Trends in the Number of Students Studying Commerce at Colleges in Samoa

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Abstract

This study examines the trend in student enrolment in the Commerce discipline at colleges in Samoa for the 13year period from 2006 to 2019. Anecdotal evidence shows a decline in the number of students studying commerce at the high school level but this has not been empirically investigated. Using archival data of the Pacific Secondary School Certificate Examination results and the Samoa Secondary School Leaving Certificate Examination results for the analysis, the study finds that for the period from 2006 to 2019 and especially from 2009 the student enrolment in the Commerce discipline at colleges in Samoa has been on a downward trend. The decline in the number of students taking commerce subjects could have implications on the workforce in that there could be a shortage in the number of qualified personnel in commerce related areas in the future, a problem experienced by some of the developed countries around the world. This is a two-part study and in this Part One of the study we examine the trend in student enrolment in commerce subjects with Part Two examining the reasons for the downward trend to be published next year. **Keywords:** student, discipline, trend

Introduction

This study examines the student enrolment in commerce subjects at high schools and colleges in Samoa and at the National University of Samoa (NUS) foundation level. Anecdotal evidence shows that there has been a decline in the number of students studying commerce subjects at high school in Samoa since the mid-2000s. This trend appears to have continued at the National University of Samoa foundation level. This issue may be of concern to various stakeholders such as the government, the Ministry of Education Sports and Culture (MESC), the business community, the National University of Samoa, and professional organizations such as the Samoa Institute of Accountants (SIA) because the fall in the number of students studying commerce could result in a short supply of qualified personnel in commerce if the downward trend continues in the future. Accounting and finance are core business functions vital to an organization's success in any economy (Robert Half, 2014), and a short supply of qualified personnel in these disciplines could increase the cost of these services, and the employers may be forced to source them from abroad at much higher costs. Australia has experienced this dilemma in which there was a national shortage of accountants from 1999 to 2008 and external auditors from 2006 to 2008 (Australian Department of Employment, 2014).¹⁷ Similarly, New Zealand noted a decline in the number of accounting graduates which was partly caused by negative stereotyping and inaccurate knowledge about accountants (Malthus and Fowler, 2009). It is therefore in the interest of Samoa to empirically examine the trend of student enrolment in commerce so that this problem could be appropriately addressed.

In this publication, we first look at the Literature Review, secondly we discuss the institutional background regarding the classification of students in various disciplines in colleges in Samoa, thirdly, we explain our methodology; fourthly, we document the trend in student enrolment in commerce at various colleges in Samoa, we next discuss our results and conclusions and lastly we present our recommendations.

Literature Review

Academic research around the world supported by government-prepared skill shortage lists show that there has been a decline in the number of students studying commerce in some countries. The media and government-prepared skill shortage lists suggest that there is a shortage of accounting personnel in New Zealand (Malthus and Fowler, 2009). However, many students are reluctant to make chartered

https://employment.gov.au/national-state-and-territory-skill-shortage-information, accessed on 30 July 2014.

¹⁷ Australian Government, Department of Employment (2014), accessed via

accountancy their first career choice (Dyer, 2005; Raman 2005). Tan and Laswad (2006) and Wells (2006) document that the number of domestic students graduating with commerce degrees in New Zealand has decreased. Malthus and Fowler (2009) find that the decline is due in part to the typical 'boring' stereotyping and limited accurate knowledge about accountants. Research in Australia (Worthington and Hicks, 2001; Jackling and Calero, 2006), Canada (Felton, Dimnick, and Northey, 1995), Japan (Sugahara and Boland 2005), Ireland (Byrne and Willis, 2005) and the USA (US) (Albrecht and Sack, 2000) also identified a similar decline in accounting graduate numbers. Suggestions for this decline include a negative perception of accounting, increasing academic requirements, a misunderstanding of accounting and the skills required, and narrow curricula at the high school and tertiary education levels (Albrecht and Sack 2000; Wells 2006).

In addition to the decline in students studying accounting, prior research (e.g. Salemi and Eubanks, 1996) also document a decline in students majoring in economics at universities globally. Salemi and Eubanks (1996) report a decline in students majoring in economics at US universities in the 1990s. They suggest that the decline was due to the waning popularity of undergraduate business studies. Similarly, Reilly and Bachan (2005) find a drop in enrolments in economics at UK universities. Ashworth and Evans (2001) report that early study of economics influenced students' choices at both later year secondary and university. Reilly and Bachan (2005) argue that the decline is due to the increased number of competitor subjects, the abstract and mathematical nature of the subject, the core curriculum offered, and the perception that a relatively severe grading policy is adopted by economics examiners. Worthington and Higgs (2001) also report that Australia experienced a dramatic decline in the number of students undertaking undergraduate economics degrees in the 1990s, a result of the massive fall in the number of students taking economics in high school. In addition, there was a rising popularity of alternative business study courses such as management, marketing and finance. The perception was that these subjects were more interesting and vocationally oriented than economics.

In addition, "Studying economics and why the decline in enrolments matters" (Dwyer 2017), concluded that "the quality of public discourse in Australia and elsewhere has fallen and would benefit from greater economic literacy and engagement with economic ideas", hence the urge for comprehensive studies in order for economies to rescue the decline.

The President of the Business Educators Australasia (BEA) (Tony Kuc, 2017) in his response to the importance of understanding economics emphasizes that the future of economics also lies in the quality teaching of Economics content throughout individual countries Curriculum. (Livermore 2020) in his Bulletin-June Quarter 2020 documents a sharp decline in the size and diversity of the Year 12 Economics student population since the 1990s and how the Reserve Bank has commissioned a comprehensive survey of students to gain evidence of the factors that contribute to this decline. While economics is perceived to be of great significance to society, the survey responses highlighted many students flatly lack interest in or understanding of economics as a subject, even more pronounced for women and those of lower social ranking.

Woods' "Women are dropping out of economics, which means men are running our economy". (Woods, 2017) found that Australia like many other nations, the economics profession has a "leaky pipeline: where women's participation starts off strong but falls through the ranks". At Australia's Treasury and the Reserve Bank of Australia, about 40% to 50% of the staff is women but they account for only around one third of the senior management positions. This is also true assimilation of Samoa's economy in terms of women employability in the higher ranks. (Woods, 2017) also concluded in her article on "Why has economics fallen out of fashion with younger women?" that a number of misconceptions have contributed to this fall in enrolments and interest. One such misapprehension is that "economics is about math and theory and that you only study economics if you want a career in finance" and "students are not necessarily taught how economics applies to the bigger picture societal

issues they are interested in". The Economic Society of Australia has established various affiliations such as Women Economics Network to implement and execute these pipeline problems for economics. Furthermore, another interesting study by (Lodewijks, Stokes and Wright, 2016) argue that it appears that economics is becoming an elite subject for elite UK universities. A similar study was carried out for the Australian economy to find out if similar patterns exist. The similarities between the UK and Australian situation were disturbing and very challenging to economists and to the economics community and society as a whole.

In addition, a study on "A logistic regression analysis on attitudes towards accounting and intention to major in accounting" by (Bekoe, Owusu and Ofori, 2018), using the accounting attitude scale (AAS) developed by Nelson (1991) suggested that attitudes are determined by four factors: referent groups, intrinsic interest, perceptions of the work of accountants and the prestige of the profession. The logistic regression demonstrated that "a positive relationship exists between the referent group factor and students' intentions to major in accounting and that intrinsic interest in the accounting discipline, prior exposure to accounting at the senior level and the desire to pursue further professional accounting qualification in future are the good predictors of student's intention to pursue a career in accounting" (Mc Dowell and Jackling 2010; Jackling and Keenely, 2009, Mariott and Mariott, 2003).

Suzy Morrisey (2018) in her studies focuses on "Women in Economics-in theory and in practice" and she concludes that the representation and position of women in economics could be improved and it will improve the quality, durability and relevance of economic policy advice.

"Gender Performance Differences in High School Economics and Accounting; characterizes gender performance differentials in the University Bursaries examinations in economics and accounting using a repeated measures multivariate analysis of variance. Controls were made for the effects of academic ability, concurrent study of mathematics and inter-year variability. The results indicated that significant gender differences were absent. In contrast, the popularity of this course combination exhibited a strong gender bias" (Keef, Stephen P. 1990). This result further confirms that accounting and economics are the most pure commerce courses which are often not substitutable for other courses.

While the trends in the number of students studying commerce have been well documented, this literature focuses exclusively on the developed countries ignoring the developing nations such as Samoa and other Pacific nations. However, the factors that cause the decline in the developed countries are not necessarily the same for developing countries. For example, none of the studies discussed above cites scholarship opportunities as a factor for the decline in the number of students studying accounting and economics which would be an influential factor in Samoa and other developing nations. Also we argue that student's choices may be influenced by their parents, a factor suggested by (Jackling and Keenely 2009) and Law (2010). As such this study will explore a larger set of reasons for the declining interest in commerce than examined by prior research. In addition, it will establish some literature on issues in commercial studies in Samoa and the Pacific.

In addition, the majority of prior studies focus exclusively on studying student enrolment and student perceptions at university levels, hence ignoring the possibility of student's early career choices and student experiences during high school that may have influenced their choice of subjects. Furthermore, prior studies do not explore the relative influence of other disciplines such as arts and science on student's interests in commerce subjects. This current study suggests that to gauge a better understanding of the student's declining interest in commerce subjects, the perceptions of students at both secondary and tertiary levels as well as educators and parents must be investigated. That will be part 2 of this study that plan to carry out next year.

Institutional Background

In most high schools and colleges in Samoa, students in their final two years (years 12 and 13) are streamlined into four core areas of study, Arts, Commerce, Science and General that pave the way for their future career choices. Students in the Arts discipline mainly study English, Geography, History and Samoan as core subjects, with either a subject in the Commerce or Science disciplines to make up a total of five. For Commerce students, their core subjects include Accounting, Economics, English, and Mathematics with an option from either the Arts or Science disciplines for a total of five subjects. Most Science students take as core subjects, Biology, Chemistry, English, Mathematics, and Physics, with some studying Computing in addition, or in lieu of one of the core Science subjects. Any student who does not study in the combination of subjects in the Arts, Commerce or Science is classified as a General student. Students in year 13 are expected to study the same courses that they studied in year 12.

Students who attain the marks to enter the National University of Samoa foundation level are then expected to continue to study in these specific disciplines. However, those who do not attain the required entry level can pursue other commercial studies at NUS in the Faculties of Education (FOE) and vocational courses in the Faculty of Business and Entrepreneurship (FOBE), or science courses also at FOE and the Faculty of Applied Sciences. At the successful completion of the foundation level, a limited number of students are offered government scholarships for further studies in Australia, New Zealand and Fiji. The rest may continue onto undergraduate studies at NUS (either funded by the government, donor organizations, or privately), the local University of the South Pacific (USP) campus, or seek employment. Some students may pursue privately funded further studies abroad. Some students who fail to complete the foundation level may have a chance to complete it in the following year, while other unsuccessful candidates may seek employment, studies elsewhere, or do nothing at all.

Students' choice of area of study

By the time the students reach their final year at colleges, their choices as to which area of study to pursue at Foundation level would have already been made. All schools are invited to open days and career days as well as the advice they get from university staff members during university faculties school visits. Of course their parents and teachers are their first advisors but in the end, their final choice comes down to first, their areas of strength and second, their career choice.

Methodology

As mentioned above students are streamlined into the four disciplines of Arts, Commerce, General, and Science in year 12. However, it is quite possible for students to switch discipline as a result of their performance in the Samoa School Certificate (SSC) examination. For example, if a student was taking core Arts subjects of English, History, and Geography for the SSC examination but failed History and/or Geography and decided to take another subject for the year 13 SSLC examination, then that student is no longer an Arts student but a General student. Similarly, if a commerce student taking the four core subjects for commerce of English, Accounting, Economics, and Mathematics for the year 12 SSC exam fails Mathematics for example and drops it for the year 13 SSLC examinations then that student is no longer a commerce student but classified as a general studies student. Hence it is more appropriate and more accurate to look at the subjects the students take in their year 13 as shown on the Samoa Secondary Leaving Certificate examination result as the indication of the discipline they have enrolled in in their final year of college and those same subjects and disciplines are their likely area of study they will continue on at the foundation level of the National University of Samoa.

Results and Discussions

This analysis is based entirely on archival data of the Pacific Secondary School Certificate examination (PSSC) results for year 13 students from 2006 to 2013 and the Samoa Secondary Leaving Certificate (SSLC) Examination results from 2014 to 2019. The year 13 examination was formerly called the Pacific Secondary School Certificate (PSSC) before it became known as the Samoa Secondary Leaving Certificate (SSLC) in 2014 with the setting of all examination papers done by local examiners and moderated by local moderators. The data for this research is based on the archival data of the actual examination results submitted to the National University of Samoa each year by the Ministry of Education, Sports and Culture before the university begins its enrolment at the beginning of the year. It is based on the total student population each year for the thirteen-year period covered in this study. We begin by looking at the year 13 student populations from all the high schools and colleges in Samoa.





The year 13 student population has been increasing generally over the years with the last three years (2017, 2018, 2019) registering the three highest totals of the period under review of 1691, 1757, and 1684 respectively. It is an encouraging sign as more students are staying on for year 13 rather than dropping out of school after sitting the year 12 School Certificate exam. There were 32 high schools and colleges in the country in 2006. Within the period under review, some schools were closed (Vaipouli College in Savaii, Congregational Christian College, Catholic Combined College) while others (Sagaga College, Savaii Sisifo College) were opened. At the end of 2019, there were 42 schools currently serving the educational need of the children of Samoa at the year 13 level. The majority of the year 13 student population attend schools in the urban area of town, then rural schools and then schools in Savaii. The majority of students are educated in government schools and church schools and a small number are educated in private schools.

The general increase in the year 13 student population suggests that the enrolment in the four disciplines would mirror that trend. However, the analysis finds that this is not the case as shown in the charts below. We separate the disciplines to show the trend of the student enrolment in each discipline from 2006 to 2019 inclusive.





Of all the four core disciplines the Arts area of study shows a generally downward trend especially starting from 2012 where the proportion of Arts students was 28 percent to its lowest of 18 percent last year. The general declining trend in the student numbers in the Arts discipline is steeper than that of the commerce discipline. This trend continues to the foundation level.

Figure 2(b): Student enrolment in Commerce from 2006 to 2019



Student enrolment in Commerce also shows a downward trend although not as steeply as the decline in Arts. Student enrolment reached a peak in 2009 of 25 percent of the student population then taking a steady general decline reaching its lowest level of 18 percent in 2018 and a 1 percent increase to 19 percent in 2019. This declining trends continues to the foundation level.

Figure 2(c): Student enrolment in Science from 2006 to 2019



The student enrolment in Science has seen a general increase in trend from 2006 to 2019. It rose from its lowest level in 2006 of 13 percent to 18 percent in 2019. The foundation student enrolment shows similar trends.



Figure 2(d): Student enrolment in General subjects from 2006 to 2019

Student enrolment in General subjects was declining at first from 2006 to 2013 but rose sharply in 2014 and reaching a peak last year of 46 percent. The biggest concern about the rise in the number of students pursuing studies in subjects that do not constitute core subjects of the major disciplines of Arts, Commerce, and Science is that those students will have to choose after their foundation year if

they continue beyond the foundation year which of the Arts, Commerce, and Science discipline they must pursue for a degree and only then they will be taking a subject they did not take before at college thereby impacting their performance. The majority of the foundation level students are enrolled in the General programme.

The following chart gives a comparison of the trends in the four disciplines from 2006 to 2019.





The general trend for both Arts and Commerce in the 13-year period under study is downward despite the general increase in the student population for the same period. This is worrying if it continues in the future. It can be seen that the decline in the student enrolment in these two disciplines is reflected in the general increasing trends in both the Science and the General studies disciplines. As indicated by the chart above in Figure 3, the rise in the number of students taking general studies subjects and enrolling in the general discipline rose significantly in 2014 and continuing on a generally increasing trend since then. Although the causes of all these trends will be confirmed and investigated in depth in Part Two of this paper, what we do know is that it was in 2014 that the year 13 Pacific Secondary School Certificate examination that students in Samoa used to sit was changed to the Samoa Secondary Leaving Certificate examination with all the exam papers set by local examiners and that the result in Mathematics was the worst in the 13-year period under review leading to students not meeting the criteria of the Arts, Commerce, and Science disciplines. This pattern continues on to the foundation level where the majority of students are enrolled in the General programme.

General Studies Discipline:

We break down the General Studies students to indicate the number of students who are taking two commerce subjects:

	Students taking two or more commerce subjects:													
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Accounting only	20	10	10	2	6	7	9	0	14	14	6	38	31	36
Accounting & Mathematics	66	69	73	49	44	40	31	23	45	26	15	5	14	16
Economics only	41	47	25	39	33	24	12	12	24	19	19	66	44	42
Economics & Mathematics	101	77	71	51	38	41	54	30	25	42	27	44	49	39
Total	228	203	179	141	121	112	106	65	108	101	67	153	138	133
Total General Studies	672	623	622	519	671	761	659	543	747	950	701	716	759	768
% of General Studies students	34%	33%	29%	27%	18%	15%	16%	12%	14%	11%	10%	21%	18%	17%



The above table and the accompanying graph shows the percentage of students under the General Studies discipline who are taking i) Accounting only, ii) Economics only, iii) Accounting and Mathematics and iv) Economics and Mathematics. As indicated by the graph above there is a clear downward trend in the number of students who are taking two commerce subjects.

Foundation Enrolment:



The above chart plots the percentage of students per discipline who enrolled at the Foundation level. As alluded to previously, a student will be enrolled in the General Studies discipline if they failed at least one of the core subjects in the Arts, Commerce or the Science discipline. There was a huge jump in the General Studies enrolment since 2015 while the Commerce enrolment assumed a downward path.

Schools with the most noticeable decline

The following four schools contributed the most in the general decline in student enrolment in commerce subjects. It is noted that with the exception of St. Joseph's College, the other three colleges are among the largest colleges in Samoa in terms of student numbers. What appears to be clear is that any movement and swing in the student enrolment in these big schools will have a dominating impact on the overall student enrolment in the various disciplines at the college level. Due to the change since 2017 in the way the Ministry of Education compiled its examination results and their lack of support to our requests for the new codes so that we could identify the schools, the following charts are for the eleven-year period from 2006 to 2016:



Figure 4(a): Student enrolment in Commerce at Leifiifi College from 2006 to 2016

Leifiifi College is the largest school by student numbers in the country. Its commerce enrolment over the eleven-year period from 2006 to 2016 is generally a declining trend. Its commerce student enrolment as a percentage of the total commerce student population fell from 16 percent in 2006 to 5 percent in 2016. It rose in the two consecutive years in 2014 and 2015 by 3 percent but fell sharply by 8 percent in 2016, its lowest level in the ten-year period from 2006 to 2016. On average, Leifiifi College makes up 8% of the student population.

Figure 4(b): Student enrolment in Commerce at St. Joseph's College from 2006 to 2016



St. Joseph's College commerce student enrolment also shows a declining trend. Like St. Mary's college which is a predominantly commerce school, St. Josephs' commerce enrolment exhibits huge fluctuations but took a dive in 2014 and falling in the following two consecutive years reaching its lowest level of 3 percent of the total commerce student population. St. Joseph's College on average makes up 5% of the student population.



Figure 4(c): Student enrolment in Commerce at Samoa College from 2006 to 2016

Considered by most as the best and top college in Samoa with a reputation to be proud of, Samoa College commerce student enrolment in the 13-year period of this study is a cause for concern! The general trend is a decreasing one and as the leading college in Samoa, this decline could inversely impact the future availability of top accounting and economics graduates to support a fast evolving and changing commerce sector of the present time. On average, Samoa College makes up 9% of the student population.



Figure 4(d): Student enrolment in Commerce at Latter Day Saints College - Pesega

The Latter Day Saints College at Pesega has one of the biggest student rolls. If combined with Latter Day Saints College at Vaiola, this church college tops the student rolls in schools in Samoa. In fact in 2015, the combined student rolls for the church college of Samoa registered the highest number. Its commerce student enrolment however is generally on the decline. On average, its student roll makes up 7% of the student population.

5%

6%

6%

6%

6%

8%

8%

13%

7%

6%

|--|

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total enrolment by the top 4 schools	34%	33%	32%	34%	30%	27%	26%	27%	30%	30%	23%
with Noticeable Decline in commerce											

Commerce discipline by gender:

Percentage of Year 13 student population

For the eleven-year period in this study and with the exception of the year 2009, the number of female students studying commerce at college is more than male students. This pattern continues to the National University of Samoa where the female students outnumber male students by a ratio of two to one.

128

8%



Conclusion

This research paper studies the trend in commerce student enrolment at the colleges in Samoa and the foundation year of the National University of Samoa. The research topic grew out of the suspicion that commerce student numbers are falling as evident during enrolment at the National University of Samoa. In the thirteen-year period from 2006 to 2019, the analysis finds that there is indeed a general declining trend in commerce student enrolments at high schools and colleges in Samoa despite the growth in the year 13 student population and that this trend continues to the foundation level of the National University of Samoa. The downward trend is steeper in the Arts discipline. Though growing steadily over the period in this review, the Science student enrolment on average is still lower than that of the other three major disciplines. Students studying General subjects have been increasing since 2014. The biggest concern with this is that this pattern continues on to the foundation level but there is no continuation of the General programme after the foundation level. All students taking the General programme at the foundation level will have to choose from the Arts, Commerce or Science the area to pursue for their degrees. This raises the question of the possible adverse impact of the availability of the General Programme on student learning when the students were asked to enrol there when the fail one of the core papers in the Arts, Commerce, and Science only to take that subject again when the students pursue their degree studies.

The analysis also finds that the major swings and fluctuations in student enrolments in the four disciplines at the bigger colleges greatly impact the overall trends in the year 13 student population. In other words, a major swing in student numbers in commerce at a large college like Leifiifi College for example is likely to cause a similar impact on the overall commerce student population.

Recommendations

This study makes several important contributions. First, it provides useful information to many stakeholders including NUS; MESC; church and private school councils; the government; the business community; and professional organizations such as Samoa Institute of Accountants (SIA). For example, if one reason for the declining interest in commerce subjects is the poor quality of high school teachers, then MESC, the councils for church and private schools, and NUS who is the local supplier of educators should be concerned. The results should also be useful to NUS in developing or restructuring commerce courses to address the concerns raised by participants and to better allocate scarce resources accordingly. The government and business community would be concerned about this

declining interest as it may affect the supply of qualified personnel to perform accounting and finance tasks. SIA would also be concerned about its future viability as a professional body. Thus, the results of this study not only informs about the state of interest in commerce courses in Samoa, but in triggering awareness of the reasons causing this problem so that appropriate solutions can be identified.

Second, this study provides a base/platform for future on-going evaluation of students' interest in studying commerce courses and issues affecting commerce education in Samoa for future policy and decision making. Third, this study extends extant limited literature on issues in commercial studies education in Samoa (and the Pacific) which has largely been ignored by researchers.

In Part 2 of this study we endeavor to find out the causes of this declining trend in commerce student enrolment at the college level so that they could be appropriately addressed.

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