018, p.2). Some of the PvU have achieved commendable standards comparable with good universities abroad. There is a prevailing perception in the country that some of the top PvU in Bangladesh have acquired an acceptable level of expertise, resources, and research facilities to offer PhD or doctoral degrees (Daily Star, 2016; Shamsul, 2015). PvU now enrolls about 60% of total students (3,61,792) in campus-based universities, of which 40% are women (UGC Yearbook 2018, p.325). This has created an additional internal demand for PhD faculty members in the PvU in the country. Elizabeth & Mannan (2014, p.21) observe that with the current economic growth in the universities, finding adequate PhD faculty members is a serious challenge for the universities.

Unfortunately, currently, the PvU are not allowed to offer PhD alongside the public universities to fulfill the increasing demand of doctorate holders for the country. Resultantly, the universities' primary role of creating new knowledge is side-lined. The PvU are also reluctant to release adequate fund for research.

On the other hand, there is an absence of a comprehensive set of criteria/key capability indicators (KCIs) for the PvU, based on which they may continue their quality improvement endeavour and evaluate themselves for offering a PhD (Ahmed et al. 2018, pp.9-16). It is argued that an elaborate set of KCIs would help the PvUs and help monitor the overall quality of PhD offered by the PvU.

Keeping that in view, the problem statement for this research is to identify the specific research-capability/capabilities that contribute towards overall ability for offering a PhD and against which the PvU would be able to ascertain and judge their own capabilities. Secondly, evaluate few top PvU to ascertain their research base for offering PhD to reach a plausible conclusion whether or not selected PvU of Bangladesh are at all capable of offering PhD.

Therefore, the research question of this study is; what are the capabilities which contribute towards acquiring research ability towards offering PhD degrees by a university? The research objective is to identify a set of key capability indicators (KCI) that will adequately demonstrate the overall ability offering a PhD by a university. The study will also evaluate the research capabilities of the top few PvU to contextualize the capabilities of Bangladeshi PvUs towards offering a PhD. The context of identifying KPIs related to the academic and research need would be the ones followed worldwide for offering doctoral degrees.

## 2. Literature Review

This study used data, statistics, and empirical observations from scholars, existing books, booklets of universities, research publications of the think tanks, handbooks on doctoral degrees, scholarly articles, research manuals, journals articles, and research papers available from different libraries and websites. The primary source of information remained the secondary source. This study draws heavily to understanding the underlying themes of the academicians and classical theorists and researchers of home and abroad.

Several articles on (Mazumder 2017, *pp.99-108*, Alam & Parvin 2014, *pp. 38-53.*, and Yeakub 2019, *pp.1-8*) PvUs of Bangladesh were reviewed regarding; analysis of quality in public and PvUs in Bangladesh; evaluating the existing pedagogy of teaching; quality of higher education in PvUs of Bangladesh. These articles identify the general weaknesses in infrastructure and management, high-tuition fees, quality of students and teachers, management, level of satisfaction of the students, and commodification of higher education. However, none looks explicitly at the PvUs to find out their real worth in offering a PhD.

Bangladeshi PvUs currently do not have handbooks for preparing students for PhD, possibly because they are not allowed to offer a PhD. Some reputed PvUs have guidelines for research in general. Guidelines for research by the PUs were generally reviewed and were of relevance to this study. The literature of a few PvUs (IUBSRP, 2018, *pp.6-13*; IRB, 2018, *pp. 4-15*) do guide the researcher on procedural issues related to the code of ethics approval process, and doing research by protecting the integrity and transparency of research, various conventions and compliance issues, research priorities, various grants, and

eligibility criteria etc. But this literature does not talk about the capability indicators for offering a PhD.

Some literatures [Ahmed et al. (2018, pp. 5-11), UGC Reports of 2016-2020, BANBEIS (2018, pp.213-230)] mention the strategy for higher education, the possibilities and challenges of higher education and the importance of having more PhD qualified people in the country, but do not mention about capability indicators for introducing PhD. However, the literature gives a good insight into the higher education in Bangladesh, which would be useful for the researcher.

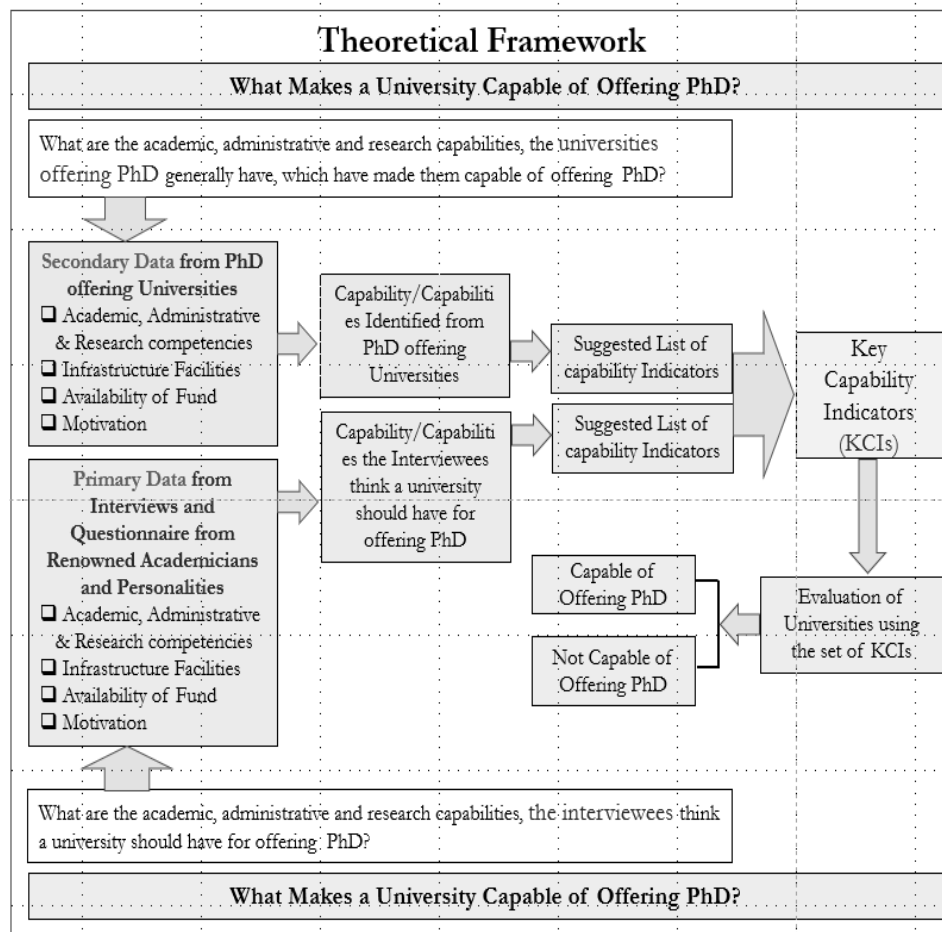
Several handbooks of universities (SHBU, 2018; 2019) on graduate and post-graduate degrees were reviewed including the ones from the University of Iceland, the University of Bristol, University of California, Berkeley, the University of Kent, the University of Edinburgh and some more. These manuals explain the modalities of preparing students after they are enrolled for pursuing a doctoral degree. These pieces of literature contain relevant information that is useful for the researcher, faculties, and administrative staff starting from enrollment to graduation (Santos & Lo, 2018, p5-7). Few (UOE, 2019, p.5-20) illustrates various official procedures and codes of ethics to be followed by the institution which systematically guides the faculties members and students to maximize their potential during different stages of the research. But none of these specifically mention about the key indicators that would prepare a university for offering doctoral degrees.

### **3. Research Methodology**

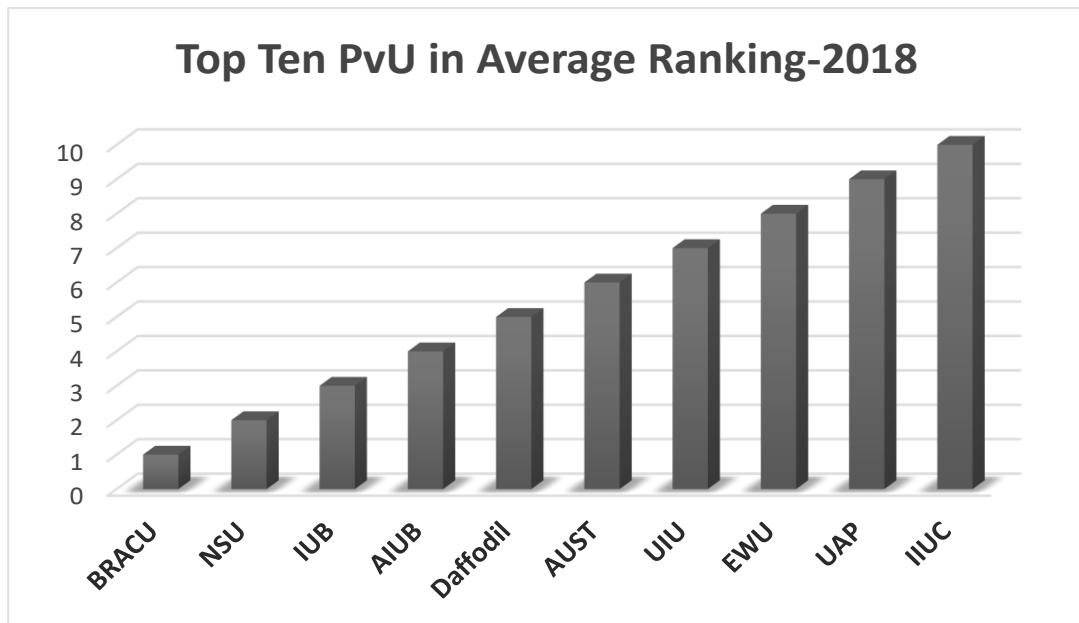
The sources of information for this study were the secondary sources of the local and foreign universities on graduate and post-graduate degrees in order to find out the key capability indicators, i.e., what makes a university capable of offering a PhD. University Handbooks, data from Govt. organizations, academic and research institutions, journals, periodicals, and research papers available in libraries and websites were extensively used.

Open-ended questions were used to find the opinions of the academicians and management officials involved with higher education. The focus of the data was to find out what would contribute towards being research-active and directly contribute to research-culture in general and would directly increase the research competence of the university. The purpose was to explore answers revolving around the research questions and objectives. The basic approach to the research is secondary search and empirical observations of the capabilities of universities through questionnaire study, general and opinion survey, and personal interviews.

A theoretical framework is designed to identify the qualifying criteria and analyze how it impacts the overall capability towards offering a PhD.



Five PvU were selected based on the average rankings of the websites involved with the universities. However, data from first ten universities were used for an objective conclusion about issues related to the objectives. Thirty-three eminent personalities of the academia and top management of universities were interviewed through an open-ended questionnaire. The purpose was to clear concept, confirm the KCIs and get view and opinions on the actual capability of the Bangladeshi PvUs in offering PhD. Efforts were taken to protect the confidentiality of the 'participants' identities wherever necessary. Figure 1 below shows the overall position of the PvU in 2018 based on the overall ranking of the websites.



**Figure 1: Top Ten Private Universities as per Average Ranking of Web in 2018.**

*Sources: Rankings of StudyMela, UniRank, StudyBerta, Webometrics, UGC-18, Daffodil, TEE times, and THE 20 Uni-YouTube of the Year 2018.*

As the principal researcher, the researcher was responsible for data collection and analysis. Semi-structured one-on-one, face-to-face interviews were conducted with each interviewee. The researcher had an opportunity to access the views of the interviewee based on their response to the specific research questions. The questionnaire comprising six questions was used to collect data, endorsing subjective and objective opinions on the debated issue, institutional views and to validate data. Overall data collection effort was focused on what makes a university capable of offering PhD programs.

#### **4. The Key Capability Indicators of a University for Offering Doctoral Degrees**

##### **4.1. General Response to the Questions by the Interviewees**

All the respondents agree that the overall development of the universities in the country has not been a balanced one. Some are performing extremely well while some are doing very poorly. The majority of them agree that few top-ranking PvU have not only acquired capabilities, expertise and research infrastructure but have established themselves as centres of excellence in the country. While answering the specific question about the overall capability of the top five PvU for offering PhD, 78.78% (26 out of 33) respondents answer positively. The top three names of the universities mentioned by all the respondents are BRAC

University (BRACU), North South University (NSU), and Independent University, Bangladesh (IUB). Other names which were also mentioned by some of the respondents were American International University Bangladesh (AIUB), East West University (EWU), and Ahsanullah University of Science and Technology (AUST).

While answering the question related to the KCIs, there was a consensus about some of the capabilities. Several KCIs are identified, contributing to the university's academic and research competence for offering doctoral programs.

#### **4.2. Research Infrastructure**

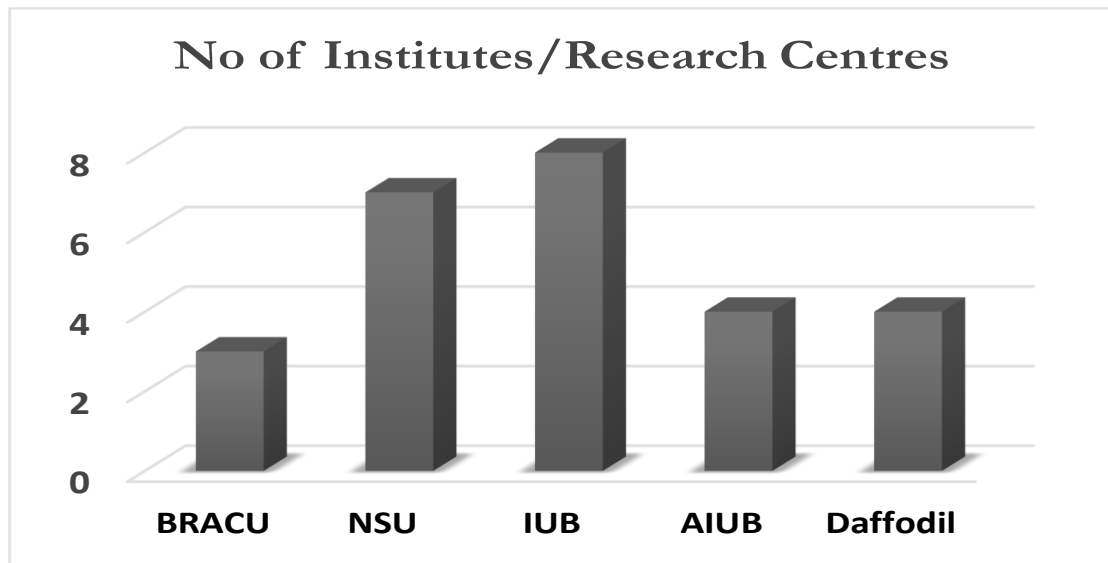
The single most important attribute for offering PhD is the availability of own functional research infrastructure. This includes research centres, research laboratories equipped with appropriate instruments and equipment for higher research, research library with the latest reference books, journals and publications, data bank for research data, and most importantly, the availability of faculty members who can be employed as research supervisors and co-supervisor.

The respondents agree that the implications of the above indicators would be different for different disciplines. For example, programs related to STEM; science, engineering, computer science, the programme of life sciences, environmental science & management etc. would need elaborate support of research laboratory. While research for Arts and Social Sciences may not need laboratory facilities, the availability of data, statistics, and the opportunity to collect data etc. from different authentic sources would be essential. Multi-disciplinary research would need both laboratories and other associated research centres for all related academic disciplines.

UGC Report (2018, pp.154-192) shows the availability of research institutions in the PvUs. However, some of the universities do not have institute, instead have research centres. Figure 2 below shows the combined availability of research centres and institutes in the first five PvU in Bangladesh.

#### **4.3. Graduate School**

In the context of Bangladesh, 87.87% of respondents, i.e., (29 out of 33) agrees that separate 'Graduate School' (GS) with available research-active faculty member, research associates, research assistant (RA), cataloguers, and relevant support staff are essential for efficient and functional coordination of the research activities for offering higher programs in the university.



**Figure 2: Number of Institutes and Research Centres in top Five PoU-2018.**

**Source:** 45<sup>th</sup> Yearly of The University Grants Commission of Bangladesh, UGC Bhaban. Dhaka-1207. Published in December 2019. pp. 154-192.

GS offer degrees in a variety of subjects for Masters, PhD and professional doctoral degrees. Some school may also offer specialists degree which are attended by the students for professional certifications or licensing requirements. A graduate student is one who has earned a bachelor's degree and is pursuing additional education in a specific field. More than 1000 Colleges and Universities in the USA offer programs leading to a graduate degree in various fields (Ednusa, 2020, p.5). Some GS may also offer specialists degree for professional certifications or licensing requirements. The GS programs are focused on a specific academic discipline or profession generating original research (UC Berkeley 2019, p.1). Many of the graduate students are working professionals and programs may be centered around a 'profession' focusing on developing skills and knowledge for the specific profession or may be a combination of both. The students' expectations are far more than the undergraduate students, and academic works are more intense in nature. The programs have a smaller class size to facilitate extensive discussion and interaction. Work experience is gathered via internships, teaching, and research. Students are required to produce original research. Students of good GSs are employed even before they are graduated.

Undergraduate students willing to pursue a research career needs to prepare themselves for several years of intense activities in GS for academic and professional growth. Five attributes defines the profile of a GS and its student in



a university (Kuther 2019, pp.2-4). These are (1) Graduate students are autonomous. With little guidance, they choose their own supervisor, select research areas, and develop research proposals. (2) PhD degrees are like an apprenticeship. Students are not tied to specific hours of classroom teaching. (3) GSs activities are centered around research. Much of the job would consist of gathering materials, reading, designing methodologies to test one's idea. (4) Doctoral program takes five-to eight-year of consistent commitment. Students are required to qualify in a set of comprehensive exams at various levels in the program for them to continue for the next level. (5) The doctoral dissertation is the basis for earning a PhD. From acceptance of the research proposal until the end, the student works closely with the supervisor and finally prepares the thesis write-up and defend the same to the PhD Committee.

Practice of a separate graduate school in PvU of Bangladesh is new. IUB had a separate GS in its organogram in 1993, but the school was not activated. NSU established their Office of the Graduate Studies and Research GSR only in 2015. GSR has the overall responsibility of enhancing the quality of graduate education by promoting coordination among NSU's graduate education programs and facilitating learning from each other's experiences and national and international experiences. Individual schools and departments remain responsible for designing and delivering graduate research programs for the graduate students. The overall quality of graduate education since 2015 have improved with the establishment of GSR at NSU.

It is seen from the above that the GS undertakes a host of activities on behalf of a university for successful completion of a research-based program. As such, it is highly recommended that a separate GS be able to promote and enhance the quality of graduate education and research, facilitate the development of a coherent graduate education curriculum, and better support the schools and departments in accessing resources necessary for offering RBP for the university.

#### **4.4. Faculty Members Qualified to be Assigned as Supervisor**

The respondents of the study unanimously agree that a university with faculty members qualified to be assigned as supervisors is likely to be better prepared than other universities for offering a PhD.

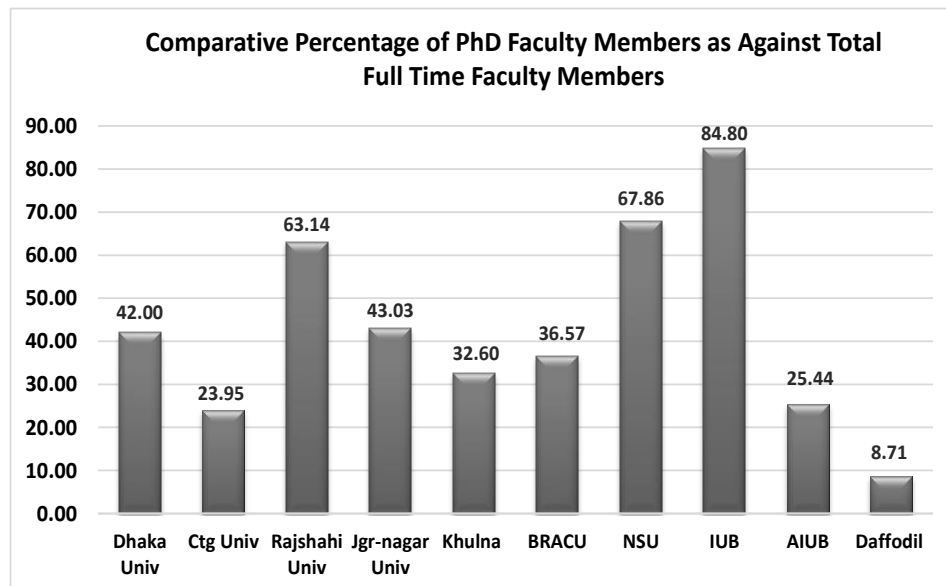
The most important person to a PhD fellow is the Supervisor. It goes without saying that the supervisor will have a PhD and postdoc and have particular expertise in his field of research and high skill as a mentor and teacher. Supervisors are primarily responsible for providing guidance and assistance to students to carry out their research and present their results in an appropriate manner. University of Nottingham views that (nottingham.ac.uk 2018, pp.1-5) the supervisors should assist the students to plan the research and develop appropriate topic, prepare an action plan identifying specific tasks in different stages of research.

He should jointly work with the student on scheduled program and be available whenever the student needs any guidance, have professional ethics, and most importantly compatible with the researcher to complete the thesis within the designated period.

It is not always necessary for the supervisor to be a famous person. What is more important is that he should be available to the researcher and have the network and connectivity to introduce the new researcher to a greater network of professionals and researchers (Coninx 2017). Supervisors should continue for own professional development through regular study and research, take initiative for updating own knowledge and skills by participating and associating him with wide range of activities and sharing good practices in the academia (nottingham.ac.uk 2018, p.1).

The study shows (UGC, 2018, pp.154-192), in the year 2018, highest number of faculty with PhD was in NSU which is 418. Second, third, fourth and fifth were BRACU 196, IUB 173, EWU 152, AUST 110. It may be noted that 1945 faculty members with PhD were available in the first fifteen selected PvU in 2016 and 1794 in 2018. Figure 2 below shows the comparative percentage of PhD faculty members in top five public and PvUs.

From the Figure 3 below is can be concluded that few selected PvU are generally prepared in terms of the availability of senior faculty members with PhD to act as thesis supervisor for their potential PhD students.



**Figure 3 : Comparative Percentage of PhD, Faculty Members as Against Total Fulltime Faculty Members in First Ten Universities (Public and Private)-2018.**

**Source:** 45<sup>th</sup> Yearly of The University Grants Commission of Bangladesh, UGC Bhaban. Dhaka-1207. Published in December 2019, p. 154-192 & 318-321.

#### **4.5. Culture of Assigning Graduate Teaching Assistantship (GTA)**

Graduate teaching assistants [GTA] are usually student enrolled in a GS who also teaches undergrad students at that university. GTAs take courses and pursue their own studies in a selected specialized academic field. They also help senior professors teach undergrad courses.

Robbie (2020, p.105) confers that GTAs are indispensable to a higher education system where research-based programs are offered. With an increasing number of undergraduate students enrolled in universities, there is an increasing demand on the senior faculty members and especially professors and associate professors at any given time. GTAs can suitably fill this gap by serving as instructors for undergrad students under the supervision of professors. This also work as a continuous process of training the potential persons for senior faculty position. In addition, professors often deliver lectures to a larger crowd of students in a course and subsequently the GTAs can provide more personalized instructions to a smaller group of undergraduate students in smaller sections and sub-sections.

While giving undergraduates closer instructional attention than tenured professors have time to provide, GTAs remaining involved in the process gain valuable teaching experience and continuously prepare them on the long road to professorship. Robbie further adds that besides taking one-to-three hours class sessions as per the teaching curriculum, they also lead the class discussions and answer students' questions, evaluate students' essays, projects, laboratory works, and test and do their assignments.

Robbie (2020, p.105) adds that students willing to pursue an RBP usually need to enroll in a graduate degree program in a university that offers a master's or doctorate degree. The student is then assigned a GTA jobs. In a reputed university which offers a research-based program, GTAs make up a significant percentage of faculty members for the undergraduate programs.

BRAC University, NSU and IUB have a limited practice of GTAs and research assistant in some of the departments. A culture of assigning GTA helps economize the valuable time of the senior professor, create an ambiance of research and teaching culture with the research-active faculty members in the university and consistently create a mind-set among the undergraduate student for pursuing knowledge creation. As such it is highly desirable and beneficial for a university willing to offer PhD to have a culture of assigning GTAs.

#### **4.6. Regular Publication of Research Output in Research Journals**

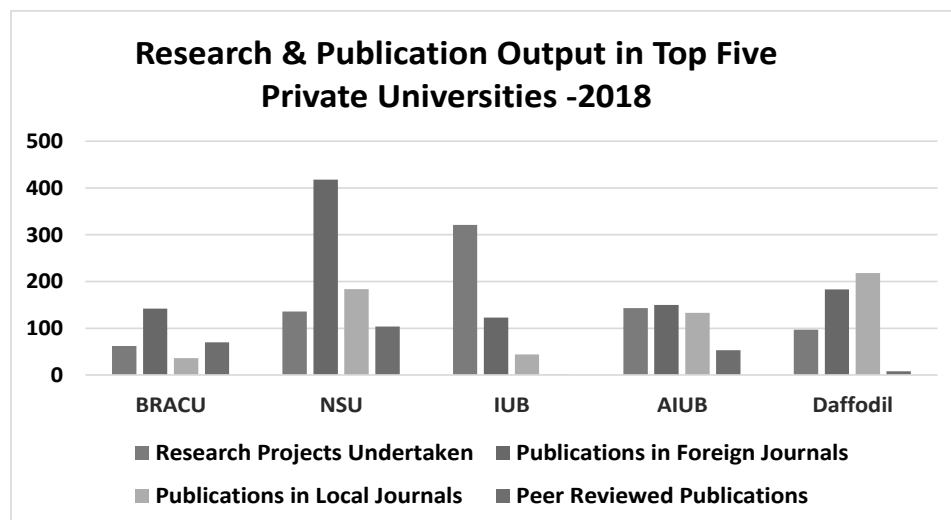
Regular publication of articles in research journals and magazines is one of the most effective ways to remain connected and share knowledge with the community. As part of the regular program of disseminating new knowledge, the university researchers should publish articles in peer-reviewed or blind-peer reviewed journals.

Various schools and departments may have their own journals. This will help the researchers to publish their research outcomes quickly and get objective feedback for further improvements. More so, regular publication of journals from the university is a prestigious academic credential in academia, but also in academia, and within the scientific and corporate community. This is in fact the most effective way of disseminating research findings. Worldwide accepted practice is that publication of any journal articles procedurally must go through a rigorous screening process called blind peer review. In that the independent experts provide the author with their critical observations and suggestions to improve their final research work.

Journal publication benefits the careers of those who publish. Annette (2018, pp.1-5) observes that publishing in a journal is a strong indicator of thought leadership and an efficient technical specialist and researcher quality.

A research-oriented university should have multiple journals published from different schools and departments. Good universities have separate journals even for different field of study. The university which encourages its faculty members and students to publish regularly in own and outside peer reviewed journals may claim to have a better research culture which is a pre-condition for offering doctoral programs.

Figure 4 shows the publication output of first five PvU. This indicate that these universities are contributing to this field of KCI. However, the study shows the next five universities need to improve their capabilities much.



**Figure 4: Research and Publication Output in Top Five Private Universities-2018.**

*Source:* 45<sup>th</sup> Yearly of The University Grants Commission of Bangladesh, UGC Bhawan. Dhaka-1207. Published in December 2019, p. 154-192.

#### **4.7. Research Staff and Associates**

A university willing to pursue RBP should have the required number of research staff and associates in addition to the qualified faculty members. This would include Research Associates (RA), Cataloguers, and Support Staff. The number and type of their qualification would vary depending on the nature of research and field of discipline.

Research Associates are professional and research scholars with some advanced degree in addition to master's degree in their own field. RA is a planned position in the organogram of the institution with specific responsibility that is perpetual in an academic institution.

RAs initially lead a research project for securing a research grant. He is regarded as an expert in a specific area of research and can plan, organize, and conduct research in that field of research in the university. While working in a research center, they would usually hold positions of Research Director, Associate Director, Centre Associate, etc.

#### **4.8. Research Active and Research Competencies**

Generally, universities define a faculty member as 'Research Active' as someone who conducts research on a regular basis and ensures that the output has a significant focus on the academic activity in the institution. This essentially means simply having a good number of faculty members with PhD is not enough. They have to be research active and consistently update their knowledge through research.

Institutions may have their own requirements of being called as research active (Margaret 2019). For example, Dundalk Institute of Technology (DKIT), in Dundalk Ireland considers a faculty to be research active if the researcher has at least three peer-reviewed publications in the past five years. This could be books, books chapter, journal articles of international standing, major reviews of a field of research, conference publications, compositions, written or recorded works, broadcasts, audio visual recordings, policy papers etc. In addition, a faculty must successfully supervise at least two PhD students in the past five years until completion.

It is highly desirable that the supervisor, the student, and the university, all in the chain should have required research competencies (RC) for pursuing RBP. These competencies include quality and passion of the supervisor to guide and consistently supervise a research fellow till the end of the study. RC generally include the quality of personality, totality of knowledge, valued academic orientations, necessities and experience of research activity showing-up in readiness and ability to execute the functions related to the research (Vardam & Lubov 2018, p. 513). For a student, it would mean the "activity that ensures the acquisition of the necessary skills for creative research, thus culminating in an independent solution of the problem".

Bottcher & Thiel (2018, pp.93-95) in their research titled "*Evaluating Research-oriented Teaching: A New Instrument to Assess University 'Students' Research Competences*" opines that the university should have training programs for student and junior researchers to have the ability to develop and process research questions in different teaching and learning format to acquire research competencies on a preferred field of study. Most of the respondents (90%) agree that the PvU lack this KCI. However, all of them generally agree that top few PvU have the required research competencies in some of their programs for offering a PhD.

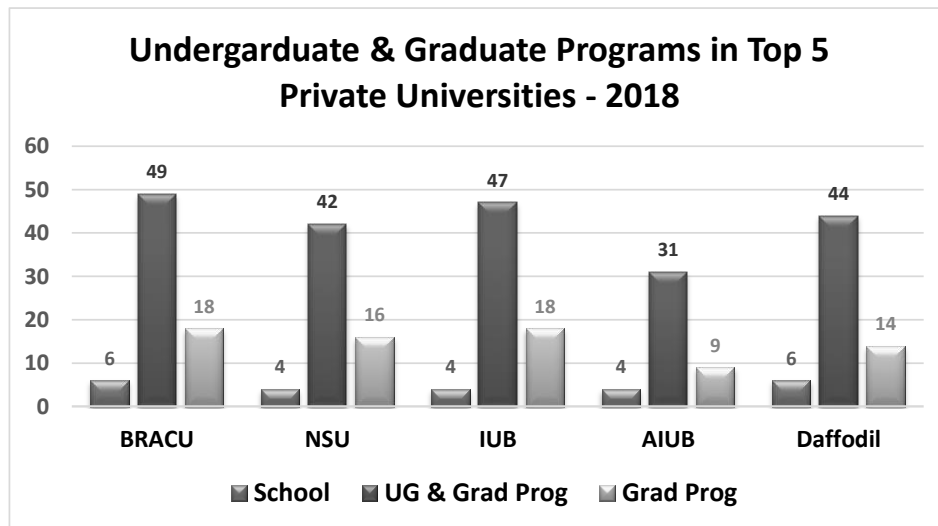
#### **4.9. Credible Undergraduate and Master's Programs**

A credible undergraduate and master's program provides the primary foundation for offering any RBP. In some of the western countries, doctoral programs admit students with only a four year's bachelor's degree. In the US, it is common to get a master's degree while enrolled in a PhD program because of many PhD programs allow students to get a master's degree with little extra effort. Public universities in Bangladesh, including Dhaka University enroll students for PhD with MPhil or four-year's undergraduate and one-year master's degree. Graduates of Bangladeshi PvU need to complete MPhil at the Dhaka University for enrollment at a PhD program.

Most PhD programmes in the UK, make the first year equate to a Masters (usually of research or philosophy). In this way they allow the students to have a masters if the student fails to pass 'confirmation of studies'. A good master's degree is certainly helpful, as it demonstrates an ability for higher-level work. There is always an advantage of having a master's degree before a PhD. This help the student to secure a better internship or part-time job as he continues to study for the doctoral program. Sometimes students drop out from the PhD program for various reasons. In such situations, having a masters helps secure a job and complete the PhD later. In the US, one does not necessarily have to have a bachelor's degree in the same or related discipline (Miller et al. 2018) to be accepted into some master's degree programs. But this is when a student already has both a bachelor's and a master's degree in the same discipline, subsequently pursuing a PhD in the same field may be helpful. In Europe it is frequently considered a prerequisite to have a master's degree before entering a PhD program which is typically a bit shorter than the American version of PhD. However, there are exceptions in some countries. In Denmark, a student can enter a PhD program without a master's degree (Andersen, 2018, pp.1-4).

From the above, we see that the universities must offer credible undergrad and master's program to create the right ambiance and capability towards offering higher research degrees.

Figure 5 below shows the number of graduate programs offered by top five PvU in Bangladesh.



**Figure 5 : Undergraduate and Graduate Programs in Top 5 Private Universities in the Year 2018.**

**Source:** 45<sup>th</sup> Yearly of The University Grants Commission of Bangladesh, UGC Bhaban. Dhaka-1207. Published in December 2019, p. 154-192 & 318-321.

#### 4.10. Doctoral Handbooks for Students, Supervisors, and Staff

A university is willing to offer a PhD should prepare a set of comprehensive quality assurance manuals covering the whole range of activities and issues from the beginning of the recruitment of students to awarding of a PhD. These should include but are not limited to the followings; code of practice for supervisors and research students, the specific role of the supervisor, guideline for their professional development, checking student's documentation, research plan, advising on the university regulations, minimum number of supervisions, record keeping, training needs of the students, journal publications, supervision during thesis pending period, written works, thesis presentation, examination of thesis and submission of data etc.

The GS may have various handbooks for different discipline, identifying graduate research areas, graduation requirements for masters and PhD students etc. The standard manuals found in the reputed universities includes (1) Policy for Sponsored Research; (2) Policy for Institutional Review Board; (3) Research Graduate Program Student Handbook; (4) Policy Handbook for Postgraduate Research Students and Supervisors.

**Sponsored Research Policy:** It is a general policy which lays down the guidelines for all sponsored research of undergraduate and graduate students. The important issues dealt with in this policy are research priorities, allocation of grants and guidelines for their applicability, allocation process, eligibility criteria,

university and school research committees and their responsibilities, process of evaluation of the projects, research project implementation, administration and review (IUBSRP, 2018, pp.6-13).

***Institutional Review Board (IRB) Policy:*** This policy sets forth a standard that the university desires to achieve, to protect the rights, privileges, and welfare of human subjects during research. Guided by the ethical standards of Belmont Report, which enumerates the three basic principles for research, i.e. respect for persons, beneficence, and justice. This manual focuses on research procedures to minimize the risks of harm and maximize the possible benefits to the participants and to the society. Besides, the process of external review, criteria and stages for review, and issues of consent related to research, data protection, and principal investigator's responsibilities are also addressed in this manual (IRB, 2018, pp. 4-15).

***Research Graduate Program Student and Supervisors Handbook:*** These manuals are different for different universities, and prepared for the post-graduate research students, supervisors, and administrative staff. Key contents are admissions of students for research, supervisors guide, instructions for faculty research-coordinators and administrators, and research committees and their responsibilities. Handbook systematically guides the student to develop the thesis starting with writing an initial research proposal until completion.

The above manuals are essential before offering any RBP in the university. Few PvU like NSU, IUB, BRACU has these manuals for guiding the research students for the faculty. However, some of the manuals may be prepared on received of approval of the country's regulatory bodies for offering PhD.

#### **4.11. Hands-on Experience through Laboratory and Practical Activities**

This is one of the most important KCIs for a university. Hands on laboratory experiences are critical to the learning process at every level of education. Investment in developing high quality laboratories for practical experiences help inspire students to further their theoretical understanding and prepare them for high-tech career and foster skills that the potential employers highly value. American Chemistry Society (ACS, 2020, p.1) research shows that students who engage in well-designed laboratories experiences a much developed problem-solving and critical-thinking skills ability; and there is no equivalent substitute for elaborate hands-on practical activities through laboratories and practical activities.

It needs no emphasis that research studies related to the field of STEM needs laboratory facilities with all appropriate equipment and material support. Separate research laboratories with equipment, instrument, and staff to fulfil the specific need of RBPs are necessary for the university.



For PhD in the field of Arts and Social Science and Theological studies might not need equipment-based laboratories, but would need an extensive visit, sightseeing, archaeological explorations, data analysis tools, and software etc., appropriate for the study. In the PvU of Bangladesh, the scope and offering hands-on experience for social sciences discipline is limited. Study reveals that two PvUs, i.e. BRAC University and Independent University, Bangladesh IUB have elaborate programs for their students. BRAC University organizes a complete semester on the outskirts of the capital city Dhaka, for the student undertaking courses and lessons on the socio-cultural aspects of Bangladesh's people. It is a unique system in higher education experiences and offer a holistic curriculum based on the principle of 'experiential learning'. In addition to being exposed to the socio-economic realities of society, it cultivates a broad range of soft skills and qualities to complement the theoretical development that students undergo. On the other hand, IUB offers a mandatory three credit course called Live-in-Field Experience LFE for all students, organized in the remote-villages of the country. The purpose is to impart hands on knowledge and experience on socio-cultural aspects of the people of Bangladesh. This is also a unique course in Bangladesh. The idea, is to provide hands-on knowledge and experience and to impress upon young minds the socio-economic realities of rural Bangladesh.

These days, most social sciences research is undertaken combining multiple fields of study. Developing modern laboratories that would suit all the areas of study would be expensive. As such the universities should develop relationship with the greater research community of the country to economize resources. For example, Social Science Research Laboratories (SSRL) is a network of nine research laboratories established with the combined support of the University of Saskatchewan, Govt. of Saskatchewan, and the Canadian Foundation for Innovation. It provides research support to faculties, staff, students, and other community-based organizations through shared research infrastructure technical and administrative support to the university and beyond, to facilitate the design, delivery, and dissemination of cutting-edge social science research.

Laboratory for the purpose of RBPs should preferably have international recognition, for example ISO certification or such like professional certification bodies. IUB has a research laboratory (IUB-Plasma+), which is the first and only ISO certified laboratory for academic research for Pharmaceutical analysis. Beside undertaking academic research, Plasma+, with its state-of-the-art research instruments and experts, conducts non-degree training and provides hands on training for students and industries on pharmaceutical analysis, biopharmaceutics, and pharmacokinetics.

Hands-on experience through laboratory and practical activities remains as one of the important capability indicators for offering RBPs. An appropriate quality assurance body should oversee and ensure the need and availability of these laboratories before any approval may be given for offering a PhD.

#### **4.12. Higher Education Financing (HEF)**

Research is expensive and needs to be supported financially. Since 1980s, with the participation of the private sector in education, there has been significant growth of PvU in all developing countries, and different groups of people came forward for HEF especially, for research-based programs. Alper & Gonca (2015, p.1154) identifies four groups to participate in HEF. The first group is the government departments with public revenue; the second group is the parents who save or borrow money to finance their children's higher education; third group is the students themselves; and the last group is the charity organizations who support students, parents or higher education institutions.

The international benchmark for allocation of budget for higher education generally varies from 15%-18% of the country's total education budget (ADB 2019, pp. 20-23). Bangladesh allocates about 11% of its total education budget to higher education. The entire amount is primarily allocated to public universities. This amount is 0.12% of gross domestic product (GDP) as opposed to a regional average of 2.9% on higher education, suggesting a need to boost the figure to reach at least the South Asian mean.

Allocation of adequate funds for the graduate students in terms of scholarship, grant, or loan creates the right ambiance for pursuing RBP in the university. The university management's willingness to allocate adequate funds for increasing research capabilities is at the core of offering a PhD (Johnstone, 2005, pp. 84-108).

In the context of Bangladesh, the HEF for research-based programs should be accompanied by capacity building for resource-generation measures such as increasing tuition and other student charges. However, student cost-sharing through higher tuition and fees for M. Phil and PhD, is very unlikely as this would be unacceptable to the student community of the private universities. As such the PvU management should mobilize resources from the government, community, donors, and charitable organizations; and seek funds from the Govt., donor countries, NGOs, local philanthropists, and industrialists to finance research student's tuition, create research resources and provide descent incentives and remuneration for the supervisors. The PvU of Bangladesh need to go a long way in developing effective public-private partnerships and university-industry linkages (UIL) for viable and affordable options for financing the research needs of the universities.

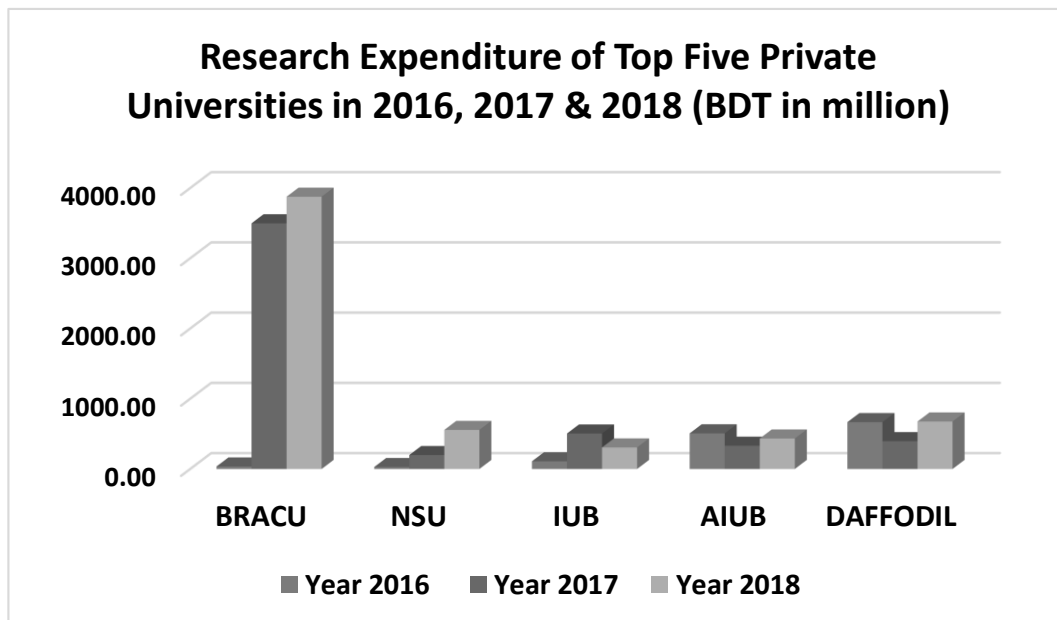
#### **4.13. Research Fund for Doctoral Degree Programs**

In most of the countries, a doctoral candidate is considered a student who studies as a regular student and manage their tuition at their own. But in many countries, PhD candidates are traditionally researchers employed by a university to complete a dissertation or thesis. Sometimes, the job vacancies are posted online, and students need to apply as if you are applying for a job. A student

does not have to pay tuition fee but gets the salary for the job, and simultaneously continue to pursue PhD. This arrangement makes funding highly competitive. Once students are hired, the research will be conducted on the topic specified in the vacancy and in conjunction with a faculty, research institute or research school of the designated institution. Majority of the candidates do complete their PhD within four-five years.

In Bangladesh, at the beginning, to make the program attractive and worthy for the students, the PvU themselves must come forward with their own allocation of fund sufficient to undertake the venture. Students may be asked to pay their usual affordable tuition for study. Wherever possible, the university should subsidize a PhD study by allocating a modest fund and make all efforts to draw-in funds from outside.

The BOT of the universities need to be generous in allocating sufficient seed funds for fundamental and applied research through well-established research centres in the University. Study shows a very poor preparation by the PvU for research funding. Figure 6 below shows the allocation of research by top five PvU in 2016, 2017 and 2018 (BDT in Lac). BRACU is way ahead of other. Overall, the rest of the universities also contribute to developing their research capability.



**Figure 6 : Research Allocation by top Five Private Universities in 2016, 2017 and 2018 (in BDT).**

**Source:** 43<sup>rd</sup>, 44<sup>th</sup> and 45<sup>th</sup> Yearbook of The University Grants Commission of Bangladesh, UGC Bhaban. Dhaka-1207. p. 142-179, p. 251-252 and p. 276-277.

#### 4.14. E-Learning Environment

In this era of digitization and huge resources and the relevant ease of their accessibility, an appropriate E-Learning Environment at the university is a core capability indicator for research. Technological advancement in multi-media and internet is the basis of e-learning environment. A proper use of an e-learning environment facilitates online access to learning content and its administration. A leading international publisher of academic research IGI Global ([www.igi-global.com](http://www.igi-global.com)) and Sander (2019, p. 2) defines e-learning as a system that refers to knowledge acquisition with the help of a collaborative and interactive learning online computer-mediated digital system.

Although there is an apparent consensus amongst the academics regarding the use of modern technology and e-learning environment in the higher academic institutions, practically not much has been achieved in the developing countries including Bangladesh. For higher education, especially in the field of research, e-learning environment is a necessity which makes access to huge web-based information a lot easier (Wani 2013, pp.181-183). It provides a researcher with the 'global reach and connectivity' he needs, especially for conducting research.

As part of the university E-learning environment, a functional Research Data Service (RDS) needs to be established. RDS is an arrangement of storing and providing data for the research community with the expertise, tools, and infrastructure necessary to manage and steward research data for the purpose of the institution. The home of RDS is usually the university library although a separate organ may also be established for this purpose (Ideals, 2020). RDS working in association with the university library have the potential to develop it as an essential and useful repository for research data in the dissemination of knowledge through research collections, research services by faculty and staff and new technologies. Survey of the E-Learning capabilities of the selected top PvUs show that the top few PvU are at the forefront of this capability. The management of the overall education system by the PvU in Bangladesh during the Corona Pandemic adequately demonstrates their better preparedness for e-learning capabilities.

The above shows that an appropriate e-learning arrangement with digital data storage, access, and management system for research is crucial for a university willing to offer RBP.

#### CONCLUSION

The study identifies thirteen Key Capability Indicators (KCIs), which are crucial for the PvUs to offer PhD or professional doctorate degrees. These are; (1) Research Infrastructure, (2) Graduate School, (3) Faculty members and his qualified to be assigned as Supervisor, (4) Culture of Graduate Teaching Assistant & Research Assistant (GTA), (5) Regular publication of research output

in Research Journals, (6) Research Staff and Associates, (7) Research Active and Research Competencies, (8) Credible and well-recognized undergraduate and master's programs in the university, (9) Doctoral Manuals and Handbooks for Students, Supervisors and Staff, (10) Hands-on Experience through laboratory and practical activities, (11) Higher Education Financing (12) Research Fund for Doctoral Degree Programs, (13) E-Learning Environment in the University.

In light of the above set of KCIs, the study suggests that few top-ranking private universities have commendable readiness and capabilities for offering any research-based program. Among the respondents, 78.78% (26 out of 33) agree that top-five PvU have acquired commendable capabilities, expertise and research infrastructure and have established themselves as centres of research and excellence in the country. Top three names of the universities mentioned by all the respondents are BRAC University (BRACU), North South University (NSU) and Independent University, Bangladesh (IUB).

A comprehensive evaluation of the prospects and challenges of introducing PhD by the PvU would be necessary which may be undertaken as a separate research. However, these KCIs would guide higher education regulatory bodies to develop criteria for allowing PvU to allow RBPs. This would also remain available to the universities as standards to improve performance and acquire competitive advantage over others in their quality assurance endeavor.

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