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Philippine graduate tracer study 4

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DISCUSSION PAPER SERIES NO. 2019-26

Philippine Graduate Tracer Study 4

Melba V. Tutor, Aniceto C. Orbeta Jr., and James Matthew Mirafior



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Philippine Graduate Tracer Study 4

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Abstract

A Graduate Tracer Survey (GTS) collects data on the graduate's college experience – skills learned, quality of instruction, and how it relates to employability. GTS allows us to illuminate the relationship between college experience and labor market outcomes, and to formulate course of actions for the higher education sector. In this round, we investigate further and look at the influence of college experience on socio-political participation and life satisfaction.

This study reports on the results of the 4th Philippine Graduate Tracer Survey. It covers graduates from AY 2009-2011. A total 11,547 graduates were surveyed, representing 32.7% of the total sample. This GTS round piloted several study design improvements and administrative arrangements aimed at capacitating the CHED. Several challenges affected the response rate, but it is still a successful demonstration of the desired GTS implementation set-up for succeeding rounds.

The results show that graduates are motivated by earnings and career advancement in their choice of baccalaureate programs. They are concentrated in a few courses, and except for nursing and IT-related courses, their courses are not the high-paying ones. For graduates of courses without professional license requirement, the median length of working on their first job from graduation is 5 months. It takes 12 months to start on their first job for those who took license-requiring courses. Only 86 out of 100 are economically active.

There are a number of tell-tale signs of job-education mismatch: (a) graduates feel that they did not sufficiently develop communication, critical thinking, and problem-solving skills; (b) less than 70% think that their college degree is relevant to their first job; (c) less than half of them consider occupational skills, which they learned in college, as the main reason for landing their first or current jobs; (d) around a fourth think that outdated skills learned in college is keeping them from getting a good job. Thus, graduates and employers are in congruence on the skills gaps that are preventing graduates from achieving their preferred occupations. Overall, only 50.3% of graduates who took courses with professional license requirement and are employed during the reference period are in jobs that match their degree. The predominant “not matched” occupations are various types of clerks, retail, sales, and other service workers, and laborers.

The socio-political life of our graduates is not an active one. Their contribution to the public good is confined to voting, obeying laws, and paying taxes. Meanwhile, despite being concerned about their earnings and rating themselves low in financial condition, overall life satisfaction is still high. In relating college experience to post-college life, we find that positive college experience (in its multiple dimensions) is generally associated with better employability, stronger sense of citizenship, less predisposition to political action, and better life satisfaction.

Keywords: higher education, graduate tracer study

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Philippine graduate tracer study 4

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1. Introduction

Even with the steady rise of enrollment in higher education, global estimates of the private average rate of return to schooling did not change much since the 1960s (Psacharopoulos and Patrinos, 2018). The primary explanation for this is that technological progress favors educated and high-skilled labor. This in turn underscores the critical role of education in ensuring inclusive growth.

In the Philippines, only 33 of 100 Filipinos who should be in college are enrolled in higher education institutions. Meanwhile, 23% of the population of 15-30 years old who graduated college or higher are unemployed in 2018. Hence, the country is battling with both low participation rates in higher education, and apparently low employability of educated youth. Even though unemployment correlates poorly with poverty (de Dios and Dinglasan, 2014), this twin problem still needs to be addressed.

Job-skills mismatch has long been the catchphrase for the persistence of high unemployment and underemployment among the highly educated youth. The usual culprits for this incongruence between education provision and industry needs are unavailability of updated and relevant labor market information to guide manpower planning, course offering, and student choice, and inadequate preparation of graduates due to insufficient participation of industry in faculty training, course and curriculum development (DOLE Project Jobsfit Report 2011-2020).

While higher education has been substantially explored using the lens of employers, educational institutions and the labor market, there remains a dearth of literature assessing it from *the perspective of the learner*.

This is an important deficit considering that it is the “student” which selects 1) schools based on the constraints imposed by the conditions of their household/family and area of origin, 2) programs based on interests, aptitude and perceived future returns, and 3) occupations after graduation, depending on labor market opportunities and school performance. Accordingly, it is the student/learner and her or his household/family that experience the consequences of their decisions, in terms of actual returns, job and overall life satisfaction. It is the student/learner – more than the HEI – who can judge training adequacy based on her or his early experience in employment. It is the student/entry-level employee – more than the employer – who can determine her or his level of job satisfaction, or if it is in line with the expectations that developed during college.

A Graduate Tracer Survey (GTS) collects data on the graduate’s college experience – skills learned, quality of instruction, and how it relates to employability. GTS allows us to illuminate the relationship between college experience and labor market outcomes, and to formulate

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course of actions for the higher education sector. To date, there are only 3 nationwide graduate tracer studies. This report presents the results of the 4th Philippine Graduate Tracer Survey, covering graduates from AY 2009-2011.

2. Research and policy objectives

Because of their nature, graduate tracer studies typically have similar objectives, i.e. to find out the results of higher education and training in terms of employment outcomes in order to improve the provision of higher education. In this study, we go a couple of steps further to get a sense of the broader college experience and how it relates not just to employment outcomes but to socio-civic participation and overall life satisfaction.

In particular, we aim to tackle the following policy questions:

1. What has been the college learning experience of higher education graduates? Here we look at learner engagement, teaching quality, student support services, and overall college experience.
2. What has been their experience after college graduation on the whole and on specific aspects of post-college life? Specifically, we are interested to look into their experiences with regards the following dimensions: (a) labor market and livelihood; (b) political and social participation; (c) contributions to community and public good; (d) life satisfaction.
3. Is there a mismatch between what students had learned in college and the work they are doing now or in their first job after college?
4. To what extent does better college experience influence post-college experience on the whole, as well as on specific aspects of post-college life?
5. Based on students' own experience, how could their college experience be improved to raise their private benefits from higher education and to increase their contribution to the public good?

Answers to the above questions will guide policy makers and implementers in shaping the future of higher education. CHED will have a sound empirical basis for the decisions it has to make on: (a) higher education priorities and corresponding resource requirements; (b) steering HEIs to be more “strategic” in developing their curricula and upgrading education provision; (c) helping students and families make choices on study programs and HEIs.

3. Review of related literature

Higher education institutions

A comprehensive study examining higher education from the perspective of HEIs is that by Paqueo, Orbeta, & Albert (2011). They observed that the participation rate in higher education is not a problem (rate is relatively higher to similarly-situated economies); rather, the problem lies with the quality of education reflected by PBE performance, low world ranking of our

HEIs, and the high proportion of college graduates among the unemployed. They traced this to low expenditure per student, low qualifications of faculty, and low program accreditation rate¹.

The study also reported that “discipline orientation continues to favor so-called low priority fields of study” and oversubscription on non-priority programs, pointing to poor guidance on college-bound students and the relative cheapness of provisioning the oversubscribed courses given limitations of HEI resource. Finally, there is substantial disparity in HEI attendance in terms of income (favoring the rich) and gender (favoring women).

Manasan and Parel (2014) point to three observations. First, State Universities and Colleges (SUC), even if they already have broad mandates to begin with, are allowed by their charters to offer programs that are outside of their core mandates, resulting in substantial duplication in programs (and therefore higher cost per student for private HEIs) and quality deterioration. Second, while SUCs perform better than private HEIs in over 84% of PBEs, this advantage is slowly being eroded. Third, there is a preponderance of HEIs with zero passing rates in many PBEs from 2004 to 2011. All of these point to the need for CHED to strictly implement an effort to rationalize HEIs and their programs as well as improve the quality of instruction.

Manasan’s (2012) paper on HEI rationalization found out that while existing funding formulas “resulted in the SUCs’ greater reliance on internally generated income”, they have failed to shift SUCs enrollment toward priority courses and improve the quality of instruction. Multiplicity of program offerings amongst SUCs is found to push SUCs’ per student cost upwards, although per student cost is not found to have statistically significant influence on the licensure examinations passing rate. Thus, “some scope for reducing per student cost without necessarily affecting the quality of education provided by SUC”².

One can argue that provisioning programs that are outside of core mandates, as well as the multiplicity of program offerings, reflect the inherent inefficiency of the SUC. Cuenca (2011) conducted a data envelopment analysis (DEA) on 78 SUCs and found out that the majority of SUCs are indeed, inefficient, with a substantial decline in efficient SUCs from 2007 to 2009. The study also concluded that “year-on-year average efficiency score of all SUCs is considerably low, which indicates a substantial amount of inputs that could have been saved if only the SUCs had operated efficiently”.

Graduates and the labor market

What has been the effect of the state of HEIs on graduates as entrants to the labor force? Orbeta (2002) looks into developments in the dynamics between the Philippine education sector and the labor market in the last quarter of 20th century. The study already noticed high unemployment rates among the highly educated, even as the share of those with college diplomas among the employed is rising. The incidence of the underemployed who are at least college graduates also increased.

A wage study was conducted by Luo & Terada (2009), using data from the Philippine Labor Force Survey (LFS) from 2003 to 2007. The study reports that wage returns to education monotonically increase — workers with elementary education, secondary education, and

¹ The accreditation system of Philippine HEIs is thoroughly reviewed by (Conchada & Tiongco, 2015). The study insisted that quality assurance is also a matter of ensuring *learners’ outcomes* and not just the quality of inputs and processes in the system.

² The study sees the amalgamation of SUCs as potential way to reduce costs without compromising quality.

tertiary education earn 10%, 40%, 100% more than those with no education. This was updated and extended by Punongbayan (2012) using 2010 data, reporting returns to elementary, secondary, and tertiary education at 14%, 50%, and 183% higher to no education, respectively. The study also demonstrated heterogeneous effects of education across income classes via quantile regression, reporting that returns to college education are higher for low-wage workers than high-wage workers in 2010, but this gap has diminished since 2001.

A wage premium analysis by Orbeta, Gonzales, & Cortes (2016) revealed shortages in college graduates among fast growing services sectors (medical, engineering and architecture; social science, business and law; sciences; and services disciplines) and oversupply in agriculture and humanities. The study mentions the results of the Philippines Employment Projections Model (PEPM) by the International Labour Organization for 2001-2010 showing that “unemployment rate increases with the level of educational attainment”, implying that “as an individual climbs up the ladder of education – learning more skills – it tends to prefer to remain unemployed rather than taking up any kind of employment”.

HEI-labor market dynamics

Given information on labor market’s behavior with college graduates (and vice-versa), we can now take a look at studies on how HEIs which produced those graduates respond to evolving labor market behavior. Edralin (2001) takes off from the perceived need for appropriate linkage and manpower matching strategies by HEIs and CHED (on top of quality assurance), and proceeded to survey 198 colleges and universities and 810 establishments from 16 regions. The study found out that there is “congruency” between the knowledge schools claimed to give their students and the knowledge expected by establishments from graduates, but a “non-congruency” in terms of skills.

The study also found out that while schools, in their list of priorities, rank developing technical skills related to specialization at the top, followed by basic academic skills, information technology skills, and then by social skills, the industry gives more premium to basic academic skills, followed by information technology skills, with technical skills related to specialization only at the third.

Finally, the study revealed a significant difference between ratings of schools and ratings of establishments with respect to their assessment of the graduates’ (evaluated by industry as on-the-job trainees) knowledge, values, and skills. This result is established in all areas regardless of the type of school and status of accreditation. There is also a significant difference in the assessment of schools and establishments on the effectiveness of the on-the-job training program. The study then proposed the formulation (by DOLE and CHED) of integrated HRD and R&D frameworks.

A joint study by the ILO Bureau for Employers' Activities (ACT/EMP) and the Employers Confederation of the Philippines (ECOP) (2015) looks into the “job mismatch” in three industries: automotive, semiconductors/electronics, and tourism. Through a combination of Focused Group Discussions (FGD) and a survey, the study confirms the existence of mismatch - both in technical and soft skills - which affects the manufacturing sector (automotive and semiconductors) more than services (tourism). The research identified three main factors behind the mismatch: 1) weak labor market information system, 2) inadequate training, and 3) weak support for science and technology.

Some studies also revealed that HEIs are putting in effort to respond to industry requirements – both in terms of skill and specialization requirements. Orbeta, Gonzales, & Cortes (2016), in particular, reports on FGDs with HEIs revealing that HEIs change their academic programs primarily based on labor market information and enrollment, although administrative bottlenecks and scarcity of resources often prevent speedy implementation of these changes³.

Learner-oriented studies

As mentioned earlier, so far there are 3 nationwide graduate tracer studies. The first is by Arcelo (2001) through the Fund for Assistance to Private Education (FAPE) covering graduates from SY 1994 to 1995. The study had 6,701 respondents (41% of the sample) from 653 participating schools. Using logistic regression, the study revealed that graduates with the highest probability of employment are male, married, with high self-rating, and products of the University of the Philippines, De La Salle University or Ateneo de Manila University. Looking at the unemployed, the primary reasons stated are failure to find a job commensurate to one's academic preparation, lack of prestige of alma mater, and lack of interest.

The study found out that optometry, foreign service, computer engineering, electronics and communication engineering, computer science, accounting, and industrial engineering courses have high employability, while law, architecture, commerce (non-accounting) and chemical engineering courses have the greatest number of unemployed. Regarding job-education fit, graduates of dentistry, commerce, language, engineering, and medicine found jobs fit to their academic training, while graduates of home economics and liberal arts programs had the least job-education fit. Interestingly, where there is a mismatch in academic qualifications and job requirements, economics and mass communications graduates are found to be more flexible and experienced less difficulty in finding jobs.

The second graduate tracer survey covered graduates from SY 2000-2001 to SY 2003-2004. It was implemented by the Asian Development Bank through the CHED Zonal Research Centers. A total of 61 (36 private and 25 public) HEIs were able to successfully implement institutional graduate tracer surveys and these were integrated into a national dataset of 26,992 respondents.

The study found that the mean job search time for college graduates was 9 months and graduates of service trades courses had the shortest search time at 5.26 months. In terms of employment tenure, graduates of business education, engineering and technology, medical and allied courses, criminology, and IT-related disciplines are the ones more likely to occupy regular or permanent positions. Meanwhile, regarding initial earnings, graduates from cluster disciplines of law and jurisprudence, medical and allied courses, and transport services are the ones with the highest average initial income. Graduates with the lowest initial gross monthly income are from the environmental protection, agriculture, and education science and teacher training disciplines. The top 3 reasons for being unemployed are: difficulty to find a job, further study, and presence of family concerns. Graduates from the natural science courses registered the highest unemployment rate, followed by those from agricultural courses.

³ This is probably related to efficiency concerns discussed earlier in Cuenca (2011).

Finally, the third nationwide graduate tracer survey covered graduates from the SY 2005-2006 to SY 2009-2010. CHED engaged the De La Salle University to implement the study. A total of 6,622 graduates (46% of the sample) participated in the survey.

Around 82% of the respondents were employed at the time of the survey, and majority are graduates of business administration and other business-related courses. They found that age, course, batch, and source of funding are significant predictors of employment status. The study also found that the education / teacher training program exhibits the highest job-education fit (76.44%), which means that graduates from this program find employment in the education industry. Meanwhile, the unemployed are mostly females (62%), graduates from private HEIs (84%), and from medical and allied courses (30%). Reasons for unemployment are professional training, lack of employment opportunities, lack of work experience, lack of connections, and plans to migrate or work abroad.

Overall college experience

We need to quantify “college experience” to be able to relate it with college success or employment success. This, however, is not a trivial exercise. We must look at studies that attempt to aggregate various facets of school experience. Webber, et al. (2013) transformed variables – using principal components analysis (PCA) – from the US National Survey of Student Engagement (NSSE) into “student engagement” components, the relationship of which to GPA and college satisfaction was explored via ordinary least squares (OLS) regression and ordinal logit. The use of the PCA was meant to address the mixed assessment predictive ability of “benchmarks” - groupings of the NSSE items initially developed by NSSE developers.

The PCA was able to deduce 10 components, which Webber et al. (2013) labeled as: 1) Course work emphasis; 2) Interactions with faculty; 3) Institutional emphasis on support and interaction; 4) Quality of relationships; 5) Undergrad research/capstone; 6) Diversity with peers; 7) Academic interaction with peers; 8) Pages in written papers; 9) Community service; and 10) Time on study/academic work. Students with activities related to items 1, 2, 4, 7, and 10 reported significantly higher satisfaction regarding overall academic experience.

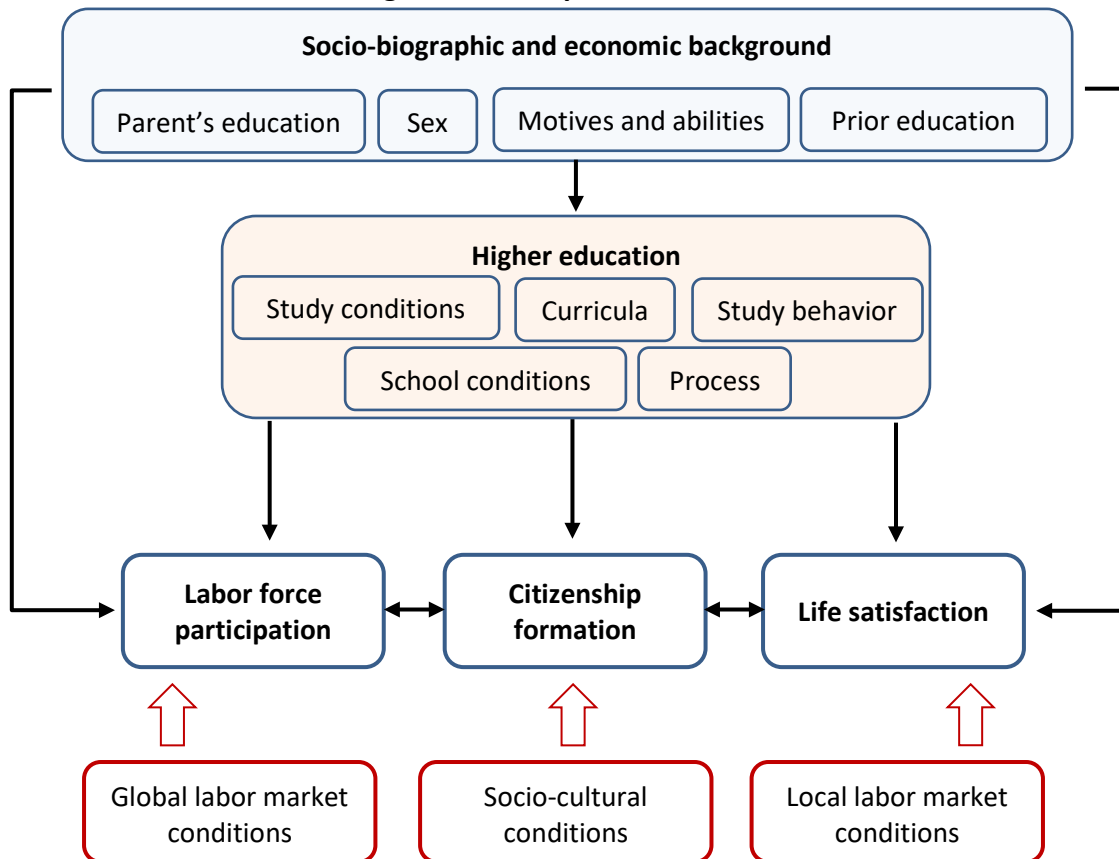
“College experience” plays significantly in the decision to finish college or not. Azarcon, et al. (2014) used conjoint analysis – a tool used in market research to identify underlying preferences of consumers and the trade-offs they make – to characterize the decision-making process of students related to retention and attrition. For the sampled students in University of the Cordilleras (UC) in Baguio City, the perceived quality of education comes out as the top factor affecting this process, followed by quality of faculty and increase in total fees.

4. Conceptual framework

We utilize a broad framework motivating higher education investments in this study (Figure 1). The decision to undertake college education is a household decision, not an individual one. Sending a child to college means delaying her or his full participation in the labor force and it is the household that carries the bulk of actual and opportunity costs. This decision is influenced by several factors, not the least of which is the parent’s education, which is a good proxy for the family’s economic status. Educated parents are more likely to send their children to pursue college, not only because they may have the means but also because they want their children to reap the returns to higher education as they do. This intergenerational effect also translates to a strong parental influence on the choice of program and higher education institution.

Individual factors such as sex or physical capacities also influence the decision to take college, as these directly influence their expected utility and college experience. For instance, it is stereotypical that parents prioritize educating their sons because they are expected to be the providers of their own families and of their parents in old age, while females are perceived to become part of their husbands’ families once they marry. In the Philippines, however, there is existing literature that points out that female children are more reliable in providing for their parents (Lynch and Makil 1968; Hollnsteiner 1970; King and Domingo 1986). Children with disabilities may also be prevented from going to college due to prohibitive costs or logistical challenges. Individual interests and intended learning outcomes – and the required aptitude and discipline required to achieve them – are in general formed before higher education. The students are products first of basic education, their households, and other influences (e.g. peers, social and tri-media) before they embark on their college journey.

Figure 1. Conceptual Framework



Source: Adapted from Schomburg (2010).

Given these considerations, the student/household decides on whether to pursue a college education. Those who choose to do so now have to choose the following:

1. *Program to enroll in.* The program should either be a) aligned with the student's interests and self-perceived aptitude, b) promises future returns, or c) both. Note that with a) this is also influenced by the household/family of the student, so it is inseparable from the household/family conditions.
2. *School to enroll in.* After a cost-benefit calculation – considering geography, perceived quality of school, parental, peer, and societal pressure, among others – the student/household selects a school. Note that the decision on the school might also partially determine the final choice of a program or that school and programs are chosen together rather than sequentially.

Once the above choices are made a student's college journey will be determined primarily by the learning environment provided by the HEI: the quality of the curricula, of the faculty, and of the school facilities and support services. The HEI's conditions – whether it is a private or public school, its geographical location, its network of support from politicians or alumni – also have implications on the school's resource pool that can be utilized directly on students or in ensuring that there are good opportunities for their graduates. The student's behavior and the process of learning are all affected by individual motivations, school standards, and competence of the faculty. Collectively, we call these factors as determinants of the student's college experience.

Hence, we consider a “strategic” HEI the one that decides on program offerings, target population, budget, fees, and overall education provision quality a) considering students' pre-college experience; b) in a way that maximizes the quality of their college experience, c) and ensures the best possible post-college experience.

A college education's direct output is the set of knowledge and skills that can be translated into competences that are ideally relevant to industry needs. These competences determine the transition of the graduate from college life into a productive member of the labor force. This transition is also affected by the student's socio-economic background in as much as the household she or he belongs provides access to job opportunities. The HEI itself can also influence the transition process through programs targeted to assisting their graduates in employment search. The transition may involve purely job search, but it can also incorporate short-term trainings to enhance employability, or even a period of idleness as the graduate explores her or his options moving forward from college, i.e. graduate studies, entrepreneurship, family, among others.

Once the graduate crossed the bridge from student life to work life, we can now observe her or his labor force participation outcomes – whether she or he decided to work, the occupation she or he landed on and in what industry, whether it is a full-time or part-time job, whether it can lead to a permanent or regular position or a rotating contractual one, whether there are opportunities for skills training, the salary and other benefits provided by the company, among others. These can also be affected directly by the graduate's family network or HEI, to the extent that they provide support in ensuring that the student lands the best possible job. From

these conditions, the graduate will be able to gauge the relevance of the college education and training she or he received in “making it” in the world of gainful employment.

Another important outcome of higher education, and some would argue is superior over earnings, is citizenship formation. A college education is supposed to imbibe in the individual a deeper understanding of her or his relationship with the state. This entails knowing her or his rights and responsibilities as a citizen, and actively ensuring that the state is accountable to the people. Thus, we can look at the graduates’ perception of and engagement with various types of socio-political activities, formed through college education and family and peer influence.

Finally, college education affects life satisfaction. Traditionally, we think of the graduate’s employment outcomes as the determining factor of overall life satisfaction as the job affords the graduates the capacity to provide for their and their households’ needs. However, a college education can directly affect life satisfaction to the extent that learning itself provides fulfillment, and the desire to explore productive activities outside of the labor force such as further studies, civic engagement, community service, among others. Again, the graduate’s socio-economic background has a role in this, as much as the household provides other fulfilling experiences. The quality of the education and training received from the HEI also has a direct contribution to the graduate’s overall welfare.

The graduate’s post-college college life – labor force participation, citizenship formation, and life satisfaction – are all interconnected. A graduate with a satisfying employment condition will have a good standard of living and can pursue an engaged socio-political life. On the other hand, a non-satisfying work condition may also be pushed to engage in socio-political action as an attempt to understand or change her or his condition. In turn, socio-political awareness may also influence the graduate’s outlook on her or his condition.

Moreover, this journey from pre- to post-college life is affected by the prevailing conditions – socio-cultural, global and local labor market. The HEI’s decision set discussed earlier is shaped by the extent of interaction with local and global employers and industry players. The variety and quality of job opportunities that can be explored by graduates depend on prevailing labor market rules and overall economic growth. Moreover, participation and success in the labor market may differentially affect women versus men due to socio-cultural norms, i.e. women are more expected to take a break from employment to raise children or to take care of an elderly parent. These breaks can affect work experience which is an important determinant of progress in the world of work.

5. Methodology

This GTS round is more comprehensive in intent and design. It also addresses key conceptual and methodological challenges of the previous graduate tracer studies. Thus, this GTS round is a first of its kind in many respects.

Sampling

The population of this GTS round is college graduates from AY 2009-2011. Based on CHED data, there are 1,197,460 graduates during this period. The earlier GTS rounds have all had nationally representative sample only, which limited the usability of the findings. The sample for this GTS is representative at the regional level, with public and private HEI disaggregation. In addition, the sample for each region is allocated proportionally to the 19 discipline groups of CHED. This sampling design is envisioned to allow for levels of analysis that are actionable not just for the CHED central office but for the CHED regional offices as well. In order to implement this, a nationwide sampling frame is consolidated by getting the list of graduates (names, course, year of graduation, contact details) from all randomly selected HEIs. The total sample size is 35,297. The regional distribution is shown in Table 1. The column “Original Sample” represents the required sample size for each region. The “Additional Sample” column refers to the replacement sample requested by selected regions due to substantial proportion of untraced graduates. Thus, the total number of graduates drawn for this GTS is 51,659.⁴

Instrument

The questionnaire developed for this GTS is the most comprehensive of all GTS survey instruments so far. In fact, it is more comprehensive than most graduate tracer instruments used globally. Typical tracer questionnaires in other countries range from 8-12 pages that are focused on educational history, college experience, and employment. This GTS 2014 instrument meanwhile covers a broad range of topics: (a) household and demographic characteristics of the family; (b) educational background; (c) college experience; (d) employment; (e) socio-political participation, and (f) life satisfaction. The College Experience section has information on academic and non-academic activities, impressions about faculty, and interaction with school officials and staff. The last two sections have questions on participation in elections, citizenship, social norms, socio-political action, and various aspects of life satisfaction. The survey instrument is implemented via face-to-face interviews by trained enumerators, unlike the 3rd GTS round that used self-administered electronic forms. The questionnaire for the survey is provided in Annex A.

⁴ For a more detailed explanation of the sampling design, refer to the GTS Sampling Report prepared by Dr. Jeffry Tejada of the School of Statistics, University of the Philippines.

Table 1 .Tracing Results

Region	Original Sample	Additional Sample	Tracing Results				
			Traced w/in Region	Traced outside Region	Untraced	Duplicate	No Report
PH	35,297	16,362	17,909	4,472	8,443	395	20,440
CAR	2,819		1,717	892	156	54	0
1	2,637		1,983	196	172	8	278
2	2,126		1,132	425	543	26	0
3	2,059	2,348	888		10		3,509
4A	2,205		1,282	174		22	727
4B	1,224		89	86	979	70	0
5	2,057		976	519	50	20	492
6	2,093		634	212	136		1,111
7	2,855		2,160	355	300	40	0
9	2,051	2,230	1,459	353	1,718	37	714
10	2,297	2,643	1,205	112	1,158	28	2,437
11	3,529	2,803	1,489	476	570	34	3,763
12	2,517	2,891	1,127	296	196	20	3,769
NCR	2,619	2,648	368	15	2,066	3	2,815
CARAGA	2,209	799	1,400	361	389	33	825

Notes: Regions ARMM and 8 are not included in this round of GTS.

Source: Tracing and Enumeration Status Reports of CHED Regional offices

Data collection

The study design is based on the premise that CHED is the only organization that has the appropriate motivation and incentive to conduct a policy-oriented graduate tracer study. With CHED, most of the conflict of interest and outreach issues associated with HEI- and third party-led tracer studies are avoided. This goal of institutionalizing a CHED-led GTS naturally leads to the Regional Offices (CHEDROs) being the main implementers. Thus, an extensive capacity-building component is incorporated in the implementation strategy. CHEDROs were trained to handle the survey operations – from consolidation of the sampling frame to conducting interviews to questionnaire editing. The Regional Director provides overall supervision while a Project Director oversees day-to-day operations. The Project Director manages the team of field supervisors, enumerators, tracers, and editors hired for the study. She/he is also responsible for all administrative, financial, and other logistical requirements of the study. This set-up is piloted in this round, with the end in view of achieving replicability for future GTS rounds. Data collection was conducted from July 2014 to June 2015.

A perennial problem from the previous GTS rounds is low response rate. The response rates of previous CHED GTS rounds are 40%, 88%, and 46%, respectively. The second round was particularly high as it was HEI-led, but there are methodological concerns in the study design. For instance, sampling of graduates was done by each participating HEI based on the targets set by the National Technical Working Group by program and by year of graduation.

Meanwhile, the third GTS utilized a volitional response design that potentially introduced bias on the study’s results.

In order to address these issues, a tracing stage is incorporated in this GTS round. The list of sampled graduates includes contact details (phone number, email, and home address) that are used to track the graduates from the point of graduation to their current status. Office-based tracing is conducted by dedicated tracers and only those traced were endorsed for enumeration. Individual-based tracing avoids the bias of volitional design, as each sampled graduate is exposed to the same level of effort and information with regard to recruitment. It also aims to trace graduates regardless of their level of after-graduation connection with the school. Table 1 shows the tracing results. The “Untraced” column includes those that did not have contact information to begin with. The “No report” column represents a gap, albeit substantial, in the monitoring data.⁵ Nationwide, only 43.3% of the sample graduates were successfully traced. Performance of the regions is highly-varied – from a high of 93% in Region CAR to a low of 7% in NCR. Regions with tracing rates of more than 70% are Regions CAR, 1, 2, 5, and 7.

Table 2. Enumeration Results

Region	Original sample	Additional sample	Enumerated	
			Frequency	%
PH	35,297	16,362	11,547	32.7
CAR	2,819		355	12.6
1	2,637		1,145	43.4
2	2,126		536	25.2
3	2,059	2,348	429	20.8
4A	2,205		912	41.4
4B	1,224		1	0.1
5	2,057		993	48.3
6	2,093		532	25.4
7	2,855		749	26.2
9	2,051	2,230	1,222	59.6
10	2,297	2,643	1,208	52.6
11	3,529	2,803	1,341	38.0
12	2,517	2,891	536	21.3
NCR	2,619	2,648	278	10.6
CARAGA	2,209	799	1,310	59.3

Notes: Regions ARMM and 8 are not included in this round of GTS.

Meanwhile, Table 2 shows the enumeration results. There are 11,547 interviews successfully conducted, representing just 32.7% of the target sample size (52% based on the number of traced graduates). Global experience with graduate tracer surveys put the response rates anywhere from 30 to 60% (Schomburg, 2003). Region 9 was able to enumerate the greatest number of graduates at 1,222 or 59.6% of the sample. It is followed by Regions Caraga and 5

⁵ Instead of encoding the tracing sheets individually, the CHEDROs prepared tracing status reports submitted periodically to the Central Office. In some cases, the numbers do not tally with the respective sample sizes. The discrepancies between the tracing status numbers were adjusted in this “No Report” column.

with 59.3% and 48.3% response rates, respectively. Region 4b basically did not implement the GTS, while Regions CAR and NCR attained only 12.6% and 10.6% of their targets, respectively.⁶

Analysis

Another first in this study is the technical support provided by PIDS. The technical support covers questionnaire development, sampling, training of GTS field supervisors, overseeing data collection and processing, and analysis.

To address the research objectives and guided by the conceptual framework discussed above, a combination of descriptive statistics and econometric techniques is employed.

Descriptive statistics include frequency tables, cross-tabulations and summary measures of the following: (1) Graduates characteristics; (2) Family information; (3) Education; (4) College experience; (5) Employment; (6) Socio-political participation; and (7) Life satisfaction.

Whenever meaningful, we present the descriptive results with the following subgroups or a combination thereof:

- Sex – whether the respondent is a female or a male;
- Geographical location – regional location of the HEI graduated from;
- HEI type – whether the institution is public or private;
- Field of study – the respondent’s baccalaureate program based on the Philippine Standard Classification of Education’s major groupings;
- Employment status – whether the respondent is employed, unemployed, underemployed, or not in the labor force;
- Occupation – the respondent’s type of occupation based on the Philippine Standard Occupational Classification’s 10 major groups;
- Industry – the respondent’s industry based on the Philippine Standard Industrial Classification’s 21 major groups;

Differences are tested for statistical significance using the chi-square test for categorical variables and the Wilcoxon-Mann-Whitney test for continuous variables. We include the p-value of the significance test for the null hypothesis of no difference whenever appropriate.

Econometric techniques are employed to investigate the following:

1. Influence of college experience on post-college life

The learners’ assessment of their college experience is summarized using polychoric principal component analysis. The index measures are used in the linear regression to determine the extent to which college experience affect employment and socio-political participation outcomes.

⁶ For a detailed discussion of the challenges encountered in implementation of this GTS, refer to the final report of the Technical Assistance on the Operational Aspects of the CHED-PIDS Graduate Tracer Study (2015).

2. Influence of college experience and employment outcomes on overall life satisfaction

The GTS asked the students, post-graduation, if they are currently satisfied with their home, current job, employment opportunities, financial situation, among others. We summarized these variables into an “overall satisfaction index” using polychoric principal component analysis. Using household variables and other appropriate controls, we test the relationship between college experience and employment outcomes on the overall satisfaction index using regression methods.

6. Limitations of the study

A major limitation of the study is the low response rate. Even though the national response rate is within global experience, 8 of the 15 regions had response rates of below 30%. The primary reason for this is the quality of the database of graduates obtained from the HEIs. Many HEIs refused to share the contact details of their graduates (big public and private universities in the NCR), and those who shared had outdated information (collected upon student’s entry, not upon graduation).⁷

Regions CAR and NCR, which are among the top regions in terms of the number of graduates, have the lowest enumeration rates at 13% and 11%, respectively. In fact, the University of the Philippines System, the Ateneo University System, and the De la Salle University System, the considered Big 3 in Philippine higher education, account for less than 5% of sampled graduates. Populous public universities such as the Polytechnic University of the Philippines and the Mindanao State University account for 1.3% of respondents while big private ones such as the Far Eastern University and the University of the East have almost zero representation.

Hence, we present the regional disaggregated data with caution, and draw attention only to regions with fairly good sample sizes (Regions I, IVA, 5, 9, 10, 11, and Caraga). Also, since there is only one respondent from Region IVB – MIMAROPA, we suppress this value in tables with regional disaggregation. Meanwhile, Region 8 begged off from participation because of the recent typhoon that destroyed records of the regional office and HEIs.

Likewise, as mentioned earlier, the CHED regional offices implemented the data collection, and this proved challenging. Many data items were not correctly edited during field and office editing stages. This resulted to substantial missing data. Thus, for key tables affected by missing data, we present the frequencies in addition to the percentages.

⁷ For a detailed discussion of the issues surrounding the operational aspects of this GTS round, refer to the Final Report of the Technical Assistance to the Operational Aspects of the CHED-PIDS Graduate Tracer Study.

7. Results

The Results section proceeds as follows. We discuss the graduates' demographic profile, followed by family information and their college education profile. We then proceed to post-college experience, from employment to socio-political participation, and life satisfaction.

7.2. Demographic profile of graduates

The total number of respondents is 11,547. Table 3 presents the regional disaggregation by sex. Nationwide, the share of female college graduates is 57.8%. The higher share of female graduates is observed across all regions, the highest being in Region VI at 61.7%. The 2015 Census of Population placed the share of females and males who are baccalaureate degree holders at 56% and 44%, respectively.

Table 3. Respondents by region and by sex

Region graduated from	Total N	Male %	Female %
CAR	355	43.4	56.6
REGION I	1,145	43.1	56.9
REGION II	536	47.0	53.0
REGION III	429	42.2	57.8
REGION IV-A	912	40.4	59.6
REGION V	993	40.4	59.6
REGION VI	532	38.3	61.7
REGION VII	749	42.6	57.4
REGION IX	1,222	42.1	57.9
REGION X	1,208	42.7	57.3
REGION XI	1,341	40.0	60.0
REGION XII	536	44.0	56.0
NCR	278	44.6	55.4
REGION XIII	1,310	43.7	56.3
Total	11,547	42.2	57.8

Since our samples are 2009 to 2011 graduates, the majority of them (73.4%) are 24 to 27 years old (Table 4). Eleven percent are 28-30 years old and 9.3% are 21-23 years old. Around 6% are above 30 years old. The share of older graduates is higher among males (21.5% vs 14.1%) ($p < 0.001$).

Table 4. Respondents by age group and by sex

Age	Total %	Male %	Female %
21-23 years old	9.3	7.1	11.0
24-27 years old	73.4	71.4	74.9
28-30 years old	11.4	14.8	8.9
Above 30 years old	5.8	6.7	5.2

Seventy-two percent of graduates have never been married (Table 5). Ninety-five percent of them intend to get married in the future, at an average age of 31 years old. Eighty-three percent of married graduates did so after graduation. The average time between graduation and marriage is 32 months. More females are married (25.6%) compared to males (20.3%) ($p < 0.001$).

Table 5. Respondents by marital status and by sex

Marital status	Total	Male	Female
	%	%	%
Never Married (Single)	72.0	75.2	69.6
Married	23.3	20.3	25.6
Living-in	4.4	4.4	4.4
Others	0.3	0.2	0.4

7.3. Family background of graduates

Seventy-four percent of graduates are still living with their parents at the time of the survey. The shares are similar between male and female graduates. A third of the graduate respondents are the eldest among their siblings (Table 6). The average number of siblings is 3.

Table 6. Birth order of respondent by sex

	Total	Male	Female
	%	%	%
Only child	7.0	7.4	6.7
Eldest	30.1	30.7	29.6
2nd	24.7	24.2	25.0
3rd	16.0	15.6	16.2
4th	9.9	9.6	10.1
5th	5.5	5.5	5.4
6th or younger	7.0	7.0	7.0
Total	100.0	100.0	100.0

Table 7. Highest educational attainment of parents

Educational attainment of father	Educational attainment of mother					Total
	Elementary graduate or lower	Some high school	High school graduate	Some college	College graduate or higher	
Elementary graduate or lower	8.4	2.3	3.3	1.6	1.2	16.9
Some high school	1.6	2.4	1.3	1.0	1.0	7.2
High school graduate	2.7	1.1	10.8	3.6	4.6	22.8
Some college	1.1	1.0	4.6	7.5	7.5	21.7
College graduate or higher	0.8	0.5	2.9	4.7	22.4	31.3
Total	14.6	7.4	22.9	18.4	36.7	100.0

Table 7 presents the highest educational attainment of the graduates' parents. It shows that 22.4% of respondents have parents who are both at least college graduates. In fact, 41% of respondents have at least one parent with some college education.

We used the asset ownership data of households to construct a wealth index and to categorize households into poor and non-poor using a cut-off of 26%, the first-half national poverty incidence in 2015. Table 8 tabulates the poverty status from this exercise with the educational attainment of the graduates' parents. It is evident that fathers and mothers from non-poor households are better educated than their counterparts ($p < 0.001$). While these findings are not surprising, these have implications with regard to perpetuating inequality.

Table 8. Highest educational attainment of parents by poverty status

	Father		Mother	
	Non-poor	Poor	Non-poor	Poor
	%	%	%	%
Elementary graduate or lower	11.5	32.7	10.6	26.0
Some high school	6.0	10.9	5.7	12.2
High school graduate	21.5	26.5	21.6	26.7
Some college	23.3	16.9	18.9	17.3
College graduate or higher	37.7	13.1	43.3	17.7

A good indication of improving equity in access to higher education is whether the share of graduates with less-educated parents is increasing over time. A comparison of results with the 3rd Philippine Graduate Tracer Survey indicates this trend. Based on that survey, 68% of mothers and 64% of fathers of the respondents are college graduates or higher. The corresponding shares for this round are 36.7% and 31.3%, respectively.

7.4. Educational profile

Program graduated in

A total of 63.3% of graduates are from private HEIs (Table 9). This higher share of private HEIs among graduates is true for all regions except for Regions II and V.

Table 10 shows the graduates' top 10 fields of study by type of HEI. Almost one-third of graduates from public HEIs are from the Teacher Training and Education Science field. This is followed by the Business and Administration and the Engineering and Engineering Trades at around 14% each. Meanwhile, the top field of study for graduates from private HEIs is the Health Programs and it also commands one-third of the graduates. Business and Administration follows at 21.8% and the Teacher Training and Education Science field is third at 10.9%. There is little variation in the field of studies taken by graduates. The top 3 fields command 54% and 64% of graduates from public and private HEIs, respectively.

Table 9. Type of school of HEI graduated in by region

	Total		Public		Private	
	N	%	N	%	N	%
CAR	351	3.1	12	0.1	339	3.0
REGION I	1138	9.9	410	3.6	728	6.3
REGION II	536	4.7	334	2.9	202	1.8
REGION III	426	3.7	215	1.9	211	1.8
REGION IV-A	908	7.9	357	3.1	551	4.8
REGION V	988	8.6	519	4.5	469	4.1
REGION VI	523	4.6	183	1.6	340	3.0
REGION VII	747	6.5	245	2.1	502	4.4
REGION IX	1215	10.6	511	4.5	704	6.1
REGION X	1206	10.5	492	4.3	714	6.2
REGION XI	1335	11.6	274	2.4	1061	9.2
REGION XII	534	4.7	144	1.3	390	3.4
NCR	272	2.4	78	0.7	194	1.7
REGION XIII	1301	11.3	441	3.8	860	7.5
Total	11481	100.0	4215	36.7	7266	63.3

Table 10. Field of study graduated in by HEI type

	Public	Private
Teacher Training and Education Science	26.2	30.8
Business and Administration	14.2	21.8
Engineering and Engineering Trades	13.8	10.9
Computing/Information Technology	11.0	9.1
Health Programs	8.9	6.6
Agriculture, Forestry and Fishery	6.5	5.9
Personal Services Programs	4.7	5.7
Social and Behavioral Science	2.8	2.0
Security Services	2.5	1.2
Life Sciences	1.6	1.1

In terms of baccalaureate programs, the Bachelor of Science in Nursing is a runaway winner, both among male and female graduates (Table 11). Around 25% and 18% of female and male graduates, respectively, took this course. For female graduates, the next top courses are Bachelor of Elementary Education (11.7%), Bachelor of Science in Business Administration (7.7%), Bachelor of Secondary Education (7.6%), and Bachelor of Science in Commerce (6.4%). For male graduates, the other courses in the top 5 are Bachelor of Science in Criminal Justice (17.6%), Bachelor of Science in Information Technology (6.7%), Bachelor of Science in Business Administration (5.3%), Bachelor of Secondary Education (4.5%), and Bachelor of Science in Commerce (4.5%). As is evident in Table 11, there is little variation among the top courses among female and male graduates.

Table 11. Baccalaureate program graduated in

	Female		Male
BS in Nursing	24.6	BS in Nursing	17.6
Bachelor of Elementary Education	11.7	BS in Criminal Justice/Criminology	9.7
BS in Business Administration	7.7	BS in Information Technology	6.7
Bachelor of Secondary Education	7.6	BS in Business Administration	5.3
BS in Commerce	6.4	Bachelor of Secondary Education	4.5
BS in Information Technology	4.6	BS in Commerce	4.5
BS in Hotel and Restaurant Mgmt	4.1	Bachelor of Elementary Education	4.3
BS in Computer Science	3.4	BS in Computer Science	4.1
BS in Accountancy	2.7	BS in Industrial Technology	4.1
BS in Criminal Justice/Criminology	1.6	BS in Hotel and Restaurant Mgmt	3.6
BS in Industrial Technology	1.1	BS in Civil Engineering	2.0
BS in Psychology	1.1	BS in Accountancy	1.8
BS in Biology	0.9	BS in Marine Transportation	1.8
BS in Tourism	0.8	BS in Agriculture	1.7
Bachelor of Arts	0.8	BS in Electronics and Communications Engineering	1.5

Looking at the top reasons for the graduates' choice of degree (Table 12), we can surmise that the most common courses above are perceived to be the ones that will provide immediate employment and career advancement. There is some traction to this belief based on the Jobstreet Salary Report for 2015, where IT-related jobs, finance, and nursing belong to the top 10 specializations with the highest salary for fresh graduates. Unfortunately, graduates of education courses are not among the well-paid even though they are among the highest paid among the fresh graduates⁸.

Graduates of private HEIs rated the following reasons significantly higher than their public counterparts ($p < 0.001$): Immediate employment prospects, Prospect of career advancement, Prestige of the profession, Influence of parents and relatives, Attractive compensation, and Overseas employment prospect. Meanwhile, the more salient reasons for choice of degree for public HEI graduates are Availability in chosen HEI, Affordable for the family, and CHED priority course. These reasons indicate that public HEI graduates had a limited choice set, defined by the capacities of their families and the availability of courses in likely the closest or only public HEI in their area.

Finally, around 17% of graduates claimed that they had no particular choice for a baccalaureate degree at the time that they chose one. CHED can promote collaboration between HEIs and secondary schools for a communications and information campaigns to give students and their families better ideas on the different programs and career prospects. This will allow them to match the alternatives with their preferences.

⁸ <https://www.jobstreet.com.ph/aboutus/highest-paying-jobs-philippines.htm#FreshGrads>

Table 12. Reasons for taking baccalaureate degree

	Total	Public	Private	Male	Female
Immediate employment prospects	73.7	72.1	74.6	72.9	74.2
Prospect of career advancement	71.1	68.5	72.6	71.2	71.1
Strong passion for profession	68.9	68.4	69.2	69.1	68.8
Availability in chosen HEI	67.7	69.2	66.9	66.6	68.5
Prestige of the profession	67.4	65.0	68.8	66.4	68.1
Attractive compensation	64.9	60.1	67.8	65.0	64.8
Affordable for the family	63.9	68.7	61.2	63.1	64.4
Influence of parents/relatives	63.2	60.9	64.5	62.0	64.0
Good grades in high school	62.1	62.0	62.2	58.7	64.6
Overseas employment prospect	53.8	47.9	57.2	55.2	52.7
Inspired by a role model	51.3	50.6	51.7	50.2	52.1
Peer influence	42.8	42.1	43.2	42.9	42.7
CHED priority course	20.3	21.4	19.7	19.1	21.2
No particular choice	16.9	15.8	17.6	17.0	16.9
Personal choice / desired course	3.4	3.6	3.3	3.5	3.3

Graduates were asked whether their baccalaureate program and the HEI they took it in are their preferred programs and university at that time. Table 13 shows the tabulation between these two. Seventy-two percent both preferred their program and university at the time they were taking it. Around 13% preferred only their university but not their program, while 7% prefers just the program. Meanwhile, 7.6% of graduates would rather take another program at another university at that time.

Table 13. Is this your preferred program / HEI at that time?

Preferred program?	Preferred HEI?		Total %
	Yes %	No %	
Yes	72.0	7.0	79.1
No	13.4	7.6	20.9
Total	85.4	14.6	100.0

Graduates were also asked whether they would change their course given their current knowledge of it – 14% answered in the affirmative. Given their volume, the top course among those who would like to change their program is Bachelor of Science in Nursing (29.8%). Their preferred courses now are Bachelor of Science in Accountancy (11.3%) and Bachelor of Secondary Education (11.1%).

Table 14 shows whether those who preferred their program at the time of taking it are the ones who are not likely to change their course given their current knowledge of it. Only 71.8% are consistent in their choice of program. Interestingly, 14.2% of graduates who did not prefer their program in college decided that they would stick to it.

Table 14. Preference vs incidence of changing course

Is this your preferred program at that time?	Given what you know today about this course, would you have changed your course?		
	Yes %	No %	Total %
Yes	7.3	71.8	79.1
No	6.7	14.2	20.9
Total	14.0	86.0	100.0

When it comes to their choice of HEIs, 12.3% of graduates said that they would choose another university given their experience (Table 15). The top 3 preferred HEIs for the three island groups are Bicol University-Main, University of the Philippines-Diliman, and Saint Louis University for Luzon, University of San Carlos, University of Cebu, and West Visayas State University-Main for Visayas, and Ateneo de Davao University, University of Mindanao and Western Mindanao State University for Mindanao. These HEIs are preferred because they are perceived to provide better employment opportunities and prestige.

Table 15. Preference vs incidence of changing HEI

Is this your preferred HEI at that time?	Given what you know today about this course, would you have chosen another HEI?		
	Yes %	No %	Total %
Yes	6.5	78.9	85.5
No	5.8	8.7	14.5
Total	12.4	87.6	100.0

Almost 11% of graduates stopped schooling for at least one semester. This proportion is similar among female and male graduates. The top primary reason for this are financial difficulty (61.3%), pregnancy (11.2%), and family obligations (7.9%) (Table 16). Among these reasons, pregnancy affects female graduates disproportionately ($p < 0.001$) – 17.5% of female graduates versus only 3% of male graduates stopped schooling due to being or getting someone pregnant.

Table 16. Primary reason for stopping schooling by sex

	Total %	Male %	Female %
Financial difficulty	61.3	61.5	61.1
Got (someone) pregnant	11.2	3.0	17.5
Family obligations	7.9	9.5	6.6
Health reasons	6.3	6.1	6.5
Disciplined by parents/ guardians	4.7	7.7	2.5
School penalties	3.5	4.7	2.6

Cost of college education

Graduates were also asked to provide estimates of their expenses during college. Table 17 shows the average tuition and other school fees per semester by region and by HEI type. Graduates from public HEIs paid Php6,876 per semester on school fees, while their private

HEI counterparts paid Php18,888 per semester. Thus, private HEI school fees are on average 2.75 times as much as public HEIs.

In addition to school fees, graduates also spent on allowances, rent, supplies, and academic and extra-curricular activities (Table 18). On average, graduates spent Php2,706 and Php1,258 per month on allowance and rent. Meanwhile, per semester they spent on average Php3,458, Php3,646, and Php1,644 on supplies, academic activities, and extra-curricular activities, respectively. Here as in school fees, we also see a marked higher spending among graduates from private HEIs.

Table 17. Average tuition and other school fees per sem by region and by HEI type (Php)

	Public			Private		
	Freq	Mean	SD	Freq	Mean	SD
CAR	12	13,583	8,361	337	21,392	19,010
REGION I	398	6,529	7,100	727	15,355	19,702
REGION II	332	4,098	2,389	200	15,053	8,943
REGION III	211	8,168	6,464	207	20,338	10,529
REGION IV-A	352	8,870	5,826	537	24,357	19,671
REGION V	515	6,023	8,835	468	17,490	8,999
REGION VI	167	6,954	7,466	300	26,395	29,857
REGION VII	238	7,352	4,687	497	20,129	11,066
REGION IX	501	6,394	5,739	699	12,816	9,183
REGION X	473	6,855	5,397	704	17,528	13,519
REGION XI	261	5,768	5,296	1,039	19,009	12,237
REGION XII	143	7,075	6,026	383	19,350	27,487
NCR	78	10,446	14,255	191	36,914	39,623
REGION XIII	438	8,132	18,822	845	17,124	16,708
Total	4,119	6,876	8,795	7,135	18,888	18,037

Table 18. Average expenses by HEI type (Php)

	Allowance per month	Rent per month	Supplies per sem	Academic activities per sem	Extra- curricular activities per sem
Total	2,706	1,258	3,485	3,646	1,644
Public	2,065	798	2,387	2,239	1,220
Private	3,071	1,534	4,118	4,453	1,891

The primary source of college funds are parents (76.3%) or other relatives (11.5%). Scholarship-financed students account for only 8% of graduates, while around 4% supported their own way through college.

Professional and government exams

Slightly above half (52.2%) of graduates took courses that require a professional license exam. Among them, 83.4% have already taken a professional or licensure exam at the time the survey. Expectedly, the top professional exams taken are those for nurses, teachers, criminologist, accountants, and civil engineers (Table 19).

Table 19. Professional exam taken

	%
Nurse	40.3
Professional Teacher	34.2
Criminologist	8.5
Certified Public Accountant (CPA)	3.0
Civil Engineer	2.1

Only around 23% of graduates took at least one government exam. This is low given that the career service exam is applicable to all college graduates. This could indicate their perception of the returns to working in the government versus the private sector. The top government exams taken are the Civil Service Commission’s Career Service Exam – Professional (70.8%) and the National Police Commission’s Police Entrance Exam (9%).

Training and advanced studies

Almost all the graduates (93.6%) had an internship or on-the-job program in their curriculum. However, only 19% consider it as helpful in finding a job (Table 23). Meanwhile, around 9% of graduates are pursuing graduate studies, only after 3 to 5 years from college graduation. The most common reason for taking graduate studies is expectedly career advancement (79.9%) (Table 20). Passion for and prestige of the profession also figure in significantly, with 75.5% and 70.2% of graduates citing them as reasons for taking masters degrees.

Table 20. Reasons for taking graduate studies

	% Yes
Prospect of career advancement	79.9
Strong passion for profession	75.8
Prestige of the profession	70.2
Immediate employment prospects	69.8
Attractive compensation	67.6
Inspired by a role model	59.8
Availability in chosen HEI	58.9
Affordable for the family	53.7
Good grades in high school	52.1
Influence of parents/relatives	43.9
Peer influence	39.9
Overseas employment prospect	38.0
CHED priority course	20.7
No particular choice	8.7

Around a third (28%) of graduates have taken any training since their graduation. This share is the same regardless of the type of HEI they graduated from. The most common training is related to their profession (76.5%). Around 38% and 14% of graduates also took training to learn other professional and general skills, respectively. The most common purpose for taking these trainings is professional development (81.4%), followed by personal development (46.8%) and promotion (18.7%) (Table 21). A higher proportion of graduates from public HEIs ($p < 0.004$) selected promotion as the reason for getting the training, while more females ($p < 0.019$) identified professional development as their reason for getting trained (Table 21).

Table 21. Purpose for taking training

	Total	Public	Private	Male	Female
Professional Development	81.4	81.6	81.3	79.6	82.8
Personal Development	46.8	47.2	46.6	45.9	47.6
Promotion	18.7	21.3	17.2	20.1	17.7

In terms for funding for the trainings, 60% of graduates said that they financed it using their own money or that of their family. Only 31.9% of respondents experienced trainings that are shouldered by their employers (Table 22).

Table 22. Sources of funds for training

	Total	Public	Private	Male	Female
Respondent/Family/Relatives	60.1	54.9	62.8	56.5	63.0
Employer	31.9	34.4	30.7	33.5	30.6
Other private/NGOs	6.3	8.0	5.4	7.1	5.7
Public/State orgs	7.6	11.6	5.5	7.7	7.6
International orgs	0.6	0.5	0.6	0.7	0.5

Around 15% of graduates believe that there are courses or trainings that assist in finding a job. These are primarily courses or trainings on occupational skills (58%), communication (25.8%), internship (19.4%), information technology (18.7%), and human resource (12.1%) (Table 23).

Table 23. Courses/training programs that assist in finding a job

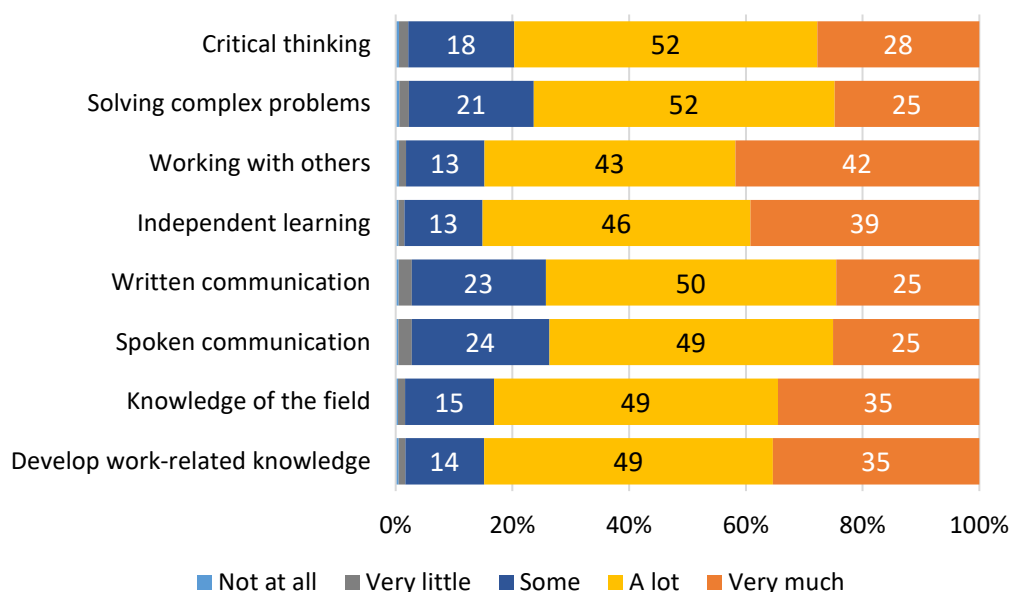
	% Yes
Occupational skills	58.0
Communication courses	25.8
Internship	19.4
IT courses	18.7
Human Resource courses	12.1
Language courses	4.8
CV writing	3.8

Skills Development

Graduates were asked to assess the extent to which their program developed a set of selected vital skills. For each skill, they have to select from a 5-point scale ranging from “Not at all” to “Very much”. The eight skills are 1) Critical thinking; 2) Solving complex problems; 3) Working with others; 4) Independent learning; 5) Written communication; 6) Spoken communication; 7) Knowledge of the field; and 8) Developing work-related knowledge.

Graduates rated their programs highest on developing their skills to work with others, to learn independently, and to obtain work-related knowledge. Eighty-five percent of them rated their program as having developed these skills “A lot” and “Very much” (Figure 2). On the other hand, graduates felt that their programs did not perform quite as well in honing their communication, problem-solving, and critical thinking skills. Less than a third of graduates felt that their program developed these skills “very much”. Not surprisingly, professional recruiters associations such as the People Management Associations of the Philippines note that fresh graduates are deficient in critical thinking, problem solving, and communication – the top competencies that employers look for among applicants.

Figure 2. To what extent has your program developed your ...?



Graduates from private HEIs rated their program significantly higher in developing critical thinking ($p < 0.001$), problem-solving ($p < 0.001$), written ($p < 0.016$) and spoken ($p < 0.002$) communication skills, as well as knowledge of the field ($p < 0.030$) and developing work-related knowledge ($p < 0.029$).

Consistent with their assessment of the extent of skills development, less than 30% of graduates felt that their program curriculum enabled them to compete in the labor market “very much”. About 53% of graduates claimed that their curriculum helped “a lot”, while 20% think that their curriculum had only some or no impact. Table 24 shows that graduates from private HEIs tend to give a lower rating of their curriculum ($p < 0.001$).

Table 24. Overall, did the curriculum enable you to compete in the labor market?

	Total %	Public %	Private %
Not at all	1.2	1.3	1.1
Very little	2.1	2.4	2.0
Some	17.1	15.8	17.9
A lot	53.0	52.1	53.6
Very much	26.6	28.4	25.5

Graduates who gave a rating of “Some” to “Not at all” above were asked which courses or training programs should be added to their curriculum to help graduates be more competitive in the labor market (Table 25). Communication courses rank highest at 46.9%; graduates have a strong belief that they were not trained well on this and that this is a critical requirement in order to get hired. Graduates also felt that their curriculum did not provide sufficient training on occupational skills (36.2%) and information technology (34.1%).

Table 25. Courses/training programs that should be added in curriculum

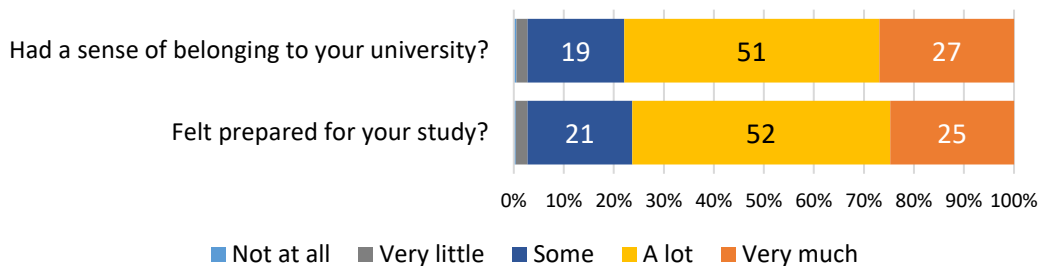
	Total %	Public %	Private %
Communication courses	46.9	50.4	45.0
Occupational skills	36.2	37.4	35.4
IT courses	34.1	35.2	33.3
Human Resource courses	19.8	19.9	20.0
Internship	18.2	19.8	17.2
Language courses	11.7	11.1	11.9
CV writing	7.2	6.7	7.5

College experience

In this section, we look at the graduates’ assessment of the totality of their college experience. First, we asked them to rate their engagement with the university and their program. This is followed by their assessment of teaching quality and student support services. Finally, we asked them to rate their overall college experience.

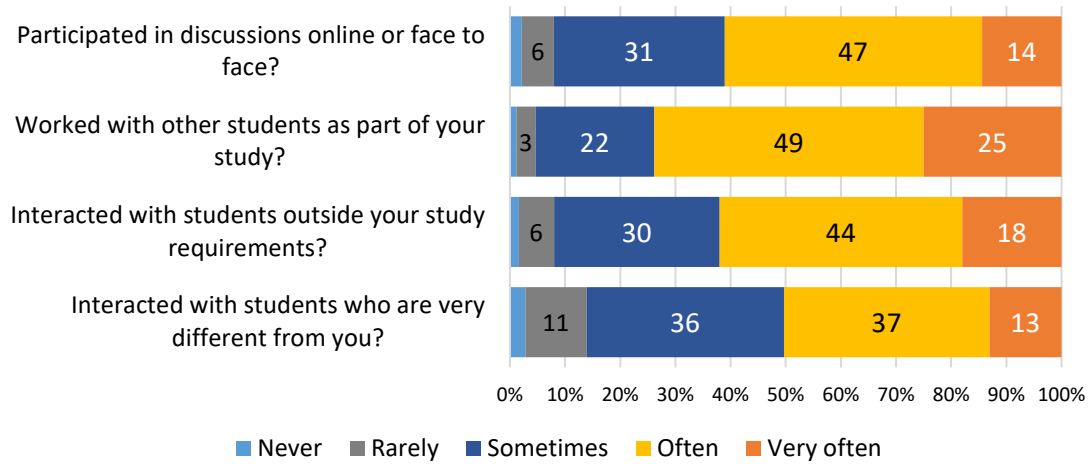
Graduates do not appear to have a strong sense of belongingness to their university, nor do they felt prepared for their study at the time they were in college. Only 27% and 25% of graduates gave top ratings for these two indicators (Figure 3).

Figure 3. During that time, to what extent have you...



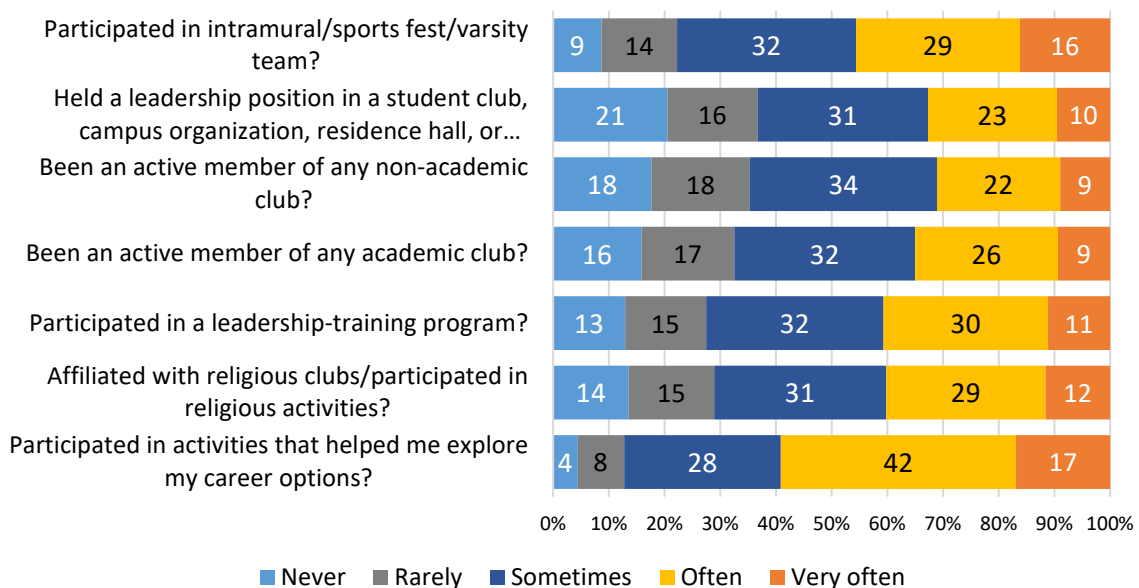
With regard to their interactions with other students, a fourth of graduates claimed that they worked “very often” with other students to fulfil academic requirements (Figure 4). However, only 18% said that this interaction continued outside of study requirements. Graduates also did not spend a lot of their time participating in discussions nor with interacting with students who are very different from them. Arguably, these are the foundations of collaborative skills that are indispensable in the workplace.

Figure 4. During that time, how frequently have you...



Participation in extra-curricular activities appear low overall (Figure 5). Sports and career options-related activities are the most popular, with 16% and 17% of graduates saying that they took part in these activities “very often”. Membership in student organizations are low whether these organizations are academic, non-academic, or religious ones. Student organizations are good avenues for developing problem-solving, communication, and collaborative skills as students have to execute projects, which require raising funds, dealing with the school administration, working with students from different programs and trouble-shooting. Student organizations also develop initiative, creativity, and resourcefulness. Access and participation in these activities are however influenced by one’s circumstances as they require a considerable amount of time, effort, and financial resources.

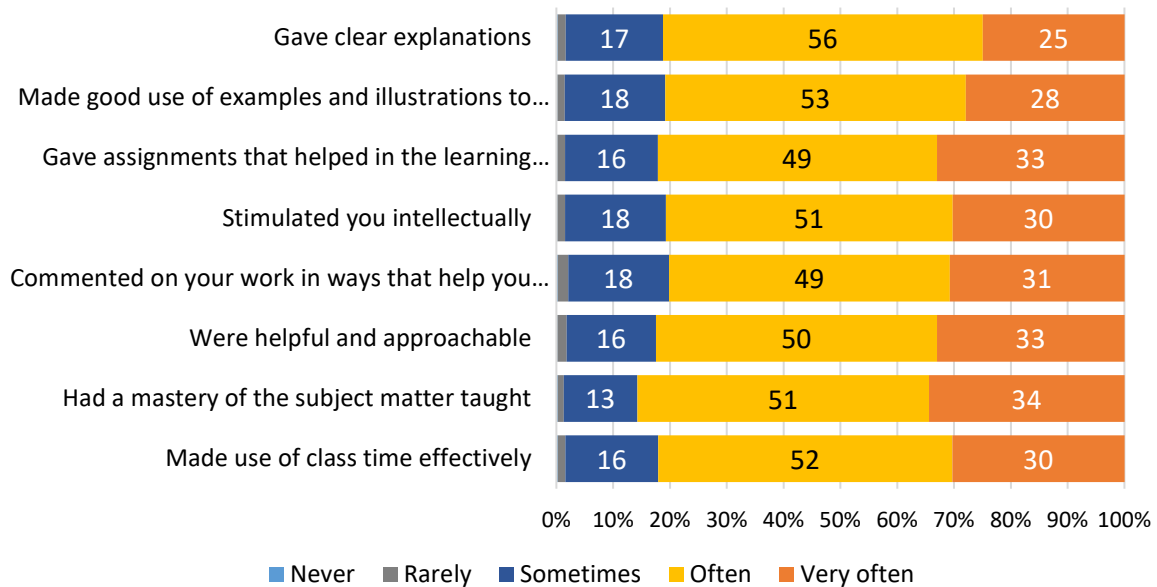
Figure 5. During that time, how frequently have you...



Graduates are very satisfied with their faculty across the board (Figure 6). More than 80% of graduates gave “Often” and “Very often” ratings to their faculty in all the eight indicators

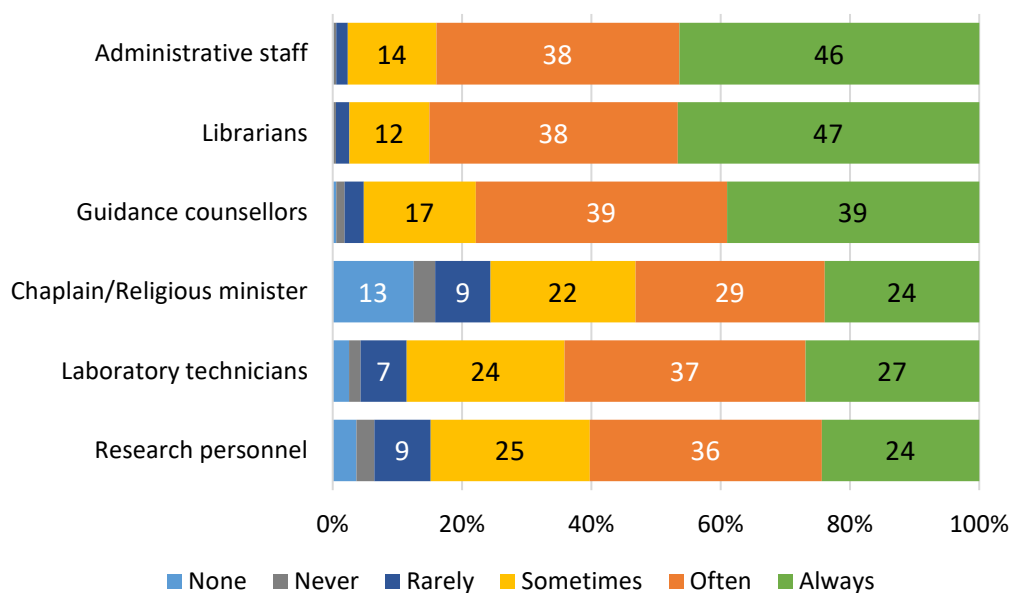
assessed. The highest rating is for mastery of the subject (85.7%), followed by helpfulness and approachability (82.5%), giving assignments (82.2%), and making good use of the class time (82.1%). The lowest-rated aspect of faculty performance is providing feedback on students' work at 80%.

Figure 6. How often have you experience faculty...



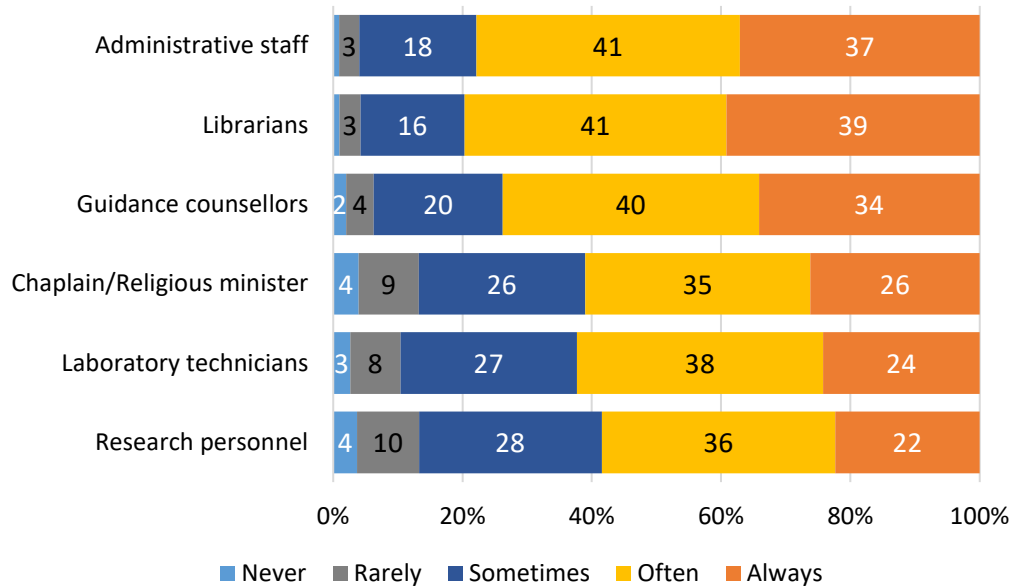
Graduates were also asked to assess various university staff in terms of availability and helpfulness. Librarians and administrative staff are the most visible support services staff, with 85% and 84% of graduates saying that they are “often” or “always” available. Meanwhile, research personnel and religious ministers are available “often” or “always” only 60% and 53% of the time, respectively.

Figure 7. During your time in college, was ... available?



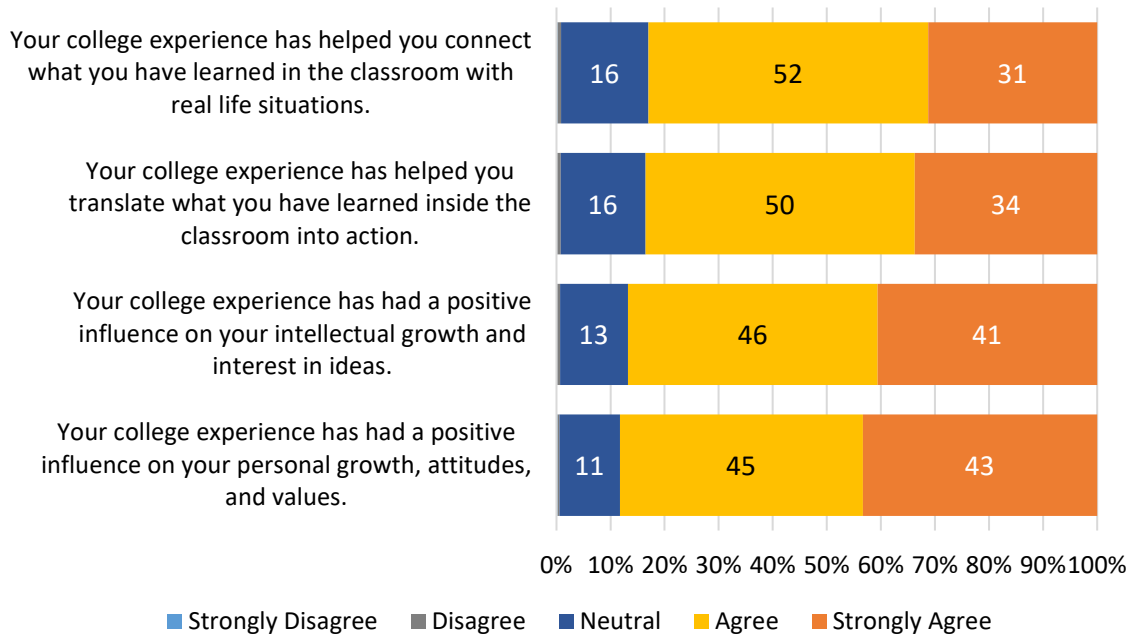
Correspondingly, graduates find librarians and administrative staff most helpful 79.7% and 77.9% of the time, respectively. Laboratory technicians and research personnel do not appear as salient in their college experience.

Figure 8. During your time in college, was ... helpful?



For overall college experience, we looked at four aspects: (a) whether college helped them connect what they have learned in the classroom with real life situations; (b) whether it helped them translate what they have learned inside the classroom into action; (c) whether it had a positive influence on their intellectual growth; and (d) whether it had a positive influence on personal growth, attitudes, and values. Graduates felt that their college experience had the strongest effect on personal and intellectual growth (Figure 9). Around 43% of graduates “strongly” agreed that college had a positive influence on their personal growth, attitudes, and values. For intellectual growth, the corresponding top rating is 41%. College experience’ impact on translating learning into action or to real-life situations is not as compelling, with only around a third of graduates giving these aspects the top rating. In fact, 16% of graduates felt “neutral” about college’s influence on these aspects. There are no differences in their assessment of their overall college experience between graduates of public and private HEIs.

Figure 9. Overall college experience



7.5. Employment profile

Transition to employment

Fifty-nine percent of graduates started looking for work right after graduation (Table 26). More graduates from public HEIs started looking for work sooner – 66.2% versus 54.6% for private HEI graduates ($p < 0.001$). The percentage of male and female graduates that looked for work right away is similar. Graduates who said that they did not look for work right after graduation includes those that have started working even before finishing their studies. But among those who were not working at the time of their graduation, the main reason for not looking for work right away are to review for licensure exams (44.2%) and to rest (30.7%).

Table 26. Did you start looking for work right after graduation?

	Freq	Total %	Public %	Private %	Male %	Female %
Yes	6768	58.9	66.2	54.6	58.5	59.1
No	4732	41.1	33.8	45.4	41.5	40.9
Total	11500	100.0	100.0	100.0	100.0	100.0

Table 27 shows the average and median length of various indicators of job transition. We computed for the number of months that the graduates started searching for a job after graduation, the number of months they spent looking for work, and finally the number of months they started working after graduation (regardless of when they looked for work). This last indicator can be viewed as a “dependency” period after graduation. We provide disaggregation by type of HEI, by sex of graduates, and whether or not the program requires a PRC license.

On average, graduates looked for worked 5 months after their graduation. Graduates from public HEIs looked for work sooner, at 3.5 months ($p < 0.001$). The average time it took the graduates to land a job is 8 months, slightly shorter by 0.8 of a month among public HEI graduates ($p < 0.001$). Finally, the graduates’ dependency period after graduation is 13 months; for graduates of public HEIs, this period is shorter by almost 3 months ($p < 0.001$). These differences between public and private graduates may be brought by differences in the share of programs that require a PRC license. Among graduates private HEIs, 56% took programs that require a PRC license, as opposed to 46% among graduates of public HEIs ($p < 0.001$). As the bottom panel of Table 27 shows, graduates of programs requiring a PRC license started their job search on average 6.2 months after graduation, they spent 8.5 months looking for work, and started their first job 14.8 months after finishing college. The corresponding amount for time for graduates on non-PRC programs are 3.4, 7.6, and 10.8 months, respectively. These differences are all significant ($p < 0.001$). Meanwhile, there are no differences in job transition indicators with respect to the sex of the graduates.

The median of these three indicators show that they are highly positively skewed (skewness > 2.). For job search initiation, all disaggregation shows that the median is 0 months, or right after graduation. The median length of job search is just 3-4 months. Among all graduates, the median start of their first job is 9 months after graduation. For those who took PRC programs, it is 12 months, while those who do not require a PRC license have a median job start of 5 months after graduation.

Table 27. Job transition indicators

	No. of months started search after grad		No. of months looked for work		No. of months started work after grad	
	Mean	Median	Mean	Median	Mean	Median
Total	4.9	0	8.1	4.0	12.9	9.0
Public	3.5	0	7.6	3.0	11.2	6.0
Private	5.7	0	8.4	4.0	13.9	10.0
Male	5.0	0	8.2	4.0	13.1	9.0
Female	4.8	0	8.0	4.0	12.8	9.0
With PRC license	6.2	0	8.5	4.0	14.8	12.0
Without PRC license	3.4	0	7.6	3.0	10.8	5.0

In Table 28 we breakdown the job transition indicators by field of study. We will look at the median given the skewness of the data. Graduates from the top 10 fields (94% of graduates), except for Health Programs (mostly nursing graduates), started their job search right after graduation. Length of job search is 2-4 months, and they are employed 4-6 months after graduation. Graduates of Social and Behavioral Science Programs and Journalism and Information Programs are the soonest to start work at 4 months. Graduates of Health Programs (BS Nursing) and Security Services Programs (BS Criminal Justice) seem to have the longest journey from graduation to employment. Their median length of job search is 6 and 7 months, respectively, and they start their first job 15 months after graduation.

Table 28. Job transition - by field of study

	% of graduates	No. of months started search after grad		No. of months looked for work		No. of months started work after grad	
		Mean	Median	Mean	Median	Mean	Median
		Health	22.7	8.5	4.0	9.7	6.0
Business And Administration	19.0	3.4	0	7.1	3.0	10.3	5.0
Teacher Training And Education Science	16.5	3.7	0	7.4	2.0	11.3	6.0
Computing/Information Technology	9.8	2.8	0	7.8	4.0	10.3	5.0
Engineering And Engineering Trades	8.7	5.1	0	7.2	3.0	12.2	9.0
Personal Services	5.4	3.3	0	8.4	4.0	11.1	6.0
Security Services	5.1	7.3	0	10.7	7.0	18.1	15.0
Agriculture, Forestry And Fishery	2.7	2.1	0	6.7	4.0	8.9	7.0
Social And Behavioral Science	2.3	3.9	0	6.6	2.0	10.5	4.0
Journalism And Information	1.3	3.1	0	6.5	2.0	9.4	4.0

First job after college graduation

Eighty-five percent of the graduates have had a first job after graduation.⁹ Their methods of job search are shown in Table 29. Most commonly, they applied to employers directly (38.5%), while more than a fifth (22.1%) found their first job through their relatives and friends. HEIs play a minimal role in placing their graduates in their first job, with only 4% employing this search method. Graduates of public and private HEIs employed the same methods in looking for their first job.

⁹ Around 3% have had jobs before graduation but not after, and around 9% have never had a job. The rest were missing data.

Table 29. Job search method by HEI type

	Total %	Public %	Private %
Approached employer directly	38.5	37.6	38.9
Approached relatives or friends	22.1	21.5	22.5
Registered in private employment agency	13.4	14.2	12.9
Placed or answered advertisements	9.9	9.8	10.0
Registered in public employment agency	8.6	9.2	8.2
School placement office	4.0	4.6	3.6

Expectedly, majority (75%) of the first jobs acquired by the graduates required a minimum of a college degree for acceptance (Table 30). Around 10% landed on jobs that only required some college level education, 5% took jobs that required only a high school diploma, and another 3.5% had jobs with almost no educational requirement. More males took jobs that require less than a college degree – 21.7% vs 15.7% for females ($p < 0.001$). Meanwhile, about 7% of graduates landed on first jobs that required a graduate degree.

Table 30. Minimum educational requirement for first job - by HEI type

	Total %	Public %	Private %	Male %	Female %
No education	0.6	0.7	0.6	0.9	0.4
Elementary	0.1	0.1	0.2	0.1	0.1
High school	4.2	4.8	3.8	5.2	3.5
Vocational	1.0	1.4	0.8	1.5	0.7
College undergraduate	9.7	10.2	9.4	10.8	8.8
College graduate	75.0	74.6	75.3	71.5	77.6
Graduate degree	6.7	5.8	7.2	6.7	6.7
No minimum requirement	2.7	2.4	2.8	3.2	2.2

Graduates working in jobs that did not require minimum educational requirement are: retail and wholesale trade managers (15%), Shop salespersons (8%), General office clerks (5%), Mining and construction laborers (4%), Market gardeners and crop growers (4%), Cashiers and ticket clerks (4%), Other sales workers (4%), Business services and administration managers (3%), Client information workers (3%), Agricultural, forestry and fishery laborers (3%), Other services managers (3%), Manufacturing laborers (3%), and Sales and purchasing agents and brokers (2%). These jobs constitute 60% of total jobs without minimum educational requirement according to the graduates. The rest are also various kinds of clerks, service workers, and laborers.

Table 31. Main task in first job - by HEI type

	Total %	Public %	Private %	Male %	Female %
Technical/Professional	46.4	45.4	47.0	46.3	46.5
Manual	27.7	30.2	26.2	30.6	25.5
Clerical	19.7	19.1	20.1	15.7	22.7
Managerial/Supervisory	5.9	5.2	6.4	7.2	5.0
Others	0.2	0.2	0.3	0.2	0.2

For their first job, around 46% of graduates had technical or professional tasks, while 47% had manual or clerical tasks (Table 31). There are no differences in the baccalaureate programs finished by those that performed technical or managerial tasks versus those with manual or clerical tasks. Meanwhile, more graduates from private HEIs and more males performed technical or managerial tasks ($p < 0.001$). These results are consistent with the classification of the first jobs by major occupation group (Table 32).

Table 32. Occupation in first job after graduation - by HEI type

	Total %	Public %	Private %	Male %	Female %
Armed Forces Occupations	0.3	0.4	0.3	0.6	0.1
Managers	4.4	3.8	4.7	4.7	4.1
Professionals	33.2	33.1	33.2	28.6	36.5
Technicians and Associate Professionals	13.4	13.2	13.4	17.1	10.6
Clerical Support Workers	26.1	24.9	26.8	21.9	29.2
Service and Sales Workers	16.8	16.3	17.1	16.7	16.9
Skilled Agricultural, Forestry and Fishery Workers	0.4	0.5	0.3	0.8	0.1
Craft and Related Trades Workers	1.6	2.8	0.8	3.1	0.4
Plant and Machine Operators and Assemblers	1.5	1.5	1.5	2.7	0.6
Elementary Occupations	2.5	3.5	1.9	4.0	1.4

More than 60% of graduates were short-term, seasonal, or casual employees in their first jobs (Table 33). This proportion is higher for graduates of public HEIs (65.1%) ($p < 0.001$) and for females (63.9%) ($p < 0.002$).

Table 33. Nature of employment of first job after graduation - by HEI type

	Total %	Public %	Private %	Male %	Female %
Permanent	36.1	33.1	37.9	37.7	34.9
Short-term or seasonal or casual	62.5	65.1	61.0	60.6	63.9
Day to day or week to week basis	1.4	1.8	1.1	1.7	1.2

For their first jobs, 72.6% of graduates were employed in private establishments while 22% worked for the government (Table 34). Around 2% worked for private households. There are more graduates from public HEIs who worked in the government sector ($p < 0.001$).

Table 34. Class of worker in first job after graduation - by HEI type

	Total %	Public %	Private %	Male %	Female %
Worked for private household	2.1	2.1	2.1	1.8	2.2
Worked for private establishment	72.6	71.3	73.3	72.5	72.6
Worked for gov't/ gov't corporation	22.0	23.9	20.9	21.6	22.3
Self-employed without any employee	1.1	1.1	1.1	1.3	0.9
Employer in own family operated farm/ business	1.3	0.8	1.5	1.5	1.1
Worked with pay on own family operated farm or business	0.5	0.3	0.6	0.7	0.3
Worked without pay on own family operated farm or business	0.5	0.4	0.5	0.5	0.4

Table 35 cross-tabulates the class of worker and nature of employment of graduates' first job after graduation. It shows that those working in the government and private establishments are primarily employed on a short-term basis (71.2% and 61.1%, respectively).

Table 35. Class of worker vs nature of employment in first job after graduation

	Permanent %	Short-term or seasonal or casual %	Day to day or week to week basis %
Worked for private household	43.9	53.6	2.6
Worked for private establishment	37.1	61.6	1.3
Worked for gov't/ gov't corporation	28.0	71.2	0.9
Self-employed without any employee	45.2	40.4	14.4
Employer in own family operated farm or business	76.7	23.3	0.0
Worked with pay on own family operated farm or business	61.7	36.2	2.1
Worked without pay on own family operated farm or business	75.0	22.7	2.3
Total	36.1	62.5	1.4

The graduates' median basic pay per day in their first job is Php300.00 (Table 36). Graduates from Caraga are the lowest paid at Php258.00. These regional differences are reflective of the differences in mandated minimum wages in each area.

Table 36. Median basic pay per day for first job by region

	Freq	Median
CAR	156	359.00
REGION I	598	298.50
REGION II	287	280.00
REGION III	175	386.00
REGION IV-A	259	364.00
REGION V	688	269.50
REGION VI	154	277.00
REGION VII	347	346.00
REGION IX	467	280.00
REGION X	686	295.00
REGION XI	838	301.00
REGION XII	259	280.00
NCR	176	545.00
REGION XIII	683	258.00
Total	5774	300.00

In Table 37, we show the median basic pay by major occupation group and by sex. Among occupations, those in Armed Forces occupations have the highest basic pay at Php735, which is 2.45 times as much as the national average. However, there are only 8 graduates in this occupation group. The next highest paid occupation group are managers at Php363.00 per day. Expectedly, the lowest paid are those holding elementary occupations (Php273.00).

A cursory comparison of the basic pay by sex shows that female graduates are paid less, especially for college-educated occupations such as managers, professionals, technicians and associate professionals. However, looking at the top 10 occupations (Nursing professionals, General office clerks, Primary school teachers, Contact center information clerks, Cashiers and ticket clerks, Secondary education teachers, Waiters, Accounting and bookkeeping clerks, Data entry clerks, and Commercial sales representatives) shows that male and female graduates are equally paid. Thus, the higher pay for males in Table 37 indicate that females are holding lower-pay occupations within the same major occupation group. For instance among professionals, while females are mostly nurses and teachers, males are also engineers, graphic artists, software developers, web and multimedia developers, and computer network professionals – evidently the higher-paying jobs.

Table 37. Median basic pay per day for first job by major occupation group

	Freq	Total	Male	Female
Armed Forces Occupations	8	735.00	770.00	700.00
Managers	133	363.00	364.00	327.00
Professionals	1826	304.00	336.00	300.00
Technicians and Associate Professionals	795	315.00	318.00	315.00
Clerical Support Workers	1573	300.00	300.50	300.00
Service and Sales Workers	1043	271.00	289.50	258.00
Skilled Agricultural, Forestry and Fishery Workers	23	265.00	252.00	320.50
Craft and Related Trades Workers	96	300.00	300.00	317.00
Plant and Machine Operators and Assemblers	72	307.50	315.00	290.00
Elementary Occupations	205	273.00	274.00	273.00
Total	5774	300.00	306.50	298.00

Note that around 3% of graduates are working in elementary occupations or jobs for unskilled workers in their first job. They are working as manufacturing laborers (23%), hand packers (14%), cleaners and helpers in offices (12%), domestic cleaners and helpers (8%), messengers (7%), building construction laborers (5%), kitchen helpers (5%), and civil engineering laborers (5%). These top 8 jobs account for almost 80% of all elementary occupations. The rest are all manners of jobs that require physical labor. These are also the jobs that did not require a minimum educational attainment in Table 30.

The top ten baccalaureate programs of these workers in elementary occupations, comprising 65 of the total, are BS in Criminal Justice (12%), BS in Hotel and Restaurant Management (8%), BS in Industrial Technology (8%), BS in Commerce (7%), Bachelor of Elementary Education (7%), BS in Business Administration (5%), BS in Information Technology (5%), BS in Nursing (5%), Bachelor in Secondary Education (4%), and BS in Computer Science (4%). Evidently, because there is a small universe of courses taken by our graduates, these are also the top courses overall. We will explore the issue of job-education fit more closely in the next section.

Only 43% of graduates believe that their college training (occupational skills) is the main reason for landing their first job (Table 38). Around 21% and 19% believe that work experience and personal connection is the main reason, respectively. Those who claimed that work experience is the main reason for landing their first job are most likely referring to their internship experience. While only 2% of the 21% have had a job before graduation, 95% of them had an internship or OJT program during college.

More graduates from private HEIs said that personal connections landed them their first job, while more graduates from public HEIs chose their university ranking as the main reason ($p < 0.016$).

Table 38. Main reason for landing first job by HEI type and by sex

	Total %	Public %	Private %	Male %	Female %
Occupational skills	43.2	43.0	43.4	44.0	42.7
Work experience	20.9	21.2	20.6	20.0	21.5
Personal connection	18.8	17.9	19.4	19.2	18.6
University/ school ranking	7.3	8.3	6.7	6.6	7.8
Others	2.9	2.8	3.0	3.0	2.9
IT skills	2.7	2.8	2.7	3.4	2.2
Language skills	2.5	2.0	2.8	2.0	2.9
Contract period	1.3	1.6	1.1	1.4	1.2
Gender	0.3	0.3	0.2	0.3	0.2
Religion	0.1	0.1	0.1	0.1	0.1

Finally on respondents' first job after graduation, less than 70% of them think that their college degree is relevant to their first job (Table 39). Graduates from private HEI ($p < 0.005$) and females ($p < 0.001$) gave a higher rating.

Table 39. Whether college degree was relevant to first job by HEI type and by sex

	Total %	Public %	Private %	Male %	Female %
Yes	68.3	66.6	69.3	66.5	69.6
No	31.7	33.4	30.7	33.5	30.4

Current employment

We now look at the graduates' current employment status.¹⁰ The reference period for employment indicators in this section is the past week. Table 40 shows that the national labor

¹⁰ We implement the Philippine Statistics Authority's definitions in computing the labor force participation indicators:

(a) Labor force - refers to the population 15 years old and over who contribute to the production of goods and services in the country. It comprises the employed and unemployed; Labor force participation rate = number of employed + unemployed / working age population.

(b) Employed - persons 15 years old and over who during the reference period were reported at work even for an hour. Also included are persons with a job/business even though not at work because of temporary illness/injury, vacation or other leave of absence, bad weather or strike/labor dispute or other reasons. Employment rate = number of employed / labor force

(c) Unemployed - persons 15 years old and over who simultaneously satisfy the following three (3) criteria: a) without work or had no job/business; b) looking or seeking work; and c) currently available for work during the basic reference period or within two weeks after the interview date. Also included as part of the unemployed are those persons who were jobless and available for work but did not look for work due to the following reasons: a) tired/ believed no work available, i.e., the discouraged workers; b) awaiting results of previous job application; c) temporary illness/ disability; d) bad weather; and e) waiting for rehire/job recall. Unemployment rate = number of unemployed / labor force

force participation rate of our graduates is 86.1%, which means that 86 out of 100 graduates are either employed or unemployed. This is higher than the 4th quarter of the Labor Force Survey in 2014, wherein 78.9% of college graduates surveyed were economically active.¹¹

Among the labor force, 88.2% of graduates were employed during the reference period, while 11.8% are unemployed. Region XI has a high employment rate of 94.1%. On the other hand, the regions with the highest unemployment rates are Region I (21.4%) and Region IX (15.9%). The LFS results reflect a better condition for college graduates – 91.8% and 8.2% employment and unemployment rates, respectively. In general, labor force participation and unemployment rates are lower based on the LFS across all regions.

Table 40. Employment status by region

	GTS			LFS 2014 Q4*		
	Labor force participation %	Employment %	Unemployment %	Labor force participation %	Employment %	Unemployment %
CAR	86.2	80.7	19.3	77.1	88.6	11.4
REGION I	83.0	78.6	21.4	74.9	88.3	11.7
REGION II	87.7	91.5	8.5	80.2	90.8	9.2
REGION III	88.8	88.4	11.6	78.8	90.6	9.4
REGION IV-A	85.0	90.8	9.2	79.3	92.9	7.1
REGION V	89.6	87.7	12.3	78.4	93.3	6.7
REGION VI	86.1	91.1	8.9	75.6	91.6	8.4
REGION VII	88.5	90.8	9.2	81.3	90.7	9.3
REGION IX	85.5	84.1	15.9	77.4	93.9	6.1
REGION X	82.5	88.6	11.4	82.4	91.0	9.0
REGION XI	88.4	94.1	5.9	81.1	93.3	6.7
REGION XII	89.2	92.3	7.7	80.2	93.9	6.1
NCR	91.4	97.2	2.8	78.9	92.8	7.2
REGION XIII	82.7	86.2	13.8	81.1	93.3	6.7
Total	86.1	88.2	11.8	78.9	91.8	8.2

Graduates from public HEIs posted a higher employment rate and lower unemployment rate during the reference period compared to graduates from private HEIs (Table 41) ($p < 0.001$). There are fewer females who are economically active (83.6% vs 89.4%) ($p < 0.001$).

Table 41. Employment status by HEI type and by sex

	Total %	Public %	Private %	Male %	Female %
Labor force participation rate	86.1	87.5	85.2	89.4	83.6
Employment rate	88.2	89.1	87.7	88.6	88.0
Unemployment rate	11.8	10.9	12.3	11.4	12.0

Around 14% of graduates are not in the labor force (Table 41). Graduates who are not available for work during the reference period or within two weeks after a job interview, or those who did not look for work due to permanent disability, family duties, schooling, and other reasons

(d) Underemployed - employed individuals who wanted additional hours of work in their present job, or to have an additional job, or a new job with longer working hours.

¹¹ Whenever relevant, we compare the GTS results with that of the 4Q Labor Force Survey in 2014. Majority of the interviews were conducted on the second half of 2014.

are not considered part of the labor force. Table 42 shows that the primary reason for not looking for work or for not being available to work is family duties (58.1%). There are more females who are not in the labor force due to family duties ($p < 0.001$). Only around 15% said that they are studying, and 10% are waiting for results of their job applications. There are no differences in reasons for not looking for work by type of HEI.

Table 42. Reasons for not looking for work (among not in the labor force)

	Total %	Public %	Private %	Male %	Female %
Household, family duties	58.1	62.2	56.1	36.7	67.7
Schooling	14.6	13.2	15.3	20.0	12.2
Awaiting results of previous job	10.4	10.6	10.3	16.8	7.4
Rest/in-between plans	3.4	2.7	3.8	6.0	2.3
Tired / Believe no work available	3.1	2.3	3.5	5.5	2.3
Waiting for rehire/ job recall	2.5	1.9	2.8	3.8	1.9
Waiting for board exam results	2.5	1.5	3.0	3.0	2.3
Temporary illness/ disability	2.4	2.5	2.3	3.6	1.9
Permanent disability	0.4	0.6	0.3	0.9	0.2
Bad weather	0.1	0.4	0.0	0.4	0.0
Others	2.4	2.1	2.6	3.2	2.1

Looking at the top fields of study, graduates from the Teacher Training and Education Science Program are faring the best (Table 43). They have the highest labor force participation rate (90.1%) and one of the highest employment rates (91.4%). Graduates from the Agriculture, Forestry, and Fishery programs are also faring well with 89.1% and 91.3% labor force participation and employment rates, respectively. However only 3% of graduates belong to this field.

Among Health Programs graduates, only 83 out of 100 are economically active. Out of this, 70 are employed. Graduates of Business and Administration Program have low unemployment rate at 8.8% but around 14% of them are also not in the labor force. Computing / Information Technology and Engineering Programs graduates have similar employment conditions, i.e. out of 100 graduates, 88 are in the labor force, and 77 are employed.

Table 43. Employment status by field of study

	% of graduates	Labor force participation %	Employ ment %	Unemploy ment %
Health	22.7	83.1	85.4	14.6
Business and Administration	19.0	86.3	91.2	8.8
Teacher Training and Education Science	16.5	90.1	91.4	8.6
Computing/Information Technology	9.8	87.9	88.3	11.7
Engineering and Engineering Trades	8.7	88.4	88.2	11.8
Personal Services	5.4	79.7	83.1	16.9
Security Services	5.1	87.3	82.3	17.7
Agriculture, Forestry and Fishery	2.7	89.1	91.3	8.7
Social and Behavioral Science	2.3	85.3	87.3	12.7
Journalism and Information	1.3	86.9	91.7	8.3

Meanwhile, graduates of Personal Services Programs (5% of total graduates) are experiencing unfavorable employment conditions. About 80 out of 100 are economically active, and only 66 out of this are employed.

Among employed graduates, around 61% are no longer on their first job. Their primary reason for leaving their previous job is to improve their salary (47.3%). Around 17% said that there was not enough challenge in their previous job. Meanwhile, around 13% left because their contract ended or the company closed. Seven percent resigned due to stress while 5% transferred to a job closer to their residence.

Table 44 shows the underemployment rates among total graduates, by type of HEI, and by sex. An employed person is considered underemployed if he or she wanted additional work (wanted additional hours of work in present job, or to have an additional job, or a new job with longer working hours) during the reference period. Underemployment primarily indicates insufficient income from a person’s current job. Around a fourth of graduates are underemployed. The underemployment rate is higher among public HEIs and among male graduates ($p < 0.001$).

Table 44. Underemployment status by HEI type and by sex

	Total %	Public %	Private %	Male %	Female %
Underemployed	24.3	26.0	23.2	26.5	22.5
Not underemployed	75.7	74.0	76.8	73.5	77.5

By field of study, graduates of the following programs have the highest underemployment rates: Personal Services, Computing / Information Technology, and Agriculture Forestry and Fishery (Table 45).

Table 45. Underemployment status by field of study

	Underemployed %	Not underemployed %
Health	23.3	76.7
Business and Administration	24.3	75.7
Teacher Training and Education Science	24.0	76.0
Computing/Information Technology	27.3	72.7
Engineering and Engineering Trades	23.6	76.4
Personal Services	21.0	79.0
Security Services	29.6	70.4
Agriculture, Forestry and Fishery	26.1	73.9
Social and Behavioral Science	21.8	78.2
Journalism and Information	18.9	81.1

Table 46 shows that 38% of the graduates are employed as Professionals. Their next major occupation group is Clerical Support Workers (21.7%), followed by Technicians and Associate Professionals (13.9%) and Service and Sales Workers (12.9%).

Table 46. Primary occupation by major occupation group

	Total %	Public %	Private %	Male %	Female %
Armed Forces Occupations	0.4	0.5	0.4	0.6	0.3
Managers	8.3	6.6	9.4	8.4	8.4
Professionals	38.1	40.4	36.6	32.7	42.2
Technicians and Associate Professionals	13.9	13.2	14.4	17.3	11.3
Clerical Support Workers	21.7	21.1	22.1	17.3	25.2
Service and Sales Workers	12.9	12.1	13.3	15.4	10.8
Skilled Agricultural, Forestry, and Fishery Workers	0.5	0.5	0.5	0.9	0.2
Craft and Related Trades Workers	1.4	2.5	0.8	2.6	0.5
Plant and Machine Operators, and Assemblers	1.5	1.3	1.6	2.7	0.5
Elementary Occupations	1.3	1.9	1.0	2.1	0.7

In Table 47, we tabulate the major industries engaged in by the graduates' employers. One fifth of the graduates are employed in the Education industry. The next top employers are the Wholesale and retail trade, repair of motor vehicles and Public Administration and Defense industries, with 15.5% and 14.7% of the graduates, respectively. Even though the Health Programs had around 23% of the graduates, only 11.4% are in the Human health and social work activities. This indicates that the Health Programs graduates are employed in other industries, and we will see later on whether they are employed as health professionals or not.

Table 47. Industry engaged in

	Total %	Public %	Private %	Male %	Female %
Education	20.3	29.2	14.8	14.3	24.8
Wholesale and retail trade; repair of motor vehicles	15.5	16.1	15.2	14.9	16.0
Public administrative and defense	14.7	13.5	15.4	18.4	11.8
Human health and social work activities	11.4	5.6	15.0	8.7	13.6
Financial and insurance activities	9.1	7.4	10.1	8.3	9.7
Manufacturing	6.4	7.7	5.6	8.6	4.6
Administrative and support service activities	6.3	5.4	6.9	6.8	6.0
Accommodation and food service activities	3.4	3.2	3.5	3.4	3.3
Transportation and storage	2.1	1.4	2.5	2.8	1.5
Information and communication	2.1	2.1	2.0	2.7	1.6
Construction	1.9	2.3	1.7	2.9	1.2
Professional, scientific and technical services	1.5	1.3	1.6	1.9	1.2
Agriculture, forestry and fishing	1.1	1.1	1.1	1.7	0.6
Other service activities	1.1	0.8	1.2	0.8	1.2
Electricity, gas, steam and air-conditioning supply	0.8	1.0	0.7	1.1	0.5

Majority of the graduates are now in permanent jobs (Table 48). Around 35% are still on short-term or casual work, while 1.6% are engaged on a day-to-day or week-to-week basis. Private establishments are still the biggest employer but less so compared to graduates' first job (Table 49). More graduates from public HEIs work in the government sector ($p < 0.001$).

Table 48. Nature of current employment by HEI type and by sex

	Total %	Public %	Private %	Male %	Female %
Permanent	63.7	63.2	64.0	65.0	62.7
Short-term or seasonal or casual	34.7	35.1	34.5	33.2	35.8
Day to day or week to week basis	1.6	1.7	1.5	1.7	1.5

Table 49. Class of worker by HEI type and by sex

	Total %	Public %	Private %	Male %	Female %
Worked for private household	1.2	1.1	1.3	1.0	1.4
Worked for private establishment	59.0	54.7	61.5	59.2	58.8
Worked for gov't/ gov't corporation	32.2	38.0	28.7	31.6	32.6
Self-employed without any employee	3.0	2.8	3.1	3.1	2.9
Employer in own family operated farm or business	2.5	1.7	3.0	2.8	2.3
Worked with pay on own family operated farm or business	0.9	0.6	1.1	1.1	0.7
Worked without pay on own family operated farm or business	1.3	1.1	1.4	1.3	1.3

In Table 50, we see that the increase in permanent workers is true for both government and private employers.

Table 50. Class of worker vs nature of employment

	Permanent %	Short-term or seasonal or casual %	Day to day or week to week basis %
Worked for private household	46.1	50.0	3.9
Worked for private establishment	68.0	30.6	1.5
Worked for gov't/ gov't corporation	55.8	43.4	0.8
Self-employed without any employee	53.5	37.0	9.4
Employer in own family operated farm or business	80.6	17.5	1.9
Worked with pay on own family operated farm or business	70.1	26.0	3.9
Worked without pay on own family operated farm or business	74.5	21.8	3.6
Total	63.8	34.7	1.6

The median basic pay is now Php461, up from P300 for the first job (Table 51). Graduates from Caraga and Region VI receive the lowest pay. The median basic pay from the GTS results are higher than the mandated minimum wage by region, but relatively lower than the LFS estimates.

Table 51. Median basic pay per day by region

	Freq	GTS	LFS 2014 Q4*	Min wage 2014**
CAR	183	500	577	260
REGION I	663	455	409	253
REGION II	387	454	561	255
REGION III	270	578	545	349
REGION IV-A	460	500	600	338
REGION V	681	500	538	260
REGION VI	341	400	536	287
REGION VII	522	500	500	340
REGION IX	769	455	538	280
REGION X	798	422	454	296
REGION XI	1011	442	477	312
REGION XII	385	409	635	270
NCR	208	818	681	451
REGION XIII	846	400	590	253
Total	7525	461	577	

* 4th Quarter Labor Force Survey data is among college graduates.

** Prevailing minimum non-agricultural wage per region in 2014. Source: National Wages and Productivity Commission

The highest paid are still those under the Armed Forces occupation group at Php800 per day (Table 52). Note that Skilled Agricultural, Forestry, and Fishery workers have a lower median pay than those in Elementary occupations.

For occupation groups that constitute majority of the graduates (professionals, clerical support workers, technicians and associate professionals, and service and sales workers account for 87% of employed graduates), the media basic pay is lower than the LFS estimates by around 15%-35%. It is possible that the sample graduates are in lower-paying jobs within these occupation groups compared to their LFS counterparts, on account of them being relatively new entrants to the labor market.

Table 52. Median basic pay per day by major occupation

	GTS			LFS 2014 Q4*		
	Total	Male	Female	Total	Male	Female
Armed Forces Occupations	800	809	800	909	909	681
Managers	500	500	500	769	800	769
Professionals	600	618	600	808	769	818
Technicians and Associate Professionals	420	415	423	545	577	500
Clerical Support Workers	400	400	390	465	466	462
Service and Sales Workers	400	538	340	460	500	336
Skilled Agricultural, Forestry, Fishery Workers	317	317	310	133	133	-
Craft and Related Trades Workers	329	346	309	384	400	327
Plant and Machine Operators and Assemblers	540	600	338	360	385	350
Elementary Occupations	325	307	344	270	296	231
Total	461	490	454	577	577	583

* 4th Quarter Labor Force Survey data is among college graduates.

In Table 53, we compute the percentage increase in median pay by occupation group among those who are not on their first job. Median pay increased across the board, and Professionals experienced the highest percentage increase at 116%.

Table 53. Median basic pay (among employed who are not on their first job)

	First job	Current job	% change
Armed Forces Occupations	770	800	4%
Managers	363	522	44%
Professionals	312	675	116%
Technicians and Associate Professionals	318	409	29%
Clerical Support Workers	301	392	30%
Service and Sales Workers	273	384	41%
Skilled Agricultural, Forestry, Fishery Workers	267	316	19%
Craft and Related Trades Workers	307	312	2%
Plant and Machine Operators and Assemblers	300	456	52%
Elementary Occupations	273	308	13%
Total	300	485.5	62%

Work location aspiration

Fifty-six percent of graduates desire to work away from their current location. Their preferred work locations are overseas (71.5%), anywhere but their current location (12.7%), big cities excluding Metro Manila (7%), and Metro Manila (6.5%) (Table 54).

Table 54. Preferred work location

	Freq	%
Overseas	4047	71.5
Anywhere	721	12.7
Big cities (excluding metro manila)	394	7.0
Metro manila	366	6.5
Total	5659	100.0

Table 55 shows the graduates' main reason for wanting to work away from their current location. The overwhelming reason is to have a better living condition (67.2%), which could mean anything from having a higher pay, better social services, better infrastructure, better work environment, among others.

Table 55. Main reason for wanting to work away from current location

	Freq	%
Better living condition	3761	67.2
Better experience/ skills/ career	864	15.4
Be independent	425	7.6
New environment	192	3.4
Be near my friends/ family/ relatives	126	2.3
Pursue further education	89	1.6
Others	141	2.6
Total	5598	100.0

While only 56% of graduates want to work away from their current location, 61% expressed willingness to work overseas if there is an opportunity. Table 56 shows that their most preferred country to work is Canada (22.7%), followed by the United States (14.4%) and the United Arab Emirates (14.4%).

Table 56. In which country are you willing to work the most?

	Freq	%
Canada	1582	22.7
United States of America (USA)	1002	14.4
United Arab Emirates (UAE)	1000	14.4
Singapore	469	6.7
Australia	405	5.8
Saudi Arabia	337	4.8
United Kingdom	290	4.2
Japan	263	3.8
Europe	236	3.4
International (any country)	227	3.3
Total	6956	100.0

Similar to their first job, graduates were asked what they thought was the main reason for landing their current job. We present the results in Table 57, disaggregating the total responses based on whether or not their current job is their first one. The relative importance of the primary reasons did not change. Occupational skills are still the top reason, followed by work experience and personal connection. However, the choices of those who are still on their first job differ significantly from those who are not ($p < 0.001$). Among those who are already on their second or third job, an equal share (35%) selected occupational skills and work experience as the main reason for getting their job. For those who are still on their first job, occupational skills, which are what they learned from the baccalaureate degree, is the most important reason for getting hired (44.7%). Personal connections matter less once the graduates have acquired more experience.

Table 57. Main reason for landing current job

	Total among employed (N=8,738) %	Among current job is not first job (61%) %	Among current job is first job (39%) %
Occupational skills	38.9	35.7	44.7
Work experience	29.1	35.4	20.0
Personal connection	16.3	14.2	19.0
University / school ranking	6.5	6.3	7.0
IT skills	2.7	2.4	2.7
Language skills	1.3	1.2	1.4
Contract period	0.6	0.5	0.5
Religion	0.3	0.3	0.2
Gender	0.2	0.1	0.3
Others	4.2	3.9	4.3

In Table 58, we further break down the reasons for landing current job by type of HEI. Note that graduates from private HEIs, whether they are on their first job or not, rate personal connections higher than their counterparts. Meanwhile, more graduates from public HEIs said that university or school ranking got them their current job ($p < 0.001$).

Table 58. Main reason for landing current job by HEI type

	Among current job is not first job		Among current job is first job	
	Public	Private	Public	Private
	%	%	%	%
Occupational skills	37.0	34.8	44.6	44.8
Work experience	35.1	35.7	21.9	18.9
Personal connection	12.9	15.1	16.3	20.6
University / school ranking	7.9	5.2	7.9	6.5
IT skills	2.5	2.4	3.0	2.6
Language skills	0.7	1.5	1.1	1.5
Contract period	0.5	0.6	0.4	0.6
Religion	0.3	0.4	0.2	0.2
Gender	0.2	0.0	0.3	0.4
Others	3.0	4.5	4.6	4.1

Even though graduates think occupational skills landed them their job, the most important factor for getting a job in general is work experience (Table 59). This is true for those who are employed but not on their first job (45.2%), and for those who are currently unemployed but have had a job since graduation (48.7%). While 36% of those on their first job selected work experience as the most important factor, a higher percentage (39%) expectedly selected occupational skills.

Table 59. Most important factor for getting a job

	Total among who ever had a job after graduation (N=10,516)	Among current job is not first job (47%)	Among current job is first job (30%)	Among unemployed but had first job (16%)
	%	%	%	%
Work experience	42.8	45.2	36.0	48.7
Occupational skills	34.4	33.0	39.3	29.8
Personal connection	11.1	9.9	12.3	12.2
University / school ranking	7.2	7.6	7.7	5.6
IT skills	2.0	1.8	2.3	1.8
Language skills	1.3	1.3	1.1	1.1
Contract period	0.2	0.1	0.3	0.2
Gender	0.1	0.0	0.1	0.1
Religion	0.1	0.1	0.0	0.0
Others	0.9	1.0	0.9	0.5

Consequently, the same proportion of graduates also believe that the main barrier for getting a good job is not having sufficient work experience (Table 60). Around 23% think that the main barrier is outdated or irrelevant skills and a fifth believe that it is the lack of personal

connections. Seven and five percent of graduates believe that a poor university ranking and lack of information on job openings, respectively, is the main barrier in getting a good job.

Graduates' preoccupation with work experience appear to be at odds with what employers are claiming as their main considerations in hiring entry-level applicants. According to the Philippines Fresh Graduates Job and Salary Report 2015 of Jobstreet.com, the top 5 functional skills that employers look for are communication skills, trainability, competence, problem-solving and analytical skills, and technical know-how. Competence and technical know-how may come from work experience, but for fresh graduates these are mostly from college training. Graduates correctly perceive that the communication, critical thinking, and problem-solving skills that they learned in college is not enough to make them competitive in the labor market.

Table 60. Main barrier for getting a good job (Top responses)

	Total among who ever had a job after graduation %	Among current job is not first job %	Among current job is first job %	Among unemployed but had first job %
No/ little work experience	42.6	45.1	37.8	45.1
Outdated/ irrelevant skills learned	23.2	21.9	26.7	20.5
No personal connections	20.2	18.7	21.3	21.6
Poor university ranking	7.0	7.1	7.5	5.8
No information on job openings	5.1	4.9	4.9	5.1

Earnings is by far the most important consideration in job choice (Table 61). Seventy percent of graduates said this is their top reason for choosing a job, and 86% of them choice this in their top 3 choices. The next top reasons are promotion, learning opportunities, and location. Graduates also care about having jobs that allow for extra income-generating opportunities, and those that provide health insurance support. The sector of employment, recognition from superiors, or infrastructure provided by the employer are not significant considerations of our graduates in selecting a job.

Table 61. 3 most important factor influencing job choice

	% Rank 1	% Rank 2	% Rank 3	% in top 3
Wage	69.5	10.5	5.5	85.5
Promotion possibilities	3.0	13.3	11.8	28.1
Education opportunities	4.6	8.6	13.5	26.7
Work location	5.6	15.8	4.8	26.2
Extra income generating opportunities	3.5	10.7	10.6	24.8
Health insurance support	1.5	6.3	14.6	22.4
Housing benefit	1.9	10.1	6.7	18.7
Proximity to family and friends	2.7	5.9	6.1	14.7
Professional environment	2.4	5.6	6.0	14.0
Workload/ working hours	0.9	4.2	7.1	12.2
Access to further education	1.9	4.3	3.3	9.5
Reputation of company	0.9	2.0	4.5	7.4
Sector (public, private for profit, NGO, etc.)	0.7	1.3	2.4	4.4
Recognition from supervisor/ boss	0.3	0.9	1.9	3.1
Infrastructure	0.1	0.3	0.9	1.3

Job-education mismatch

So far, we have observed the following with regard to job-education mismatch: (a) less than 70% of graduates think that their college degree is relevant to their first job; (b) less than half of them consider occupational skills, which they learned in college, as the main reason for landing their first or current jobs; (c) around a fourth of them think that outdated skills learned in college is keeping them from getting a good job. Here, we explore the issue further by looking at specific degree-occupation matches.

We attempt to gauge the extent of mismatch by comparing the current occupations of our graduates vis-à-vis their baccalaureate program. This mismatch is admittedly a narrow one, as we are only assessing “horizontal” mismatch, or the appropriateness of the degree completed with the requirements of the job. For instance, a graduate of Bachelor of Secondary Education is considered working in a “matched” occupation if he or she is employed as a Secondary School teacher; a graduate of BS Electronics Engineering should be working in the Electronics Engineering profession to be considered as “matched”. The decision to do so was made to reduce possible arbitrariness given our lack of information regarding core skills learned from a degree that is of use to all possible occupations. Finally, since there is no official mapping of the baccalaureate programs to all their possible matched occupations, we focus our analysis on programs that require a professional license. These courses typically have more defined “matched” occupations.¹²

Table 62. Match of occupations with baccalaureate program

	% of graduates	Match %	Not match %
BS in Nursing	21.6	52.8	47.2
Bachelor of Elementary Education	8.6	62.8	37.2
Bachelor of Secondary Education	6.3	60.8	39.2
BS in Criminal Justice/Criminology	5.0	48.7	51.3
BS in Accountancy	2.3	26.5	73.5
BS in Civil Engineering	1.2	46.6	53.4
BS in Agriculture	1.1	17.1	82.9
BS in Electronics and Communications Engineering	0.8	11.4	88.6
BS in Electrical Engineering	0.6	25.9	74.1
BS in Mechanical Engineering	0.6	26.4	73.6
BS in Elementary and Secondary Education	0.5	58.1	41.9
BS in Social Services/Social Work	0.5	46.8	53.2
BS in Architecture	0.4	45.5	54.5
BS in Customs Administration	0.3	4.2	95.8
BS in Pharmacy	0.3	65.4	34.6

In Table 62 we present the results of our matching exercise. Overall, 50.3% of graduates who took PRC-required courses and are employed during the reference period are in jobs that match their degree.¹³ Among the top 15 baccalaureate programs with PRC requirement, the Bachelor Science in Pharmacy have the highest percentage of job-education fit. Around 65% of their graduates work as pharmacists. On the other hand, only 7.6% of BS in Agriculture graduates

¹² In previous GTS rounds, “matching” was done by pairing baccalaureate programs with broad occupation or industry groups. For instance, a Nursing graduate would be considered “matched” as long as he or she works in the health sector.

¹³ The corresponding percentage is 42% for the graduates’ first job.

work as agriculturists or as agricultural technicians, and only 4% of BS Customs Administration work as customs and border inspectors.

Let us examine the top programs closely. From Table 63 to Table 69 we present the occupations considered as “not matched” for the top 7 baccalaureate programs with PRC license requirement (those with incidence of at least 1% of total graduates). The jobs showed in these tables comprise at least 60% of the “not-matched” occupations.

Among BS Nursing graduates, 52.8% are working as nursing professionals. Table 63 shows the occupations of those who are not nursing professionals. Around 11% work in call centers, 8% are retail or wholesale trade managers, and 6% are general office clerks.

Table 63. Occupations of BS Nursing graduates (“not matched”)

	%
Contact centre information clerks	11.0
Retail and wholesale trade managers	8.0
General office clerks	6.2
Cashiers and ticket clerks	3.5
Health care assistants	3.2
Police officers	3.2
Nursing associate professionals	2.4
Technical and medical sales professionals	2.1
Shopkeepers	1.8
Teaching professionals not elsewhere classified	1.7
Shop sales assistants	1.7
Commercial sales representatives	1.6
Services managers not elsewhere classified	1.5
Secondary education teachers	1.5
Social work associate professionals	1.5
Data entry clerks	1.5
Medical secretaries	1.3
Sales and marketing managers	1.2
Pharmaceutical technicians and assistants	1.2
Fire-fighters	1.2
Bank tellers and related clerks	1.1
Finance managers	1.0
Restaurant managers	1.0
Secretaries (general)	1.0
Accounting and bookkeeping clerks	1.0
Personnel clerks	1.0
Shop supervisors	1.0

* NEC means “not elsewhere classified”, a category used by the Philippine Statistics Authority to lump occupations within a category that have small incidence.

Meanwhile for the Bachelor of Elementary Education graduates, we considered as “not-matched” those that are working as early childhood educators (19.8%), other teaching professionals (8.5%), secondary education teachers (4.4%), and university and higher education teachers (3.4%) (Table 64). While these teaching occupations can be argued to be not a mismatch, what is clear is that those not working as teachers are general office clerks (10.2%),

cashier and ticket clerks (3.1%), commercial sales representatives (2.7%), and other types of clerks and service workers.

Table 64. Occupations of Bachelor of Elementary Education (“not matched”)

	%
Early childhood educators	19.8
General office clerks	10.2
Teaching professionals NEC	8.5
Secondary education teachers	4.4
University and higher education teachers	3.4
Cashiers and ticket clerks	3.1
Commercial sales representatives	2.7
Retail and wholesale trade managers	2.4
Secretaries (general)	2.4
Shopkeepers	2.0
Credit and loans officers	1.7
Accounting and bookkeeping clerks	1.7

* NEC means “not elsewhere classified”, a category used by the Philippine Statistics Authority to lump occupations within a category that have small incidence.

Majority of Bachelor of Secondary Education graduates who are not teaching in high school are primary school teachers (30.4%) (Table 65). The non-teaching jobs are likewise clerks, shopkeepers, and sales representatives. Around 1.3% are police officers or domestic cleaners and helpers.

Table 65. Occupations of Bachelor of Secondary Education (“not matched”)

	%
Primary school teachers	30.4
University and higher education teachers	6.7
Teaching professionals NEC	5.8
General office clerks	4.6
Early childhood educators	3.8
Contact centre information clerks	3.3
Cashiers and ticket clerks	2.9
Accounting and bookkeeping clerks	2.1
Shopkeepers	1.7
Retail and wholesale trade managers	1.3
Commercial sales representatives	1.3
Police officers	1.3
Domestic cleaners and helpers	1.3

* NEC means “not elsewhere classified”, a category used by the Philippine Statistics Authority to lump occupations within a category that have small incidence.

Among BS Criminal Justice graduates, the majority in “not matched” occupations are security guards (20.6%), followed by fire-fighters (5.3%) (Table 66).

Table 66. Occupations of BS Criminal Justice / Criminology (“not matched”)

	%
Security guards	20.6
Fire-fighters	5.3
Shopkeepers	4.3
General office clerks	3.8
Protective services workers NEC	3.8
Retail and wholesale trade managers	3.3
Commercial sales representatives	3.3
Debt-collectors and related workers	3.3
University and higher education teachers	2.4
Credit and loans officers	2.4
Data entry clerks	1.9
Contact centre information clerks	1.9
Cashiers and ticket clerks	1.9

* NEC means “not elsewhere classified”, a category used by the Philippine Statistics Authority to lump occupations within a category that have small incidence.

Table 67 shows that BS Accountancy graduates who are not working as accountants are primarily either accounting and bookkeeping clerks (19.9%) or accounting associate professionals (19.3%).

Table 67. Occupations of BS Accountancy (“not matched”)

	%
Accounting and bookkeeping clerks	19.9
Accounting associate professionals	19.3
General office clerks	6.0
Bank tellers and related clerks	6.0
University and higher education teachers	4.8
Debt-collectors and related workers	3.0
Finance managers	2.4
Financial analysts	2.4
Cashiers and ticket clerks	2.4

The top occupation of BS Civil Engineering graduates who are not working as civil engineers is general office clerks (11.3%) (Table 68). Some relatively-related occupations are civil engineering technicians (6.5%) and engineering professionals not elsewhere classified (4.8%).

Table 68. Occupations of BS Civil Engineering (“not matched”)

	%
General office clerks	11.3
Physical and engineering science technicians NEC	8.1
Civil engineering technicians	6.5
Engineering professionals NEC	4.8
Information and communications technology operations technicians	4.8
Supply, distribution and related managers	3.2
Retail and wholesale trade managers	3.2
Industrial and production engineers	3.2
University and higher education teachers	3.2
Electrical engineering technicians	3.2
Manufacturing supervisors	3.2
Shop sales assistants	3.2
Senior government officials	1.6
Senior officials of special-interest organizations	1.6

* NEC means “not elsewhere classified”, a category used by the Philippine Statistics Authority to lump occupations within a category that have small incidence.

Among BS Agriculture graduates, 83% are working in “not matched” occupations. Table 69 shows that they are primarily clerks, sales representatives and retail workers as well. Some are primary and secondary school teachers.

Table 69. Occupations of BS Agriculture (“not matched”)

	%
General office clerks	8.0
Commercial sales representatives	6.9
Retail and wholesale trade managers	5.7
Debt-collectors and related workers	4.6
Shop sales assistants	4.6
Cashiers and ticket clerks	4.6
Traditional chiefs and heads of villages	2.3
Secondary education teachers	2.3
Primary school teachers	2.3
Manufacturing supervisors	2.3
Credit and loans officers	2.3
Regulatory government associate professionals NEC	2.3
Social work associate professionals	2.3
Accounting and bookkeeping clerks	2.3
Stock clerks	2.3
Shopkeepers	2.3
Fire-fighters	2.3

* NEC means “not elsewhere classified”, a category used by the Philippine Statistics Authority to lump occupations within a category that have small incidence.

7.6. Socio-political participation and life satisfaction

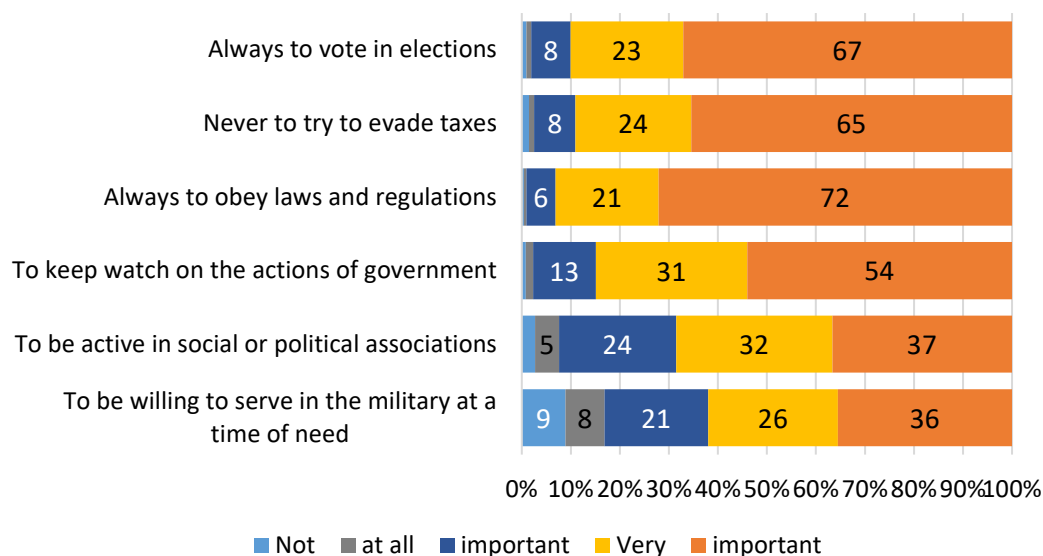
Nearly all graduates (96%) are registered voters. Incidence of voting in the four most recent elections is not as high – 90% in the 2010 Presidential elections and 86% in the 2013 midterm elections (Table 70).

Table 70. Incidence of voting in selected elections

	% Yes
2010 Presidential elections	90.01
2010 Barangay elections	86.91
2013 Midterm elections	85.92
2013 Barangay elections	83.95

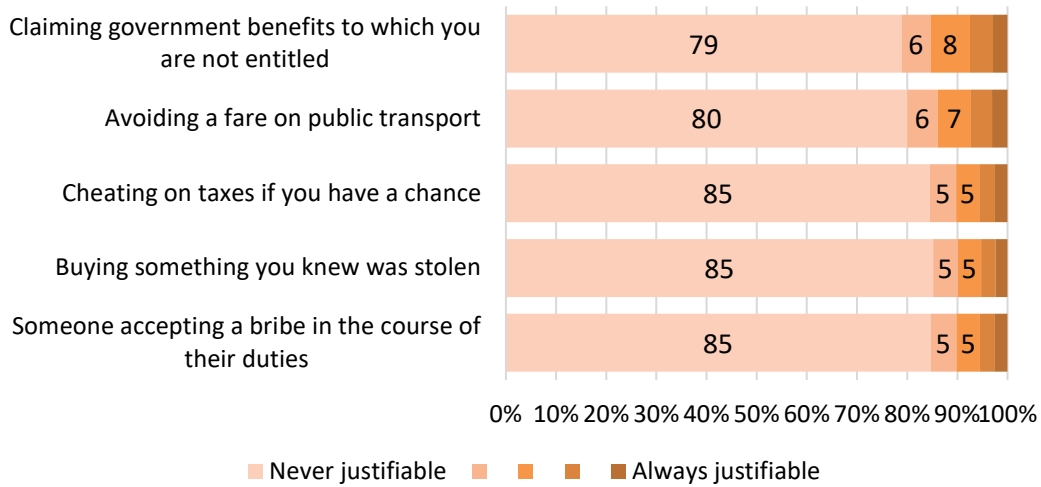
Good citizenship is mostly associated with voting, obeying laws, and paying taxes (Figure 10). A little over half (54%) think that being vigilant on the actions of the government is “very important”. Only around 36% are concerned with being active in social and political associations and in serving the military at a time of need.

Figure 10. As far as you are concerned personally, how important is...



Most graduates have a clear belief on what is ethical behavior (Figure 11). Ninety percent believe that it is not justifiable to cheat on taxes, buy something stolen, or accept a bribe. A slightly lower percentage think that it is not justifiable to claim government benefits that are not entitled to them (85%) or to avoid paying fare in public transport (86%).

Figure 11. Is ... never justifiable, always justifiable or something in between?



Graduates barely participate in political and social actions (Table 71). The most common social action is donating for a cause; 47% of graduates donated for a social cause in the past 12 months. Participation in the rest of the political and social actions is less than 10%.

Table 71. Participation in political and social action - past 12 months

	% Yes
Donated money or goods for a social cause	47.31
Signed a petition to support an ordinance or a bill	9.72
Bought certain products for political, ethical, environmental reasons	9.24
Joined an Internet political forum or discussion group	8.47
Attended a political meeting or rally	7.04
Took part in a demonstration	6.82
Boycotted certain products for political, ethical, environmental reasons	6.73
Contacted, or attempted to contact, a politician or a civil servant to express your views	5.72
Contacted or appeared in the media to express your views	5.08

Participation in groups is also low across the board (Table 72). The highest participation rate is 37%, for religious organizations. Leisure-related, voluntary or professional associations only have 24%-21% participation rates. Only 6% are members of a political party.

Table 72. Participation in groups - past 12 months

	% Yes
A church or other religious organization	37.06
A sports, leisure or cultural group	23.91
Another voluntary association	21.86
A trade union, business, or professional association	21.39
A political party	6.12

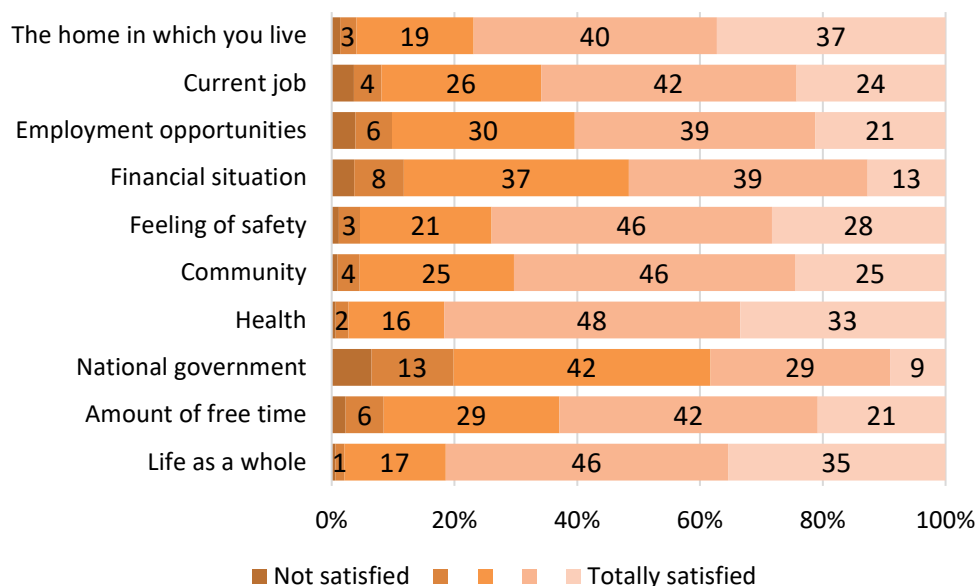
Finally, graduates are asked to rate their satisfaction over different aspects of their lives, and of their life overall. Around 81% are satisfied with their lives as a whole. They are most satisfied with their health and their homes – 82% and 77% are “totally satisfied” with these two

aspects, respectively. They are also satisfied with their safety and belongingness to their communities. Around 74% and 70% of graduates gave these aspects “satisfied” and “totally satisfied” ratings, respectively. This can be an overestimate, to the extent that graduates in unsafe areas were not interviewed due to security reasons.¹⁴

Graduates seem quite lukewarm with their current job and employment opportunities. Less than 25% of graduates said that they are “totally satisfied”. In fact, a higher percentage gave a neutral rating (26% for current job and 30% for employment opportunities).

Graduates are least satisfied with their finances and the national government. Only 13% of them are “totally satisfied” with their financial situation, and 37% are neutral about it. This might be understandable given that they are in the early stages of their career, and can also be related to their lukewarm satisfaction with their current jobs. The national government received a “totally satisfied” rating of only 9%, and a “not satisfied” rating of 20%.

Figure 12. How satisfied are you with the following aspects for your life?



7.7. Relationship of college experience to post-college outcomes

In this section, we explore the extent to which college experience influence post-college outcomes such as employment, socio-political participation, and life satisfaction. To do this, we first summarize the information from the different aspects of college and post-college experience captured in our data. We then use this summarized information in our regressions relating college experience to post-college outcomes.

Generating Indices

The college experience module features several questions that intend to capture various features of college life. The questions in a given feature (sub-module) are supposed to exhaust

¹⁴ Some regions have reported this issue during data collection.

the most important elements of said feature. Unfortunately, the volume of questions even in a single feature (say Learner Engagement) is large enough to make direct analysis difficult. This requires the use of dimensionality reduction techniques; here, we use the Principal Component Analysis (PCA), taking off from and extending the approach by Webber, et al. (2013).

PCA allows us to represent a set of variables into smaller sets of orthogonal components – linear combinations of variables – that capture their variability. This is usually done by eigenvalue decomposition of the covariance or correlation matrix of the variables. We then analyze the resulting components scores – transformed values corresponding to data points, and loadings – multiplicative weight of each original variable to get the component score. Usually, we are interested in the first few components (1-3) that capture the bulk of the variability of the original sets of variables.

PCA methods usually calculate the matrix using Pearson correlation, which assumes that variables are continuous and normally distributed. This may be problematic in case of Likert scale variables which we use for the study. In this case, we use a flavor of PCA called polychoric PCA, which simply assume that variables are ordered measurements of a given continuum. It uses polychoric correlations, which are also maximum likelihood-based, have the same range as Pearson correlation, and thus can be interpreted in the same way.

We used polychoric PCA to reduce the questions in a feature of college experience captured through several questions into one to three indices, depending on the variability explained and interpretability of the components (based on the sign of the loadings). For college experience, we ran PCA for learner engagement (Figure 3 to Figure 5, 13 questions), teaching quality (Figure 6, 7 questions), student support services (Figure 8, 6 questions), overall college experience (Figure 9, 4 questions). For socio-political participation, we ran polychoric PCA for good citizenship (Figure 10, 6 questions), ethics (Figure 11, 5 questions), political and social action (Table 71, 9 questions), and joining a group or association (Table 72, 5 questions). Finally, we also ran PCA on overall life satisfaction (Figure 12, 10 questions).

For learner engagement, we decided to extract two principal components from the 10 questions explaining 61% of the variability (Table 73).

Table 73. Components and variables explained for Learner engagement

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	5.8924	3.8081	0.4533	0.4533
Comp2	2.0844	0.9975	0.1603	0.6136
Comp3	1.0869	0.3678	0.0836	0.6972
Comp4	0.7190	0.0677	0.0553	0.7525
Comp5	0.6514	0.0711	0.0501	0.8026
Comp6	0.5803	0.2065	0.0446	0.8473
Comp7	0.3738	0.0315	0.0288	0.8760
Comp8	0.3422	0.0439	0.0263	0.9023
Comp9	0.2984	0.0153	0.0230	0.9253
Comp10	0.2830	0.0306	0.0218	0.9471
Comp11	0.2525	0.0232	0.0194	0.9665
Comp12	0.2293	0.0227	0.0176	0.9841
Comp13	0.2065	.	0.0159	1.0000

Table 74. Factor Loadings – Principal Components Analysis for Learner engagement

Variable	Comp1	Comp2	Comp3	Unexplained
C1A_1	0.1969	0.3606	0.5328	0.1919
C1A_2	0.2030	0.3576	0.5467	0.1657
C1B_1	0.2684	0.2461	-0.1486	0.4254
C1B_2	0.2493	0.3663	-0.2734	0.2729
C1B_3	0.2667	0.3369	-0.3811	0.1866
C1B_4	0.2643	0.2618	-0.3512	0.3115
C1C_1	0.2576	-0.1758	-0.0498	0.5417
C1C_2	0.3085	-0.2905	-0.0263	0.2626
C1C_3	0.3061	-0.2836	-0.0340	0.2789
C1C_4	0.3217	-0.2747	0.0284	0.2322
C1C_5	0.3225	-0.2402	0.0666	0.2620
C1C_6	0.2979	-0.1811	0.1269	0.3912
C1C_7	0.3056	-0.0605	0.1618	0.4137

The principal component can then be interpreted as the “**learner engagement index**”, representing the bulk of information from the 13 questions (Table 74). Orthogonal to this is the second principal components, which, by looking at the signs of the factor loadings, can be interpreted as an “**intra-curricular index**”. The index represents the emphasis of the learner engagement on non-extra-curricular activities (represented by Figure 3 and Figure 4 questions).

For teaching quality, the first principal component already explains 72% of the variation, which we interpret as the “**teaching quality index**” (Table 75). We need not look into interpreting the second principal component via its factor loadings since we are just using the first one.

Table 75. Components and Variables Explained for Faculty

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	5.7868	5.3052	0.7234	0.7234
Comp2	0.4817	0.0367	0.0602	0.7836
Comp3	0.4449	0.0830	0.0556	0.8392
Comp4	0.3619	0.0751	0.0452	0.8844
Comp5	0.2868	0.0501	0.0359	0.9203
Comp6	0.2367	0.0155	0.0296	0.9499
Comp7	0.2212	0.0413	0.0277	0.9775
Comp8	0.1799	.	0.0225	1.0000

For student support services, we opted to look into the “helpfulness” questions since we believe that it is more representative of the actual presence of support (Table 76). Looking at the polychoric PCA analysis, the first two principal components explain 77% of the variation. The first component can be interpreted as the “**support services index**”.

Table 76. Components and Variables Explained for Support Services

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	3.860	3.112	0.643	0.643
Comp2	0.748	0.232	0.125	0.768
Comp3	0.516	0.160	0.086	0.854
Comp4	0.356	0.089	0.059	0.913
Comp5	0.267	0.015	0.045	0.958
Comp6	0.252	.	0.042	1.000

Table 77. Factor Loadings – Principal Components Analysis for Support Services

Variable	Comp1	Comp2	Comp3	Unexplained
C3B_1	0.4036	-0.5028	-0.1438	0.1714
C3B_2	0.4133	-0.4977	0.0128	0.1554
C3B_3	0.4237	-0.1635	0.3005	0.2405
C3B_4	0.3741	0.4179	0.7333	0.0518
C3B_5	0.4172	0.3883	-0.4083	0.1293
C3B_6	0.4157	0.3838	-0.4294	0.1277

Looking at the signs of the factor loadings of the second principal component, we can intuitively define the second component as the “**non-core support services index**” since it gives less priority to core staff like administrative staff, librarians, and guidance counselors over religious support, laboratory support, and research personnel (Table 77).

For overall college experience, the first two components (explaining 92% of the variation) are also useful (Table 78). The principal component is interpreted as “**overall college experience index**” while the factor loadings of the second components suggests its interpretation as “**practicality of college experience index**” given its information on translatability of college experience to real-life situations or concrete actions (Table 79).

Table 78. Components and Variables Explained for Overall college experience

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	3.3330	2.9927	0.8332	0.8332
Comp2	0.3403	0.1642	0.0851	0.9183
Comp3	0.1761	0.0254	0.0440	0.9623
Comp4	0.1506	.	0.0377	1.0000

Table 79. Factor Loadings – Principal Components Analysis for Overall college experience

Variable	Comp1	Comp2	Comp3	Unexplained
C4_1	0.4955	0.5505	0.6407	0.0062
C4_2	0.5011	0.4493	-0.6879	0.0111
C4_3	0.5037	-0.4636	-0.2114	0.0733
C4_4	0.4996	-0.5293	0.2676	0.0601

We now go to the socio-political module. For the good citizenship questions, we opted to use the first three principal components (explaining 87% of the variability), both because of the variance explained and the interpretability of the components (Table 80). The principal

component then becomes “**citizenship index**”, for it captures what an individual sees as features of being a good citizen.

Table 80. Components and Variables Explained for Citizenship

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	3.8569	2.9175	0.6428	0.6428
Comp2	0.9394	0.5139	0.1566	0.7994
Comp3	0.4256	0.1013	0.0709	0.8703
Comp4	0.3243	0.0583	0.0540	0.9244
Comp5	0.2659	0.0780	0.0443	0.9687
Comp6	0.1879	.	0.0313	1.0000

Table 81. Factor Loadings – Principal Components Analysis for Citizenship

Variable	Comp1	Comp2	Comp3	Unexplained
E3_1	0.4182	-0.3188	0.1589	0.2193
E3_2	0.4148	-0.3996	0.2793	0.1532
E3_3	0.4335	-0.3376	0.0195	0.1679
E3_4	0.4402	0.1191	-0.5626	0.1046
E3_5	0.4023	0.4533	-0.3944	0.1166
E3_6	0.3309	0.6365	0.6514	0.0165

A cursory analysis on the loadings of the second component indicate an individual’s preference for “active” displays of citizenship (active watching of government actions, joining the military, participation in social or political associations over simply voting or not evading taxes) (Table 81). Therefore, we can interpret it as “**active participation preference index**”.

For the ethics questions, the principal component already explains 92% of the variation, which we simply interpret as the “**ethics index**” (Table 82).

Table 82. Components and Variables Explained for Ethics

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	4.6110	4.4235	0.9222	0.9222
Comp2	0.1875	0.0865	0.0375	0.9597
Comp3	0.1010	0.0405	0.0202	0.9799
Comp4	0.0605	0.0205	0.0121	0.9920
Comp5	0.0400	.	0.0080	1.0000

For questions on political and social action, we also just take the principal component, even as it explains only 65% of the variability, due to the lack of variance explained by, and difficulty in interpreting, the second and third components (Table 83). The first component, we interpret as “**political/social action index**”.

Table 83. Components and Variables Explained for Political and social action

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	5.8321	4.9635	0.6480	0.6480
Comp2	0.8686	0.1791	0.0965	0.7445
Comp3	0.6895	0.2279	0.0766	0.8211
Comp4	0.4616	0.1477	0.0513	0.8724
Comp5	0.3140	0.0396	0.0349	0.9073
Comp6	0.2743	0.0699	0.0305	0.9378
Comp7	0.2044	0.0220	0.0227	0.9605
Comp8	0.1824	0.0093	0.0203	0.9808
Comp9	0.1731	.	0.0192	1.0000

Table 84. Factor Loadings – Principal Components Analysis for Political and social action

Variable	Comp1	Comp2	Comp3	Unexplained
E5_1	0.3536	-0.0791	-0.3342	0.1883
E5_2	0.3496	-0.0612	-0.4299	0.1566
E5_3	0.3327	0.1225	-0.5062	0.1647
E5_4	0.3462	-0.2248	-0.0158	0.2570
E5_5	0.3408	-0.2623	0.1963	0.2363
E5_6	0.3598	-0.1712	0.2170	0.1869
E5_7	0.2062	0.8896	0.0401	0.0635
E5_8	0.3403	-0.0285	0.4578	0.1792
E5_9	0.3438	0.1850	0.3876	0.1772

For questions on active participation in groups and associations, we decided to use the first two principal components, explaining 74% of the variation (Table 85). The principal component is simply interpreted as “**group participation index**” while the second component, due to the interpretation of loadings as favoring political or economic organizations over others, was interpreted as “**political/economic group participation index**” (Table 86).

Table 85. Components and Variables Explained for Participation in groups

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	3.0142	2.3210	0.6028	0.6028
Comp2	0.6932	0.1109	0.1386	0.7415
Comp3	0.5823	0.1989	0.1165	0.8579
Comp4	0.3834	0.0564	0.0767	0.9346
Comp5	0.3270	.	0.0654	1.0000

Table 86. Factor Loadings – Principal Components Analysis for Participation in groups

Variable	Comp1	Comp2	Comp3	Unexplained
E6_1	0.4132	0.5489	-0.6110	0.0592
E6_2	0.4058	0.5624	0.6636	0.0279
E6_3	0.4518	-0.4324	0.3437	0.1865
E6_4	0.4685	-0.4242	-0.2200	0.1855
E6_5	0.4910	-0.1242	-0.1406	0.2512

We finally arrive at the overall life satisfaction questions (Table 87). The first principal component was only able to explain 49% of the variation, so we found it fit to use the first three principal components, which can now explain over 68% of the variation. As with before, the first principal component as a straightforward interpretation as “**overall life satisfaction index**”.

Table 87. Components and Variables Explained for Overall life satisfaction

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	4.9435	3.8921	0.4944	0.4944
Comp2	1.0514	0.2301	0.1051	0.5995
Comp3	0.8213	0.1415	0.0821	0.6816
Comp4	0.6798	0.1034	0.0680	0.7496
Comp5	0.5764	0.0714	0.0576	0.8072
Comp6	0.5050	0.0873	0.0505	0.8577
Comp7	0.4177	0.0367	0.0418	0.8995
Comp8	0.3810	0.0353	0.0381	0.9376
Comp9	0.3457	0.0676	0.0346	0.9722
Comp10	0.2781	.	0.0278	1.0000

Table 88. Factor Loadings – Principal Components Analysis for Overall life satisfaction

Variable	Comp1	Comp2	Comp3	Unexplained
E9_1	0.2899	0.0220	-0.4361	0.4277
E9_2	0.3338	-0.4989	0.0574	0.1848
E9_3	0.3256	-0.5039	0.0607	0.2058
E9_4	0.3490	-0.3018	0.0629	0.2989
E9_5	0.3357	0.1727	-0.2543	0.3584
E9_6	0.3259	0.2143	-0.0410	0.4254
E9_7	0.3160	0.3290	-0.2001	0.3596
E9_8	0.2561	0.1253	0.7605	0.1842
E9_9	0.2742	0.4325	0.3039	0.3559
E9_10	0.3423	0.1376	-0.1476	0.3830

The second component is also easy to interpret, given the distinct negative loadings assigned to satisfaction on current job, employment opportunities, and financial situation over those that are “non-economic” (Table 88). We therefore interpret this component as “**non-economic life satisfaction index**”. The third is a bit more complex, but the positive loadings indicate that satisfaction with respect to aspects of life that involve interaction with other people outside of family or community (free time can be interpreted as leisure time – which usually involves interacting with strangers). We can therefore see the third component as an “**external life satisfaction index**”.

The indices we generated will be our explanatory or outcome variables in our subsequent econometric analysis. Note that these indices are composite variables, linear combinations of the original variables. Therefore, interpretation on the elasticities/elasticities can be broken down to original variables using the factor loadings, if necessary.

College experience on employment and socio-political participation

Employment. We first look at the relationship of college experience on employment and on socio-political participation indices we developed earlier: citizenship, active participation, ethics, participation in groups, and political/economic groups' participation. College experience consists of the indices learner engagement, intra-curricular focus, teaching quality, helpfulness of support services, helpfulness of non-core support services, overall college experience, and perceived practicality of college experience. We control for the student's sex, HEI type, region graduated from, poverty status, and the educational attainment of the father and mother.

Each of the regressions are of the form $Y = F(\alpha + \beta'X + \lambda'Z + \varepsilon)$, where Y is any of the post-college indexes we developed earlier; X is the set of college experience indexes that we also generated and are hypothesized to affect Y ; Z is a set of student characteristics mentioned above, ε is the error term, and $F()$ is the functional form of the estimating equation that will depend on the nature of the dependent variable of interest. In the regression tables present below, we report just the coefficients for X for parsimony.

For the dependent variable employment status, it is equal to 1 if the graduate is employed and 0 otherwise. Thus, we utilize the logistic regression, and we present the odds ratios of the estimates (Table 89). We note that among the explanatory variables, learner engagement, support services, and overall college experience have statistically significant effect on the odds ratio of employment. In particular, a unit increase in learner engagement and a unit increase in overall college experience increases the odds ratio of employment by 9.5% and 8%, respectively, while the support services index reduces the odds or employment by 5.0% and the rest of the indices did not turn out to statistically significant.

Table 89. Logistic regression of employment on college experience

	Odds Rat.	Std. err.	p-value
Learner Engagement Index	1.095	0.022	0.000
Intra-curricular Index	0.966	0.030	0.263
Teaching Quality Index	0.972	0.022	0.208
Support Services Index	0.941	0.023	0.011
Non-Core Support Services Index	1.032	0.046	0.478
Overall College Experience Index	1.083	0.031	0.005
Practicality of College Experience Index	1.030	0.056	0.582
Pseudo R-squared	0.048		
Prob > chi2	0.000		
N. of cases	7280		

But given that the explanatory variables are just principal components themselves, how do we interpret this result using the original variables? This is a bit complicated, but not impossible. Consider the case of learner engagement: we must establish that a unit increase in learner engagement can be produced by a linear combination of increasing by one unit (in a range of 1 to 5) of the original questions. For instance, the learner engagement index can be increased by one unit by simultaneously increasing by one unit the answers to questions 2, 3, 5, and 7

(Table 90). So we can say that by doing so, we increase by 9.5% the odds ratio of employment. Interpreting other explanatory variables can proceed similarly.¹⁵

Table 90. Learner engagement questions

Question	Factor Loading
During that time, to what extent have you (1- NOT AT ALL, 2- VERY LITTLE, 3-SOME, 4-A LOT 5-VERY MUCH)	
1. had a sense of belonging to your university?	0.1969
2. felt prepared for your study	0.2030
During that time, how frequently have you: (1-NEVER, 2-RARELY, 3-SOMETIMES, 4-OFTEN, 5-VERY OFTEN)	
3. Participated in discussions online or face to face?	0.2684
4. Worked with other students as as part of your study?	0.2493
5. Interacted with students outside your study requirements?	0.2667
6. Interacted with students who are very different from you?	0.2643
How frequently have you: (1-NEVER, 2-RARELY, 3-SOMETIMES, 4-OFTEN, 5-VERY OFTEN)	
7. Participated in intramural/sports fest/varsity team?	0.2576
8. Held a leadership position in a student club, campus organization residence hall, or fraternity/sorority?	0.3085
9. Been an active member of any non-academic club?	0.3061
10. Been an active member of any academic club?	0.3217
11. Participated in a leadership-training program?	0.3225
12. Affiliated with religious clubs/participated in religious activities?	0.2979
13. Participated in activities that helped me explore my career options?	0.3056

For the rest of the runs, a simple OLS regression was used to deduce the association of the variables. Note that interpreting the magnitudes is a bit complicated at this point (as we are comparing linear combinations to linear combinations); for our purposes, it is sufficient to examine the direction (sign) and strength of the association (statistical significance).

Citizenship. For the citizenship index, all explanatory variables are significant except for the practicality index (Table 91). This is an expected result except for the non-core support services index, which has a negative sign, and the intra-curricular index, which is positive. One can expect that exposure to extra-curricular activity – participation in student organizations – can help in imbibing a spirit of civic participation.

Table 91. Regression of citizenship index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	0.111	0.010	0.000
Intra-curricular Index	0.072	0.015	0.000
Teaching Quality Index	0.036	0.011	0.001
Support Services Index	0.052	0.011	0.000

¹⁵ So how do we use this information to increase employment? This basically becomes an optimization problem. We proceed by assigning costs to increasing by one unit the answers to questions below (e.g. what is the cost of increasing students' participation outside of study requirements?). Then we can proceed to compute for the least cost way of increasing learner engagement given the costs and the factor loading.

Non-Core Support Services Index	-0.052	0.021	0.013
Overall College Experience Index	0.083	0.014	0.000
Practicality of College Experience Index	0.015	0.027	0.564
R-squared	0.142		
N. of cases	8443		

But this result can be clarified when we look at the active participation index, which measures preference to civic participation that emphasize action over passive citizenship – vigilance to government action, willingness to join the armed forces, service in political associations. Here the result is less surprising (Table 92). Non-core support services have positive association. Extra-curricular emphasis helps (intra-curricular is negative), while overall college experience is negative. A less satisfying experience during college may nudge individuals into becoming more active for political reform post-college.

Table 92. Regression of active participation index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	0.043	0.006	0.000
Intra-curricular Index	-0.044	0.009	0.000
Teaching Quality Index	-0.010	0.006	0.107
Support Services Index	0.023	0.007	0.001
Non-Core Support Services Index	0.098	0.013	0.000
Overall College Experience Index	-0.034	0.008	0.000
Practicality of College Experience Index	0.000	0.016	0.988
R-squared	0.091		
N. of cases	8443		

Ethics. As for the ethics index, surprisingly, support services index has positive association, while learner engagement, non-core support services, and overall college experience have negative association (Table 93). This needs further examination, though one consequence is that a more privileged background (which is associated with better college experience) may lead to less predisposition to ethical decisions.

Table 93. Regression of ethics index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	-0.035	0.011	0.001
Intra-curricular Index	0.024	0.017	0.169
Teaching Quality Index	0.013	0.012	0.306
Support Services Index	0.108	0.013	0.000
Non-Core Support Services Index	-0.135	0.024	0.000
Overall College Experience Index	-0.083	0.015	0.000
Practicality of College Experience Index	0.047	0.030	0.119
R-squared	0.101		
N. of cases	8458		

Political and social participation. The political/social action index is positively associated with learner engagement, but negatively associated with inter-curricular thrust and practicality of college experience (Table 94). It could be that more engaged students, exposed to realities

of life via extra-curricular activities and more social than technical education, tend to become more politically active.

Table 94. Regression of political / social action index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	0.119	0.011	0.000
Intra-curricular Index	-0.047	0.017	0.006
Teaching Quality Index	-0.018	0.012	0.135
Support Services Index	-0.010	0.013	0.425
Non-Core Support Services Index	0.014	0.024	0.544
Overall College Experience Index	-0.012	0.015	0.420
Practicality of College Experience Index	-0.093	0.030	0.002
R-squared	0.064		
N. of cases	8494		

As for participation in groups, Table 95 shows that almost all explanatory variables are statistically significant, with positive association for learner engagement, non-core support services, and overall college experience and negative association with intra-curricular focus, teaching quality, and practicality of college experience. The importance of extra-curricular thrust and more liberal arts orientation of education (as opposed to technical) nudges individuals towards greater group participation.

Table 95. Regression of participation in groups index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	0.108	0.008	0.000
Intra-curricular Index	-0.072	0.013	0.000
Teaching Quality Index	-0.021	0.009	0.021
Support Services Index	-0.007	0.010	0.461
Non-Core Support Services Index	0.052	0.018	0.004
Overall College Experience Index	0.037	0.012	0.002
Practicality of College Experience Index	-0.049	0.023	0.033
R-squared	0.081		
N. of cases	8494		

Finally, participation in political/economic groups only has two statistically significant explanatory variables: non-core support services (positive) and practicality of college experience (negative) (Table 96). This is not surprising; students with exposure to less “practical” college experience would be more predisposed to join political groups over non-political ones.

Table 96. Regression of political/economic group index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	0.000	0.005	0.932
Intra-curricular Index	0.010	0.009	0.240
Teaching Quality Index	0.002	0.006	0.758
Support Services Index	0.003	0.007	0.635
Non-Core Support Services Index	0.024	0.012	0.042
Overall College Experience Index	-0.004	0.008	0.597
Practicality of College Experience Index	0.035	0.015	0.021
R-squared	0.022		
N. of cases	8494		

College experience and employment outcomes on overall life satisfaction

We can now look at the factors associated with the life satisfaction index. In these regressions, we included employment status as a control variable. Unsurprisingly, all explanatory variables are positively associated with life satisfaction, except non-core support services (Table 97). Among college experience variables, learner engagement and overall college experience indexes have the largest effects.

Table 97. Regression of life satisfaction index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	0.120	0.013	0.000
Intra-curricular Index	0.099	0.021	0.000
Teaching Quality Index	0.087	0.015	0.000
Support Services Index	0.077	0.016	0.000
Non-Core Support Services Index	-0.042	0.029	0.143
Overall College Experience Index	0.148	0.019	0.000
Practicality of College Experience Index	0.079	0.034	0.020
R-squared	0.135		
N. of cases	6584		

For non-economic dimension of life satisfaction, however, we would find that only learner engagement and teaching quality have statistically significant association (Table 98). There is a need to take a closer look on the negative association with learner engagement.

Table 98. Regression of non-economic satisfaction index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	-0.021	0.007	0.002
Intra-curricular Index	0.003	0.011	0.788
Teaching Quality Index	0.020	0.007	0.008
Support Services Index	0.004	0.008	0.637
Non-Core Support Services Index	-0.011	0.014	0.452
Overall College Experience Index	-0.005	0.009	0.582
Practicality of College Experience Index	0.003	0.018	0.887

R-squared	0.066
N. of cases	6584

For “external” dimensions of life satisfaction, we find that intra-curricular focus is negatively associated – an expected result given that extra-curricular activities may help shift the locus of satisfaction from the self to the external world (Table 99). Learner engagement and perceived practicality of college experience are positively associated, which implies that better college interaction and realism also improves post-college interaction with society.

Table 99. Regression of external satisfaction index on college experience

	Coef.	Std. err.	p-value
Learner Engagement Index	0.018	0.006	0.004
Intra-curricular Index	-0.048	0.010	0.000
Teaching Quality Index	0.001	0.007	0.845
Support Services Index	0.012	0.007	0.104
Non-Core Support Services Index	0.008	0.014	0.570
Overall College Experience Index	-0.016	0.009	0.080
Practicality of College Experience Index	0.038	0.017	0.022
R-squared	0.053		
N. of cases	6584		

What can we take from all these results? Positive college experience (in its multiple dimensions) is generally associated with 1) better employability, 2) stronger sense of citizenship (although we have noted the preference for more active displays of citizenship, which may have been induced by perception of bad “overall” college experience, as well as exposure to extra-curricular activities), 3) less predisposition to political action, and 4) better life satisfaction.

8. Summary and recommendations

We present the summary of findings and recommendations in two parts. First, we incorporate the results from the operational assessment of the GTS implementation conducted in 2015. This is to achieve an integrative report tackling both the administrative and analytical aspects piloted in this GTS round. We then proceed with the findings and recommendations regarding the survey results.

8.1. GTS Design

Summary of findings

Data quality turns out to be the single-most important factor in GTS success. This result is consistent with global experience in graduate tracer studies (Schomburg, 2014). Complete and updated contact information, at least up to the point of exit from the school, is an absolute must in order to address the age-old problem of low response rate. Admittedly, in this GTS round, the quality of contact information became second priority to obtaining the list of graduates. It was midway through GTS 2013 implementation when it became apparent that the contact details are of little help since they are incomplete and/or outdated.

One of the primary goals of this GTS round is to capacitate the CHED, especially the regional offices, in managing data collection for the study. The advocacy is that a national graduate tracer study should be carried out within CHED as it has the right policy motivations to come up with credible results¹⁶. Expectedly, CHED encountered several challenges in piloting the GTS 2013 as designed. The administrative, financial, and audit aspects of the study turned out to be a potent hurdle in GTS 2013 operations. CHEDROs were unable to exercise flexibilities to be more responsive to the needs of operating a graduate tracer study. One key element pointed as crucial in sustaining GTS implementation amidst hurdles is the active support and involvement of the Regional Director. Some Regional Directors went as far as providing personal funds to ensure the continuity of GTS operations.

While CHED encountered birthing pains, the Central and Regional offices see the value in being the GTS implementer. They all found the experience “challenging yet inspiring”. It is only in this round that they experienced direct interaction with graduates going through various stages of transition to post-college life. They developed a deeper understanding for the need to find out how higher education can be improved to really make a dent in our youth’s life trajectory. Some CHEDROs even expressed interest in analyzing the data on their own.

Recommendations

A foremost consideration is improving the quality of data on graduates. A short-term solution is to institutionalize the collection of the list of graduates with updated contact details in CHED Regional offices. HEIs should be instructed to include this in their annual submission to CHEDROs prior to conferring degrees to their graduates. Necessarily, this calls for substantial improvement in record-keeping capacities of HEIs. HEIs may also conduct an exit survey for its graduates. They can collect updated contact information, gather preliminary data, and encourage graduates to participate in a tracer study in case they will be sampled.

¹⁶ TESDA produces regularly what they call study on the employability of TVED graduates (used to be called impact evaluation studies) which are really tracer studies of TVET graduates. Although, unlike CHED, TESDA run training institutes.

A possible long-term solution is to develop student-level data in the CHED Management Information System, like the Learners' Information System of the Department of Education. Again, data for this should be updated upon exit from the school, and the graduates should have a way to update selected items in their profile.

On top of improving data quality to increase response rates, another short-term solution is to develop an aggressive national communications campaign. This campaign should target not just graduates but also HEIs, the private sector, and government institutions, including the Philippine Overseas Employment Agency and Department of Foreign Affairs. This will help generate familiarity among stakeholders of graduate tracer studies being conducted by CHED. There might also be a need to consider separate modalities for tracing graduates from private and autonomous HEIs to address confidentiality issues. One option is to contract out the tracing component to HEIs. A transparent protocol should be established to ensure that the biases being avoided in HEI-led enumeration is also accounted for in HEI-led tracing. Lastly, different strategies are called for by some graduates. For instance, some professionals such as police, army officers, and lawyers, are sensitive to interviews. They simply refused to participate or divulge even non-employment related questions. An information campaign among these professions may help improve their reception to the study.

The learnings in this round with respect to research management are enormous. The GTS project officers should be gathered to cull-out specific recommendations to improve succeeding GTS rounds. Clearly, there is a need to establish detailed and GTS-specific administrative, financing, and auditing guidelines to avoid the ambiguities that hindered implementation in this round. A separate orientation for administrative, finance, and audit personnel could also be included in the project preparatory activities. Finally, if CHED moves toward institutionalization of GTS implementation, there is a need to address staffing constraints at the regional offices. Grooming a GTS point person or team is necessary to sustainably improve GTS implementation.

8.2. GTS Results

Summary of findings

Graduates are concentrated in a few courses. Almost 50% of the graduates took either BS in Nursing, Bachelor of Elementary Education, BS in Business Administration, Bachelor of Secondary Education, or BS in Commerce. Their main motivations for their choice of degree are immediate employment and prospects of career advancement. Getting a college education is expensive. Graduates from public HEIs paid Php6,876 per semester on school fees, while their private HEI counterparts paid Php18,888 per semester. These are lower-bound results because the big private schools are not well-represented among respondents.

Overall, college life is mostly focused on academic activities and interactions. Graduates did not participate much in organizations, nor interact with other students outside of school requirements. Looking back, they feel that college experience had a stronger influence on their personal and intellectual growth than on translating learning to action or the 'real' world.

Majority of the graduates started looking for work right after graduation. The median length of job search is just 3 to 4 months. Graduates of PRC programs were able to start working 12

months after graduation, while those who do not require a PRC license have a median job start of 5 months after graduation.

Labor force participation rate of our graduates is 86%. Among those in the labor force, 88.2% were employed during the reference period, while 11.8% are unemployed. The LFS results among college graduates reflect a better condition for college graduates in terms of employment rates and median basic pay. A possible reason for this is that our sample respondents are relatively new entrants to the labor market. Around 14% of graduates are not in the labor force, primarily to attend to family duties.

There are a number of tell-tale signs of job-education mismatch: (a) feel that they did not sufficiently develop communication, critical thinking, and problem-solving skills; (b) less than 70% of graduates think that their college degree is relevant to their first job; (c) less than half of them consider occupational skills, which they learned in college, as the main reason for landing their first or current jobs; (d) around a fourth of them think that outdated skills learned in college is keeping them from getting a good job. Overall, only 50.3% of graduates who took courses that required professional license to practice their profession are employed during the reference period in jobs that match their degree. The predominant “not matched” occupations are contact center and various types of clerks, retail, sales, and other service workers, and laborers.

Graduates believe strongly in the primacy of work experience in order to get a job. In addition, they gathered that employers look for communication skills, trainability, competence, and problem solving and analytical skills. Graduates are aware that college did not sufficiently developed these skills, and they may be preoccupied with work experience to compensate for these. This could also explain why they are taking various jobs that require less educational requirement.

Other aspects of post-college life that we looked at in this study are socio-political participation and life satisfaction. We find that their socio-political life is not an active one. Their contribution to the public good is confined to voting, obeying laws, and paying taxes (but as we’ve seen earlier, more active forms of participation is induced by negative perception of overall college experience). Meanwhile, despite being concerned about their earnings and rating themselves low in financial condition, overall life satisfaction is still high.

In relating college experience to post-college life, we find that positive college experience (in its multiple dimensions) is generally associated with better employability, stronger sense of citizenship (although preference for more active displays of citizenship may be induced by perception of bad “overall” college experience, and exposure to extra-curricular activities), weaker sense of ethics, less predisposition to political action, and better life satisfaction.

Recommendations

The GTS results point to several policy and research directions that are of interest to CHED. Among the top 10 courses taken by our graduates, only nursing, engineering, and IT-related courses promise a high salary. Thus, high school students seem to be misinformed because they are choosing degrees that do not lead to high-paying jobs, even though their primary motivation for choosing a job, getting further education, or training is earnings. Labor market information

must penetrate students in earlier stages of secondary education to allow them to better assess among alternative career paths vis-à-vis their preferences.

On the issue of job-education mismatch, it is evident that college instruction must be thoroughly improved in order to substantially develop communication, critical thinking, and problem-solving skills among college students. Insufficient training on these aspects affect all courses and all types of HEIs surveyed in this GTS round, suggesting that it is a structural problem. Graduates and employers are in congruence that these skills gap are preventing our graduates to achieve their preferred occupations. In addition to these skills, graduates also think that they need to upgrade their IT and occupational skills to current industry standards. In all of these, CHED needs to push HEIs and the industry to strategically collaborate to ensure effective HEI response.

Second, there is still much to be learned on the job-education mismatch issue from the perspective of the learner. For instance, why are they employed in occupations with less educational requirements? Is it the case that they did not pass their respective professional exams, so they had to work as associates or technicians? Or is it because there was not enough resources for review and taking the exam? It could be that for the first few years from graduation, they are working in “not matched” occupations to save up for review and exam expenses.

Our exercise on looking at composite indices representing college experience and post-college experience need further study, but it is evident that college experience is strongly correlated with private and public returns to higher education. Based on the different aspects of college experience tackled in this GTS, CHED and HEIs can formulate improvements to a student’s college life that will have desirable effects beyond employment.

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