Public and Private Universities in Taiwan: To compete or not to compete?

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Introduction

Since the 1950s, Taiwan has made great strides in higher education. However, its developmental growth has not been stable. Different studies show different ways to distinguish the stages of higher education development: Chen (2008) stated the stages of development in Taiwan from 1949 to the present can be seen as the following eras: early development (1949-1953), embryonic (1954-1971), controlling (1972-1985), releasing martial law (1986-1993), open (1994-). Zhou (2003) describes three stages: in infancy (1987-1988), growth (1989-1993), rising (1994-1998), and criticism and reflection (1999-2003). Different observations all indicate that the scale of higher education in Taiwan began to grow in the 1990s. Although the current higher education scale in Taiwan seems to have ceased expanding, it turns to the focus of source distribution and the international ranking for both public and private universities. This paper explores the uniqueness of institutional support and faculty development in Taiwan's public and private universities under such phenomena.

Development of higher education policy in recent years

Impacted by the legitimized discourse of competition and marketization, recent development of Taiwanese higher education generally included rapid expansion and tension between public and private higher education in competing for more resource and public attention. These two essential domains led

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Taiwan's universities to their competitiveness and auditing driven by the power of marketization and ranking.

Rapid expansion of higher education

Historically Taiwan was an elite class-dominant society, a traditional Confucian society with high respect for educated persons with university diploma. According to Taiwan's Higher Education Statistics, there were only seven schools in Taiwan in 1950 (one university, three independent colleges, three polytechnics), and graduate schools attached to three universities, with 6,665 students. In 2015, the total number of higher education institutions has reached 158, including 123 universities, twenty-one independent colleges, and fourteen polytechnics (Table 1).

Table 1. Number of higher education institutes in Taiwan

	University		Independent College		Polytechnic		Total		
School Year	public	private	public	private	public	private	public	private	total
1950	1	—	3	—	3	1	7	1	8
1953	1	—	3	—	4	1	8	1	9
1954	2	—	3	2	6	1	11	3	14
1968	6	2	4	10	20	43	30	55	85
1971	6	3	5	9	20	53	31	65	96
1972	6	3	5	9	20	56	31	68	99
1985	9	7	6	6	21	56	36	69	105
1986	9	7	6	6	21	56	36	69	105
1993	13	8	15	15	14	60	42	83	125
1994	15	8	17	18	13	59	45	85	130
2001	27	30	23	55	3	16	53	101	154
2002	27	34	23	55	3	12	53	101	154
2004	34	41	17	53	3	11	54	105	159
2005	41	48	10	46	3	14	54	108	162
2006	41	53	11	42	3	13	55	108	163
2015	47	76	1	20	2	12	50	108	158

Source: Ministry of Education (2015a)

Table 2. Enrollment in higher education- by programs (3 categories)

Unit: person;%

School Year		Grand Total	Humanities	Social Science	Science & Technology
1998-1999	T.	915,921	128,298	284,849	502,774
	%	100.00	14.01	31.10	54.89
1999-2000	T.	994,283	143,490	320,915	529,878
	%	100.00	14.43	32.28	53.29
2000-2001	T.	1,092,102	160,181	358,502	573,419
	%	100.00	14.67	32.83	52.51
2001-2002	T.	1,187,225	176,872	398,560	611,793
	%	100.00	14.90	33.57	51.53
2002-2003	T.	1,240,292	189,405	425,419	625,468
	%	100.00	15.27	34.30	50.43
2003-2004	T.	1,270,194	200,489	437,432	632,273
	%	100.00	15.78	34.44	49.78
2004-2005	T.	1,285,867	207,217	446,788	631,862
	%	100.00	16.11	34.75	49.14
2005-2006	T.	1,296,558	211,911	450,392	634,255
	%	100.00	16.34	34.74	48.92
2006-2007	T.	1,313,993	215,986	459,218	638,789
	%	100.00	16.44	34.95	48.61
2007-2008	T.	1,326,029	221,731	464,907	639,391
	%	100.00	16.72	35.06	48.22
2008-2009	T.	1,337,455	227,933	473,813	635,709
	%	100.00	17.04	35.43	47.53
2009-2010	T.	1,336,659	232,443	476,729	627,487
	%	100.00	17.39	35.67	46.94
2010-2011	T.	1,343,603	235,906	485,704	621,993
	%	100.00	17.56	36.15	46.29
2011-2012	T.	1,352,084	241,155	496,127	614,802
	%	100.00	17.84	36.69	45.47
2012-2013	T.	1,355,290	245,146	508,142	602,002
	%	100.00	18.09	37.49	44.42
2013-2014	T.	1,345,973	247,722	512,743	585,508
	%	100.00	18.40	38.09	43.50
2014-2015	T.	1,339,849	250,121	516,207	573,521
	%	100.00	18.67	38.53	42.80

Source: Ministry of Education (2015b)

The overwhelming, enrollment rate in Taiwanese higher education during the last fifteen years is shown in Table 2. Although the growth rate has been affected by the low birth rate which has decreased since 2013, the expansion of student enrollments and the increased number of universities has played a crucial role in the development of higher education for the last two decades.

(1) Rapid expansion of colleges and universities; Decrease in polytechnics

In 2006, the total number of higher education institutes were 163 reaching the peak of university expansion. Due to competition and marketization, the universities began to meet the need for mergers and alliances. Though the number of universities was increasing before 2013 shown in Table 3, the number of polytechnics and colleges was shrinking. That indicates that the latter two forms of higher education were transferred into universities and most of them were private. Further examination of the allocation of public and private universities reveals that the ratio of public and private at the college and polytechnic levels is extremely low (1:20; 2:12); even in the university category the ratio is 48:76. Following the decrease of polytechnics, the government budget for them was hardly affected because transferred polytechnics are private. However, the added number in the university category will enhance tension between public and private universities to competing for resources both domestically and internationally.

Table 3. Growing number of higher education institutes

School Year	Category										
	university			college			total	polytechnic			total
	public	private	subtotal	public	private	subtotal		public	private	subtotal	
1996	16	8	24	21	22	43	67	14	56	70	137
2001	27	30	57	23	55	78	135	3	16	19	154
2006	41	53	94	11	42	53	147	3	13	16	163
2014	48	76	124	1	20	21	145	2	12	14	159

Source: Ministry of Education. (2015c)

(2) Student-faculty ratio of public and private universities

Table 4 presents the ratio of students and full-time institute faculty. Public universities had the lowest student-faculty ratio during the past decade. In 1996, the student-faculty ratio of public universities was 13.73. In 2006, it increased to 22.02. The student-faculty ratio of private universities shows a downward trend, from 38.84 to 30.29 between 1996 and 2006. As for colleges though the student-faculty ratio of public colleges was lower than private ones in 1996, and the student-faculty ratio of private colleges (25.90) was lower than public ones (27.32) in 2006.

Table 4. Ratio of students and full-time higher education faculty

School Year	Category										
	Universities and Colleges			Technical and vocational colleges			total	Polytechnic			total
	public	private	subtotal	public	private	subtotal		public	private	subtotal	
1996	13.73	38.84	20.43	16.68	21.60	19.55	20.09	17.84	22.33	21.41	20.60
2001	19.16	32.90	25.75	22.32	28.51	27.14	26.35	9.64	23.24	22.77	26.13
2006	22.02	30.29	26.63	27.32	25.90	26.10	26.51	13.26	15.35	15.18	26.19

Source: Ministry of Education (2008)

(3) Private schools play an important role in providing higher education opportunities

According to Table 5, among 163 higher education institutes, 108 are private, accounting for 66.26%. Of the 1,313,993 students in post-secondary institutions in 2006 (Table 5), 913,964 are in private schools, accounting for 69.56％. As higher education moves toward the “massive-oriented” or “universal” model (Trow, 1973), private schools play a fundamental part in the expansion of Taiwanese higher education; its contribution cannot be ignored. In delivering to higher education opportunities, private and university institutes demonstrate the process of universalizing Taiwanese higher education.

Table 5. Number of students according degree levels

	Ph.D. program		Master program		Bachelor program		Polytechnic		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total	29,839	100.00	163,585	100.00	966,591	100.00	153,978	100.00	1,313,993	100.00
Public	24,948	83.61	106,100	64.86	253,831	26.26	15,150	9.84	400,029	30.44
Private	4,891	16.39	57,485	35.14	712,760	73.74	138,828	90.16	913,964	69.56

Source: Ministry of Education (2007)

Tension between public and private institutes

Borysiewicz (2005) argued that society provides financial support to universities through five channels: students and their families; alumni and friends; charitable foundations; industry; and government and its agencies, administering public funds on behalf of society as a whole. This holds for most universities in the world. In addition, some universities, including Taiwan's, develop and manage significant revenues of their own through endowments, businesses, and intellectual properties. The farther universities reach, the more resources they get, resulting in conflict between public and private institutions.

However, heavy dependence on any one of these sources brings institutional risks. A university entirely sustained by student fees would be susceptible to being accused faddishness of consumerism, as well as putting too much burden on students and their families. The demands of donors could open up a route to distortion of the academic purposes of the university. Funding from industry might encourage research dominated by a quest for results amenable to rapid commercialization. Exclusive dependence on endowment revenues would expose the university to the volatility of the financial markets.

In Taiwan, the balance among funding sources is sharply tilted toward government. Only the top ten public universities have significant endowments and extra funds subsidized by the government in order to increase the competitiveness of those universities. During the last fifty years, the government has played an important part in the finances of public and a few private universities, which was discouraged until recently by the economic recession. As a result, almost all public universities today rely on government agencies for peer-reviewed research grants and for block grants to support of teaching and core research needs.

Thus, the overall picture in Taiwan is, indeed, one of heavy dependence on a single funding source, government. Due to the better and supportive environment offered from the public universities, many academics in private ones may intend to switch to a public institution if the opportunity comes. The financial structure of universities of very different character is relatively homogeneous, highly regulated, and still insufficient for their needs. Therefore, there is always tension between the public and private sectors in competing for limited source.

Today, the financial strategies of public and private universities in Taiwan are converging. With national budgets under mounting budgetary pressure, public universities are increasing tuition fees and building their endowments with gifts from alumni and friends. Private universities, with budgets fueled by endowment growth and higher tuition fee, have experienced freezes and cutbacks in recent years, as financial markets have slowed and public opposition to large fee increases has grown. Public and private universities alike have long looked to the government to fund research and graduate training.

Data

Quantitative data was collected from academics in both public and private universities in Taiwan. The survey was designed to reflect the current state of higher education in Taiwan. Survey participants, 412 academics from universities and research institutes, were asked to complete a six-dimension questionnaire which included: career and professional situation; general work situation and activities; teaching; research; management; and personal background.

Table 6 presents the personal information of the survey participants. They consisted of 82.1% males and 17.9% females in public universities; 59.6% males and 40.4% females in private universities. In terms of the familial status partner, most academics in both public and private universities were married, which accounted for 88.5% and 88.7% respectively. Most of the academics in public and private universities have children living with them, the former is approximately 76.4% and the latter 75.2%. Among those in public universities who indicated that they have children living with them, the numbers of their children were: one (29.2%), two (33.3%), and three or more (13.9%). The numbers in the private ones were: one (22.5%), two (43.4%), and three or more (9.3%).

A majority of the respondents' spouse/partner are usually not academics (public 67.1% and private 62.5%, respectively).

Table 6. Demographic data of the respondents

		public	private
Gender	Male	82.1%	59.6%
	Female	17.9%	40.4%
Familial status partner	Married/partner	88.5%	88.7%
	Single	11.5%	11.0%
	Others	.0%	.3%
Is your spouse/partner also an academic?	Yes	32.9%	37.5%
	No	67.1%	62.5%
Do you have children living with you?	Yes, 1	29.2%	22.5%
	Yes, 2	33.3%	43.4%
	Yes, 3 or more	13.9%	9.3%
	No	23.6%	24.8%

Findings and discussion

The current career and professional profile of the respondents are displayed in Table 7. In terms of their employment, both in public and in private universities, the distributions were almost the same. In public universities, there are 94.8% full-time academics and 5.2% part-time academics; on the contrary, there are 90.2% full-time academics, 7.6% part-time academics, and 2.1% others in private universities. From the perspective of academic ranking, the levels in public universities are higher than private ones. Public university faculty comprised 50.6% professors, 35.1% associate professors, and 14.3% assistant professors; private universities comprised 44.9% professors, 28.9% associate professors, 20.3% assistant professors, 3.4% lecturers, and 2.5% teaching assistants.

As can be seen in Table 7, employment contracts for both public and private university faculty are guaranteed, but still have room for improvement. More than half of employment contracts are permanent (public 55.8% and private 56.9%), but the percentage of fixed-term employment are a bit higher

(public 39.0%; private 37.3%). Due to the respondents' personal experiences, their preference for teaching and research appeared differently. Nevertheless, the comprehensive tendency of public and private universities displayed one result. For the academics in the university, the interests in research are higher than teaching. The findings in public universities are as following: primarily in teaching 2.6%; in both, but leaning towards teaching 46.2%; in both, but leaning towards research 47.4%; primarily in research 3.8%. The results in private universities are: primarily in teaching 5.2%; in both, but leaning towards teaching 44.0%; in both, but leaning towards research 46.2%; primarily in research 4.6%.

Table 7. Career and professional distribution of public and private university respondents

		public	private
Employment situation	Full time	94.8%	90.2%
	Part time	5.2%	7.6%
	Others	.0%	2.1%
Academic ranking	Professor	50.6%	44.9%
	Associate professor	35.1%	28.9%
	Assistant professor	14.3%	20.3%
	Lecturer	.0%	3.4%
	Teaching assistant	.0%	2.5%
Employment contract	Permanent	55.8%	56.9%
	Fixed-term employment	39.0%	37.3%
	Others	5.2%	5.8%
Main interest	Primarily in teaching	2.6%	5.2%
	In both, but leaning towards teaching	46.2%	44.0%
	In both, but leaning towards research	47.4%	46.2%
	Primarily in research	3.8%	4.6%

In order to fully understand the current research picture in public and private universities, Tables 8-10 demonstrate data from the past three years. Comparing the publications, the percentage written in a foreign language in public universities is higher than private universities, which accounted for 64.5% in public and 58.6% in private universities respectively (Table 8). Co-authored publications with foreign academics is uncommon in both public and private universities. In public universities, only one quarter of university faculty co-authored with foreign academics in public universities; the percentage is less in private universities, merely 17.9% (Table 9). In addition to this survey, we also investigated the case of publishing in a foreign country. 34.5% of the public university faculty published their works in a foreign country. The rate is higher than private universities, which is 32.4 percent (Table 10).

Table 8. Published in a language different from the language of instruction at your current institution

	public		private	
	number	%	number	%
Yes	40	64.5%	146	58.6%
No	22	35.5%	103	41.4%

Table 9. Co-authored with colleagues in foreign countries

	public		private	
	number	%	number	%
Yes	14	25.5%	38	17.9%
No	41	74.5%	174	82.1%

Table 10. Published in a foreign country

	public		private	
	number	%	number	%
Yes	19	34.5%	70	32.4%
No	36	65.5%	146	67.6%

The results of the survey also displayed the general work conditions and activities in public and private universities (Table 11-13). The average scores of respondents' answers were adopted to recognize their level of identification with university internationalization in Table 11. For the first three items, public university faculty responses were more positive than the private ones. Public university faculty considered that (a) connect with scholars in other countries are very important to my professional work; (b) read books and journals published abroad could help keep up with developments in my discipline; and (c) universities and colleges should do more to promote student and faculty mobility from one country to another. Only the last item "the curriculum at this institution should be more international in focus" showed a different result. More private university faculty think that the curricula at their institutions should be more internationalized (public 1.90; private 1.87). This also attests that internationalization is more recognized at public universities than private universities. Therefore, the need for international curriculum at the public universities is not as high as private ones.

Table 11. Attitudes toward international connections

Indicators	Mean	
	public	private
Connections with scholars in other countries are very important to my professional work	1.78	1.95
In order to keep up with developments in my discipline, a scholar must read books and journals published abroad	1.30	1.42
Universities and colleges should do more to promote student and faculty mobility from one country to another	1.49	1.57
The curriculum at this institution should be more international in focus	1.90	1.87

Note: 1- agree; 3- neutral; 5- disagree

Tables 12 summarizes the evaluation of all related supporting systems in both public and private universities, including eighteen indicators such computer facility, research funding, or the intellectual atmosphere and so on. The eighteen indicators are the sub-concepts of "facilities, resources, and personnel". The final results of this survey present a quite similar tendency. Private university faculty are much more satisfied with their overall software and hardware equipment than public university faculty. However, in terms of the

"library and service"; "retirement arrangement" and "other fringe benefits"; the results are completely different. Public university displayed higher satisfaction with the aforementioned three items. The Mean of "library and service" was 2.16 (public) to 2.19 (private); "retirement arrangement" was 2.46 (public) to 2.59 (private); and "other fringe benefits" was 2.77 (public) to 2.78 (private).

In order to understand the current academic environment, the university faculty opinions from diversity aspects were investigated. From Table 13, one can get a much more comprehensive understanding about universities. At first, item 4 (this is a poor time for any young person to begin an academic career in my field) for example, both public and private university teachers show great confidence in the current academic environment to some extent (public 4.10; private 3.92). This can be demonstrated by item 5 (if I had it to do over again, I would not become an academic), which still shows great attraction for and academic career (public 3.92; private 3.81). It's worth noting that public university faculty's identification with academia is still higher than private ones.

Table 12. Satisfaction with equipment and institutional support

Indicators	Mean		Indicators	Mean	
	public	private		public	private
Classrooms	2.28	2.19	Teaching support staff	2.72	2.66
Tech for teaching	2.44	2.27	Research support staff	3.07	2.92
Laborites	2.81	2.63	Research funding	3.20	2.98
Research equipment and instrument	2.57	2.46	Retirement arrangement	2.46	2.59
Computer facility	2.26	2.14	Paid sabbatical leave	2.76	2.72
Library and service	2.16	2.19	Travel fund for academics	3.20	2.96
Your office space	2.42	2.27	Other fringe benefits (e.g., medical insurance, life insurance, housing, education)	2.77	2.78
Secretarial support	2.75	2.57	The intellectual atmosphere	2.57	2.53
Internet	2.24	2.09	The sense of community	2.69	2.59

Note: 1- excellent; 5- poor

Table 13. Personal views on certain indicators

Indicators	Mean`	
	public	private
Scholarship is best defined as the preparation and presentation of findings on original research	1.65	1.73
Scholarship includes the application of academic knowledge in real-life settings	1.60	1.75
Scholarship includes the preparation of reports that synthesize the major trends and findings of my field	1.88	1.87
This is a poor time for any young person to begin an academic career in my field	4.10	3.92
If I had it to do over again, I would not become an academic	3.92	3.81
My job is a source of considerable personal strain	2.56	2.84
Teaching and research are hardly compatible with each other	3.29	3.15
Faculty in my discipline have a professional obligation to apply their knowledge to problems in society	2.41	2.27

Note: 1- agree; 3- neutral; 5- disagree

Table 14. Reasons for leaving or staying at the institution

Indicators	Mean	
	public	private
Income	3.71	3.41
Resource of research	3.58	3.39
Academic reputation of the institute	3.72	3.56
Academic collaboration among colleagues here	3.63	3.46
Region in which this institution is located	3.54	3.58
Teaching load	3.62	3.38
Administrative load	3.23	3.02
Language of teaching	3.49	3.48
Family reason	3.51	3.44

Note: 1- strong reason to leave; 3- neutral; 5- strong reason to stay

The study not only investigated the aspects of research and the general work conditions, but also examined the willingness of the academics. Table 14 examined nine main reasons for deciding to leave or stay at one's current institution. Among these, it is notable that public university faculty tend to stay

at their current institutions more than private university ones. For instance, the income, research resources, institute reputation, or teaching/administrative load in public universities encourage the academics to stay. Only one factor showed that public university faculty have a strong reason to leave — "institution location". The average score of public universities is 3.54 and 3.58 for private ones.

For the quantitative analyses, the Chi-Square Test was conducted to determine the correlation of two nominal variables (attitudes and experiences) in Table 15. One presents "attitudes toward international connections" and the other presents "the experiences of academics in the last three years". The first row, for example, the p-value of three items in the experiences part are all smaller than 0.05 (p=.000; p=.0003; p=.000, respectively). This suggests that "connections with scholars in other countries are very important to my professional work" has a relation to all three items of experience. That is the level of academics' identification about internationalization would influence their willingness to publish in a foreign country. According to the data in Table 9, only the second and third item of attitudes did not have a relation to "co-authored with colleagues located in other countries" respectively (p=.272; p=.128).

Table 15. Attitudes (column) vs. experiences (row)

Chi square	published in a language different from the language of instruction at your current institution	co-authored with colleagues located in other (foreign) Countries	published in a foreign country
Connections with scholars in other countries are very important to my professional work	26.540(0.000)	16.364(0.003)	25.006(0.000)
In order to keep up with developments in my discipline, a scholar must read books and journals published abroad	19.981(0.000)	3.903(0.272)	15.209(0.002)
Universities and colleges should do more to promote student and faculty mobility from one country to another	10.330(0.035)	7.157(0.128)	19.460(0.001)
The curriculum at this institution should be more international in focus	14.798(0.005)	10.945(0.027)	12.672(0.013)

The following analyses (Table 16-19) are based on logistic regression to determine the factors that affect the indicator－published in a language different from the language of instruction at your current institution. In Table 16, nine items of satisfaction are listed, including technology for teaching, office space or secretarial support and so on. When faculty discontent is higher, the probability in publishing the works in different language would become lower. However, the p-value in Table 16 showed that the degree of equipment satisfaction do not have significant influence on the above indicator.

Table 16. Satisfaction with equipment vs. published in a language different from the language of instruction at your current institution

Logistic regression	Public		Private	
Indicators	exp(beta)	p	exp(beta)	p
Classrooms	0.70	0.25	1.12	0.51
Technology for teaching	0.84	0.58	1.03	0.86
Laboratories	0.56	0.07	1.08	0.61
Research equipment and instrument	0.59	0.06	1.14	0.38
Computer facility	1.29	0.35	1.22	0.20
Library and service	0.68	0.17	0.96	0.79
Your office space	0.85	0.51	1.26	0.09
Secretarial support	1.19	0.48	1.17	0.22
Internet	1.19	0.58	1.08	0.62

Table 17. Support from institution vs. published in a language different from the language of instruction at your current institution

Logistic regression	Public		Private	
Indicators	exp (beta)	p	exp(beta)	p
Teaching support staff	0.93	0.78	1.46	0.01
Research support staff	0.99	0.96	1.02	0.90
Research fund	0.72	0.24	1.11	0.43
Retirement arrangement	1.13	0.62	1.26	0.06
Paid sabbatical leave	1.08	0.74	1.42	0.00
Travel fund of institution	0.89	0.61	1.18	0.18
Other fringe benefits (e.g., medical insurance, life insurance, housing, education)	0.99	0.97	1.06	0.67
The intellectual atmosphere	1.09	0.77	1.22	0.18
The sense of community	1.02	0.94	1.05	0.74

Table 17 surveyed the supporting systems provided by institutions. Results indicate that only the satisfaction of "teaching support staff" and "paid sabbatical leave" have significant influence on the same indicator (p=.01; p=.00, respectively). These two findings are significant for private university faculty, but not public university faculty. For the "teaching support staff", it is notable that when private university faculty' discontent is higher, their willingness to publish works in foreign language would become lower; so does the item "paid sabbatical leave". Briefly speaking, support from one's institution does not have significant influence on publication in a language different from one that the faulty current use in the classroom.

Table 18 shows that the time university faculty spent in session or not in session does not have significant influences on publishing with different languages in public universities (p=.41; p=.49). On the contrary, the time private university faculty spent in session or not in session has significant influences on the same indicator (p=.08; p=.004). One can tell when private university faculty spent much time on research per week, the probability of publishing in a different language will become higher. The situations are similar whether in session or not in session.

By characteristics of the discipline, the "applied/practically-oriented" and "socially-oriented/intended for the betterment of society" research has significant influence on publishing with different languages in public universities respectively (p=.03; p=.02); however, these two research approaches were opposite in private universities (Table 19). At the private universities, "basic/theoretical" and "commercially-oriented/intended for technology transfer" researched significant influence on publishing with different languages respectively (p=.01; p=.04). For example, when private university faculty research emphasized "basic/theoretical" much more, the probability of publishing works in a different language will became higher.

Table 18. Hours per week when classes are in session vs. published in a language different from the language of instruction at your current institution

Logistic regression	Public		Private	
B1_2	exp(beta)	p	exp(beta)	p
Hours per week when classes are in session	1.02	0.41	0.98	0.08
Hours per week when classes are not in session	1.01	0.49	0.97	0.004

Table 19. Emphasis of your primary research vs. published in a language different from the language of instruction at your Current institution

Logistic regression	Public		Private	
D2	exp(beta)	p	exp(beta)	p
Basic/ theoretical	0.77	0.24	1.29	0.01
Applied/ practically-oriented	1.77	0.03	1.12	0.33
Commercially-oriented/ intended for technology transfer	1.68	0.13	1.32	0.04
Socially-oriented/ intended for the betterment of society	1.64	0.02	0.87	0.14

Conclusion

What does all this mean for higher education in Taiwan? It is apropos to ask this question because public and private universities in Taiwan differ widely in history, size, reputation, mission, balance between research and teaching, faculty commitment, governance, and so on. They also differ in cost, depending on various management styles; resources; the fields of research; the pools from which faculty are recruited; administrative support in teaching or research; and the retirement plan. This diversity is healthy and desirable because students themselves have different needs and aspirations, and society itself places a wide range of demands upon universities. However, with the ongoing challenge of a low birth rate, Taiwan will face its first higher education crisis in 2016 due to enrollment numbers decreasing from 280,000 to 230,000. It will accelerate merging of and alliance building of higher education institutes in both the public and the private sectors. The Taiwanese government encourages universities moving toward world class universities, with high ambition and deep obligations to society. In order to sustain this ambition and fulfill its obligations, it is essential that government keeps investing financially in certain universities thereby making both public and private universities urge their faculty and staff fulfill requirements mandated from the top. The only concern of this wave of competition is the university autonomy. How much will be left to the universities after the harsh competition?

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