

Identify the Critical Success Factors of Business Management in Taiwanese Veterans Home

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Abstract According to a survey conducted by the Council for Economic Planning and Development of Taiwan, the population of adults aged 65 years or above will increase from 11.2% in 2012 to 20% in 2025. The Veterans Affairs Commission (VAC) Taiwan also revealed that until April of 2011, there are 456,866 veterans living in Taiwan (one in fifty Taiwanese residents is a veteran). Their average age is 68.1 years old and the majority of veterans (56%) are aged 65 and older. The increase in life expectancy and ongoing growth of aging population has led to new models of aging that empower older people to fulfill their quality of later life. In order to take care of the veterans who have contributed to the country and spent half of their life defending the country, the Veterans Affairs Commission Taiwan is assigned with responsibilities to assist in medical care, home care and other general services. These services were designed to facilitate the transition of military personnel from the armed forces to civilian life. The aim of this paper is to identify the critical successful factors of business management in Taiwanese Veterans Home by Analytic Hierarchy Process (AHP). The author's survey results revealed that the top three critical successful factors of business management in Taiwanese Veterans Home are; service quality of the professional team, long-term care planning and accidents audit plan.

Keywords Analytic Hierarchy Process, Critical Successful Factor, Taiwanese Veterans Home

1. Introduction

With decreasing birth rates and increasing life expectancy, Taiwan is facing the economic impact of the aging population on its health care system, especially public funded health care services. Furthermore, with rising expectations for the quality of care, has made health care

reform a major task of the Taiwanese government (Leung *et al.*, 2004). It is estimated that the Taiwanese population aged 65 and older will grow to 14% of the total population in 2016 and 20% of the total population in 2025. Even though aging is not synonymous with frailty, elderly people are major consumers of health care. In the United States, health care spending is expected to grow by two thirds by 2008, and the elderly account for one third of the country's \$112 billion prescription drug costs, which are growing by more than 10% a year (Critical Conditions, 2000).

In addition, there are 980,300 Hong Kong people who are 65 years old and above in 2012 (13.7% of total Hong Kong population). Total expenditure on health amount HK \$ 88,721 million, as 5.2% of Gross Domestic Product (GDP). Wong (2013) reported that Hong Kong will have to spend much more than expected on elderly health care in future, according to revised government predictions that show previous estimates were far too low. Furthermore, by 2030, almost one in three people will be 65 or older in Japan. Meeting the needs of an ageing population, the Japanese government provides universal health care coverage for its population while spending around 8.5% of GDP (Curry, 2012).

According to the Veterans Affairs Commission (VAC), Taiwan survey in April of 2011, there are 456,866 veterans living in Taiwan (one in fifty Taiwanese residents is a veteran, see Table 1). Their average age is 68.1 years old and the majority of veterans (56%) are aged 65 and older (VAC, 2011). There are two salient demographic changes that will take place in the Taiwanese veteran population over the next ten years, which will greatly affect the demand for long-term care and other services (Washington State Department of Veterans Affairs, 2006). These demographic changes include:

- An extraordinary increase in the veteran population aged 80 and older;
- The highest proportion of aging veterans is male.

Table 1. Number of Taiwanese Veterans – by Age

Categories	20-49 years old	50-64 years old	65 years old & over	Total
2007	105,064	91,205	295,265	491,534
2008	103,215	95,662	283,225	482,102
2009	98,143	101,668	271,495	471,306
2010	92,574	109,457	259,604	461,635
Until April 2011	90,608	111,424	254,834	456,866

Source: Veterans Affairs Commission (2011)

Over the next 10 years, the number of veterans aged 65 and older in Taiwan will remain relatively stable, fluctuating between 200,000 and 250,000. However, there will be a sharp rise in veterans aged 80 and older. According to VAC, Taiwan (2011) projections, the number of veterans age 80 and over will increase by 20% between 2011 and 2021. The growth in very elderly veterans is resulting in increased demands for long-term care, including special needs such as hospice care and care for Alzheimer's and other dementia conditions. According to the Washington State Department of Veterans Affairs (WDVA, 2006) study on prevalence rates for Alzheimer's, it is estimated that approximately 16,000 Washington veterans aged 65 and older will be diagnosed with this disorder by 2010, representing an increase of almost 100%.

One unique characteristic of older Taiwanese veterans that affect service needs is the high proportion of males – 97% of veterans over the age of 65 are males, compared to 50% for the country population as a whole – and the presence of wartime disabilities, both physical and mental. Using data from a VAC, Taiwan (2011) statistic, approximately 10,000 veterans aged 65 and over in Taiwan are currently receiving war-related disability compensation or pensions from the central government.

The main purpose of a veterans home is to achieve their organisational mission and vision which include insuring the vitality of the armed forces, securing social stability and prosperity, maximising human resources and supporting national reconstruction. In addition, they need to focus on customer satisfaction in order to maintain sustainable service operations (Predrag, 2011). This paper addresses the emerging phenomenon of providing a health care system for an aging population. It also identifies the critical success factors of business management in the Taiwanese Veterans Home (TVH).

2. Introduction to Taiwanese Veterans Homes

In order to take care of the veterans who have contributed

to the country and spent half of their life defending the country, the Taiwan VAC is assigned with responsibilities to assist in educational support, employment assistance, medical care, home care and other general services. These services were designed to facilitate the transition of military personnel from the armed forces to civilian life. It is also concerned with improving their quality of later life (Veterans Affairs Commission, 2011). According to the Republic of China (ROC) Veterans Assistance Act, the VAC is to set up institutes to provide home-care for veterans. Under these principles, the VAC has set up 14 veteran's homes and 4 domiciliary centres to provide home-care services in following categories.

2.1. Home-care at Government's Expenses

Veterans aged 61 and older, receiving less than an average monthly income of NT \$ 13,550 (about USD 417) and holding a valid household registration in Taiwan as well as those service connected injured or sick veterans, are entitled to VAC home-care of this category. In addition, qualified single veterans are encouraged to live inside the veterans homes. To the end of April 2011, Taiwanese veterans homes provide 6,862 beds at the government's expense (see Table 2). Currently, 6,577 veterans are living in veterans homes, with bed occupancy rates of 96% (Veterans Affairs Commission, 2011).

2.2. Home-care at Self-expenses Domiciliary

Veterans aged 61 and older, and who are financially capable to support their own home-care services are included in this category. If the applicants are married, their spouses, over 50 years old, are qualified to apply with the veterans as well, but they should be able to handle their daily activities. To the end of April 2011, Taiwanese veteran's homes and domiciliary centres provide 2,769 beds at a self-expense domiciliary (see Table 3). Currently, 2,107 veterans are living in veterans homes and domiciliary centres, where the occupancy rate of beds is 76% (Veterans Affairs Commission, 2011).

Table 2. Number of Beds of Veterans Homes at Government's Expense

Categories	Independent domiciliary	Nursing care / disabled	Nursing care / Dementia	Total
Banciao Veterans Home	150			150
Taipei Veterans Home	639	270	70	979
Taoyuan Veterans Home	416	158	50	624
Hsinchu Veterans Home	348	176		524
Changhua Veterans Home	327	144	80	551
Yunlin Veterans Home	178	200		378
Baihe Veterans Home	263	169		432
Jiali Veterans Home	278	68		346
Tainan Veterans Home	348	93		441
Gangshan Veterans Home	548	211	100	859
Pingtung Veterans Home	142	174	60	376
Hualien Veterans Home	330	130		460
Taiping Veterans Home	188	94	67	349
Malan Veterans Home	252	141		393
Total	4,407	2,028	427	6,862

Source: Veterans Affairs Commission (2011)

Table 3. Number of Beds of Veterans Homes at Self-expense Domiciliary

Categories	Independent domiciliary	Nursing care / disabled	Nursing care / Dementia	Total
Taipei Veterans Home		45	20	65
Taoyuan Veterans Home		69	27	96
Hsinchu Veterans Home	26	24		50
Changhua Veterans Home			20	20
Yunlin Veterans Home		200		200
Baihe Veterans Home	87	70		157
Jiali Veterans Home	26			26
Tainan Veterans Home	61	30		91
Gangshan Veterans Home	2			2
Pingtung Veterans Home		100	40	140
Hualien Veterans Home	10	20		30
Taiping Veterans Home	6	62	25	93
Malan Veterans Home	15	19		34
Bade Domiciliary Center	666	34		700
Changhua Domiciliary Center	352	32		384
Nanzih Domiciliary Center	408	75		483
Hualien Domiciliary Center	183	15		198
Total	1,842	795	132	2,769

Source: Veterans Affairs Commission (2011)

2.3. Home-care Resource Sharing

In order to build up better neighbourhood relationships and facilitate better use of government resources the VAC has launched a new project to share its home-care facilities with civilians in the vicinity from 2007. VAC veterans homes and domiciliary centres are instructed to offer day-care centres and the rehabilitation facilities inside the home-care institutes to the nearby civilians (Veterans Affairs Commission, 2011).

Currently, there are a lot of challenges facing Taiwanese veterans homes on future developments, for example, accommodating a continued decrease in the number of veterans. There were 598,000 veterans in 1991, but in April 2011 there are only 456,866 veterans living in Taiwan, decreasing by more than 7,000 veterans a year. Holmes (1996) indicated that a proxy measure of financial performance is the occupancy rate of the facility. Facilities with high occupancy rates are likely to be more profitable or at least have greater economies of scale. This should enable veterans homes to increase service provisions. As a consequence, these facilities may also be more likely to have improved resident outcomes (Castle and Banaszak-Holl, 2003).

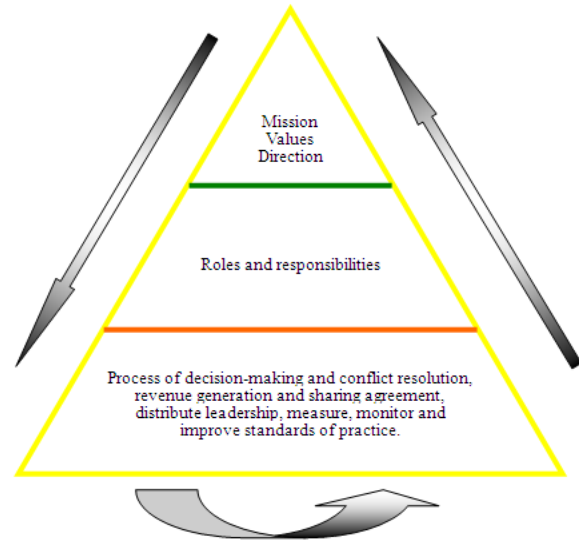
Although Taiwanese veterans homes are public funded health care services, Kaplan and Norton (2001) stated that both profit and non-profit organisations need to focus on profitability and customer satisfaction in order to maintain sustainable business operations. Therefore, it is important to increase the occupancy rate of the facility for Taiwanese veterans homes on future developments.

3. Critical Success Factors of Non-Profit Organization, Nursing Home and Veterans Home

The Critical Success Factors (CSFs) are interdependent; one is not more important than another. However, the success factors cascade down and build on one another beginning with a shared mission, values, vision and direction and then proceeding to clearer definitions of relationships and processes (Mollenhauer, 2006, see Figure 1).

The idea of CSFs was first presented by Ronald Daniel in the 1960s. It was then built on and popularized a decade later by John F. Rockart, of MIT Sloan School of Management and he has since been used extensively to help businesses implement their strategies and projects (MindTools, 2013). Rockart also defined CSFs as: 'The limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation. They are the few key areas where things must go right for the business to flourish. If results in these areas are not adequate, the organisation's efforts for the period will be less than desired.' He also concluded that CSFs are 'areas of activity that should receive constant and careful attention from management' (MindTools, 2013). Critical Success Factors

are therefore strongly related to the mission and strategic objectives of business or project. Whereas the mission and objectives focus on the aims and what is to be achieved, Critical Success Factors focus on the most important areas and get to the very heart of both what is to be achieved and how business will achieve it.



Source: Mollenhauer (2006) adapted by author

Figure 1. Triangle of success factors

Veterans home staff must articulate clear and meaningful values that drive their behaviour. For example, Veterans home values might be to; ensure that the veterans served come first, value the different capacities and interests of all veterans, consistently aim for efficiency and effectiveness and communicate in an open and transparent fashion (Mollenhauer, 2006). In addition, the division of roles and responsibilities reflect the veterans homes values and are based on what each part of the veterans home can do most effectively. There is a clear value added and no duplication of effort. Additionally, the roles and responsibilities are based on realistic expectations because they take into consideration the various capacities of homes. Once the role and responsibilities are established, a successful veterans home ensures that each member of staff is fulfilling their role (Mollenhauer, 2006).

3.1. Critical Success Factors of a Non-Profit Organization

Kaplan and Norton (2001) proposed a non-profit organisation structure to establish the four major Balanced Score Card (BSC) perspectives. The organisational mission is at the top followed by the customer, internal process, learning and growth, and financial perspectives. Through the balanced score card approach, each individual will find his or her orientation and connection within the organisation and will determine how to satisfy customer requirements, improve organisational financial performance and contribute to staff growth (Lawrence and Sharma, 2002; Wilson et al., 2003; Kaplan and Norton, 2004; Chen et al., 2006).

Table 4. Measures for improved and modified BSC objectives of the non profit organisation

Objectives	Measures		
Develop needed workforce skills and competencies	Retain best qualified staff	Track all external trainings and conferences for division and departments	Communications and marketing plan is developed and executed
Ensured organisational learning based on data, outcomes and experience	Turnover rate	Organisational learning	Promotion rate
Deliver services aligned with resources and prioritised core activities	Number of consults	Process efficiency	Marketing performance
Build professional competencies that support strategy	Number of solutions evaluated	Number of joint projects in new or emerging markets	Level of satisfaction with newly implemented solutions
Understand customer segments	Number of repeat customers	Offering customers high-quality services	Number of services available to customers
Provide quality programs that are superbly executed	Number of hours spent with customer	Market share	Customer loyalty program
Average gift amount	Number of safety incidents from new products		Revenue from markets and segments
Achieve financial sustainability	Revenue growth vs budget targets	Number of new business opportunity identifications	
Be the best managed non-profit organisation in the country	Marketing, selling, distribution and administrative as percent of total cost		

Source: Predrag (2011)

Table 4 demonstrates BSC measures for improvement and modified objectives of the non-profit organisation. Non-profit organisations must emphasise the financial costs and benefits of business management. Without awareness of the complete financial structure, including resources and budgets, it is impossible to achieve a vision or mission (Predrag, 2011). Many non-profit organisations have admirable mission and vision statements but lack adequate financial support, which results in poor performance. Fletcher and Smith (2004) suggested that the learning and growth perspective was the leading indicator of the internal business process, which in turn, was the leading indicator of customer satisfaction. A degree of improvement in internal business processes and the level of customer satisfaction will also affect the financial perspective.

In addition, Predrag (2011) stated that non-profit organisational members that have core abilities in quality awareness can improve their internal processes to increase administrative efficiency. He further indicated that if the organisational services and education are of good quality and adequate operational facilities, customer requirements will be satisfied. When non-profit organisational internal and external customers are satisfied with its performance, its profit growth will most likely be positive and sustainable. Therefore, an adequate financial structure helps a non-profit organisation achieve their mission and vision.

A survey of Employee Volunteering Program (EVP) for the small to medium Not-for Profit Sector (NFPs) conducted by Dalton *et al.* (2008) revealed that interviewees generally said that the commitment of volunteers was important. Their reliability contributed to the success of the EVP. Moreover, quantitative data revealed that a key point to success is the relationship between NFPs and corporations. Good communication, clarity of purpose and direction, understanding each other and good management were also

significant themes. Mutual benefit was achieved via skills and experience exchange. Some stated good planning of a project is also a crucial factor.

3.2. Critical Success Factors Of Nursing Home

Nursing homes are being challenged in many ways. For example, there is an ever-growing elderly cohort, patients may be admitted to nursing homes in poor health conditions and reimbursement for nursing homes services may not be adequate (Childs, 2000). These trends are likely to continue. Nursing Homes therefore may need better leadership qualities within the industry so that they can improve services to the elderly. Castle and Banaszak-Holl (2003) believed that it is equally obvious that the administration of nursing homes may determine the context and content of nursing home care and may also have an important effect on quality.

The Institute of Medicine (IOM) estimated that more than half of the nursing homes in the United States of America (USA) provided low standards of care (IOM, 1986). Several USA government reports also indicated that many of their nursing homes have serious quality problems that can harm residents (General Accounting Office, 1999a, 1999b, 1999c). Harrington *et al.* (2000) found that administrative staff time was not related to any deficiencies for resident care but was inversely related to non-health deficiencies. Castle and Banaszak-Holl (2003) agreed and stated that the ability of administration to react to resident outcomes and code violations on state inspections may be tied to the organisation's financial performance. They also indicated that competition may be an important influence on the behaviour of administration, especially in promoting quality care.

In addition, a research carried out by Castle and

Banaszak-Holl (2003) revealed that the effective staffing levels of nurses need to be larger than those for administration. They believed that administrative staffing is important but clearly not as influential as caregiver staffing. Previous research has identified high rates of administrator turnover in nursing homes (Singh & Schwab, 1998). Rubin and Shuttlesworth (1986) surveyed the average turnover of administrators to be 33% per year. Furthermore, A recent study using data from five states of the USA found turnover rates to average 43% per year (Castle, 2001). Additionally, several studies have identified turnover of administrators in nursing homes as a potential influence on quality of care, therefore making an understanding of the factors associated with turnover even more pressing (Christensen & Beaver, 1996; Singh *et al.*, 1996).

Castle and Shugarman (2005) also indicated that administrator turnover is affected by both organisational characteristics and the personal characteristics of top managers. They also showed that top management teams with longer tenured administrators are 40% less likely to leave the organisation than those with shorter tenure. Therefore, increased tenure is generally associated with stability within a facility. Currently, care facilities are facing increasing pressure to provide higher staffing levels. Several states of the USA, for example, have mandated minimum staffing levels (Mueller *et al.*, 2006). This clearly comes at an added expense for the facility. Castle (2008) indicated that one beneficial outcome of higher staffing levels could be lower staff turnover.

Following nursing home admission, family members of the new resident and the health care staff should interact with each other. Some staff mistakenly think that family members abandon their relatives once they are admitted to the nursing home (Rowles & High, 2003), but the reality is that most family and friends remain involved in the care of their relative through visits and phone calls (Port *et al.*, 2001). A recent research has shown that family members value effective relationships with nursing home staffs that they see as a source of information and a means of remaining involved in care decisions. Family members who also possess information about residents' preferences, habits and goals of care can assist staff to establish an optimal plan of care that contributes to resident well-being (Rowles & High, 2003).

Wilder (2005) suggested that improved interaction and communication between staff and family are necessary to improve relationships and decrease family complaints that can lead to costly investigations. However, a survey conducted by Utley-Smith *et al.* (2010) revealed that staff at two nursing homes described staff-family relationships as difficult, problematic and time consuming. An earlier study also revealed that the same was true for families, which contributed to unresolved staff-family member conflicts (Marzialli *et al.*, 2006). Utley-Smith *et al.* (2010) further identified that differences between the staff attitudes and perceptions of family expectations at two nursing homes could be due to general differences in socioeconomic status.

Working class families are possibly less demanding or more appreciative of the care received by their relative, while the middle and upper middle class families may expect and demand more.

One nursing home introduced a system of communication with family members in the first 72 hours after admission. The program was intended as a preventative strategy to ensure that family members were intended as a preventative strategy to ensure that they were comfortable with their relative's care. During the first 24 hours the admission director telephoned the family, at 48 hours the nurse telephoned the family and at 72 hours the social worker contacted the family. The assistant nursing home administrator admitted that the system was not always followed but believed it worked when it was adhered to.

4. Materials and Methods

The Analytic Hierarchy Process (AHP) is a mathematically based, multi-objective decision making tool which was introduced by Saaty (1990). It uses the pair wise comparison method to rank order alternatives of a problem that are formulated and solved in hierarchical structure (Udo, 2000; Coyle, 2004; Saaty, 2008). The AHP approach has been adopted in many applications including project management (Kamal & Al-Subhi, 2001), project risk management (Dey, 2002) and supplier evaluation and selection (Tahriri, *et al.*, 2008). Additional application areas include problems in vendor selection, information technology outsourcing decision and decision making etc. (Udo, 2000; Saaty, 2008; Kumar, *et al.*, 2009).

Kendrick and Saaty (2007) also indicated that AHP can assist strategy focused organisations in properly managing business process improvement programs. Furthermore, Hepler and Mazur (2007) indicated that the most important outcome of service quality is a design and implementation activity list to assure customer satisfaction. Since most organisations cannot complete this list due to human resource, budget, and time constraints, some prioritisation of the action items is necessary. This prioritising action items is critical to aiming the organisation towards a shared vision. One widely accepted approach to planning, priority setting, and resource allocation in complex situations involving multiple criteria is the AHP. The objective of this survey is to use the AHP method for Critical Success Factor's judgement. In order to comply with collecting quantitative and qualitative data for AHP CSFs model that could be applied in the Taiwanese Veterans Home; a three step approach was performed to ensure successful implementation as follows:

4.1. Step 1: Structure the Hierarchical Model

The first step in AHP rating procedure is to establish the criteria and sub-criteria to be used for CSFs judgement. To comply with the criteria for CSFs judgement and their importance required data to be collected based on the

literature review. Figure 2 shows that three important criteria in the second level and fifteen sub-criteria from the third level were selected to analyse the CSFs for business management of the TVH.

4.2. Step 2: Prioritise the Order of Criteria and Sub-Criteria

The mathematics of the AHP and the calculation techniques require a matrix to be constructed that expresses the relative values of a set of attributes. Each of these attributes is assigned a number on a scale (see Table 5). Udo (2000) stated that priority values can also be used as evaluation or performance measures. Businesses, government and even other organisations that seek to perform are able to evaluate their actions with measures of performance. He further explained that Expert Choice is a multi-attribute decision support software tool based on the AHP methodology. This tool can help the decision makers to examine and resolve problems involving multiple evaluation criteria.

To identify the CSFs of business management in the Taiwanese Veterans Home, a questionnaire was conducted, which was designed and based upon the current literature review and research objectives. Before the main survey was undertaken, a draft version of the questionnaire was piloted with one VAC officer, one Veterans Home administrator and also with one eminent academic professor. This pilot study was undertaken to elicit responses that would help to test the

wording of the questionnaire, identify ambiguous questions, and also provide an indication of the time to complete the questionnaire. A number of the comments and suggested amendments from the pilot study respondents were used to amend the questionnaire prior to its final distribution.

A total of 81 experts were asked to evaluate the priority of CSFs based on three criteria in the second level and fifteen sub-criteria in the third level by comparing the criteria with each other with respect to the goal. The name and post address of the experts were obtained from the author's network of contacts and also from organisations such as the Veterans Affairs Commission Taiwan, Association of National Universities of Taiwan, Information Service Association of Chinese Colleges, Association of Private Universities and Colleges, and Taiwan Veterans General Hospital. Prior to sending the posted questionnaire, an initial email was sent to each organisation in order to identify the person in the organisation with responsibility for veterans home administration or professional of veterans care.

A total of 52 valid returns were received during January 2013 and March 2013, representing a response rate of 64%. Naoum (1998) however suggests that 40%-60% is a more typical response rate for postal questionnaires. Therefore, the 64% response rate was considered very acceptable. The data obtained from the questionnaire survey was analysed according to the categories of expert, which was distinguished in three categories as indicated in Table 6.

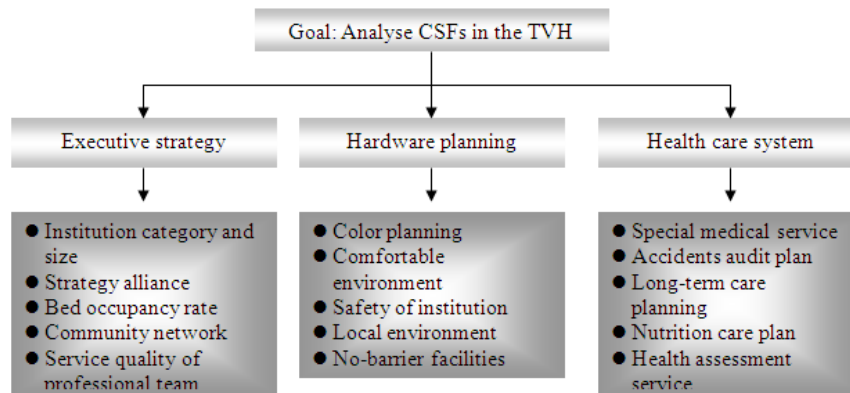


Figure 2. Hierarchy model of CSFs judgement

Table 5. The Saaty rating scale

Intensity of importance	Definition	Explanation
1	Equal importance	Two factors contribute equally to the objective
3	Some what more important	Experience and judgement slightly favour one over the other.
5	Much more important	Experience and judgement strongly favour one over the other.
7	Very much more important	Experience and judgement very strongly favour one over the other. Its importance is demonstrated in practice.
9	Absolutely more important	The evidence favouring one over the other is of the highest possible validity.
2,4,6,8	Intermediate values	When compromise is needed

Source: Coyle (2004)

Table 6. Questionnaire response rate

Categories	No. sent	No. returned	Response rate
VAC officer	10	5	50%
Veterans Home administrator	59	41	70%
Academic professor	12	6	50%
Average	81	52	64%

4.3. Step 3: Calculate the Consistency Ratio and Identify the CSFs

The final step is to calculate a Consistency Ratio (CR) to measure how consistent the judgements have been relative to large samples of purely random judgements. If the CR is much in excess of 0.1 the judgements are untrustworthy because they are too close for comfort to randomness and the exercise is valueless or must be repeated (Coyle, 2004; Farzad Tahriri et al., 2008). Based on the global priority, weights of each alternative can be evaluated and summarised. The summaries of overall criteria are discussed in next section.

5. Results

The results have been classified under the following headings:

- The results of pair-wise comparison in the second level
- The results of pair-wise comparison in the third level
- The overall results of the hierarchy model

5.1. The results of pair-wise Comparison in the Second Level

The author's survey results revealed that 'executive strategy' has a weight of 0.332, 'hardware planning' 0.248 and 'health care system' 0.454 (see Table 7). The interpretation of this survey result is that 'health care system' is the most attractive option of CSFs of business management in the Taiwanese Veterans Home. The result found in the author's survey was also confirmed by a study conducted by Abbott, *et al.* (2007) who indicated that almost half of the frail male veterans in their study are at risk of having no one to provide instrumental aid and health

monitoring support if something should happen to the one person who provides this type of assistance.

The author's survey results also revealed that Consistency Rate (CR) for the integrated matrix of pair-wise comparison of the category VAC officer was 0.01, VH administrator was 0.00 and academic professor was 0.00, as these rates are less than 0.1, it shows the consistency of the comparisons. Therefore, the prioritisations can be considered reliable.

5.2. The results of Pair-Wise Comparison in the Third Level

5.2.1. Within the Executive Strategy Category

A research survey carried out by Utley-Smith *et al.* (2010) concluded that by increasing connections and exchange of information between nursing home staff and family members, potentially better outcomes may be realised for nursing home staff members, family members and ultimately residents. Soderstrom *et al.* (2003) agreed and stated that nurses who promoted inviting interactions with family members by listening, being present and answering questions spent less time with families overall than their non-inviting colleagues. Nurses who used "non-inviting interactions" became defensive and withdrew from family interactions. This led family members to mistrust staff and spend more time on the unit with their relative.

The author's survey results revealed that 'service quality of the professional team' (0.530) is the major critical successful factor within the executive strategy category, followed by 'institution category and size' (0.173) and 'strategy alliance' (0.115) (see Table 8). These findings concur with the study conducted by Castle and Banaszak-Holl (2003) who indicated that the administration of nursing homes may have an important relationship with quality of care.

Table 7. The results of pair-wise comparison in the second level

Criteria in the second level	VAC officer	VH administrator	Academic professor	The overall
Executive strategy	0.338	0.230	0.327	0.332
Hardware planning	0.155	0.288	0.301	0.248
Health care system	0.507	0.482	0.373	0.454

Table 8. The results of pair-wise comparison within executive strategy category

Executive strategy	VAC officer	VH administrator	Academic professor	The overall
Service quality of professional team	0.565	0.459	0.566	0.530
Institution category and size	0.160	0.180	0.180	0.173
Strategy alliance	0.104	0.103	0.098	0.115
Community network	0.086	0.115	0.092	0.097
Bed occupancy rate	0.085	0.143	0.065	0.084

Table 9. The results of pair-wise comparison within hardware planning category

Hardware planning	VAC officer	VH administrator	Academic professor	The overall
Safety of institution	0.384	0.377	0.370	0.377
No-barrier facilities	0.378	0.341	0.398	0.372
Local environment	0.113	0.108	0.106	0.109
Colour planning	0.065	0.073	0.060	0.066
Comfortable environment	0.061	0.102	0.066	0.076

Table 10. The results of pair-wise comparison within health care system category

Health care system	VAC officer	VH administrator	Academic professor	The overall
Long-term care planning	0.310	0.282	0.305	0.299
Accidents audit plan	0.250	0.222	0.271	0.247
Special medical service	0.229	0.203	0.166	0.199
Nutrition care plan	0.118	0.142	0.120	0.128
Health assessment service	0.093	0.151	0.138	0.128

5.2. Within the Hardware Planning Category

According to a veterans health study carried out by Kazis, *et al.* (1998) indicated that 36% of the patients had a disability. Duh *et al.* (2008) also reported that the incidence of injurious falls among American community-dwelling older adults ranged from 9.5 to 15.8 per 1000 person-years. Furthermore, a similar survey conducted by Chu *et al.* (2008) revealed that the fall rate in the Hong Kong Special Administrative Region of China was 26.4%.

Table 9 shows that 'safety of institution' (0.377) is the major critical successful factor within the hardware planning category, this was followed by 'no-barrier facilities' (0.372), 'local environment' (0.109) and 'comfortable environment' (0.076). Leung *et al.* (2010) agreed and stated that a high standard of care management service demonstrated a significant preventive effect on falls in the Chinese population. It reduced the risk of falling by 73%. They further indicated that cognitive impairment, unsteady gait, perceived poor health status, dizziness and depression were identified as the significant factors related with falls. Therefore, the safety of an institution will be a major factor to prevent the incidence of injurious falls in the Taiwanese Veterans Home.

The author's survey results also revealed a CR of 0.02 (VAC officer), 0.01 (VH administrator) and 0.02 (academic professor) within the hardware planning category. The Consistency Rate (CR) provides a measure of the logical rationality of the pair-wise comparison, these figures are all less than 0.10 so they are generally considered acceptable.

5.2.3. Within the Health Care System Category

Nakatani and Shimanouchi (2004) suggested that it is important to develop a care plan based on the necessary amount of service. Continuous monitoring and evaluation are also essential and these measures lead to satisfactory client outcomes. Leung *et al.* (2010) further stated that care managers are able to identify the high-risk group of service recipients, allocate resources to develop tailor-made care and eventually monitor the service recipients' progress in a continuous manner.

The author's survey results revealed that 'long-term care planning' (0.299) was considered to be most important critical successful factor within the health care system category. The 'accidents audit plan' (0.247), and 'special medical service' (0.199), ranked second and third most important respectively (see Table 10). These findings concur

with the survey conducted by Leung *et al.* (2004) who indicated that the major important reason for moving to a Continuing Care Retirement Community (CCRC) was to seek continuing care. They further stated that the long-term care provided by a CCRC is a paramount motivator for moving there.

Table 11. The overall results of pair-wise comparison from the VAC officer opinion

The second level		The third level		Combined weight	The order of priority
Criteria	Weight	Sub-criteria	Weight		
Executive strategy	0.338	Institution category and size	0.160	0.054	8
		Strategy alliance	0.104	0.035	10
		Bed occupancy rate	0.085	0.029	11
		Community network	0.086	0.029	12
		Quality of professional team	0.565	0.191	1
Hardware planning	0.155	Colour planning	0.065	0.010	14
		Comfortable environment	0.061	0.009	15
		Safety of institution	0.384	0.060	5
		Local environment	0.113	0.017	13
		No-barrier facilities	0.378	0.059	7
Health care system	0.507	Special medical service	0.229	0.116	4
		Accidents audit plan	0.250	0.127	3
		Long-term care planning	0.310	0.157	2
		Nutrition care plan	0.118	0.060	6
		Health assessment service	0.093	0.047	9

Table 12. The overall results of pair-wise comparison from the VH administrator opinion

The second level		The third level		Combined weight	The order of priority
Criteria	Weight	Sub-criteria	Weight		
Executive strategy	0.230	Institution category and size	0.180	0.041	9
		Strategy alliance	0.103	0.024	14
		Bed occupancy rate	0.143	0.033	10
		Community network	0.115	0.027	13
		Quality of professional team	0.459	0.105	4
Hardware planning	0.288	Colour planning	0.073	0.021	15
		Comfortable environment	0.102	0.029	12
		Safety of institution	0.377	0.109	2
		Local environment	0.108	0.031	11
		No-barrier facilities	0.341	0.098	5
Health care system	0.482	Special medical service	0.203	0.098	6
		Accidents audit plan	0.222	0.107	3
		Long-term care planning	0.282	0.136	1
		Nutrition care plan	0.142	0.068	8
		Health assessment service	0.151	0.073	7

5.3. The Overall Results Of Hierarchy Model

Turnover of nursing aides, licensed practical nurses and registered nurses in nursing homes has been a subject of research for the past decades. This interest has primarily been the result of consistently high rates of turnover identified for these caregivers in many facilities. (Castle & Engberg, 2005). Castle & Engberg (2005) further reported that understanding turnover in nursing homes is important. This is because turnover can influence facility operating costs, lower care-giver job satisfaction and have negative health outcomes for residents.

Castle (2008) agreed and stated that probably the most important concern about staff turnover is its potential association with quality of care. In general, high staff turnover is associated with poor quality. The critical successful factors of business management in the Taiwanese Veterans Home have been identified in the author's survey. The results are illustrated in Table 11, 12, 13, 14 and indicate that the top six critical successful factors are:

- Service quality of the professional team;
- Long-term care planning;
- Accidents audit plan;
- Safety of the institution;
- Special medical service;
- No-barrier facilities.

Table 13. The overall results of pair-wise comparison from the academic professor opinion

The second level		The third level		Combined weight	The order of priority
Criteria	Weight	Sub-criteria	Weight		
Executive strategy	0.327	Institution category and size	0.180	0.059	7
		Strategy alliance	0.098	0.032	10
		Bed occupancy rate	0.065	0.021	13
		Community network	0.092	0.030	12
		Quality of professional team	0.566	0.185	1
Hardware planning	0.301	Colour planning	0.060	0.018	15
		Comfortable environment	0.066	0.020	14
		Safety of institution	0.370	0.111	4
		Local environment	0.106	0.032	11
		No-barrier facilities	0.398	0.120	2
Health care system	0.373	Special medical service	0.166	0.062	6
		Accidents audit plan	0.271	0.101	5
		Long-term care planning	0.305	0.114	3
		Nutrition care plan	0.120	0.045	9
		Health assessment service	0.138	0.051	8

Table 14. The overall results of hierarchy model

Sub-criteria	VAC officer	VH administrator	Academic professor	The overall	The order of priority
Institution category and size	0.054	0.041	0.059	0.051	9
Strategy alliance	0.035	0.024	0.032	0.020	13
Bed occupancy rate	0.029	0.033	0.021	0.028	11
Community network	0.029	0.027	0.030	0.029	10
Quality of professional team	0.191	0.105	0.185	0.160	1
Colour planning	0.010	0.021	0.018	0.016	15
Comfortable environment	0.009	0.029	0.020	0.019	14
Safety of institution	0.060	0.109	0.111	0.093	4
Local environment	0.017	0.031	0.032	0.027	12
No-barrier facilities	0.059	0.098	0.120	0.092	6
Special medical service	0.116	0.098	0.062	0.092	5
Accidents audit plan	0.127	0.107	0.101	0.112	3
Long-term care planning	0.157	0.136	0.114	0.136	2
Nutrition care plan	0.060	0.068	0.045	0.058	7
Health assessment service	0.047	0.073	0.051	0.057	8

6. Discussion

According to VAC, Taiwan (2011) projections, the number of veterans age 80 and over will increase by 20% between 2011 and 2021. The growth in very elderly veterans is resulting in increased demands for long-term care, including special needs such as hospice care and care for Alzheimer's and other dementia conditions. One unique characteristic of older Taiwanese veterans that affect service needs is the high proportion of males – 97% of veterans over the age of 65 are males, compared to 50% for the country population as a whole – and the presence of wartime disabilities, both physical and mental. There are approximately 10,000 veterans aged 65 and over in Taiwan are currently receiving war-related disability compensation or pensions from the central government (VAC Taiwan, 2011).

In order to take care of the veterans who have contributed to the country and spent half of their life defending the country, the VAC is assigned with responsibilities to assist in medical care, home care and other general services. These services were designed to improve their quality of later life. To the end of April 2011, Taiwanese veterans homes provide 6,862 beds at the government's expense and 2,769 beds at a self-expense domiciliary. Currently, 6,577 veterans (government's expense) and 2,107 veterans (self-expense) are living in veterans homes, with bed occupancy rates of 96% and 76% (Veterans Affairs Commission, 2011).

Although Taiwanese veterans homes are public funded health care services, Holmes (1996) indicated that a proxy measure of financial performance is the occupancy rate of the facility. Kaplan and Norton (2001) agreed and stated that both profit and non-profit organisations need to focus on profitability and customer satisfaction in order to maintain sustainable business operations. Therefore, it is important to increase the occupancy rate of the facility for Taiwanese veterans homes on future developments.

The critical successful factors of business management in the Taiwanese Veterans Home have been identified in the author's survey. The top six critical successful factors are: (1) service quality of the professional team; (2) long-term care planning; (3) accidents audit plan; (4) safety of the institution; (5) special medical service; (6) no-barrier facilities. The findings in the author's survey are similar to the research conducted by Leung *et al.* (2004) who identified the most important general considerations in selecting a CCRC were respectively; continuing care (71.4%), on-site medical services (60.4%), a desire to remain independent (36.3%), the reputation of the facility (35.2%), the size, design, or choice of the living units (31.9%) and the facility's reputation for being well-managed (30.8%). However the order of importance of the various critical successful factors is slightly changed.

The author's survey results also concur with the survey carried out by Chen *et al.* (2008) who revealed that 8.2% of Taiwanese veterans home residents reported a history of falls in the proceeding 180 days. They further indicated that

'accidents audit plan' and 'no-barrier facilities' are two preventive strategies for falls in the Taiwanese Veterans Home. In addition, the findings in the author's survey are confirmed by Ku *et al.* (2006) who indicated that prevalence of depressive tendency is 35.5% of veterans home residents in eastern Taiwan. They further identified that depressive status is significantly predicted by poor functional status, dissatisfaction with living situation, poor perceived health status and lower education level. Additionally, they concluded that Taiwanese veterans home need to be considered when assessing the health of older veterans and developing future interventions for residents, such as 'long-term care planning' and 'special medical service' etc.

In general, critical success factors are common to most businesses that assist management in measuring whether they are on track toward reaching profit and market share goals. Phillips (2002) agreed and stated that some nursing homes are better than others, because some nursing homes are more effective organisations than other nursing homes. Castle (2008) also believed that the organisational context can help differentiate between more and less effective organisations with respect to turnover and vacancy rates. Finally, Yusuf (1995) identified several critical factors for success in small and medium business as follows: (1) good management (4.36); (2) access to finances and level of initial investment (3.70); (3) personal qualities (3.67); (4) satisfactory government support (3.65); (5) level of education and training. Although the order of importance of critical successful factors is changed, Yusuf (1995) survey results are similar to the author's survey findings.

7. Limitations of the Research

Several limitations and constraints have influenced the response obtained in this research:

- **Unfamiliarity of AHP applications:** AHP is a relatively new tool, particularly in the Taiwanese Veterans Home and therefore some respondents were unfamiliar with the AHP applications available or even the esoteric terminology used.
- **Constraints of conducting structured interviews:** Although a substantial empirical study was conducted using three questionnaire surveys, the expense and time-consuming nature of conducting structured interviews limited the number that were able to be carried out.
- **Analysis constraints:** Some difficulty was experienced in analysing some of the survey respondent's comments, due to their subjectivity.

8. Conclusion

Population aging is a global phenomenon that affects both developing and developed countries, and Taiwan is no exception. Taiwan was estimated to become the fastest aging

country in the world, and the percentage of older population in Taiwan will be doubled from 2010 to 2025 (Chiang *et al.*, 2012). The escalation of older population may cause various challenges to health care systems which include Taiwanese veterans care system. Among this older population, one in six older Taiwanese is a veteran (VAC, 2011) and they have unique characteristics. The majority of Taiwanese veterans are single. Their languages, habits and value systems were different from those of local people, making it difficult for them to form new social networks and to get a job (Ku *et al.*, 2006).

Currently, there are a lot of challenges facing Taiwanese veterans homes on future developments. For example, the growth in very elderly veterans is resulting in increased demands for long-term care, including special needs such as hospice care and care for Alzheimer's and other dementia conditions. The prevalence of dementia was 5.9% – 9.4% in community-dwelling elderly and 57.2% among residents living in long-term care facilities. Cognitive dysfunction also shares many common risk factors with falls, such as visual impairment, muscle strength and balance (Chen *et al.*, 2008). Falls and related injuries are therefore the major issues of care in the Taiwanese veterans homes.

A study of veterans home in Taiwan showed that 8.2% of residents reported a history of falls in the preceding 180 days (Chen *et al.*, 2008). About one-third of falls in care homes resulted in various physical injuries, of which 3% – 5% were fractures (Rubenstein *et al.*, 1996). In addition to physical injuries, falls have tremendous impact on the elderly in terms of loss of function, anxiety, depression and increased economic burden. The no-barrier environment and facilities is therefore an important preventive strategy for falls in the Taiwanese Veterans Home. This concept is confirmed by the author's survey results, there are 52 VAC officers, veterans home administrators and academic professors identified that 'no-barrier facilities', 'accidents audit plan' and safety of the institution' are three critical successful factors of business management in the Taiwanese Veterans Home.

The author's survey results also revealed that another three critical successful factors of business management in the Taiwanese Veterans Home are 'service quality of the professional team', 'long-term care planning' and 'special medical service'. Ku *et al.* (2006) agreed and stated that the prevalence of depression in the elderly around the world is high. According to their survey results reported that 35.5% of veterans home residents have revealed depressive symptoms in eastern Taiwan. Preventing suffering from depression and detecting depressive symptoms earlier for the elderly has become an important issue for health care systems worldwide.

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