Applying market segmentation theory to student behavior in selecting a school or department

Yu-Fen Chen,   Chin-Hui Hsiao
Chihlee Institute of Technology, Taiwan

Abstract

Background: Because of the educational reform and decreasing birth rate in Taiwan over the past 20 years, higher technological and vocational Education (TVE) in Taiwan faces a severe student recruitment competition. Dailey (2007) indicates the need to develop marketing strategies in higher education is evident. TVE institutes are beginning to recognize the need to become more businesslike and the value of marketing in achieving a competitive advantage (Ewing & Napoli, 2005).

Aims: This study, adopts marketing segmentation theory to find the major factors students emphasized when selecting a school or department.

Sample: First of all, the researcher divided the country into three major areas: Northern, Central, and Southern. Two TVE schools were chosen randomly per area, with 200 freshman students from each school respectively. One thousand two hundred TVE freshman students in Taiwan were surveyed in this study.

Method: The collected data were analyzed using cluster and discriminate analyses.

Results: The result indicated that 4 factors, "reputation and quality", "function and convenience", "emotion and meaning", and "scale and structure", were considered most important by students. The students were categorized into 3 groups: "career oriented" students (50.42%) considered "reputation and quality" as most important factor, "emotion oriented" students (19.71%) concerned most on "emotion and meaning", and "environment oriented" students (29.87%) concerned most on "function and convenience" and "scale and structure".

Conclusion: Based on the results, the researcher made the following recommendations which may serve as critical references for school administrators and policy makers while making their recruitment strategies: 1. Investigate the evaluation standards of how students choose their schools. 2. Reinforce school's internal marketing. 3. Improve school's image. 4. Establish a specific department responsible for recruiting students.

Keywords*: market segmentation, cluster analysis, discriminate analysis*

以市場區隔理論探討學生之校系選擇行為

陳瑜芬、蕭晴惠〔台灣〕

摘要

背景：為因應政府對技職教育市場的大幅開放，和出生率的逐年降低，技職教育體系如何以更積極的態度以追求永續的經營，如何活用企業行銷管理的手法以經營校務，這些議題均已成為當前各校所面臨的首要課題之一。

目的：本研究旨在由行銷學中的「市場區隔」出發，探討技職教育體系新生在入學時選擇就讀校系之資訊來源及主要考量之因素為何。

調查對象：首先將台灣地區依地理位置略分為北、中、南三區，每一區隨機抽選二所技職校院，每所學校再隨機抽取200名四技一年級新生為樣本，共有1200位學生為本研究之問卷受試者。

調查方法：以研究者自編之問卷做為研究工具，就所抽樣的學生進行問卷調查。

調查結果：研究結果顯示新生在選擇校系時的考量因素主要有四大構面：聲望與品質、機能與便利、情感與意義、和規模與結構；繼之以市場區隔理論為基礎，進行集群分析和區別分析，所得結果將學生區分為三個集群：「前途型」學生最重視「聲望與品質」因素（佔總樣本的50.42%）；「情感型」學生最重視「情感與意義」因素（佔總樣本的19.71%）；「環境型」學生則較重視「機能與便利」與「規模與結構」因素（佔總樣本的29.87%）。

總結：根據研究結果提出下列建議，以供各校擬定招生策略之參考。1、調查學生校系選擇之評估準則。2、強化學校內部行銷。3、提昇學校形象行銷。4、成立招生行銷專責單位。

關鍵詞：市場區隔、集群分析、區別分析

Introduction

Higher education in Taiwan has seen a drastic growth. According to information from the Ministry of Education, in 1992, prior to educational reform, there were only fifty colleges and universities (not including junior colleges) in Taiwan, and the number went up to 163 in 2008 (http://www.edu.tw/statistics/index.htm). On the other hand, Taiwan experiences continuously declining birthrate (http://sowf.moi.gov.tw/stat/week/week 9804.doc), comparing to ten years ago. The education market has slowly shifted from a "seller's" market (school-oriented) into a "buyer's" market (student-oriented) today. TVE institutions now face the overwhelming competition and need to take a more aggressive stance in recruiting students.

The development of educational institutions in Taiwan is very rarely linked to business management. For many people, a "school" is a non-profit entity that has deep social implications. This view makes it almost impossible to use the theories of business management to run a school. However, facing intense competition, the application of business management techniques on operating TVE schools in Taiwan should be one of the most important issues at hand. Maringe (2005) indicated marketing in higher education continues to be based on imported wisdom from the business sector. Hence, this study adopts the target market segmentation to explore the factors TVE students emphasized when selecting a school or a department. Cluster and discriminate analyses were applied to the collected data to segment the student market. The results from this study can assist schools in deciding their target market, drawing up concrete and effective marketing strategies to face competition and challenges from local schools and international schools all over the world.

Literature Review

I. Changes in the Education Market

The government's policy of widespread senior high school and university establishment has led to a drastic increase in the number of higher education institutions, both public and private. According to statistics from the Ministry of Education, the number of colleges and universities in Taiwan started increasing in 1994. As of 2008, there were 163 institutions. The landscape of higher education is more competitive now than ever before (Moorer, 2007). With this drastic increase, competition between these institutions for student recruitment stiffened. Consequently, there is a real necessity to study the status and characteristics of the recruitment market segment for colleges and universities.

In addition, comparing to 10 years ago, the birth rate in Taiwan is less than half in 2008. Fewer and fewer people will go to school in the near future. (Hsu, Chou, & Shen, 2002). From 2002, the total TVE recruitment target exceeded the number of graduates from vocational high schools (it is the major student source for higher TVE institutions) for the first time. Under this supply exceeding demand situation, these schools are not able to recruit enough students and this problem is becoming more serious. Dailey (2007) indicates the need to develop marketing strategies in higher education is evident. Schools are beginning to recognize the need to become more "businesslike" and the value of marketing in achieving a competitive advantage (Ewing & Napoli, 2005).

II. Definition of Market Segmentation

The market segmentation concept was presented by Wendell in 1956. Since then it has been used widely in corporate operations. Wendell believed that market segmentation uses market demand as its development foundation and makes realistic and reasonable adjustments to product as well as marketing activities to meet the different needs of different consumers.

Kolter (2000) defined market segmentation as confirming and describing different buying groups and coming up with the most effective products and marketing mixes to satisfy the needs of different groups. Perreault and McCarthy (2005) believed that market segmentation combines similar market groups into one market. Groups with similar characteristics will have similar responses to specific market mixes. This allows companies to implement marketing strategies more effectively. Bearden, Ingram, LaForge (2003) defined market segmentation as dividing the market into smaller markets according to similarities in behavior, desires and buying behavior in potential customers. Its' goal is to further interpret the differences between consumers with similar characteristics and turning these difference into an advantage.

To sum up the above viewpoints, the researcher believed that market segmentation refers to the principle that individuals or groups have one or many similar characteristics which lead to the same product demand. Companies categorize consumers according to their different demands, using differentiated products to satisfy different demands.

III. Base and Steps of Market Segmentation

Peter and Donnelly (2000) indicated that the segmentation bases applied by market segmentation are as follows:

1. Geographic segmentation: refers to geographical variables used as bases for market segmentation, e.g. state, country, area, climate, etc.

2. Demographic segmentation: uses basic demographic statistics to segment the market, e.g. gender, age, income, career, educational level, race, etc.

3. Psychographic segmentation: market is segmented according to lifestyle, interests, opinions, personality, and values.

4. Behavioral segmentation: Market groups are formed according to the consumers' knowledge, attitude, and utilization or response. In other words, purchasing timeframe, utilization rate, use situation, degree of loyalty, and others.

Kolter (2000) divided the market segmentation process into three stages: 1. survey stage: during this stage, gather information about consumer motivation, attitude, behavior, and other information through interviews, surveys, and other methods for analysis; 2. analytical stage: use factor analysis to extract a direction and then use cluster analysis to segment the market; and 3. planning stage: use the cluster analysis results to analyze demographics, behavior, and attitudes further and name each cluster according to these characteristics. Yu (2001) pointed out that market segmentation should adhere to the following procedures: 1. list usable segmentation variables; 2. decision making procedure of customer analysis; 3. use segmentation variables to search out segments; 4. describe the characteristics of each segmentation

variable; 5. evaluate each market segment; and 6. choose a target market. Peter and Donnelly (2000) divided the market segmentation process into six steps: 1. analyze current trends; 2. know the demands of the consumers; 3. use appropriate aspect to segment the market; 4. decide product positioning; 5. decide market segmentation strategy; and 6. come up with marketing mix strategy.

The study subjects were freshman students at TVE institutions. To understand the reasons behind selecting the institutions at which they now study, the researcher counted on the market characteristics and decided to adopt a market segmentation procedure similar to the one presented by Kolter (2000) to search for various segments in the education market.

IV. Methods of Market Segmentation

Based on the study of Wind (1978), market segmentation could be divided into four methodologies:

1. A priori segmentation: When using this method, the researcher must decide on what segmentation basis to use even before conducting any research on the market. After the market is segmented, segmentation research is conducted once again to confirm the market size, demographics, psychographics, and others.

2. Post hoc segmentation: Relevant information should be gathered and through special research methodologies (like cluster analysis) to find the level of similarity among the test subjects in terms of segmentation variables for segmentation. This is to affirm the number and nature of the segmentation; the segmentation variables frequently used by this methodology include lifestyle, demand attitude, pursuit of benefits, etc.

3. Flexible segmentation: This method makes use of computer simulation combining comprehensive analysis and the selection behavior of consumers; many cross-segmentation are developed through this method. Each segment includes some consumers who exhibit similar reactions towards the product tested. Flexible segmentation allows the business owner to understand the reaction consumers have towards different products; it is a characteristic none of the two prior methods have.

4. Component segmentation: This method was developed through comprehensive analysis. Its greatest difference with flexible segmentation lies in the fact that it includes individual and product characteristics at the same time. This is why it has a double-tiered function of segmenting and predicting the market.

To explore how to operate TVE institutions for the intense market competition, this study was conducted to find the major factors students emphasized while selecting a TVE school or department. Hence, it is appropriate for this study to adopt post-hoc segmentation, using cluster analysis to study the factors considered by students when choosing a TVE institution to conduct market segmentation.

Research Methodology

In this study, the researcher adopted the target marketing viewpoint to explore the factors considered by TVE freshman students in choosing a school. One thousand two hundred TVE students were surveyed and cluster and discriminate analyses were conducted to find the market segments.

I. Survey Subjects

The study population was freshman students in four-year programs at TVE schools in Taiwan. First of all, the researcher divided the country into three major areas: Northern, Central, and Southern. Two TVE schools were chosen randomly per area, with 200 freshman students from each school respectively. A total of 1200 students were the subjects of this study.

II. Research Instrument

To explore the factors considered by TVE freshman students in choosing a school, the researcher synthesized related literature, interviewed 2 acknowledged experts in two fields, education and marketing, respectively (total in 4 experts), and collected 10 students' opinions to come up with a self-developed questionnaire as the research instrument. Two experts were well-known scholars in universities and the other were officers of Ministry of Education. The questionnaire included of two parts: the first part consisted of the factors TVE freshman students consider when choosing a school. The second part consisted of personal information including school area and sex type.

III. Pre-testing and Credibility/Validity of the Questionnaire

To establish the credibility and validity of the research instrument, the researcher first designed the questionnaire and tested it on 200 randomly chosen TVE freshman students. One hundred seventy-two preliminary questionnaire samples were collected. Eighteen were invalid. One hundred fifty-four valid samples underwent data analysis. To establish the questionnaire's credibility and validity, the

researcher used item analysis (shown in Table 2), Cronbach's α credibility analysis (shown in Table 3), and factor analysis (shown in Table 4). There were originally 22 items in the questionnaire and all items with significant P values were retained through item analysis (shown in Table 2). Four factors were generated through factor analysis (with a factor load of 0.4 as standard) (shown in Table 4). These factors were termed "reputation and quality," "function and convenience," "scale and structure," and "emotion and meaning." The α coefficient for each factor was above 0.7 and reached 0.8015 for the questionnaire as a whole (shown in Table 3). Hence, the results showed that the questionnaire is credible and valid. Furthermore, the researcher submitted the questionnaire to four experts in this field to confirm it again. The final draft was prepared after following their recommended revisions.

Table 2 Item analysis of Questionnaire

Question number	Critical Ratio	P-value	Pearson relevant coefficient	P-value
1	13.549	.000	0.607	.000
2	11.647	.000	0.655	.000
3	13.682	.000	0.709	.000
4	12.592	.000	0.657	.000
5	12.172	.000	0.727	.000
6	14.194	.000	0.726	.000
7	16.104	.000	0.718	.000
8	12.592	.000	0.653	.000
9	16.194	.000	0.785	.000
10	14.294	.000	0.754	.000
11	16.845	.000	0.728	.000
12	14.362	.000	0.763	.000
13	13.841	.000	0.687	.000
14	12.270	.000	0.721	.000
15	12.623	.000	0.701	.000
16	12.876	.000	0.718	.000
17	11.984	.000	0.687	.000
18	14.195	.000	0.645	.000
19	13.342	.000	0.783	.000
20	13.936	.000	0.704	.000
21	9.641	.000	0.654	.000
22	14.462	.000	0.750	.000

Table 3 Credibility Analysis of Questionnaire

Factor	α Coefficient	Question number
Reputation and quality	0.8421	1, 2, 8, 9, 12, 15, 18
Function and convenience	0.8754	3, 4, 5, 16, 17, 20
Emotion and meaning	0.7691	6, 13, 19, 21, 22
Scale and Structure	0.7821	7, 10, 11, 14
Overall questionnaire	0.8015	

Table 4 Factor Analysis of Questionnaire

Topic	Factor load value	Eigen Values	% of Variance	Cumulative % of Variance
Reputation and quality				
1. reputation and reviews	0.805			
12. graduates' career prospects	0.772			
18. acceptance grade of joint	0.707			
college entrance exam	0.659	6.818	17.912	17.912
2. name recognition	0.591			
15. program design and	0.512			
course schedule	0.478			
9. faculty				
8. facilities and equipment				
Function and convenience				
3. transportation convenience of school location				
4. distance of school from home	0.757			
5. living functions of nearby areas	0.691			
	0.625	4.751	15.751	33.663
16. amount of scholarships provided	0.531			
17. quality of dormitories	0.463			
20. amount of tuition	0.452			
Emotion and meaning				
22. has special feelings towards the school/ department				
6. the level of the school's openness in managing its students	0.709			
	0.592			
	0.517	3.814	12.624	46.287
19.results of school promotion	0.449			
13. level of activity among the school's extracurricular groups	0.440			
21. it matches my religious beliefs				
Scale and structure				
11. size of school area	0.581			
10. landscape of school grounds	0.532			
	0.435	3.122	8.159	54.446
14. ratio of male and female students	0.412			
7. size of library collection				

IV. Data Collection

The survey was implemented on November 2006. According to the random number table, the researcher first randomly chose two TVE schools for each of the areas (Northern, Central and Southern). A total of six schools were chosen. After getting the teachers' permission, the questionnaires, with a detailed explanation were sent to the school via registered mail. A teacher at each school was requested to distribute the questionnaires. The researcher also provided contact information for teachers in case of questions regarding the questionnaires. Teachers that had been requested to distribute the questionnaires sent them back after three weeks in self-addressed return envelopes provided by the researcher.

The study distributed a total of 1200 questionnaires. One thousand six of them were returned. Deducting 62 invalid samples, a total of 944 valid samples were received. The valid return rate is 78.67%. Five hundred seventy-four samples were received from male students and 370 samples from female students (shown in Table 1).

Table 1 Sample distribution

Area	Original number distributed	Actual number returned	No. of valid questionnaire	Sex	
North	400	364	324	Male	574
Central	400	314	300	Female	370
South	400	328	320		
Total	1200	1006	944		

V. Data Analysis Methods

After the questionnaires were collected, the researcher encoded the questionnaires and applied statistical analysis methods as follows:

1. Descriptive statistics: Analysis was done to show the sample distribution, percentage distribution, average, and standard deviation of the subjects' answers.

2. Cluster analysis: Cluster analysis was performed on the four factors, considered by TVE freshman students when choosing a school/department, in order to distinguish a different segment.

3. Discriminate analysis: The study applied discriminate analysis and conducted examination of the cluster division results. Lateral cluster analysis was then used to categorize the students into various cluster groups; this was related to the examination of the segment's stability.

Analysis Results

I. Basic Analysis of Factors Considered for School Selection

Table 5 shows the level of each factor aspect considered by freshman students when choosing a school/department. The factor with the highest average was "reputation and quality" with a score of 3.720. The rest in descending order were as follows: "function and convenience," 3.302; "emotion and meaning," 3.102; and "scale and structure", 2.868. The results showed that when students choose a school or department, their priority for consideration is the school's reputation within the society and the quality of its facilities and equipment, faculty, and program design. In comparison, students

do not care so much about the size of the school grounds, the landscape, the ratio between male and female students, and other aspects of the "scale and structure" factor.

In terms of individual questions, "the careers of the graduates" ranked at the top. Students choosing to study at TVE schools obviously cared about their career prospects after graduation. Second in line was "various living functions of the areas surrounding the school;" administrators in TVE institutions should give this ranking a lot of thought. Administrators may think that fine equipment, a great faculty and beautiful campus and landscapes should be able to attract students to come and study. This was not really so because the beat of modern living is fast, information comes from all over and the convenience afforded by the surroundings affects the daily needs of the students. Consequently, in addition to the school's aggressive thrusts in improving its facilities and beefing up its faculty, it may also have to prioritize making campus life convenient for the students. Third in the rankings was "the school's hardware equipment," showing that students also care about the school's facilities and equipment. This means that schools should not neglect updating and expanding its facilities and equipment.

Table 5 Average Score and Standard Deviation of Students in each of the factor considered by TVE freshman students when choosing a school or department

Factors considered	No. of samples	Average	Standard Deviation
Reputation and quality	944	3.720	0.8542
Function and convenience	944	3.302	0.9016
Emotion and meaning	944	3.102	0.8176
Scale and Structure	944	2.868	0.7988

II. Analysis of Market Segmentation

The four factors students emphasized while choosing a school/department were abstracted through factor analysis (Table 4). These factors were used as the four variables for conducting cluster analysis. The study designated 3 as the cluster unit; K-means was used to generate number of students and percentage of each cluster. The results are shown in Table 6.

This study used the average scores from the four factors as dependent variables and the three clusters as independent variables to conduct discrimination analysis. The category matrix generated by the results was shown in Table 7. The accurate discriminatory rate of the category matrix from the discrimination analysis was as high as 94.49%; this showed that grouping results were good.

Table 6 Percentage and distribution of student population in each cluster

Market segmentation	No. of students	Percentage
Cluster 1	476	50.42%
Cluster 2	186	19.71%
Cluster 3	282	29.87%
Total	944	100%

Table 7 Cluster analysis results of school or department selection by new 4-year new technical/vocational college students

	No. of samples	Rate of discrimination	Predicted discrimination		
			Cluster 1	Cluster 2	Cluster 3
Cluster 1	476	96.22%	458	0	18
Cluster 2	186	91.40%	4	170	12
Cluster 3	282	93.62%	14	4	264

Accurate discriminatory rate = (458+170+264)/(476+186+282) = 94.49%

In Table 8, the study conducted one-way ANOVA on the priority level for the four factors, "reputation and quality," "function and convenience," "emotion and meaning," and "scale and structure". The results indicated there is a significant difference in the four factors among the three clusters. Hence, Scheffé post hoc comparison was applied to do further analysis among 3 clusters. As shown in Table 8, the 3 clusters had been named "career oriented," "emotion oriented," and "environment oriented." The characteristics of the three cluster groups are as follows:

1. Career oriented: To this cluster of students, the most important factor is "reputation and quality." The related items in this factor include the school's reputation and reviews, career opportunities available to its graduates, the school's level of recognition, program design, and faculty. All of these items are related to future career development, hence termed "career oriented." The least prioritized factor is "emotion and meaning," with "scale and structure" coming in second. This group has the majority of students, accounting for more than 50% of the total number of samples (shown in Table 6); accurate discriminatory rate is also the highest at 96.22% (shown in Table 7).

2. Emotion oriented: This cluster of students ranked "emotion and meaning" as the most important factor. The related factors included special feelings students have towards the school/department, the level of openness the school ambience offers, the promotion efforts of the school, level of activity within the student organizations, and individual religious beliefs; termed "emotion oriented." The average scores of this group for "function and convenience" and "scale and structure" are very low. The number of students belonging to this group are

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also the lowest, accounting for only 19.71% of the total number of samples (shown in Table 6).

3.   Environment oriented: Of the 3 clusters of students, this group scored the highest in "function and convenience," followed by "scale and structure;" this showed that to this cluster of students, the school's location, transportation, living functions, and dormitories were their priorities. Secondary to these were the size of the school, landscape, ratio of male and female students, size of the school's library collection, and others. The factor least prioritized by this group was "emotion and meaning." The group accounted for 29.87% of the total number of samples (shown in Table 6).

From the Scheffé post hoc comparison (shown in Table 8), in terms of average scores, one can see that

level of priority given to "reputation and quality", the career oriented group scored higher than environment oriented group, which in turn scored higher than the emotion oriented group. In the priority level given to "function and convenience", the environment oriented group scored higher than the emotion oriented group, which in turn scored higher than the career oriented group. In the priority level given to "emotion and meaning," the emotion oriented group scored higher than the career oriented group, which in turn scored higher than the environment oriented group. In the priority level given to "scale and structure," the environment oriented group scored higher than the emotion oriented group, which in turn scored higher than the career oriented group.

Table 8 Comparative analyses between clusters

	Cluster 1	Cluster 2	Cluster 3	F-value	P-value	Comparison of clusters
Reputation and quality	0.4154	0.1754	-0.1521	231.04	.000*	1> 3> 2
Function and convenience	-0.2042	-0.4623	0.3912	148.96	.000*	3> 2, 3> 1
Emotion and meaning	-0.8741	0.6354	-0.6491	157.36	.000*	2> 1, 2> 3
Scale and Structure	-0.4196	-0.3212	0.1356	97.45	.000*	3> 2, 3> 1
Cluster name	**Career-oriented**	**Emotion-oriented**	**Environment-oriented**		*p< 0.05	
No. of people in cluster	476	186	282			

Conclusion and Implications

This study used questionnaires to determine the factors considered by TVE freshman students when choosing a school/department. Cluster analysis and discriminate analysis were conducted to analyze the

market segmentation on the data collected. Therefore the following conclusions and recommendations are given below.

I. Conclusion

The four major factors considered by TVE students when choosing a school/department, in order of their scores were: "reputation and quality", "function and convenience", "emotion and meaning", and "scale and structure". Then, categorizing the students by the four factors, the results found that the students can be divided into three cluster groups: career-oriented, emotion-oriented, and environment-oriented. As indicated by Marginson (2006), all universities, whatever their resources and status, are active in this market and compete directly for students. Hence, the findings must be applicable to the specific context of Taiwan where the research was conducted.

II. Implications

The main issue school administrators should consider first is how to find a major market segment based on its own positioning and the needs of the students. This target market will have to be in step with the school's resources, its faculty's expertise and future long-term development. These are issues that any institution cannot afford to ignore or neglect when planning student recruitment programs. Based on the results obtained from this study, the researcher made the following recommendations which hopefully may serve as references for schools making their recruitment strategies.

1. Investigate the evaluation standards of how students choose their schools

Currently when schools implement recruitment strategies, they usually highlight the school's image, recruitment promotion, school environment, and others. However, what really attracts students to going to a particular school is (1) career opportunities after graduation; (2) the school able to offer employment opportunities, reduce miscellaneous fees, and provide scholarships. The discrepancy lies in the fact that when schools plan their marketing strategies for recruitment, they often fail to conduct further surveys or analyses on students with different orientations. This results in ineffective utilization of resources. To avoid this kind of discrepancy, before embarking on any recruiting activity, schools can carry out a survey on the evaluation standards students have when choosing a school as well as the characteristics and needs of the students. Whether the organization is a profit or non-profit organization, marketing activities that are customer oriented are the only ones that can truly meet the needs of the customers.

2. Reinforce school's internal marketing

The school's external marketing focuses on carrying out marketing activities for the school's external direct and indirect customers. External customers include the students, their parents, the general public, and people who are concerned with education as a whole. Its internal customers include the faculty, staff members, and students who are currently enrolled with the school. Currently, when the school implements its marketing strategies, the efforts it makes for its external customers greatly those made for the internal customers; the marketing activities planned lean more toward commercial marketing. In terms of enhancing the image of the school, this type of marketing does not achieve the expected goals in the long-term. Consequently, when the school carries out its marketing strategies for recruiting students, it should first make sure

it is doing good internal marketing. Everybody in the school, from its leaders, faculty members, administrative personnel to the student body should identify with the school's operation philosophy, feel the importance of work done in the area of marketing, in order to provide the school's external customers with better quality of service and products.

3. Improve school's image

When the school plans its marketing strategy, it should put effort into coming up with promotion activities. What it should do, on a more extensive basis, is to focus on long-term development, school philosophy and social welfare. To this end, the school should utilize its resources on hand to develop a distinctive atmosphere and style, creating an ideal learning environment, and fostering a school culture that emphasizes a passion for excellence. The next step would be to communicate these things to direct and indirect customers through marketing.

4. Establish a specific department responsible for recruiting students

According to the results of data gathered by the study, it was found that when each school conducts student recruitment, the majority of the work is done by the academic affairs and R&D offices. These offices are in charge of planning and implementing student recruitment programs. Only a few schools have put up student recruitment offices. In terms of marketing personnel, majority of these people are administrative personnel from the academic affairs and R&D offices, who double up as members of the marketing staff. They are often already very busy with their main jobs; faced with conduct marketing

activities during recruitment season, it is only logical that performance will be below par. Consequently, the researcher believes that the formation of an office focusing on recruitment, which would be responsible for gathering and analysis of data from the education market, will greatly help the school in carrying out marketing activities for student recruitment.

References

Bearden, W. O., Ingram, T. N. and LaForge, R. W. (2003). *Marketing : Principles & Perspectives* (4th ed.). New York: McGraw-Hill.

Dailey, L. (2007). Understanding MBA customer needs and the development of marketing strategy, *Journal of Marketing for Higher Education,* 16(1), 143-158.

Ewing, M. T., and Napoli, J. (2005). Developing and validating a multidimensional nonprofit brand orientation *scale, Journal of Business Research*, 58, 841-853.

Hsu, S. S., Chou, C. M., and Shen, C. H. (2002). A Study on the Educational Marketing Strategies of Technical and Vocational Schools, *Bimonthly Journal of Technological and Vocational Education*, 69, 9-13.

Kolter, P. H. (2000). *Market Management: Analysis, Planning, and Control*. London: Prentice Hall.

Marginson, S. (2006). Dynamics of national and global competition in higher education, *Higher Education*, 52, 1-39.

Maringe, F. (2005). University marketing: Perceptions, practices and prospects in the less developed world, *Journal of Marketing for Higher Education*, 15(2), 129-153.

Ministr accessed 21 April, 2009.8). Major Educational Statistical Information. Available from http://www.edu.tw/EDU_WEB, accessed 21 April, 2009.

Ministry of the Interior (2008). Statistical Report on Population Structure. Available from http://sowf.moi.gov.tw/stat/week/week9804.doc, accessed 21 April, 2009.

Moorer, C. (2007). A university name change: significance of faculty involvement, *Journal of Marketing for Higher Education*, 17(1), 117-145.

Perreault, W., and McCarthy, E. J. (2005). *Essentials of Marketing*. New York: McGraw Hill.

Peter, J. P., and Donnelly, J. H. (2000). *Marketing Management: Knowledge and Skills* (6th ed.). New York: Irwin/McGraw-Hill.

Wendell, R. S. (1956). Product differentiation and market segmentation as alternative marketing strategies, *Journal of Marketing. 12*, 3-8.

Wind, Y. (1978). Issues and Advances in Segmentation Research. *Journal of Marketing Research, 15*(8), 317-337.

Yu, C. C. (2001). *Modern Marketing Management*. Taipei City. Wunan.

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Author:

1. Yu-Fen Chen, Associate Professor, Department of Accounting and Information, Chihlee Institute of Technology, Taiwan
Dr. Chen graduated from University of Missouri, Columbia, with a Ph. D. degree.
  e-mail   bephd@mail.chihlee.edu.tw

2. Chin-Hui Hsiao, Associate Professor, Department of Finance, Chihlee Institute of Technology, Taiwan

Note :

1. In the comparative results for clusters, "1" represents the career-oriented cluster; "2" represents the emotion-oriented cluster; and "3" represents the environment-oriented cluster.
2. The symbols < and > are used to compare average scores of the factors.