

***Constructing the EXPAND Core Dimensions of Admission Strategies in  
Taiwan Higher Education***

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**Abstract**

In the context of low fertility rate and the marketization of education, the admissions of higher education have faced numerous challenges. How higher education institutions can resolve these crises and turn them into opportunities have become indispensable issues that cannot be ignored. This study aims to construct the core dimensions of admission strategies in Taiwan's higher education through a mixed methods research approach. First, a literature analysis is conducted to understand the current situations of higher education admissions in Taiwan. Subsequently, core dimensions are generalized through psychology, sociology, and management. Finally, expert consensus is obtained through opinion reviews and expert consensus analysis by five experts. According to the results of this study, EXPAND core dimensions include six aspects: 1. Executive (E), 2. X-Development (X), 3. Promotion (P), 4. Agreement (A), 5. Network of Occupation (N), and 6. Daily necessity (D). The degree of consensus among the six core dimensions ranges from .95 to 1. That shows a high level of expert consensus. Based on the results, the study provides suggestions for higher education admission and research as well.

Keywords: Higher Education, Admission, Marketization of Education, Low Fertility Rate, Degree of Consensus (D.C.)

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## **Introduction**

In order to eradicate hunger and poverty, countries around the world pay attention to the environmental, economic and social needs such as health, education, sanitation, energy, employment, infrastructure, climate change, ocean and environmental protection of all genders and ages. Hoping to establish a partnership of equality, peace, inclusiveness and sustainable development by 2030, the United Nations (UN) proposed 17 Sustainable Development Goals (SDGs) in 2015, which include 169 sub-goals. The development of educational quality has become a sustainable development project around the world in order to achieve Goal 4: "Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations, 2024).

There are 145 colleges and universities in Taiwan (Ministry of Education, 2024a). The Subparagraph 1 of Article 1 in University Act stipulates: "Universities shall have as their objectives conducting academic research, training and educating highly skilled people, enhancing culture, serving society, and boosting national development." And Article 2 stipulates: "In this Act the term, university, refers to a tertiary level educational institution that has been established in accordance with this Act and that confers bachelor's degrees and higher-level degrees" (Laws & Regulations Database of the Republic of China (Taiwan), 2019). Therefore, 145 colleges and universities must develop the functions of research, cultivation, service and promotion of national development in order to comply with the SDGs Goal 4 and comply with the spirit and provisions of the University Act.

However, statistics showed that Taiwan's fertility rate in 2023 was the lowest among the statistical subjects (CIA, 2024) and the birth rate has dropped sharply recently (Department of Household Registration of the Ministry of the Interior, 2024). The declining birthrate has led to a crisis in higher education admission, and many schools have even closed down (Chen, 2015). The Ministry of Education has disclosed the relevant information such as School under Early Warning and School under Special Guidance (Ministry of Education, 2024b). Under the influence of the marketization of education, students have more choices in school, and the admission competitiveness among higher education has also increased (Tan, 1998). Relevant empirical research has found that students or parents will evaluate the quality of education and their future. Field development, career development and school resource provision are listed as factors in school selection (Cheng, 2016; Ma et al., 2022; Shannon-Baker et al., 2020; Tang & Su, 2016;). It can be seen from this that Taiwan's higher education has faced many admission challenges due to the declining birthrate and the marketization of education. Chang (1999) suggested that the research results need to be consistent with the functions and goals of the university, and a complete system must be established. Therefore, a comprehensive analysis and research of what efforts are needed to solve the admission crisis in Taiwan's higher education have become important topics at present.

## **Literature Review**

### ***International Development Trends of Higher Education***

Countries in the world are interdependent and global (Tsai, 2008). It is very important to overview the international practices and to internalize them into suitable education policies (Wu, 2008). Therefore, the following will explore the connotations of educational indicators

and projects proposed by international organizations to realize the development trends of higher education.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) proposed Education for All (EFA) to emphasize fairness, accessibility, and affordable high-quality higher education. The relevant projects include linking vocational skills, providing digital learning courses and policies, providing equal STEM resources for women, strengthening cross-border cooperative teaching and research programs, and reducing gender or other barriers in education training, providing lifelong learning opportunities, developing Global Convention on the Recognition of Qualifications concerning Higher Education, and Qualifications Passport for Refugees and Vulnerable Migrants (UNESCO, 2016, 2020, 2023).

The European Commission promotes the European Higher Education Area (EHEA) through micro-credentials, European Universities initiative, European Students European Student Card Initiative to build high-quality, relevant, connected, and innovative European higher education (European Commission, 2023).

The World Bank (WB) found that people who receive higher education can help them to reduce poverty and improve the entire educational system. Those who receive higher education will have better social stability and higher citizen participation. The goals of higher education are as follows: Strategically diversified systems, Technology, Equity, Efficiency and Resilience (The World Bank, 2021).

The Organization for Economic Cooperation and Development (OECD) is committed to analyze higher education policies and systems and provides higher education policies through the Group of National Experts on Higher Education (GNE-HE). The OECD focuses on improving student employability, evaluating the appropriate allocation of higher education resources (such as funds, etc.), and reviewing of the higher education policies through external organizations (OECD, 2023).

The Higher Education Evaluation and Accreditation Council of Taiwan is responsible for planning and executing higher education evaluation. School governance and management, teaching and academic disciplines of teachers, learning effectiveness of students, social responsibilities and sustainable developments are included in the evaluation indicators (Higher Education Evaluation and Accreditation Council of Taiwan, 2023).

### ***The Admission of Taiwan's Higher Education***

The admission of higher education admissions in Taiwan can be divided into domestic, overseas and lifelong learning orientations. Domestic admission includes: (1) university admissions: Taiwanese students can take academic tests and select universities through special selection, test distribution, application for entrance, and Star Plan, etc. (University Admission Committee, 2024), and (2) four-year technical universities or two-year technical colleges admissions: Taiwanese students participate TVE Joint College Entrance Examination, joint registration and distribution, special selection, individual entrance admissions, etc. (Technical and Vocational Education Admissions Strategy Committee, 2024). After students entering the school, the students can transfer or have double major or take supplementary courses in accordance with the school regulations. The overseas admissions of Taiwan's higher education are independent admission, exchange students, personal selection, short-term study, college-affiliated Chinese centers, and overseas youth classes, etc. (Tsai &

Tang, 2023). Taiwan's higher education also has many lifelong learning admission projects, such as master's and doctoral degree courses, further education, and various credit courses, to meet the needs of various learners. Regardless of domestic, overseas and lifelong learning orientations, admission in colleges and universities must comply with the purposes of researching academics, cultivating talents, enhancing culture, serving society and promoting national development which are regulated in the University Act.

However, statistics from the CIA found that Taiwan’s fertility rate ranked as the last place among 227 subjects (CIA, 2024). The birth rate has dropped sharply, and it can be estimated that the number of undergraduate students will reach a new low in 2028 and 2040 (Department of Household Registration of the Ministry of the Interior, 2024). The Ministry of Education revealed the list of School under Early Warning and School under Special Guidance (Ministry of Education, 2024b), and some research has explored the closure of private schools (Lu, 2015; Lin et al., 2018). The Measures for Promoting the Merger of National Universities clearly stipulates that the admission rate is one of the conditions for the merger of national universities (Laws & Regulations Database of the Republic of China (Taiwan), 2019). It is obvious that the admission of higher education has impacted the existence of public and private schools.

### ***The Theories and Empirical Studies of Higher Education Admission***

Higher education admission strategies need to satisfy the needs of multiple parties, to maintain the quality of higher education, and to meet the social expectations. The Psychology can explore the mind, the Management can explore the executive patterns, and the Sociology can explore the context and expectations of society. Therefore, this study will be based on the theoretical and practical research in psychology, management, and sociology and researcher synthesized six core levels. The contents are as follows (Table 1 and Table 2).

Table 1: The Comparison Table Between Empirical Studies and Core Dimensions

<b>Field</b>	<b>The Admission Contents</b>	<b>Core Dimensions</b>
Psychology	In order to improve the admission effect, we could provide reinforcers and models(1) , conduct marketing through multiple coding principles(2), and meet the basic and growth needs of faculty and students(3, 4, 5, 6) to gain the recognition of the school (1).	agreement (1) promotion (2) daily necessity(3) x-development (4) network of occupation (5) executive (6)
Management	Higher education administrative units should establish core team (1) to manage admission plans, oversee the process, support every unit, develop the most marketable hooks (2), and link marketing elements to demonstrate the school's strength in admission (3).	executive (1) promotion (2) agreement (3)
Sociology	Higher education plays an important role in the social structure. Sociology theories emphasize the importance of resource assistance (1, 2), linkage to the job market (3), attachment and commitment goals, dedication and participation, and positive beliefs about the school (4), etc.	daily necessity (1) x-development (2) network of occupation (3) agreement (4)

References: Chang, 2004; Chiou, 2007; Chi & Su, 2006; Su & Chen, 2010; Hoffman & Maslow, 1996; Maslow, 1970; Ou et al., 2009; Uluçınar, 2021.

Table 2: The Definitions of Six Core Dimensions

Dimension	Definition
Executive (E)	The higher education units utilize scientific methods to manage admission strategies.
X-development (X)	The higher education units provide resources to meet the teaching, learning, and research needs of faculty, staff and students.
Promotion (P)	The higher education units manage marketing and promotion admission strategies and establish positive brand about the schools.
Agreement (A)	There are some hooks that enhance student, parents, volunteers, alumni, and enterprise to attend or contribute to the school.
Network of Occupation (N)	Multiple ways and people (such as teachers, alumni, senior, or enterprises, etc.) guide students' career development network. The higher education plans to assist students in constructing career goals, connecting career links, and cultivating skills during the study period.
Daily necessity (D)	The higher education supplies the financial support for students' daily life, the safety caring of the environment and campus inside and outside, and the interpersonal interaction assistance.

## Research Method

### *Mixed Research Method Approach*

This study aims to construct the core dimensions of admission strategies in Taiwan higher education through a mixed methods research approach. First, a literature analysis is conducted to understand the current situations of higher education admissions in Taiwan. Subsequently, core dimensions are generalized through psychology, sociology, and management. Finally, the research invites nine experts to supply quality opinions and invite five experts to conduct a quantitative analysis of the degree of consensus (D.C.) based on the EXPAND expert questionnaire (Likert 5 ranking scales) (Figure 1).

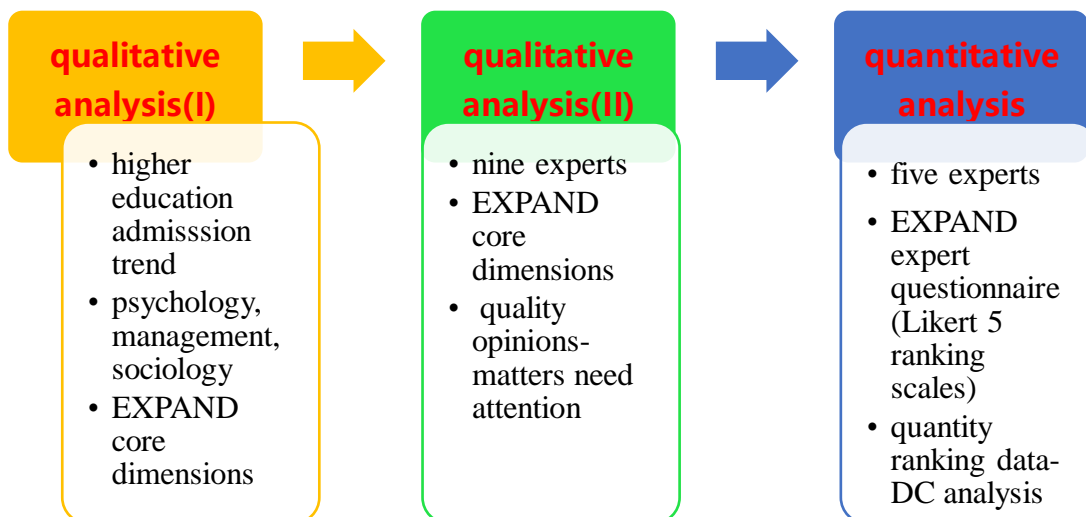


Figure 1: Research Procedure of Core Dimensions of Admission Strategies in Taiwan Higher Education

## ***Subjects***

This study invited 9 experts (professors from public and private education-related institutes, or administrative directors of higher education, or directors of the National Academy for Educational Research) to provide qualitative opinions on the core dimensions of EXPAND, and 5 experts completed the expert questionnaire for five-ranking scale (1. Delete, 2. Substantially revise, 3. Revise some text and keep it, 4. Revise little text and keep it, 5. Keep it without revision) and conducted the D.C. analysis.

## ***Data Analysis***

The D.C. analysis steps are as follows:

1. Calculate the average and standard deviation of the overall core dimensions of higher education admission and the six dimensions.
2. Calculate the degree of consensus(DC.):  $DC_j=1-CDI_j$ . If  $DC_j \geq 0.8$ , the dimensions can be retained or revised. If  $DC_j < 0.2$ , further discussion is needed to revise or delete according to expert opinions (Ye, 2009, pp. 147- 148). Consensus deviation index (CDI) is calculated as follows:

$$CDI_j = \frac{S_j}{\max\{\bar{X}\}}$$

## **Results**

This study conducted mixed research method to explore the core dimensions of Taiwan's higher education admission strategy. The results of the qualitative and quantity analysis will be described below.

### ***The Qualitative Analysis Results (Matters Need Attention)***

This study invited 9 experts to provide qualitative descriptions of the core dimensions of higher education admission strategy and proposed four matters need attention.

#### ***1. Higher education admission strategies should focus on the EXPAND dimensions.***

In this study, 9 experts unanimously consider EXPAND six core contents as the higher education admission strategy, including: (1) Executive (E); (2) X-development (X); (3) Promotion (P); (4) Agreement (A); (5) Network of Occupation (N); (6) Daily necessity (D). The definitions of the core dimensions are reached to the consensus without revisions (see Table 2-2).

The EXPAND is compiled from the first English letter of six core dimensions. It is expected that the six core dimensions will be used to assist the implementation of higher education admission. The feedback from experts (numbers B and D) indicate that the research shows significantly practical contribution (for example, expert B described that "*The research topic is important.*" and "*The research purpose is appropriate and can be expected to contribute*"; expert D described that "*The topic has important policy value and practical implications*"). Therefore, higher education admission strategies should pay attention to the work of the six dimensions-EXPAND and consider how the work can be promoted and implemented.

2. *Each dimension of EXPAND is both independent and closely related.*

Nine experts in this study unanimously agreed the EXPAND six core dimensions. Therefore, higher education admission work needs to pay attention to the planning and execution of them. Especially expert B mentioned: "...maybe x-development and network of occupation are similar to each other. Do they need to be distinguished? ...." That reminded us to continue explore the six core dimensions. It is possible that we plan to improve executive works so that each department pays more attention to the curriculum development (enhance x-development), training content (enhance network of occupation), and marketing (enhance promotion) etc. and vice versa. Therefore, each of the six core dimensions should be paid attention to so that other core dimensions will be induced.

3. *EXPAND rely on every units' division and cooperation.*

Experts attach great importance to the division of responsibilities and the cooperation among units in the school (for example, expert F described "*What are the admission missions of administrative unit?*"; and expert I described "*There are career guidance units in the school*"), and that reminds us to pay attention to the division responsibility and cooperation. For example, every department in the academic unit must develop the curriculum (including administrative and non-administrative teachers), the news center is in charge of promotion and shape the positive school images, the career guidance center must do the students' career training, the school security center must keep the school safety and comfort, and the volunteers, enterprise, alumni must supply some resources to support the school. Only by mutual support and assistance can achieve higher education admission goals.

4. *Follow-up studies on the EXPAND implementation are needed.*

Experts in this study attach great importance to the concrete executable work projects of EXPAND. For example, expert C described "*What are the detailed indicators of each dimension?*" and that remind us to study and explore the implementation projects in the future.

### ***The Quantitative Analysis Results***

This study invited 5 experts to rank the questionnaire and conduct D.C. analysis. The analysis results from Table 3 show that the consensus analysis results of this study, the averages of the executive, x-development, promotion, agreement, network of the occupation, and daily necessity are 4.80, 4.75, 5.00, 4.80, 4.75 and 5.00 respectively, the standard deviations are .20, .25, .00, .20, .25 and .00 respectively, and the consensus levels are .96, .95, 1.00, .96, .95 and 1.00 respectively. All higher than the standard value of .80. Therefore, the six core dimensions of this study are above .80. Therefore, it shows that experts have a high degree of consensus on the six core dimension of the higher education admission strategy.

Table 3: The Core Dimension Ranking Analysis of the Higher Education Admission

Item dimension	Mean	SD	DC	Results		
				Retain	Revise	Delete
Executive	4.80	.20	.96	V		
X-Development	4.75	.25	.95	V		
Promotion	5.00	.00	1.00	V		
Agreement	4.80	.20	.96	V		
Network of the occupation	4.75	.25	.95	V		
Daily necessity	5.00	.00	1.00	V		

## Conclusion

The purpose of this study is to construct the core dimensions of admission strategies in Taiwan's higher education through a mixed-methods research approach. We construct key components of higher education admission strategies through reviewing and converging the literature. This is further validated through qualitative and quantitative analysis by nine experts. The results reveal six core dimensions in Taiwan's higher education admission strategies: Executive (E), X-development (X), Promotion (P), Agreement (A), Network of Occupation (N), and Daily necessity (D). Four matters need attention are proposed, including Higher education admission strategies should focus on the EXPAND dimensions, Each dimension of EXPAND is both independent and closely related, EXPAND rely on every units' division and cooperation, and Follow-up studies on the EXPAND implementation are needed.

## Recommendations

*1. Higher education admission strategies should pay attention to six core dimensions.*

Through the mixed method analysis of this study, it found that higher education admission strategies should pay attention to six core dimensions. The principal is the leader of the school (Chen, 2021). In executive management, there is often lack of executive commitment to change. Problems such as resistance and good opinions failure to gain the commitment and trust of executive managers (Mukwawaya et al., 2022). Therefore, in order to enable principals to make better decisions, it is recommended that principals establish educational think tanks to plan, oversee, communicate, and coordinate the higher education admission strategies.

*2. The multi-faceted efforts on curriculum and activities.*

In order to enhance the recognition of staff and students with the school, it is suggested to provide abundant learning software and hardware resources, employ professional teachers, provide career training, build a safe and convenient school life, and add school characteristics and development content to the students' curriculum and activities. For instance, the introduction and transcription of the school song for music students, and the SWOTS technology used to analyze the current admission situation and future response of the education department, etc. Through the multi-faceted efforts, the faculty and students can learn about the school from the curriculum and activities, identify with the school and plant the seeds to contribute.



*3. The follow-up studies are needed.*

In the future, we can conduct a research on the practical operation work items of these dimensions, and construct detailed implementation indicators through quantitative (e.g., AHP, CFA, etc.) and qualitative analysis. In addition, how to cultivate the most critical core dimension work items due to limited resources and time.

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