

Discussing The Conceptual Framework Of Cultural Landscape In Taiwan

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This study aims to develop a measureable tool to identify the feature of Taiwan cultural landscape. In-depth interviews from ten scholars were first conducted to design a questionnaire which contained a seven-dimension measurement model of identifying cultural landscape, and then 808 local participants were asked to response this questionnaire for gathering the quantitative data in four cultural significant sites. Exploratory factor analysis and confirmatory factor analysis were applied to confirm the structure of the supposed measurement model from the questionnaire data. The result of factor analysis showed that the confirmed measurement model was less complicated than the supposed measurement model. The cultural feature dimension of cultural landscape was composed of three factors which are environment element, human evidence and traditional custom. And the place meaning dimension of cultural landscape contained cultural atmosphere, life dependence and affective identity. This finding revealed the evidence that local participants' perception to the feature of cultural landscape was very different from experts' understanding of the composition of cultural landscape in Taiwan. It also hints the difficulty of conservation for cultural landscape was local people's disregards to their cultural landscape since these features didn't have any physical connection with local people's daily life. This study build a 16-item scale measuring cultural landscape from the perspective of local people in Taiwan, which provide practitioners a reliable and valid analytical tool to assess cultural landscape. And it also offered government agencies a useful foundation to make conservation strategies with local people for cultural landscape.

Key words: in-depth interview, cultural feature, place meaning, cultural process

Introduction

Taiwan, known as Formosa, is a developed district with dense population and high urbanization. Although a small island district, it showed a successful experience of economic development and successful democratization over the last three decades.

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Due to its unique geo-strategic position in Asia, Taiwan has been occupied successively by the Holland, Spain, China, Japan, and finally ruled by the contemporary authorities, and therefore it embraces diverse land use and architecture styles. A variety of ethnic groups, such as Fujian, Hakka, the aborigines and other Chinese immigrants have been living in this area. Their religious beliefs and cultural customs changed over time due to political, cultural and economic conflicts, and finally evolved into the unique culture compared with other Chinese-speaking districts. This unique contemporary Taiwanese culture represents abstracted and modified Chinese culture in the ideas of nationalism and self-identification as a result of the long separation from China.

Compared with the modern lifestyle in the urban place, the rural settlements, agricultural techniques, local food, clothing, and the religious tradition represent Taiwan's cultural characteristic that respects nature and lands. However, the huge profit from property development renders it increasingly hard for local residents to preserve their rural land and culture especially at the increasing rural-urban interface. Faced with the threat of losing the distinct rural landscape and cultural heritage, scholars began to call for government steps to address the issue. Under such circumstances, the Council of Cultural Affairs in Taiwan government finally extended the law articles of preserving cultural landscape such as the categories of cultural landscape, the registrations procedure and financial subsidy policies into the Cultural Heritage Conservation Law in 2005. Many local cultural affair department attempted to register their culturally significant rural places to the official cultural landscapes lists in Taiwan one after the other following the announcing of renewed the Cultural Heritage Conservation Law. There have been thirty-four cultural significant sites which were registered into the lists of Taiwan's cultural landscape by 2011. However, the local cultural affairs departments still have to overcome lots of difficulty for conserving the rural cultural landscapes in Taiwan.

From the point view of administrate, the main challenge is the unclear description of cultural landscape. In the registration procedure, the local government's cultural department has to review and evaluate every application for cultural landscape registration. The registration activities usually bring the economic benefit of tourism and investment from government. Thus local advocacy groups or politicians might make efforts to persuade the government agency to accept their applications of the registration even though these sites may not meet the basic criteria of cultural landscape or it could not be sustained well by local people. As a result, it will be difficult for the government agencies to assess whether specific sites could be nominated as cultural landscapes or not under the indefinite description of cultural landscape from the Cultural Heritage Conservation Law.

Above all, this study has two goals. The first goal is to explore and conceptualize the compositions of Taiwan's cultural landscape by interviewing scholars who in cultural landscape research field. The second goal is to develop a measurement model for cultural landscapes. The research results are expected to provide an important reference to promote the understanding of how it sustain cultural landscapes with local stakeholders at the rural-urban interface in developing or developed democratic countries facing increasing population and decreasing environmental resources. This is the first study to use quantitative and qualitative research methods to explore and confirm the cultural landscape measurement model in the cultural landscape research field.

Theoretical Background

Studying Cultural Landscape as a Multidimensional Framework

The importance of context within the parameters of the concept of setting in the practice of conserving cultural heritage in changing townscapes and landscapes was stressed by China in the 2005 International ICOMOS conference held in Xi'an. The Hoi An Protocols argued that the four dimensions of authenticity used to interpret culturally significant places are: 1. Location and Setting, 2. Form and Design, 3. Use and Function, and 4. Immaterial Qualities. It underscores the inter-relatedness of practices for the conservation of the physical heritage sites, the intangible heritage and cultural landscapes because the setting is not just about physical protection and may have cultural or social dimension (Taylor, 2009).

Some studies have also interpreted cultural landscape as a multidimensional conceptual framework that can be interpreted using some qualitative research methods. Tallbull, Deaver, and La Point (1996) described the physical environment, spiritual environment, cultural history and ethnohistory of the Blue Earth Hills cultural landscape using the local American Indian perspective. Sinha (2006) detailed the essential dimensions of the cultural landscape of Pavagadh and their relationships. These five dimensions included history, topographic symbolism, mythology, landscape of pilgrimage, and landscape experience. Taylor (2009) generalized a cultural construct which included meaning, value, spatial, and political dimension, and used it to interpret the cultural landscape. Solymosi (2011) systematically described nine categories of cultural landscape characteristics, which are: 1. Geography, 2. Site conditions, 3. History, 4. Land use, 5. Structure, 6. Economy, 7. Policy, 8. Cultural and 9. Perception.

In the past two decades, scholars are devoted to developing distinct and systematic approaches for clarifying the composition of cultural landscapes. Related studies have attempted to emphasize the importance of tangible and intangible characteristics in cultural landscape sites (Janssen & Knippenberg, 2008; Marignani, Rocchini, Torri, Chiarucci, & Maccherini, 2008; Selman, 2004; Solymosi, 2011; Stephenson, 2008; Tallbull et al., 1996; Walker & Ryan, 2008). But there is limited statistical evidence that tangible and intangible characteristics are both the core composition of cultural landscape. This needs to be verified, especially in contemporary rural areas which face the challenge of local conservation affairs. As a result, it is necessary to identify the pivotal dimensions and components of cultural landscapes. Because different cultural values and knowledge between the west and the east can affect the complex interactions in landscapes and the "cultural product of process" (Taylor, 2009).

Research Method

This study was conducted in two stages. The first stage was to develop a measure instrument of studying cultural landscape. The second stage was to examine the reliability and validity of the measurement model for cultural landscape. The third stage was to confirm the causal relationship and mediating effects among these dimensions of the cultural landscape measurement model.

In the first stage, information was gathered from interview manuscripts, and these items were eliminated from the original questionnaire in order to develop the first brief questionnaire. In the second stages, exploratory factor analysis (EFA) and

confirmatory factor analysis (CFA) was conducted to verify the factor structures of the revised version.

The Development of Primary Measure Instrument

This study aimed to develop a measurement instrument for studying cultural landscapes on the rural-urban fringe, particularly in the places with high levels of urbanization such as Taiwan. This research uses qualitative methods to develop a conceptual framework for studying cultural landscapes in Taiwan. The in-depth interview approach was used to explore the dimensions and components of cultural landscapes. The existing literature and analyses of interview transcripts were used to collect the items in the original questionnaire.

First, ten scholars who have worked on cultural landscapes research were asked to respond to the questions about the context of cultural landscapes. The concept of cultural feature and place meaning dimension resembled the components or elements of cultural landscape in some studies (Atik, Danaci, & Erdogan, 2010; Brabyn, 2009; Degraft-Hanson, 2005; Eben Saleh, 2000; Scazzosi, 2004; Selman & Knight, 2006; Shipley & Feick, 2009; Sinha, 2006; Solymosi, 2011) and it included seven categories, which are space district, geographical feature, living space, monument, myth, traditional custom, and festival.

An original questionnaire was designed as a survey instrument under the conceptual construct of studying cultural landscape mentioned above, and the items of the measure instrument were gathered from existing literature on cultural landscape research as well as the qualitative data collected through these interviews of locals and scholars. The written questions of cultural features asked respondents to rate the value that they place on cultural landscapes components. All questions used a five-point Likert-style scale which ranged from (1) strongly disagree to (5) strongly agree.

In order to develop a brief and efficient version of the instrument, a pre-test of the original questionnaire was conducted involving 73 respondents. The questionnaire was sent to the local community members and residents in the rural zones where there are some famous cultural tourism destinations. The reliability and item analysis was used to reduce the number of items in the questionnaire in order to construct reliable measurement scales. The data was first examined for outliers and extreme values, and the distribution of normality was checked. An inspection of skewness and kurtosis results indicated that their values were in the acceptable range (-1 to +1), lending support for the normality in the distribution of data (Hair, Anderson, Tatham, & Black, 1995). Following this procedure, each scale was subjected to reliability analysis to control the internal consistency of the scale items. After these procedures, the formal questionnaire with three dimensions of studying cultural landscape was developed. The cultural feature dimension refers to the characteristic of cultural landscape (21 items ,see Table 1), and the place meaning dimension refers to the characteristic of cultural landscape (27 items ,see Table 2)

Table1: The item of cultural feature dimension in cultural landscape

Item	
1.	The local geology and terrain such as Valley, coast, rock
2.	The local water bodies such as water source, stream or pond
3.	The local specific ethnicity residents such as aboriginals and Hakka people
4.	The local living space such as settle, meeting place and pavilions
5.	The local Religious spaces such as Temple Square.....

Item	
6.	Production place such as gardens, farms, flower fields, oil fields and cane fields
7.	The local public facilities such as barns, sugar factory and Irrigated System
8.	Traditional transport facilities such as rail, sugar cars and cable cars
9.	The memorial space such as memorial stone, monuments and arches
10.	The local legends are the key elements of cultural landscape
11.	The local historical events.
12.	The traditional land use and special patterns(like Feng Shui).
13.	The traditional production method and skills
14.	The cultural rules such as traditional class level and the institution of marriage
15.	The traditional and local food
16.	The traditional dress and clothes.
17.	The local language, accent and tone
18.	The local ideas and values
19.	The local Cultural and aesthetic preferences.
20.	The local religious practices.
21.	The local ballad opera

Table2: The item of place meaning dimension in cultural landscape

Item	
1.	This place is more beautiful than other place
2.	There is a special feeling about the place
3.	The cultural image of the place is different from other similar cultural place...
4.	This place is of great ecologic value
5.	I am very familiar with the history and culture of the place
6.	I can easily identify any location of the place
7.	This place makes me remember the past wonderful memory easily.
8.	This place is full of historic meaning to me
9.	The resources provided from the place make me feel that it is the best place to me.
10.	I prefer here more than other place
11.	I can't find other place which is better than the place
12.	I like to stay here more than other place.
13.	This place makes me feel very comfortable.
14.	I will feel regret if I can't live here
15.	I feel that I am one of the place
16.	I strongly recognize everything of this place
17.	I felt knowing myself in this place
18.	This place provides deeper impression to me than any other place
19.	I am proud of this place
20.	I felt very proud of everything of the place
21.	I felt very proud of living in the place for a long time
22.	I have a special emotional feeling on this place
23.	I have a strong sense of belonging on this place
24.	I have a strong emotional attachment on this place
25.	I can find spirit bailment from this place
26.	If I would like to escape from real world, I will come to here
27.	Many of my friends like this place very much

Study Sites Selection

Because most of the culturally significant sites in Taiwan's rural-urban fringe have faced a challenge of the necessity to continue the traditional lifestyle, land use and other cultural customs. Some of these places tried to maintain the cultural features by developing local tourism, some might try to cooperate with government for sustaining unique cultural treasures, and others may tend to alter their traditional land use and landscapes for the reason that they would like to catch up with the level of urban economic development. For obtaining as complete a presentation of Taiwan's rural areas with magnificent cultural landscape as possible, four regions representing concrete examples of rural landscapes and culturally significant destinations in Taiwan were selected (Fig 1): The Erjie Canal community, Shengxing Station with the nearby market area and community, Lu-Kang historical area, and Neipu old street settlement. The criteria for the selection were indicators developed in this study, in addition to the following reasons:

- Sites which represent Taiwan's cultural heritage in four very different cultural feature and ethnic settings: The Erjie Canal community is a Fujian ethnic settlement with historical irrigation system and its rural landscape. Shengxing Station with nearby market area is a Hakka hillside ethnic place with famous tourism attraction such as Hakka building and food. Lu-Kang historical area is a Fujian ethnic settlement with famous traditional settlement space and local food. Neipu old street settlement is a Hakka ethnicity settlement with traditional living style.
- Sites which represent Taiwan's cultural heritages at different stages of development: Traditional agriculture still affords a little source of income in the Erjie Canal settlement and Neipu street settlement, whereas in Shengxing Station with nearby market area and Lu-Kang historical area they had lost this role and has become a pastime. Actually, many residents from these four sites do face the dilemma between conservation and development. Indeed, Shengxing Station with nearby market area and Lu-Kang historical area have already become famous cultural tourism destination where there are just little agricultural activity.

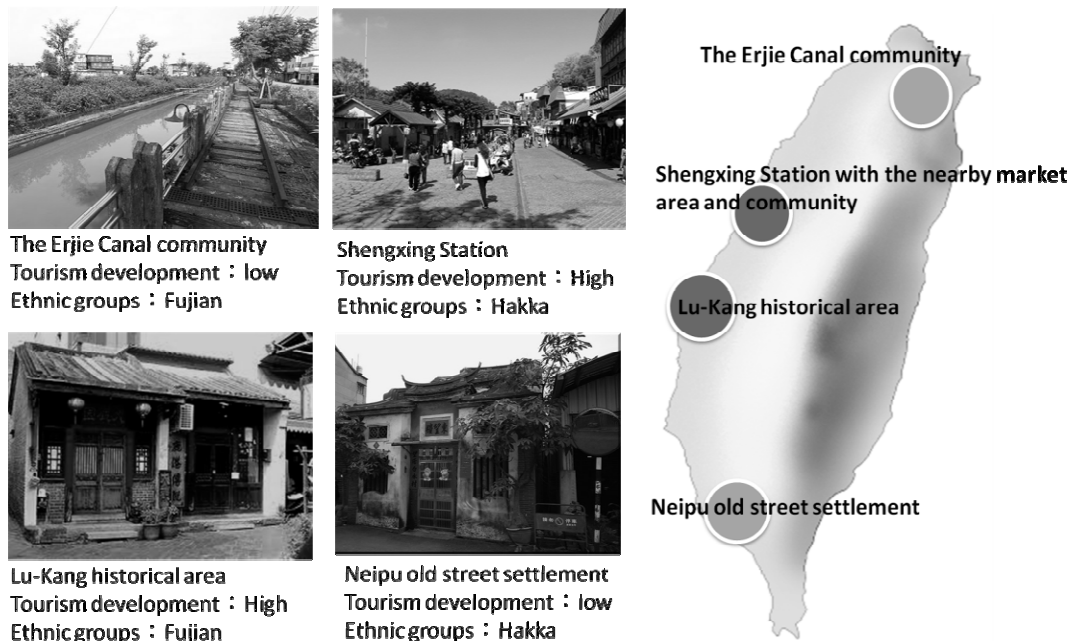


Figure 1: The Study sites

Survey Sample and Participants

The related work regarding sample size for factor analysis is that more participants led to better result. Gorsuch(1983) mentioned that the preferred sample size for factor analysis is at least 200 participants . Reviewed literature suggested SEM is a larger sample technique because small samples tend to yield unreliable results (Hoyle, 1995; Lei & Wu, 2007). Lei and Wu (2007) further suggested a sample size of preferably no less than 400 to obtain significant estimates. Another general rule of thumb of 5-20 participants per parameter estimated is commonly used to get trustworthy results in CFA (Kline, 2005; Lei & Wu, 2007).

There was not a complete sampling frame available to undertake a probability method of sampling for both residents and visitors. A convenient sampling method was there chosen. This study conducted a questionnaire survey in four sites from May to July, 2011. In total, 850 questionnaires were returned. Of the returned surveys, 42 questionnaires were eliminated for not replying to the questions of studying cultural landscape completely, and 808 cases were coded for data analysis, yielding an effective response rate 89.8% .Among these 808 responses, 393 were males (48.6%) and 415 were females (51.4%), reflecting similar gender proportions of the gender population in Taiwan reported in 2011.

Data Analysis

This study proposed that these concepts, abstracted from the opinions of interviewees, have extended some contents of theoretical construct in the past studies or theories, and these proposals still need to be proven by statistic evidence. As a result, this analysis focused on the development of measurement model and exploration of causality among these three dimensions in studying cultural landscape. For these reason, the exploratory factor analysis (EFA) was used to identify the factors of every dimensions in cultural landscape, and confirmatory factor analysis (CFA) was used to confirm the structure of the measurement model.

In this study, the exploratory factor analysis (EFA) was conduct to three dimensions (cultural feature, place meaning, and cultural process) of cultural landscape for evaluating the factor structure and primary measure instrument. The principal axis factor analysis was then used for identifying groupings or categories of every dimensions of cultural landscape within the data, as determined by factor loadings (>0.5). Scales of factors were constructed using these factor analysis results.. After conducting EFA, all sample analysis was used to carry out CFA for developing a measurement model. The SEM procedure was then to explore the causal relationship among the unobserved constructs in this study that were set up on the basis of prior research and theory. All Statistical analyses in this study were carried out using SPSS18.0 and SIMPLIS8.51.

Result

Analyzing the Cultural Feature Dimension of Cultural Landscape

First, an exploratory analysis was conducted with the 21 culture feature items to identify the underlying factors in the cultural feature dimension. Principal Axis Factor (PAF) was used for factor extraction, and the promax rotation with an oblique rotation was applied. Consequently, a cut-off point of factor loading was considered to be 0.50

or greater to select meaningful items (Ford, MacCallum, & Tait, 1986). After this procedure, two items which are worship place (C5) and food (C15) were deleted for the reason of low factor loading score (<.5).

Three culture feature factors were identified in the ideal solution (KMO=.90; variance explained = 57.06%; Cronbach's α =.92). All items of cultural feature dimension were fit to three factors. The essential element factor (CF1) includes geographic feature, body of water, ethnic groups and habitat. (Cronbach's α =.78). The human evidence factor (CF2) consists of the following items: production place, public facility, transportation, monument, myth, history, land use rule, traditional agricultural skill, and traditional institution. (Cronbach's α =.88). The "traditional custom" factor (CF3) is formed by clothing, dialect, philosophy of life and value, aesthetic value, religion and drama. (Cronbach's α =.88).

Subsequently, a confirmatory factor analysis (SIMPLIS 8.52) suggested eliminating items due to low standardized coefficient and high modification indices with these three factors. The transportation (C7) and public facility item (C8) in factor two (CF2) were dropped for the reason of low standardized coefficient (<.5). After deleting the two items with low standardized coefficient, the test of goodness-of-fit showed that the measuring model wasn't still fit well ($X^2=753.22$, RMSEA= .097, CFI= .85, NNFI =.83, AGFI=.80, CN= 122.46). Thus the items with high value of modification index (>3.84) were then considered to be deleted (Jöreskog & Sörbom, 2000), and the modification index (MI) provided by statistical software (SIMPLIS 8.52) indicated that some items could be deleted to fit the model well.

The existing literature also suggested that each high MI item could be deleted after every re-estimate of goodness-of-fit test. The traditional agricultural skill item (C13), the aesthetic value item (C19), the drama item (C21) the geographic feature item (C1), the habitat item (C4), the traditional land use skill item (C12), the monument item (C9), the cultural rules (C14), and the production place item (C6) were deleted due to the high MI value. The model was modified according to the MI, as Model CF (Fig. 2), and exhibited good fit ($\chi^2 = 52.87$, RMSEA=.070, CFI=.97, NNFI=.95, AGFI= .94, CN=262.99, Average Variance. Extracted >.45. Composite Reliability>0.6). The interval of discriminant validity in the cultural feature dimension range from 0.2224 to 0.8888, which was adequate for the criterion of the discriminant validity test.

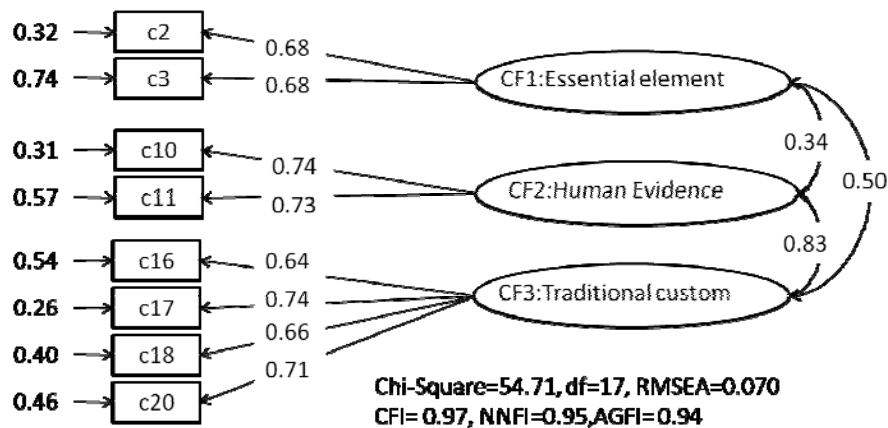


Figure 2: The model CF of cultural landscape

Analyzing the Place Meaning Dimension of Cultural Landscape

The same as the analyzing procedure of cultural feature dimension, an exploratory factor analysis was also conducted to identify the underlying factors in the place meaning dimension. A cut-off point of factor loading was considered to be 0.50 or greater to select meaningful items (Ford, MacCallum, & Tait, 1986). After this procedure, one item (M13: *This place makes me feel very comfortable*) was deleted for the reason of low factor loading score ($<.5$).

Five “place meaning” factors were identified in the ideal solution (KMO=.93; variance explained = 65.81%; Cronbach’s $\alpha =.94$). The “affective identity” factor (PM1) includes 12 items which contain some concepts such as place identity, pride of place, affective attachment (Cronbach’s $\alpha =.94$). The “place value” factor (PM2) was consisting of 4 items which means the environmental value of place (Cronbach’s $\alpha =.71$). The “cultural atmosphere” factor (PM3) contains 5 items with the concept of cultural and historical value (Cronbach’s $\alpha =.80$). The “life dependence” factor (PM4) includes 3 items of the concept of place dependence (Cronbach’s $\alpha =.76$). The “place familiarity” factor (PM5) includes 2 items which mean the comprehensive familiarity of the history and position of place (Cronbach’s $\alpha =.72$).

After exploratory factor analysis, a confirmatory factor analysis (SIMPLIS 8.52) was performed to consider eliminating items with low standardized coefficient ($<.5$), and high standardized deviation ($>.6$) in these five factors. Four items in the “place value” factor (PM2) was dropped due to low standardized coefficient (M1: *This place is more beautiful than other place*, M4: *This place has great ecologic value*) and high standardized deviation (M26: *If I want to escape from real world, I would like visit here*, M27: *Many of my friends like this place very much*). Two items in the “place familiarity” factor (PM5) was eliminate for the reason of high Standardized deviation (M5: *I am very familiar with the history and culture of the place*, M6: *I can easily identify any location of the place*).

The test of goodness-of-fit showed that the measuring model wasn’t fit well ($\chi^2=754$, RMSEA= .097, CFI= .86, NNFI=.84, AGFI= .80, CN=114.54), thus several items with high modification indices (>3.84) was considered eliminating after checking the meaning of these items. Three items (M7: *this place makes me to remember the wonderful memory*, M8: *this place is full of historic meaning to me*, M9: *the resources provided from this place make me feel that it is the best place to me*) were deleted in the “cultural atmosphere” factor (PM3). Six items were eliminated in the “affective identity” factor. (M14: *I will feel regret if I can’t stay here*, M15: *I am part of the place*, M18: *This place provides deeper impression to me than any other place*, M19: *I am proud of this place*, M20: *I am very proud of everything of the place*, M22: *I have a special emotional feeling on this place*, M23: *I have a strong sense of belonging on this place*). The model was modified according to the MI, as Model PM (Fig. 3), and exhibited good fit ($\chi^2 =51.72$, RMSEA= .069, CFI= .97, NNFI=.95, AGFI=.94, CN= 264.19, Average Variance. Extracted $>.45$. Composite Reliability >0.6). The interval of discriminant validity in the place meaning dimension range from 0.3224 to 0.8588, which was adequate for the criterion of the discriminant validity test.

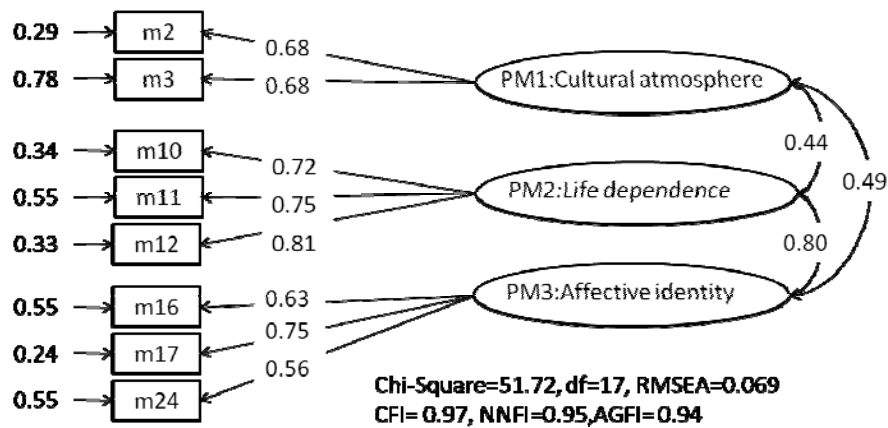


Figure 3: The model PM of cultural landscape

Discussion and Conclusion

The result of CFA revealed that the measurement model of cultural landscape responded from local participants was briefer than the proposal construct model of studying cultural landscape from interview data. The findings are also in agreement with the conceptual framework of cultural landscape as a multidimensional construct delineated by the related literatures (Eben Saleh, 2000; Schein, 2009; Solymosi, 2011; Tallbull et al., 1996; Terkenli, 2001).

The findings demonstrate that local people's opinions of the cultural feature were briefer than the opinion of experts. Related studies (Nüsser, 2001; Solymosi, 2011; Stewart, 2007; Taylor, 2009) argued that the components of cultural landscape may contain tangible and intangible properties. As a result, some environmental features such as natural resources or geographical characteristic and human creations such as settlement, building, public facility, transportation, farm, monument, even the skills were mentioned to be the important elements for conserving cultural landscape in the past studies. Nevertheless the statistical result of this study revealed that only a few environment characteristic (e.g. water feature and ethnic group characteristic, historic record (e.g. human's legend and myth), and traditional customs (e.g. clothing, traditional value, religious behavior and dialect) were thought to be the important factors of conserving cultural landscape by local people.

It is important to note that to conserve a cultural landscape owned by local people is very complex because of the number of groups involved in the process and affected by rural property development, such as local residents. The support of the local people is necessary for two reasons. First, most lands in cultural landscape sites were owned by local residents. Rather than conserve these cultural landscapes, they might sell their own lands to property developers to solve their economic difficulty. Second, the registration and maintenance of cultural landscape to specific places need the support of local residents. Therefore, identifying and understanding the factors that influence the willingness to participate in conservation for cultural landscape is very important for the Council of Cultural Affairs in Taiwan's government and for the success of any conservation strategy. Knowledge of what factors affect local residents' support for sustaining cultural landscapes and the interaction of these factors is important to the relevant unit before providing government resources such as technical, educational and financial assistance.

A critical finding revealed by this study is that the traditional customs considered as the key factors to conserve cultural landscape in landscape conservation

affairs. Because these four cultural significant sites are located in rural-urban interface, these areas are usually regarded as the suburbs which provided new opportunity for residential even industrial use. Local people might have the difficulty to resist the temptation of great economic benefit when they are persuaded to sell their lands by property development enterprise. Local people's choice of sustaining these lands with magnificent landscapes seemed to be the critical factors for successful conservation. As a result, the governments and conservationists need to consider the traditional custom as a key point to communicate with local residents while specific cultural landscapes owned by local residents are worthy of conservation.

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