



# RELATIONS OF THE UNIVERSITY MANAGEMENT STYLE AND THE

# CONSCIOUSNESS OF ACADEMICS IN TAIWAN

---

## **Robin Jung-Cheng Chen**

Professor & Vice Dean, College of Education  
National Chengchi University (Taiwan)

## **Sophia Shi-Huei Ho**

Professor & Director, Institute of Educational  
Administration and Evaluation  
University of Taipei (Taiwan)



# Current Status of Higher Education in Taiwan



No. of students in universities  
and colleges: 1.3 million



Population: 23 million



Higher education  
admission rate: 76.2%



No. of universities and  
colleges: 152

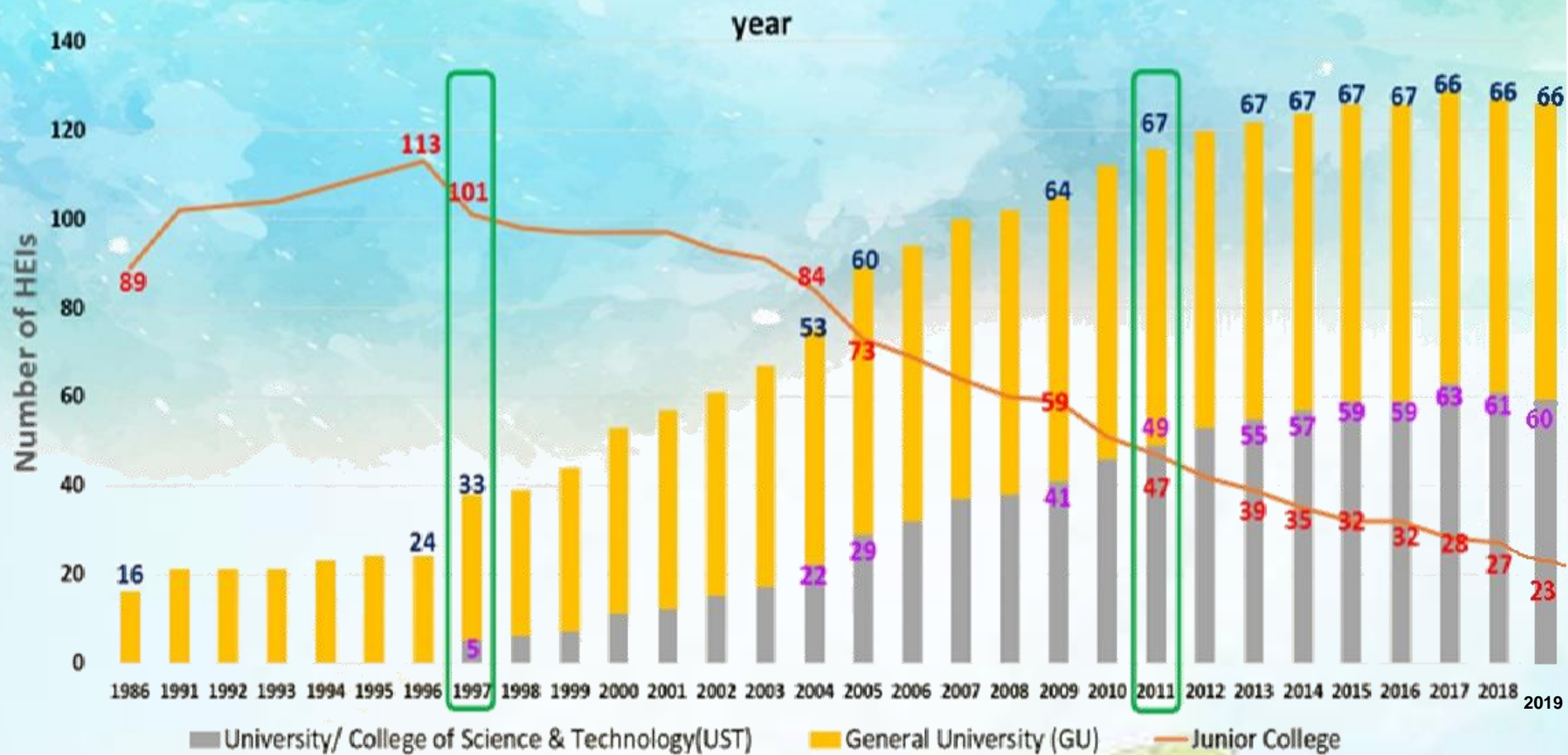


Literacy rate  
(age 15 and above): 98.96%



Fertility rate: 1.05%  
(world's 1<sup>st</sup> lowest in 2019)

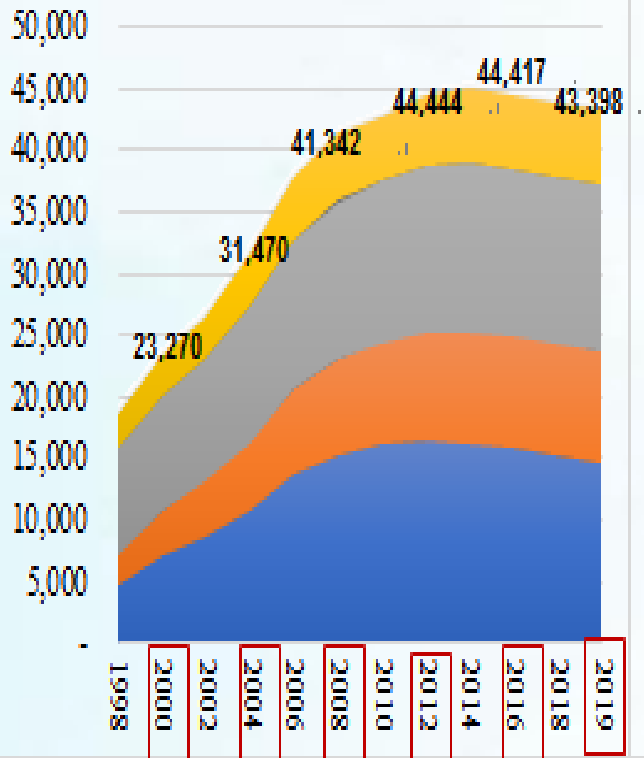
# The Changing Landscape of HEIs



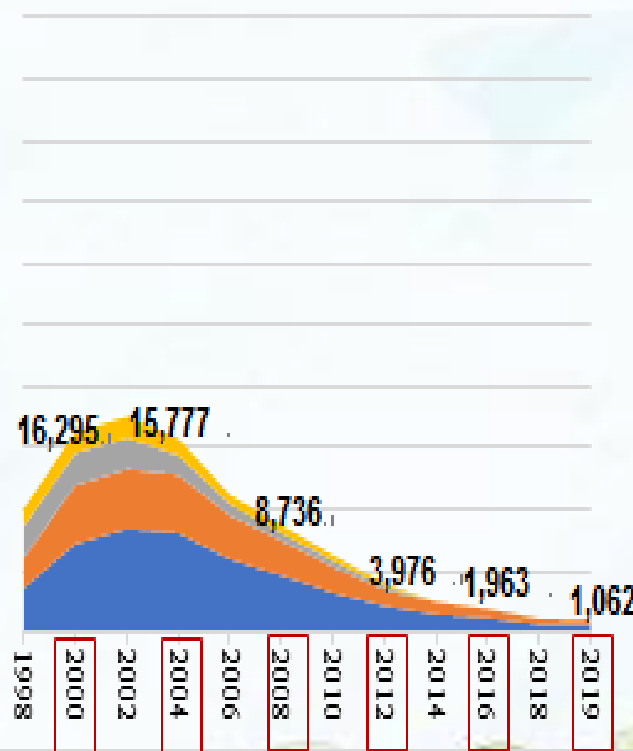
# Faculty of HEIs

- Public F
- Public M
- Private F
- Private M

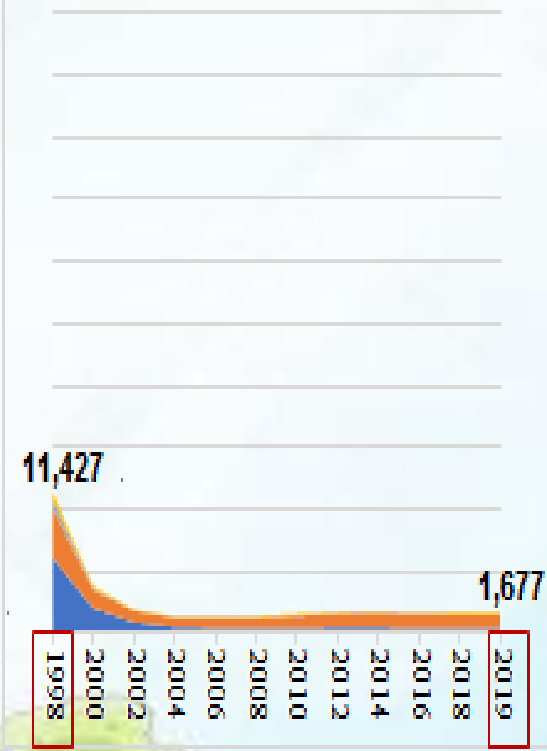
## GU&UST



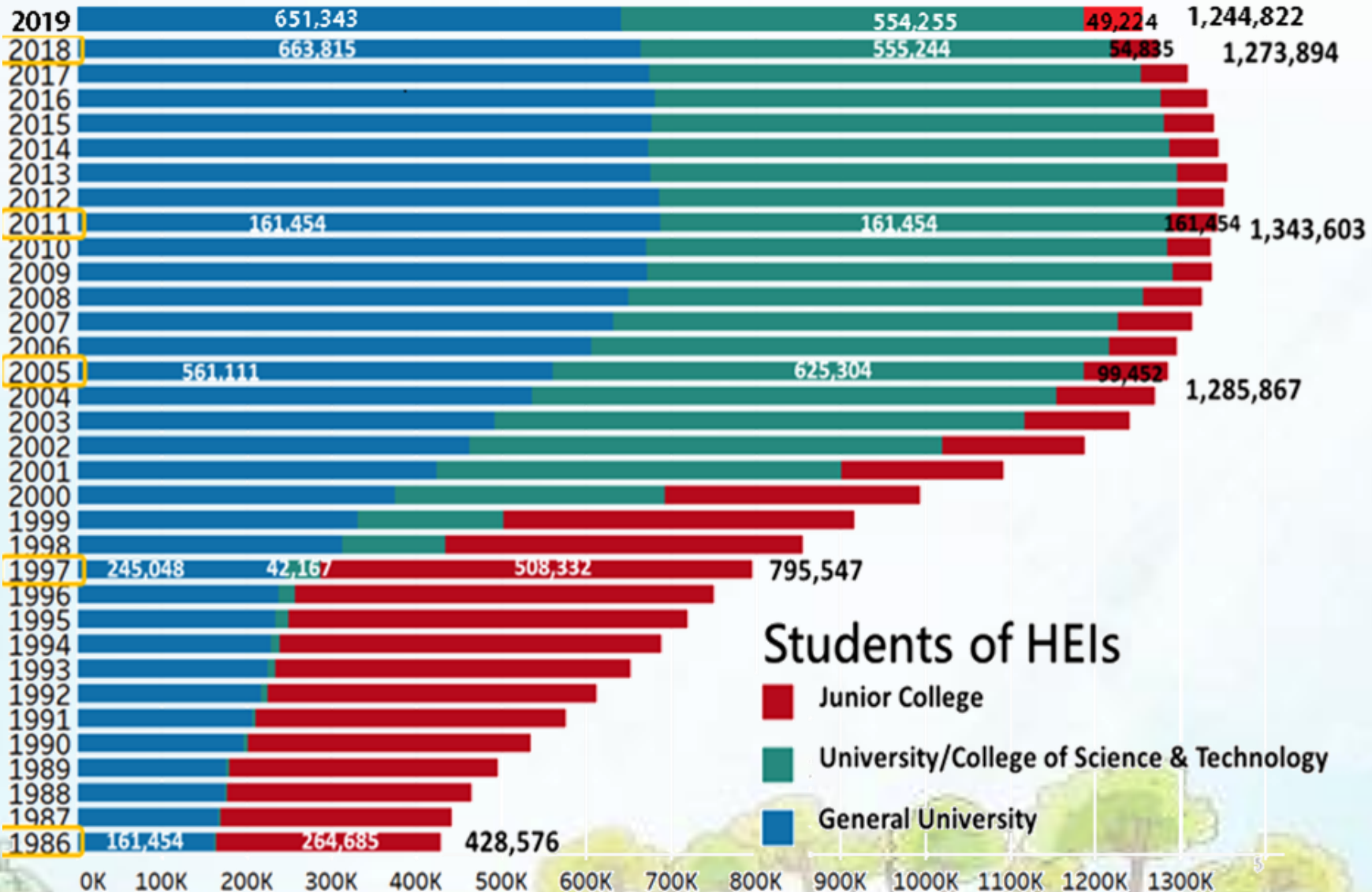
## College



## Junior College



# Students of HEIs



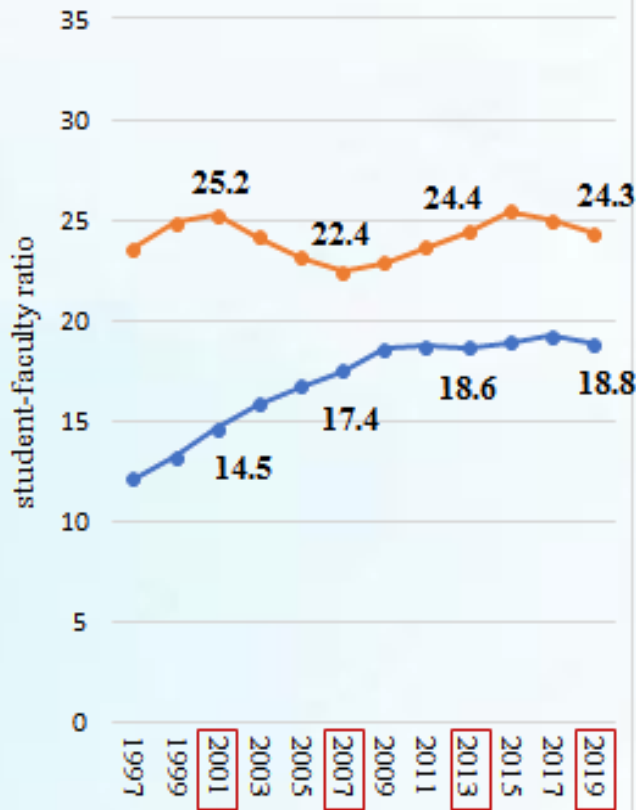
## Students of HEIs

- Junior College
- University/College of Science & Technology
- General University

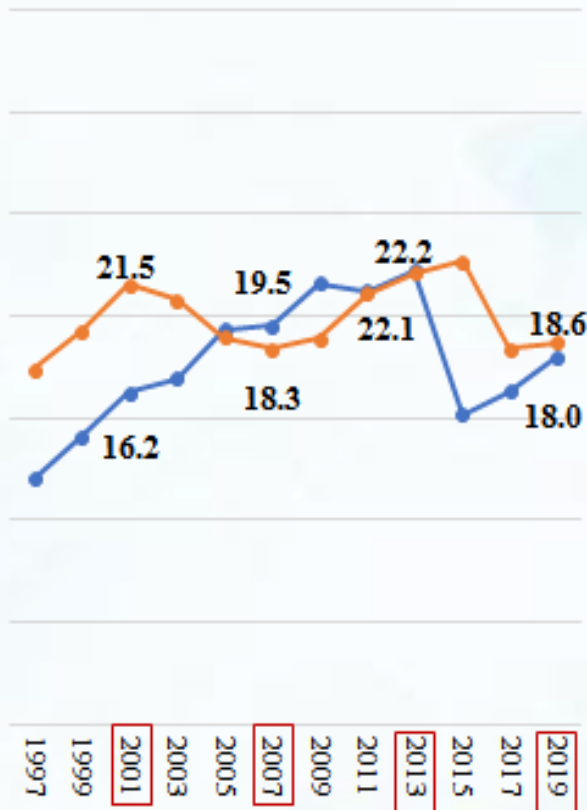
# The Ratio of Student to Faculty

Public  
Private

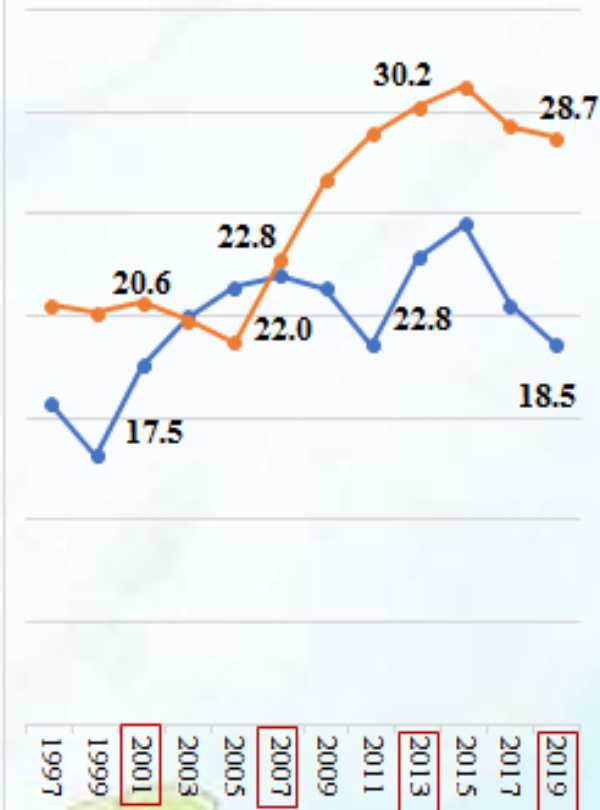
## GU&UST



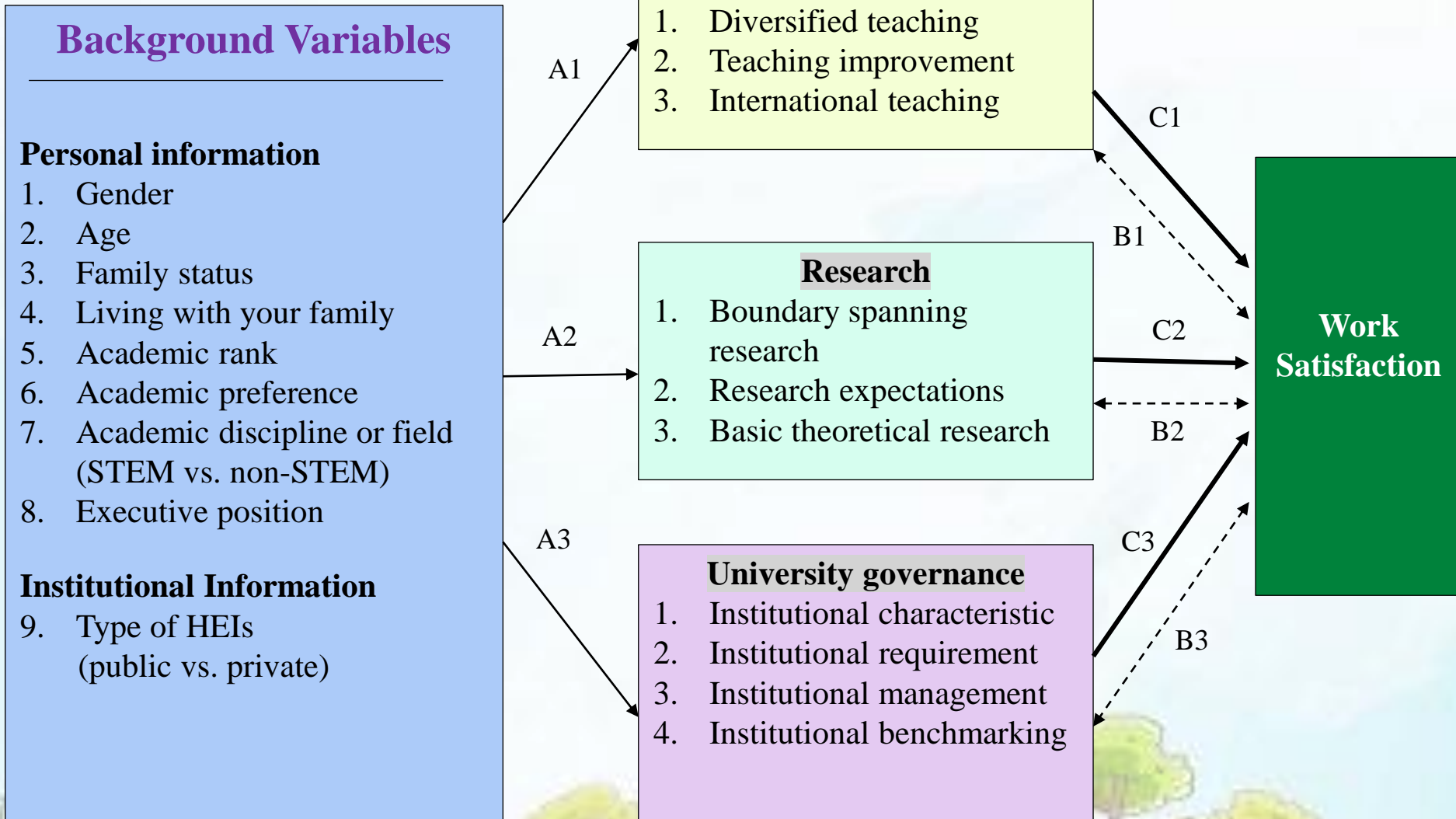
## College



## Junior College



# Research Framework



# Variables Measurement (1/7)

Variable	Item	Question
<b>Background Information</b>	<b>1. Gender</b> H1 What is your gender?	1. Male 2. Female 3. Other
	<b>2. Age</b> H2 Year of birth	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Year
	<b>3. Familial status</b> H8 What is your familial status?	1. Married/partner 2. Single 3. Other (please, specify):_____
	<b>4. Living with your family :</b> H3 Do you have any dependent person living with you?	1. Yes, I have <input type="text"/> <input type="text"/> (number of) dependent children living with me 2. Yes, I have another dependent person living with me 3. No
	<b>5. Academic rank</b> A1 What is your academic rank?	1. Professor (Researcher) 2. Associate Professor (Associate Researcher) 3. Assistant Professor(Assistant Researcher)
	<b>6. Academic preference</b> B2 Regarding your own preferences, do your interests lie primarily in teaching or research?	1. Teaching (Primarily in teaching / In both, but leaning towards teaching) 2. Research (In both, but leaning towards research / Primarily in research)



## Variables Measurement (2/7)

Variable	Item	Question
<b>Background Information</b>	<p><b>7. Academic discipline or field (STEM vs non-STEM)</b></p> <p>A2 Please, identify your academic discipline or field.</p>	<ol style="list-style-type: none"> <li>1. <b>STEM</b> (Life sciences / Physical sciences, mathematics / Chemistry / Computer sciences / Engineering, manufacturing and construction, architecture / Agriculture, forestry / Medical sciences, health related sciences)</li> <li>2. <b>non-STEM</b> (Teacher training and education science / Humanities and arts / Social and behavioural sciences / Business and administration, economics / Law / Social work and services / Personal services, transport services, security services)</li> </ol>
	<p><b>8. Executive position</b></p> <p>A9 Have you been in an executive position in the past <u>two</u> academic years?</p>	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
	<p><b>9. Type of your university/research institution</b></p> <p>A10 What is the type of your university/research institution?</p>	<ol style="list-style-type: none"> <li>1. National or Public</li> <li>2. Private</li> </ol>

## Variables Measurement (3/7)

Dimension	Sub-dimension	Sub-scale	Question
<b>Teaching</b>	<b>Diversified teaching</b>	<b>C4 Please indicate your views on the following:</b>	<p><b>C4_4.</b> Practically oriented knowledge and skills are emphasized in your teaching</p> <p><b>C4_5.</b> In your courses you emphasize international perspectives or content</p> <p><b>C4_12.</b> Your external activities reinforce your teaching</p> <p><b>C4_11.</b> Your research activities reinforce your teaching</p>
	<b>Teaching improvement</b>		<p><b>C4_2.</b> You are encouraged to improve your instructional skills in response to teaching evaluations</p> <p><b>C4_3.</b> At your institution there are adequate training courses for enhancing teaching quality</p>
	<b>International teaching</b>		<p><b>C4_10.</b> Currently, most of your graduate students are international</p> <p><b>C4_9.</b> Since you started teaching, the number of international students has increased</p>

# Variables Measurement (4/7)

Dimension	Sub-dimension	Sub-scale	Question
<b>Research</b>	<b>Boundary spanning research</b>	<p>D2 How would you characterize the emphasis of your primary research in the past <u>two</u> academic years?</p>	<p>D2_4. Socially-oriented/intended for the betterment of society            D2_7. Multidisciplinary            D2_5. International in scope or orientation            D2_3. Commercially-oriented/intended for technology transfer</p>
	<b>Research expectations</b>	<p>D5 To what extent do you consider yourself to be exposed to the following expectations by your institution?</p>	<p>D5_4. Complying to guidelines for research set by research funders            D5_6. Being active in carrying the research results beyond typical publications (technology transfer, dissemination in various media, etc.)            D5_3. Conducting applied (and possibly commercially oriented) research</p>
	<b>Basic theoretical research</b>	<p>D2 How would you characterize the emphasis of your primary research in the past <u>two</u> academic years?</p>	<p>D2_6. Based in one discipline            D2_1. Basic/theoretical</p>

# Variables Measurement (5/7)

Dimension	Sub-dimension	Sub-scale	Question
<b>University Governance</b>	<b>Institutional characteristic</b>	F4 At your institution, there is...	<p>F4_1. Competent leadership</p> <p>F4_2. A strong emphasis on the institution's mission</p> <p>F4_3. Good communication between management and academics</p> <p>F4_5. Collegiality in decision-making processes</p>
		<b>Institutional requirement</b>	F5 To what extent does your institution emphasize the following practices?
	F4 At your institution, there is...		F4_6. a strong teaching performance orientation

# Variables Measurement (6/7)

Dimension	Sub-dimension	Sub-scale	Question
<b>University Governance</b>	<b>Institutional management</b>	F4 At your institution, there is...	F4_4. A top-down management style F4_8. A cumbersome administrative process
		F5 To what extent does your institution emphasize the following practices?	F5_1. Performance based allocation of resources to academic units F5_2. Funding of departments substantially based on numbers of students
	<b>Institutional benchmarking</b>	F4 At your institution, there is...	F4_7. A strong research performance orientation
		F7 Please indicate your views on the following:	F7_8. Your institution encourages faculty members to publish internationally

## Variables Measurement (7/7)

Dimension	Item	Question
<p style="text-align: center;"><b>Work Satisfaction</b></p>	<p><b>B5</b> How do you rate your satisfaction with?</p>	<p><b>B5_2.</b> Your current work situation (e.g. workload, work environment)</p> <p><b>B5_3.</b> Your current overall professional environment</p>
	<p><b>B4</b> Please indicate your views on the following:</p>	<p><b>F4_2.</b> If I had it to do over again, I would not become an academic</p> <p><b>F4_3.</b> My job is a source of considerable personal strain</p> <p><b>F4_4.</b> Teaching and research are hardly compatible with each other</p>

# Background Information (1/3)

## 1. Gender

- a total of 1,224 valid sample
- 34.9% female (n: 427); 64.5% male (n: 790)

## 2. Age

- 16.2% : 35 to 45 years old (n: 198)
- 29.8% : 46 to 55 years old (n: 365)
- 29.3% : 56 years old and above (n: 359)

## 3. Family status

- 84.7% married/partner (n: 1,037)
- 15.3% single (n: 187)

# Background Information (2/3)

## 4. Living with your family

- **66.6%** Yes (n: 815)
- **33.3%** No (n: 408)

## 5. Academic rank

- **21.5%** Professor (n: 263)
- **35.9%** Associate Professor (n: 439)
- **39.6%** Assistant Professor (n: 485)

## 6. Academic preference

- **61.8%** Teaching (n: 756)
- **37.8%** Research (n: 463)



# Background Information (3/3)

## 7. Academic discipline or field

- 51.6% STEM (n: 632)
- 48.1% non-STEM (n: 589)

## 8. Executive position

- 42.8% Yes (n: 524)
- 57.2% No (n: 700)

## 9. Type of your university

- 62% National or Public (n: 759)
- 37.9% Private (n: 464)

## Result Analysis 1: The differences between background variables and teaching, research and university governance (1/5)

1. The average number, SD and significant test of university teachers with **different gender**

Variable and dimension	Male ( N=790 )		Female ( N=427 )		t value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Boundary spanning research	3.04	0.75	2.95	0.75	1.97*
Basic theoretical research	3.09	0.88	2.96	0.95	2.40*
Research	3.21	0.50	3.12	0.56	2.77**

\*p<.05 ; \*\*p<.01

# Result Analysis 1: The differences between background variables and teaching, research and university governance (2/5)

## 2. The average number, SD and significant test of university teachers with different age

Variables and dimension	35-45 (N=198)		46-55 (N=365)		56 years old and above (N=359)		F value	Post hoc
	M	SD	M	SD	M	SD		
Research expectations	3.49	0.70	3.52	0.67	3.37	0.68	4.47*	56 years old and above < 46-55
Institutional characteristic	3.77	0.83	3.54	0.89	3.52	0.86	5.84**	56 years old and above < 35-45 46-55 < 35-45
Institutional requirement	3.87	0.70	3.75	0.77	3.71	0.63	3.66*	56 years old and above < 35-45
Institutional benchmarking	4.03	0.82	3.75	0.85	3.70	0.79	10.80**	56 years old and above < 35-45 46-55 < 35-45
University governance	3.88	0.52	3.72	0.58	3.69	0.51	6.62**	56 years old and above < 35-45 46-55 < 35-45

\* $p < .05$  ; \*\* $p < .01$

# Result Analysis 1: The differences between background variables and teaching, research and university governance (3/5)

## 3. University teachers **live with their family** on average, SD and significant test

Variables and dimension	Yes (N=815)		No (N=408)		t value
	M	SD	M	SD	
Institutional management	3.88	0.61	3.93	0.62	-2.03*

\* $p < .05$  ; \*\* $p < .01$

## 4. The average number, SD, and significant test of university teachers in each **academic rank**

Variables and dimensions	Professor (N=263)		Associate Professor (N=439)		Assistant Professor (N=485)		F value	Post hoc
	M	SD	M	SD	M	SD		
Boundary spanning research	3.08	0.72	2.93	0.77	3.04	0.74	3.82*	Associate Professor < <b>Professor</b>
Research expectations	3.58	0.67	3.42	0.65	3.46	0.67	4.96*	Associate Professor < <b>Professor</b>
Research	3.25	0.51	3.14	0.53	3.17	0.53	3.66*	Associate Professor < <b>Professor</b>
Institutional characteristic	3.62	0.79	3.48	0.84	3.62	0.82	4.06*	Associate Professor < <b>Professor</b>

\* $p < .05$  ; \*\* $p < .01$

## Result Analysis 1: The differences between background variables and teaching, research and university governance (4/5)

### 5. The average number, SD, and significant test of teachers' **academic preference**

Variables and dimension	Teaching ( N=756 )		Research ( N=463 )		t value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
International teaching	2.19	0.86	2.43	0.87	<b>-4.81**</b>
Teaching	3.25	0.52	3.35	0.51	<b>-3.18**</b>
Boundary spanning research	2.95	0.74	3.11	0.76	<b>-3.69**</b>
Research expectations	3.38	0.65	3.61	0.66	<b>-5.85**</b>
Research	3.13	0.54	3.25	0.50	<b>-3.96**</b>
Institutional management	3.74	0.71	3.55	0.79	<b>4.08**</b>
Institutional benchmarking	3.73	0.81	3.88	0.81	<b>-3.20**</b>

\* $p < .05$  ; \*\* $p < .01$

## Result Analysis 1: The differences between background variables and teaching, research and university governance (5/5)

### 6. The average number, SD, and significant test of teachers' **academic discipline or field**

Variables and dimension	STEM ( N=632 )		non-STEM ( N=589 )		t value
	M	SD	M	SD	
Boundary spanning research	2.97	0.75	3.06	0.76	-2.07*
Research expectations	3.53	0.67	3.41	0.65	3.15**
Basic theoretical research	2.97	0.94	3.13	0.87	-3.27**
Institutional benchmarking	3.88	0.81	3.69	0.80	4.09**

\* $p < .05$  ; \*\* $p < .01$

### 7. University teachers have **executive positions** on average, SD and significant test

Variables and dimension	Yes ( N=524 )		No ( N=700 )		t value
	M	SD	M	SD	
Research expectations	3.53	0.67	3.43	0.66	2.56*
Institutional requirement	3.80	0.65	3.72	0.69	2.08*

\* $p < .05$  ; \*\* $p < .01$

## Result Analysis 2: Correlation analysis between teaching, research, university governance and work satisfaction (1/3)

### 1. Correlation coefficients, variances and covariates of various aspects of **teaching dimension** and **work satisfaction**

	Diversified teaching	Teaching improvement	International teaching	Teaching	Work satisfaction
Diversified teaching	.37	.15	.09	.20	.04
Teaching improvement	.30**	.64	.09	.29	.10
International teaching	.17**	.13**	.76	.31	.06
Teaching	.64**	.70**	.69**	.27	.06
Work satisfaction	.09**	.17**	.09**	<b>.17**</b>	.50

\* $p < .05$  ; \*\* $p < .01$

## Result Analysis 2: Correlation analysis between teaching, research, university governance and work satisfaction (2/3)

### 2. Correlation coefficients, variances and covariates of various aspects of **research dimension** and **work satisfaction**

	Boundary spanning research	Research expectations	Basic theoretical research	Research	Work satisfaction
Boundary spanning	.57	.22	.07	.28	.02
Research expectations	.44**	.44	.05	.24	.02
Basic theoretical research	.10**	.08**	.82	.31	.05
Research	.72**	.67**	.65**	.28	.03
Work satisfaction	.04	.05	.07**	<b>.08**</b>	.50

\* $p < .05$  ; \*\* $p < .01$



## Result Analysis 2: Correlation analysis between teaching, research, university governance and work satisfaction (3/3)

### 3. Correlation coefficients, variances and covariates of various aspects of university governance dimension and work satisfaction

	Institutional characteristic	Institutional requirement	Institutional management	Institutional benchmarking	University governance	Work satisfaction
Institutional characteristic	.68	.30	.04	.30	.33	.18
Institutional requirement	.53**	.46	.13	.19	.27	.06
Institutional management	.06*	.26**	.55	.13	.21	-.09
Institutional benchmarking	.45**	.35**	.22**	.66	.32	.09
University governance	.75**	.75**	.54**	.74**	.28	.06
Work satisfaction	<b>.31**</b>	.13**	<b>-.17**</b>	.15**	<b>.16**</b>	.50

\* $p < .05$  ; \*\* $p < .01$

# Result Analysis 3: The prediction of work satisfaction by teaching, research and university governance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change statistics					Durbin-Watson
					R Square change	F Change	df 1	df 2	Sig. F Change	
5	.373 <sup>e</sup>	0.139	<b>0.136</b>	0.6555	0.003	4.492	1	1218	<b>.03*</b>	1.944

e. explain variables: (constant), Institutional characteristic, Institutional management, Teaching improvement, Basic theoretical research, Institutional benchmarking

f. Dependent variable: work satisfaction\_Mean

Model	Unstandardized Coefficients		Standardized Coefficients		Collinearity statistics		
	B	Std. Error	$\beta$	T	Sig.	Tolerance	VIF
(Constant)	<b>2.489</b>	0.151		16.503	<.001		
<b>Institutional characteristic</b>	<b>0.221</b>	<b>0.026</b>	<b>0.259</b>	8.35	<.001	0.737	1.357
Institutional management	<b>-0.189</b>	0.026	-0.2	-7.321	<.001	0.951	1.052
Teaching improvement	<b>0.067</b>	0.025	0.076	2.661	0.008	0.87	1.15
Basic theoretical research	<b>0.05</b>	0.021	0.064	2.401	0.017	0.994	1.006
Institutional benchmarking	<b>0.056</b>	0.027	0.065	2.119	0.034	0.756	1.323

a. Dependent variable: work satisfaction Mean

## Regression equation

**Work satisfaction** = 2.489 + 0.221 Institutional characteristic - 0.189 Institutional management + 0.067 Teaching improvement + 0.05 Basic theoretical research + 0.056 Institutional benchmarking

# Conclusion and Suggestion (1/3)

1. **Unlocking the communication channels within the organization and enhancing organizational identity will have a positive impact on job satisfaction**

According to the results of multiple regression analysis,

- 1) **“Institutional characteristics” variable has the greatest impact on university teachers’ job satisfaction.** If the communication channels within the organization are unblocked and university teachers are given a higher degree of autonomy, job satisfaction will increase.
- 2) **“Institutional management” variable has a negative impact on teachers’ job satisfaction.** If the organization's management is more authoritarian, it will reduce the autonomy of teachers and reduce job satisfaction.

Therefore, to improve the job satisfaction of university teachers, HEIs should adopt democratic management so that teachers have more autonomy and increase their sense of identity with the institution.

## Conclusion and Suggestion (2/3)

2. **Junior university teachers are more aware of “institutional governance” than senior teachers. Among them, university teachers who are teaching-oriented have the highest awareness of “institutional management”**

According to the results,

- 1) **Junior teachers endure more pressure** of getting promotion within certain years, which may cause them paying more attention on governance than senior ones.
- 2) In addition, according to recent HE initiatives, **teaching quality and student learning outcome are far more emphasized**, which lead “teaching oriented” group showing higher awareness on governance.

Policy content influence academics’ intentions. The academics’ autonomy is shrinking while facing policy preference.

## Conclusion and Suggestion (3/3)

### 3. **Non-STEM university teachers have higher boundary spanning research ability than STEM ones**

According to the results,

- 1) We will argue that due to the employment opportunities for non-STEM are less than STEM, **non-STEM academics now are more flexible looking for cross disciplinary cooperation.**
- 2) It also indicates **traditional discipline starting to remapping its scope, starting from non-STEM.**

The uncertainty of the discipline boundary will remain as long as the job market keeps changing.

Thank you for listening  
Q & A

