A study of the construction of university sports team achievement index and the achievement evaluation

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Outline

- Introduction

- Method

- Results and Discussion

- Conclusions

Introduction

1, background 1/2

In Taiwan the number of universities from 1990 to 123 schools, the development of the 150 schools in 2000, until 2011, the number of universities has reached 171 (Ministry of Education, 2011).

Universities must adopt a more positive attitude in order to recruit top athletes enrollment attending (Wang , 2009).

The academic performance of school sports teams, a positive effect on school awareness

1, background 2/2

sports team management performance was seldom (Lin , 2002).

Past performance evaluation use in the field of sports industry, business and professional games .
(Fizel & D'Itri, 1997; Leibenstein & Maital, 1992; Mizak & Stair, 2004; Sexton & Lewis,, 2003).

Based on this, from the perspective of the sports team cut through the construction of sports team performance indicators and to assess the performance of universities at all levels of sports teams in 2009-2011.

2, Purposes

> The purpose of this study was to understand the current status performance of the 2009-2011 university sports team management, construction the Performance Evaluation indicator of the university sports team, assess the university sports team performance and analysis the impact of sports team performance factor.

3, study problems

1. Understand the current status of the university sports team in Taiwan？

2. To construct the performance evaluation indicators of the university sports team？

3. To view the university sports team performance evaluation indicators？

4. University sports team performance evaluation analysis and impact performance factors?

Research methods

1, Research methods

Construction Performance Evaluation of a university teams index

➢ Literature and document analysis

➢ Delphi expert survey method
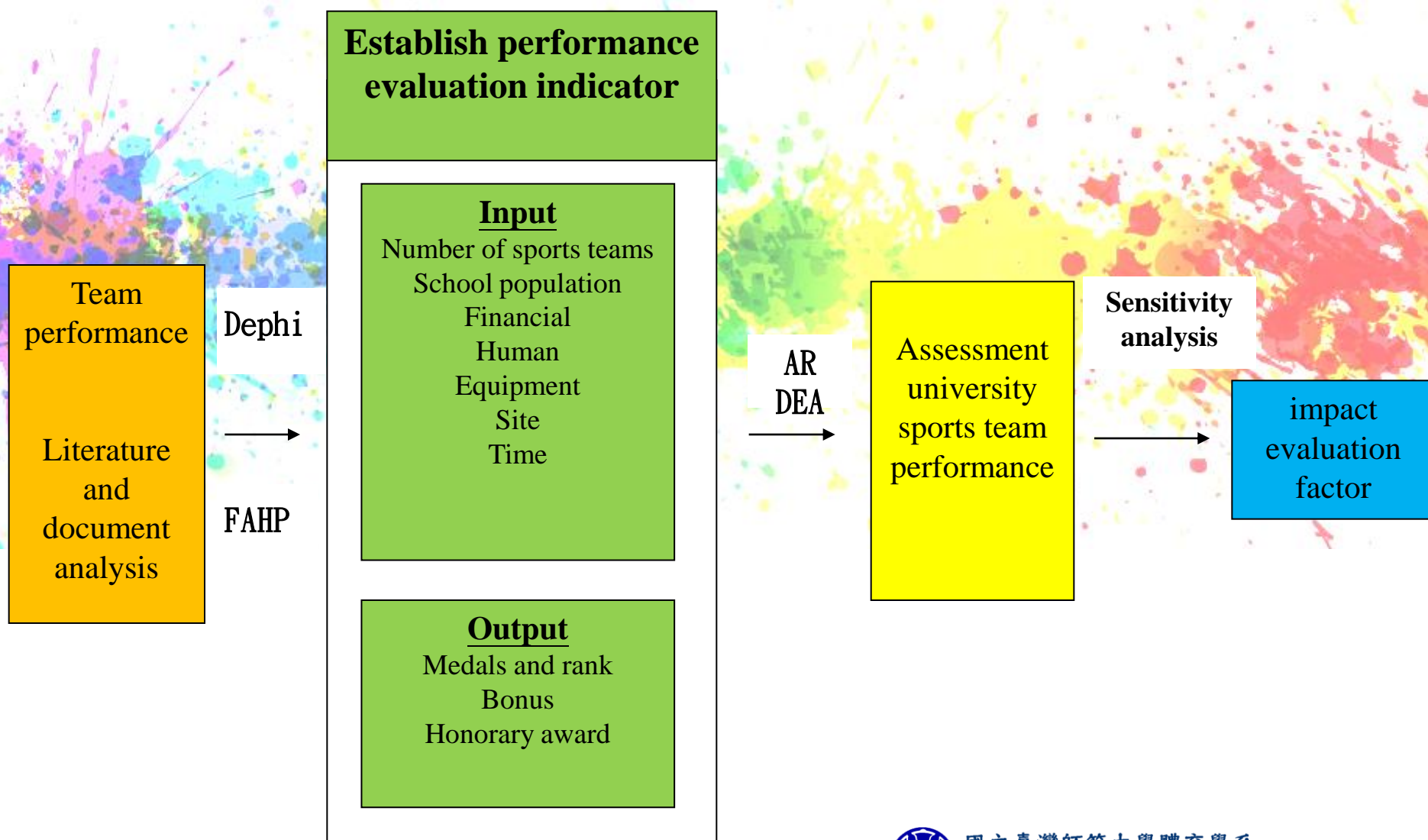
➢ Fuzzy Analytic Hierarchy Process (FAHP)

Evaluation the university sports team performance

➢ Assure regional data envelopment analysis (ARDEA)

➢ The difference between the variables and sensitivity analysis

2, study object (27 National schools, 17 private schools)

No.	name	Sport teams	No.	name	Sport teams
1	NTPEC	56	23	FCU	19
2	NSU	55	24	NTUE	19
3	FJU	39	25	LYIT	19
4	NTU	37	26	SCU	18
5	CCU	36	27	NCCU	18
6	TKU	35	28	NPUST	18
7	NTNU	32	29	CYU	18
8	NTIPE	31	30	KMU	18
9	NKU	28	31	NCTU	16
10	NTAU	24	32	NKUST	16
11	UST	24	33	NKMU	16
12	CYCU	23	34	CNPSU	16
13	NCU	22	35	NTEU	16
14	NSYEU	22	36	CMU	16
15	MCU	22	37	NTUST	16
16	NDU	21	38	IIU	15
17	NCNU	20	39	NTHU	15
18	NCKU	20	40	SAU	15
19	AU	20	41	FEU	15
20	NCUE	20	42	NPEU	15
21	NHUST	20	43	NKFUST	15
22	NYUST	19	44	LTUST	15

3, Research framework

Team performance

Literature and document analysis

Dephi

FAHP

Establish performance evaluation indicator

Input
Number of sports teams
School population
Financial
Human
Equipment
Site
Time

Output
Medals and rank
Bonus
Honorary award

AR
DEA

Assessment university sports team performance

Sensitivity analysis

impact evaluation factor

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4, Preparation of research tools 1/3

(1)A research tool the process of compiling

The preparation of university sports team performance evaluation indicators expert review of the questionnaire

Collect Lin (2002), Wu (2011), Sun & Kang (2005), Kang & Huang (2004), Chen (2009), Chen (2007), Yang (2002a), Yang (2002b), Yang (2003), Zheng & Lu (2006), Zheng & Tsai (2005), Chellandurai & Danylchuk (1984), Onifade (1993).

(2)The content of tools prepared

Performance Evaluation is divided into two levels of input and output, part of the input level is divided into 7 sub-indicators; at the output level part, is organized into 3 sub-indicators.

4, Preparation of research tools 2/3

(1) The tool test

(A) Delphi expert survey review
Conducted a survey between January 10, 2012 to February 10 select the

5 experts for the 2 relevant experts and scholars in the field and 3

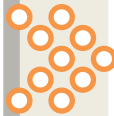university sports team in 2 round charge questionnaire review.

4, Preparation of research tools 3/3

(B) level analysis of the relative importance of evaluation
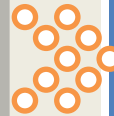
Survey period 11 February to 10 March 2012, so this questionnaire is expected to

select the 8 experts in the field, fill in a university or college sports team

performance evaluation indicators "dimensions of the relative importance of

evaluation table.

5, Data processing

Delphi expert survey **Consistency**	Fuzzy AHP: Expert **Choice 11.5 AHP**	SPSS18.0	DEA-Solver

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Results and Discussion

1, The status of university sports team in Taiwan

2, Construction Performance Evaluation of university sports team

3, Review university sports team performance evaluation indicators

4, Affect university sports team performance factor

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1, The status of university sports team in Taiwan 1/3

The status of sports team average in 2009-2011 **(input)**

Type of sport	14.5	Number of part-time coach	5
Sports team number	22.9	Standard number of training venues	25.2
the number of athletic	312.8	Training ground number	15,056.9
Training of funding	2,004,605.4	The total number of schools	12,400.9
Funding of the game	1,952,069	The number of sports-related departments	716.9
Grounds maintenance	5,527,659.3	the number of Non-sporting related departments	12,022.4
Equipment purchase	1,774,659.9	teams age	40.7
Coach appointment	686,735.8	sports-related weekly training hours	13.7
Number of full-time coach	17.5	Non-sports related weekly training hours	6.2

The status of sports team average in 2009-2011 **(output)**

The total number of University Games medals	19.3
The total number of University Games gold medal	6.3
The total number of University Games Silver medal	6
The total number of University Games Bronze medal	5.8
Total score of the sports league	11.6
The total prize money of sports league team	497,422.7
University Games players' personal total prize	668,977
Government and the relevant units supplement	915,671.7
Merits and awards	70.9
others	2.8

1, The status of university sports team in Taiwan 3/3

current status of the university sports team trends in 2009-2011

Increased year by year
The number of team
Training of funding
Grounds maintenance fee
Equipment purchase fee
Coach appointment fee
The total number of University Games medals
The total prize money of sports league team
Government and the relevant units supplement

"**Sports grounds maintenance fee**" increase rate is more !!

(1) Delphi

By the literature and documents brought together 31 items (7 input level, 3 output level), after two rounds of expert survey, a total of 28 questions of experts asked the status of up to the stable distribution, were put into18 questions and outputs of 10 questions (6 input level, 3 output level).

(2) FAHP

With Expert Choice 11.5, the overall CI and CR value of consistency ratio shows that the experts interviewed for the consistency of high-index weights .

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(3) The main level of fuzzy weight

project	AHP		FAHP	
	weight	rank	weight	rank
input				
Number of sports teams	.076	6	.083	5
budget	.189	3	.186	4
Human Resources	.187	4	.197	3
Space and equipment	.248	1	.243	1
School population	.084	5	.080	6
time	.216	2	.210	2
output				
Medals and rank	.507	1	.516	1
Bonus	.334	2	.330	2
Honorary award	.160	3	.155	3

(4) The secondary level of fuzzy weight

rank	Input dimensions	Output dimensions
1	Number of full-time coach	The total number of university games gold medal
2	Standard of training venues Block	Sports league team bonus
3	Training ground	Government and the relevant units of reward

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(A) input and output analysis

• Data envelopment analysis with the requirements had expansionary.

• In this study, to achieve this requirement, thus using the Pearson related analysis method, in order to confirm the inputs and outputs, the presence of expansionary.

• The 2009-2011 sports team performance evaluation indicators to delete a total of 8 inputs and 2 outputs to retain the 10 input and 8 output indicators.

(B) input and output regression analysis

Banker, Charnes and Cooper (1984) further proposed a number of DMU of the input and output number and the more than three times, the analysis of the reliability of the results with the highest interpretability.

Backward elimination method, delete the lowest value close to 0 inputs and outputs of the project, a total of 6 steps, to retain a total of 8 inputs and 5 outputs.

Input-X1: type of sport;   X2: sports team number

X3: the total number of athletic X4: funding of training;

X5: funding of the game;   X7: equipment purchase fee

X8: coach appointment fee   X9: The number of full-time coaches.

Output-Y1: University Games medals

Y2: University Games gold medal

Y3: University Games silver medal

Y4: University Games bronze medal

Y5: sports league points.

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(1) AR / DEA model performance evaluation

The performance of the 2009-2011 AR / DEA mode of the national colleges and universities in Sports on behalf of the team learned that the A02N, A05N, A06N, A09N, B01N and 5 schools to maintain the full efficiency for three consecutive years of efficiency value of 1.

(1) AR / DEA mode

For three consecutive years in public schools part of the A02N, A05N, A06N, B01N and other four schools achieved complete efficiency.

Four schools in the part of private schools, A03P, A04P, B02P, B07P, etc. for three consecutive years in complete efficiency.

Overall, the national schools get better efficiency value performance evaluation than private schools

- National school operating sports-related departments is better than non-sports related departments.

- Private school operating non-sports related departments is better than sports-related departments.

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(2) The difference between the variable analysis

Performance Evaluation of 2009-2011 university sports team proposed to **reduce the input part** of the **equipment purchase fee** and **coach appointment fee** .

Increase the output part of performance evaluation indicators in the 2009-2011 university sports team in the proposed to increase the total number of medals in university games .

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(3) The sensitivity analysis

The sensitivity analysis is mainly by the increase or decrease the input and output, changes in the efficiency value of the assessment unit (Huang, 1993; Ping, 2005; Wu, 2008).

The 2009-2011 national university sports team performance evaluation AR / DEA model, the input will affect the overall efficiency of the '' equipment purchase fee '' as a strong indicator. The output part " the total number of medals in university games " is a strong indicator.

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(3) The sensitivity analysis

Inputs: the total number of sports teams as a vulnerable index, representing delete the entire project, assess the efficiency values for the performance of the assessment unit will not be much change .

Suggested that schools can establish a sports team retreat market mechanism.

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4, Evaluation university sports team performance

(3) The sensitivity analysis

Outputs: The sensitivity analysis showed that the University Games total medals was the most important output indicators'', but FAHP expert find "University Games total gold medals is the most important output indicators. It's differences between the two.

Recommends that the university sports team managers in the business of the school sports teams, set main goals in **University Games total medals.**
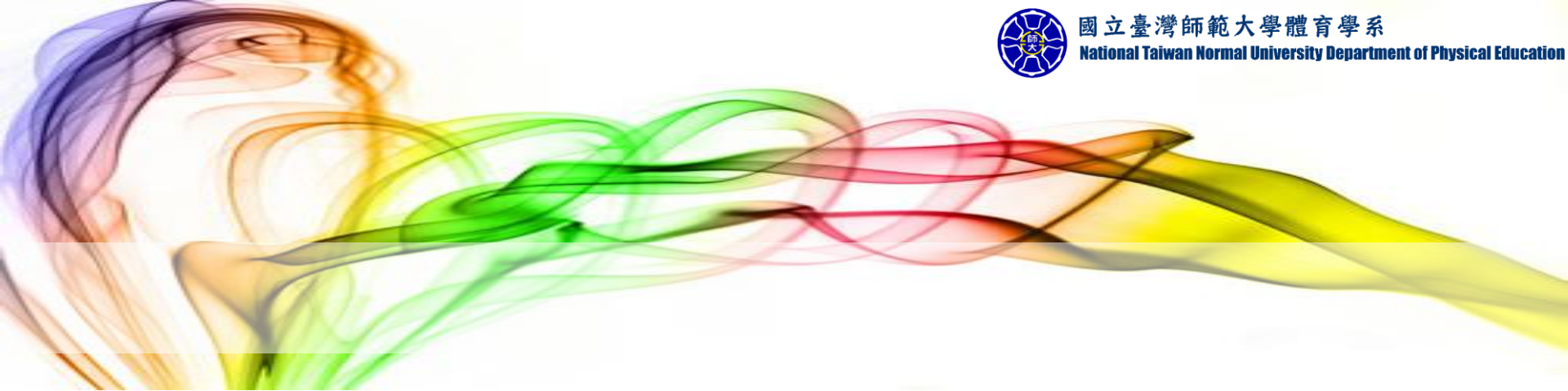
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Conclusions

- The total number of training budget and site maintenance costs negative changes increased year by year, and to strengthen the control site maintenance costs.

- Performance Evaluation of university sports team input level: the number of full-time sports coach as the main indicator, the output level: the total number of university games gold medal as the main indicators.

- The university sports team performance evaluation indicators include input level of the 8 indicators, output level 5 indicators, a total of 13 indicators, and to fight for the honor-oriented.

- Overall performance evaluation, **national university sports team had better performance**; national universities in the business of sports-related departments; private universities operation of non-sports related departments sports team had better performance.

Thank for your attention

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-I will play a video introduction to Taiwan-