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## Brand management model of vocational high schools in Taiwan

Yi-Ling Hung<sup>a</sup>, Ching-Sheue Fu<sup>a\*</sup>

<sup>a</sup>*Chung Hwa University of Medical Technology, National Cheng Kung University, Taiwan*

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### Abstract

The purpose of this study was to probe brand management at vocational high schools in Taiwan using a goodness-of-fit model to understand the applicability structural and practiced currently model among the different types of them. 1620 teachers and students were randomly selected from public and private vocational high schools in Taiwan. The findings were: The scales had good reliability and validity, and a good model fit; the dimensions of brand planning and brand marketing at vocational high schools had a positive impact on brand equity; this structural model was applicable to different school types; all dimensions of interviewee's operational perceptions reached an ideal level.

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### 1. Introduction

Changes in Taiwan's social environment have caused a decline in births resulting in a negative birth rate. School management staff is facing increasing pressure to enroll more high-quality students. Improving competitiveness has become a major issue in school management in Taiwan.

In Taiwan, the names of vocational high schools and their departments are complex. There are more than 10 kinds of vocational schools, such as High Schools of Industry, High Schools of Commerce, High Schools of Agriculture, etc. This complexity creates vague positioning and it's difficult for students and their parents to agree with their definitions. In addition, the brand images of schools in the vocational system are not as good as those of general high schools. They are often students' second choices. These unfavorable factors have made vocational high school management a hard job. Therefore, the purpose of this research is to help vocational high schools find better ways to manage their brands and to create unique brand images.

Since 2000, there have been many studies related to school brands in Taiwan. However, the focus of these studies is usually on elementary schools and universities. It's obviously an M shape. There are few studies on vocational high schools which are the middle level of the M shape. That's why this study focuses on vocational schools.

Management can be seen as a procedure. Through this procedure, enterprises/organizations can use their resources to reach their goals efficiently. Procedures and processes also need to be established for brand

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\*Ching-Sheue Fu. Tel.: 886-932772912

E-mail address: [missallyfu@gmail.com](mailto:missallyfu@gmail.com)

management in order to help with the formation of strategies and information for evaluation (Kotler, 2002). Currently, studies of education brands mainly focus on the effects of brand management, which is known as terminal output. The examination of other topics such as brand projection, execution, and marketing are rare. Study in these areas is incomplete and needs to be expanded.

After indexes are constructed, an examination procedure follows. Indexes should be transformed into reliable scales in order to understand how school brands work from brand projection to marketing and their relationship with management effectiveness. How they fit into different groups should also be examined. With this in mind, the status of education can be explored to improve the effectiveness of the research tools. Based on the description above, the goals of this study are:

- 1) To understand how brand management works for vocational high schools.
- 2) To understand the relationships between the variables affecting school brand management.
- 3) To understand the differences between the management models of different school types.

Management is supposed to be a complete process. Mariotti (2001) proposed that the four major steps of brand management should include four major cores: projection, development, execution, and evaluation and adjustment. Aaker and Joachimsthaler (2000) also believed that the brand projecting process is composed of some basic elements such as strategic analysis, brand strategy, plans to create brand images, and objective evaluation. Summarizing scholars' opinions (Aaker, 1991; Arnold, 1992; Davis, 2000; Aaker & Joachimsthaler, 2000; Keller, 2003), reveals that the key steps in brand management process are: analysis of current status, brand projecting, brand marketing, and brand evaluation.

By summarizing scholars' opinions on brand management, while also taking the findings from studies of school brand management in Taiwan into account (Ye, 2003; Chen, 2003; Lin, 2004; Ma, 2004; Huang, 2005), it can be seen that the school brand management process includes background analysis, market research, brand planning, brand image, market segmentation, brand positioning, brand internal promotion, brand external promotion, effectiveness evaluation, and feedback adjustment. These tasks can be grouped into four main elements including current status analysis, brand projection, brand marketing, and brand effectiveness evaluation. It was found in the researcher's previous study of index construction, through interviews, experts' content validity review, and exploratory and confirmatory factor analyses, it was found that vocational high school brand management models can be separated into three elements including brand projection, brand marketing, and brand management effectiveness evaluation. Discussion of brand management operation in this study is based on this basic structure.

## **2. Methodology**

### *2.1. Participants*

The sample population of this study was composed of 156 vocational high schools from data provided by the Department of Statistics in the Ministry of Education. They were stratified by variables such as public/private and school size. Random sampling was conducted to select 1/5 of the population, which was 31. From each school, 32 subjects including faculty members (2 principals and directors, 5 department directors, 3 section chiefs, and 6 teachers), students (8 class representatives) and parents (8 parent-teacher association members). 832 questionnaires were sent and 548 retrieved. The response rate was 65.9%. Then, in order to test the validity, random sampling was conducted using SPSS to select 272 and 276 subjects to be used as the samples for parameter estimation and validity testing.

### *2.2 Data collection*

This study used a questionnaire survey as the main data-gathering tool. Through steps such as document analysis, interviews with involved people, selecting indexes, and survey analysis, brand management indexes for vocational high schools were constructed. The "vocational high school brand management indexes" constructed by the researcher in 2008 through processes such as document analysis, interviews, pre-tests, formal questionnaire surveys, etc. were transformed into scales for the survey of brand operation. The final content included 4 layers including current status analysis, brand planning, brand positioning, and identifying image, with 14 questions. There were 4 constructs on the brand marketing scale, internal promotion, service, external promotion, and location with 21

questions. There were 4 constructs on the brand effectiveness evaluation scale, brand loyalty, brand awareness, perceived quality, and brand effectiveness evaluation, with 21 questions. The total number of questions was 56.

The  $\alpha$ 's for internal consistency reliability testing were .92, .95, and .97. For construct reliability they were .90, .91, and .94. The  $\alpha$ 's for the 12 layers were between .77 and .94, and so were the  $\alpha$ 's for their construct reliability. The average variance extracted was between 52.39% and 75.01%. From these numbers, it can be seen that the internal consistency reliability and construct reliability were good. In the aspect of validity testing, the standardized parameter estimations for all variables were significant with absolute values of standardized residuals less than 1.96. In the three scales, the accumulated variation explained was 63.30%, 63.05%, and 71.88%, which meet the demands of a good tool.

### 3. Results

The mean values of the 3 layers of brand management by the vocational high school subjects were all matches and partial matches ( $M=3.61 \sim 3.70$ ). The operation values of each construct tended to fall between match and partial match ( $M=3.33 \sim 3.82$ ). The mean values of the 12 constructs were significantly different ( $F(11,6017)=51.640$ ,  $p<.000$ ,  $\alpha=.05$ ). The values of “brand awareness” and “current status analysis” were higher than the other 10. The value of “identifying image” was significantly lower than the other 11. The mean values of the constructs, ordered from the largest to the smallest, are: “brand awareness” and “current status analysis” > “service” and “brand loyalty” > “brand positioning”, “perceived quality”, and “place” > “brand planning” and “brand association” > “internal promotion” and “external promotion” > “identifying image”, as shown in table 1.

Table 1. Summary of the results of overall brand management operations and confidence interval analysis from research subjects. (  $n=548$  )

Brand Management Operation	Construct	<i>M</i>	<i>SD</i>	Operation Order	
				Inter-construct/Overall Comparison	
Brand Projection		3.62	0.61		□
	Current Status Analysis	3.81	0.66	1	1
	Brand Planning	3.60	0.74	3	8
	Brand Positioning	3.68	0.73	2	5
	Identifying Image	3.33	0.77	4	12
Brand Marketing		3.61	0.59		□
	Internal Promotion	3.53	0.71	3	10
	Service	3.73	0.65	1	3
	External Promotion	3.49	0.75	3	10
	Place	3.66	0.68	2	5
Brand Effectiveness Evaluation		3.70	0.59		□
	Brand Loyalty	3.73	0.64	2	3
	Brand Awareness	3.82	0.77	1	1
	Perceived Quality	3.66	0.62	3	5
	Brand Association	3.62	0.73	4	8

Note: The entries are ordered by the analysis results of the GLM with repeat measurements instead of real mean values. For example, the mean values of “internal promotion” and “external promotion” are not significantly different in their mean values. Therefore they are both the third, and so on.

From figure 1 shows that the standardized path coefficient from “brand projecting” to “brand marketing” is .63 ( $p = .000 < \alpha = .05$ ), which means that if the research subjects felt that the brand projection was going smoothly then the brand marketing would work well. The standardized path coefficient from “brand marketing” to “brand effectiveness evaluation” is .78 ( $p = .000 < \alpha = .05$ ). Therefore, if the research subjects felt that the brand marketing was going smoothly then the school brand effectiveness would be high. The percentages of variation for the  $R^2$ , are .40 and .61, which means these relations are applicable.

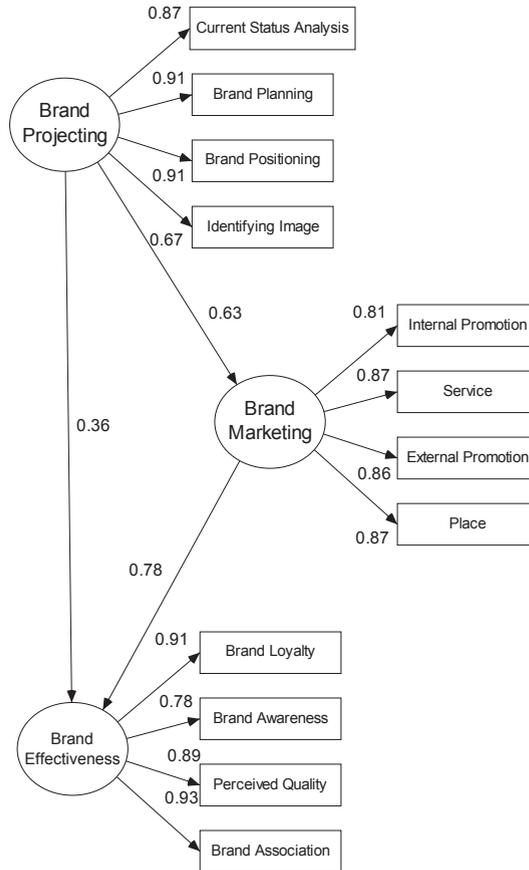


Figure.1 Group invariance test

In order to find out if the structural model would differ for interested parties from different schools, a group-invariant confirmatory factor analyses was executed using a nested model for the comparison. It is assumed that the unconstrained model is correct, but the results show that the difference between it and the limited loading model is not statistically significant, with significance level  $F=of .05 (p=.668)$ . The NFI values are not very different (.001~.007), as shown in table 3. It is safe to say that the factor relations between groups are invariant. Then an invariance test for factor loadings was performed and found CR values for differences between parameters between -.335 and .985. The absolute value is not over 1.96, the cut point for the significance level of .05. It can be seen that there is no significant difference between structural models for interested parties from different schools.

Table 3. Comparison of nested models assuming the unconstrained model is correct

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho-1	TLI rho2
Measurement weights	9	6.702	.668	.001	.001	-.007	-.007

#### 4. Conclusion and Suggestions

##### 4.1 The structural model of brand management operation is applicable.

The structural model of the brand management operation fit. The research results show that brand projection directly influences brand marketing, brand marketing directly influences brand effectiveness, and brand projecting influences brand effectiveness through brand marketing. This means, the better the brand projection, the better the brand marketing will be. Eventually, brand effectiveness will be influenced. This model is applicable.

#### 4.2 The status of research subjects' perceived operations is acceptable.

According to the research results, the status of the research subjects' perceived brand management operation was acceptable. Among the 3 layers, the status was best in brand effectiveness”.

#### 4.3 There are differences in operations between layers

Among the layers, the operation statuses were better in current status analysis and brand awareness, while they were worse in identifying image. And the operations in layers, such as internal and external promotion, are also worse. This result was statistically significant. These layers are all keys to creating brand images and market brands. They should be improved. From this, it can be seen that there are differences between layers. Some of the layers still don't operate smoothly.

#### 4.4 Schools should improve identification systems to create fresh images.

Among all the layers, the operation of identifying images was the worst. The purpose of a school brand is to show how a school operates so that customers can tell it apart from competitors. Therefore, it is necessary to construct identity systems and use them properly.

#### 4.5 Improving media promotion, promoting with enthusiasm

Although this perceived operation was a little bit better in the external promotion layer than in the identifying image layer, its performance was still poor. This means schools are not flexible enough when doing media promotions. It is necessary to be more active and to use different kinds of media (DM, newspaper, local TV station, etc.) well.

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