

Study on the Factors Affecting the Participation in Parent-child Leisure Sports—A Case Study of Miaoli County Primary Schools

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Abstract

Affected by globalization, low birth rate, and aging, the factors influencing leisure sports factors change correspondingly. Due to immature mental development, the selection of leisure sports of primary school children was mainly affected by the preferences of their parents. And parents gradually consider the needs of their children during such selection. This study aimed to understand the influencing factors of parents' participation in parent-child leisure sports. First was literature collection and summary of the opinions of experts and scholars which were used to form a questionnaire. And parents were invited to fill in the questionnaire. AHP was employed to conclude consistency and the relationship of weights. The results show that, the top three factors in terms of weight are promotion of family relationship (0.265), expansion of life experience (0.134), and personality characteristics (0.082). It is obvious that the encouragement of parents to participate in parent-child leisure sports can enhance the relationship of family members and expand knowledge and life experience. Among the 13 factors, population structure is not stressed, indicating that, during different development stages of family, the differences in the age of family members and number of family members have little influence on the participation in parent-child leisure sports by parents. In terms of the topic of participation in parent-child leisure sports, this study initially completed basic investigation and analysis and will serve as reference for future relevant studies.

Keywords: parents, parent-child sports, family relationship, recreational, exercise

1. Introduction

The participation in parent-children leisure sports can reflect the quality of life. Due to the stress of holistic leisure sports by the national policies on health, the participation in health activities is vital for the development and health education of students from childhood to adulthood. With the advent of low birth rate and aging, it is important to maintain economic and social stability and handle the issues of students so as to facilitate the development of leisure sports industry. Because of various

influencing factors, and in line with the current social trend, close attention shall be paid to the strategies and specific practices of participation of parent-child leisure sports, which is helpful and beneficial. Due to low birth rate and the idea of "child first", the majority of parents are busy with their work. The education and accompany of primary school students is a crucial factor influencing their life quality. Parent-child leisure activities mean that one or both parents take the initiative to join interactive activities with their children during their spare time, which can enhance family member communication and family identity, promote the mental and physical development of children, and cultivate good values [1]. Shaw pointed out that, for parents, it was of high value to participate in family leisure activities, because they could directly or indirectly enhance family communication and identity, promote the physical health of children, and cultivate good mortal ideology [2]. Zabriskie and McCormick assumed that participation in activities by family members could result in more family interaction. They further argued that participation in leisure activities could strength family unity, and the development of conjugal and parent-child relations [3]. Raymore believed that leisure life had a positive influence on family life. Through the participation in leisure activities, family members could enhance mutual understanding and interrelations [4]. Neumann asserted that common family recreational activities could provide children with knowledge and experience which could enhance their education, help them build self-confidence, promote family intimacy, and create memories of each other [5]. This study considered the parents of primary school children as its subjects to explore the factors that affected parent-child leisure sports. Literature review and formal Delphi Method had been employed to make an expert questionnaire. This study summarized the factors influencing the participation in parent-child leisure sports by parents, adopted AHP to form the framework of such factors, and explored the weights and order of such factors during the selection of leisure sports. Based on the results, this study hoped to serve as reference in terms of the promotion of parent-child leisure sports at government agencies, schools, civil societies, and leisure management companies.

2. Literature Review

In order to make this study more complete and clear, literature related to the key factors influencing the participation in parent-child leisure sports by parents had been reviewed and summarized.

2.1 Discussion on leisure, leisure activities, and leisure sports

Leisure is a broad social behavior with a wide range. Many experts and scholars at home and abroad have different ideas on leisure. Thus, there is no consensus on the definition of leisure. The general public has ambiguous understanding of the three concepts, that is, leisure, leisure activities, and leisure sports [6]. Chang comprehensively summarized the views of experts and scholars and believed that leisure was a broad concept with a wide range. Its meaning contained leisure activities and leisure sports which were both preferential activities during spare time for the purpose of relaxing and enjoyment. The two concepts were interrelated. Leisure was abstract, while leisure activities were most specific. Leisure sports focused more on physical movement [7]. The leisure sports in this study refer to: Parents select and participate in the activities at will during their spare time to promote their mental and physical development and ease pressure.

2.2 The meaning of family leisure activities

From the perspective of time, family leisure activities stood for the recreational activities participated by both parents and children during their spare time [2]. From the perspective of family participation: Family leisure activities refer to the leisure activities participated by all family members during spare time (except the time spent in work and daily life) which had the functions of relaxing, entertainment, and self-development [8]. As time passes by, Taiwan passed "Family Education Act" on January 7, 2003, which specifically stressed the planning and study of leisure life was a vital way to enhance family quality. Through the participation in family leisure activities, family members could understand each other better, enhance their mutual relationship and reliance [9].

Family is the first learning environment for children. Family leisure activities considerably affect children, parents, and even the whole society. Family leisure activities can provide the opportunities of emotional exchange between parents and children, allow children to complete the process of socialization, enhance the communication, coordination, interaction, and unity of family, promote physical and mental health, improve physical fitness, expand life experience, and improve work efficiency and the quality of life.

2.3 The classification and function of leisure sports

Cheng believed that recreational sports were a combination of leisure and sports, different from other leisure activities. Leisure sports activities could not only make one relax, forget trouble, get rid of the same life style, but also have entertainment, meet the sense of accomplishment, improvement health, and enjoy social functions, which were unique from other types of leisure activities [10]. Participation in leisure sports can improve healthy, experience the joy of leisure, and enjoy good life

from sports. As there are a variety of sports, people of different ages, genders, physical conditions, and physical fitness can have different choices. Scholars had different views on leisure sports. Most ways of classification were based on the nature, purpose, and function of sports. This study considered the possible factors which would affect the participation of leisure activities by parents and children. The classification mainly based on the nature of sports had been adopted. Parent-child leisure sports had been classified into seven categories, namely, ball games, outdoor sports, fitness, dance, folk sports, martial arts, and water sports. The benefits of leisure sports are diversified and dynamic to promote mental and physical health, ease pressure, expand social contact and life experience, enhance family harmony and work efficiency, ease work pressure, and enhance life quality. The benefits of leisure sports are crucial, which can be considered as important efficiency and factors in terms of active participation in leisure sports.

2.4 Exploration on the obstacles of leisure sports

Crawford & Godbey [11] pointed out that leisure obstacles were the factors making individuals perceive that they did not like or were unable to participate in leisure activities. They classified the factors that impeded the participation in leisure activities into personal inner obstacles, interpersonal obstacles, and structural obstacles. They summed up all kinds of leisure obstacles, developed leisure obstacle model, and classified them into three types:

1) Personal inner obstacle: It referred to personal psychological state and attitude. The leisure preferences or participation affected include frustration, stress, perception skills, anxiety, self-ability, subjective evaluation of appropriate leisure activities and other psychological states.

2) Interpersonal obstacle: It stood for the result of mutual influence among people. The lack of appropriate or enough partners in leisure affected the preferences and participation of leisure. For instance, parents and children had different interests. And this obstacle also applied to the relationship between parents and between parents and children.

3) Structural obstacles: It meant the external factors affecting personal preference or participation, including: climate, time, season, family property, leisure opportunities, leisure resources, equipment, and other external factors.

Because leisure sports are a kind of dynamic activity, there are many and complicated obstacles of participation, often affected by psychological state of an individual, interpersonal influence, and external environment. Different research subjects and background variables have different obstacles. This study classified the obstacles influencing the participating of parents into personal and family background factors. Personal factors included: living environment, work pressure, personality, education concept, and time management. Family background factors included: education background, profession, salary, and family structure. As parent-child leisure sports require the participation of one or both parents, family background factors had been included in obstacles.

3. Research Methods

This study aimed to establish a set of criteria which could be used as the influencing factors of parents' participation in parent-child leisure sports. Through hierarchical analysis, it confirmed research theme, established evaluation criteria, conducted questionnaire survey, formulated weights, and proposed decision-making suggestions.

3.1 Definition of problem—Research subjects and scope

The subjects of this study were the student parents of the primary schools in Miaoli County. This study adopted literature review and formal Delphi method, conducted questionnaire survey twice to conclude consensus, and summarized criteria and sub-criterion layers.

3.2 Establishment of the hierarchical framework

1) Selection of factors: This study reviewed relevant literature. Based on the views of scholars and experts, it adopted revised Delphi method to evaluate the selection of actors. It considered the feasibility and the topic of parent-child leisure sports. Hence, it covered 10 respondents from industrial, governmental, and academic circles. It hoped to provide diversified, professional, and deep opinions and suggestions. It referred to the convergence conditions proposed by Hong (2000) that when over 70% of the questions had consensus, it means that all the experts had reached consensus [12]. Based on the results of the two questionnaire surveys, the degree of support of experts to each selection factor was over 70%, indicating consensus. Among the 15 primary evaluation factors, except "education background of parents" and "work pressure of parents", 13 items had been included in the hierarchical framework of this study, as shown in Figure 1.

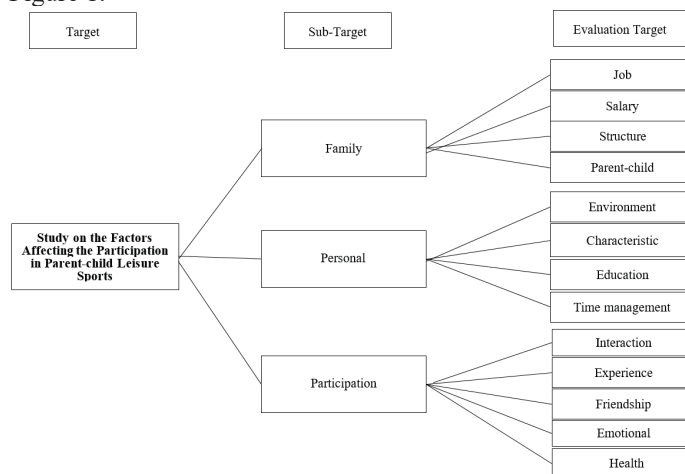


Figure 1 Establishment of the hierarchical framework

2) Description of the factors of each layer

The above hierarchical structure contains three layers. The first layer is the target layer. The second layer is the criteria layer. And the third layer is the sub-criterion layer. There are four to five indicators under the criteria layer. The meanings and supporting literature of the indicators are described in Table 1 below.

Table 1. Meanings and supporting literature of the indicators

Dimension	Indicator	Description	References
Benefits of participation	Family relationship	Through joint participation of parent-child leisure activities, parents and children can enhance their affection, promote positive interaction, and promote family relationships.	[13] - [14],
	Expand experience	Through the participation of parent-child leisure sports, life experience and knowledge, can be enriched and expanded.	[7] - [15], [16] - [17],
	Social contact and friendship	Through parent-child leisure sports, family members can expand their living circles, enhance interpersonal interaction skills, and maintain friendship.	[7] - [13], [18] - [19], [20],
	Emotional expression	Through the participation in parent-child leisure sports, you can adjust and express emotions. Based on the confidence and sense of accomplishment obtained during the sports, you can effectively process and manage emotions.	[7] - [14], [15] - [16] - [19] - [20],
	Physical and mental health	Through leisure sports, parents and children can promote metabolism, ease physical and mental stress, improve physical health and fitness, and relax and strengthen their bodies.	[13] - [14], [16] - [18], [19] - [20] [21],
Personal factor	Living environment	Traffic convenience, resource acquisition, and urban and rural gap are related to living environment, which will affect the participation in parent-child leisure sports.	[7] - [19] - [22] - [23],
	Personality characteristics	Different personality characteristics lead to different preferences, such as extroverted, introverted, and active personalities, which will affect the participation in parent-child leisure sports.	[14] - [15], [24] - [25], [23],
	Educational concept	The different educational ideas of parents will influence their ideas on leisure sports as well as the intention to participate in parent-child leisure sports.	[13],
	Time management	Time is a vital factor influencing the effective management and utilization of time to participate in parent-child leisure sports by parents. Parents spend their spare time to participate in conducting leisure sports at will.	[13] - [21], [25],
Family background	Profession	Parents of different professions will produce different family life patterns and leisure life, which will also affect the participation in parent-child leisure sports.	[23] - [25],
	Salary	Parent-child leisure sports sometimes are a consumption behavior requiring money. Hence, salary income will affect such participation.	[13] - [23],
	Family structure	Different development stages of family, as well as ages and number of family members will influence the time, frequency, and types of parent-child activities.	[25] - [26],
	Parent-child relationship	Parent-child leisure sports are the activities involved at will by one or both parents and their children during their spare time. Thus, the relationship between parents and children will affect their participation.	[23] - [25],

3.3 Questionnaire design and survey

Questionnaire design: After confirming twice the expert questionnaire designed through the modified Delphi method, the "hierarchical analysis questionnaire" was developed and identified. The hierarchical analysis method uses the question of the two pairs as a medium to extract the key factor which influences parents of the school children to choose the parental leisure movement.

Pairwise comparison matrix: Integrating the data obtained from the questionnaire by geometric mean, and making them into pairwise comparison matrix according to the values.

3) Calculate the eigenvalues and eigenvectors: Calculating the vector values by using the average of the line weights. Obtaining the weight values between the elements of each hierarchy through the calculation of the eigenvector Eq. (3-1). Let "participation benefit" be w1, "personal factors" be w2, "family background" be w3. That is

$$w_i = \frac{1}{n} \sum_{j=1}^n \frac{a_{ij}}{\sum_{i=1}^n a_{ij}} \quad (3-1)$$

4) Consistency vector: Calculating the consistency vector by using Eq. (3-2), denoted by v. And then finding the arithmetic mean of v by using Eq. (3-3).

$$V_i = \sum_{j=1}^n w_j a_{ij} / w_i \quad (3-2)$$

$$\lambda = \sum_{i=1}^n v_i / n \quad (3-3)$$

5) Consistency test: The consistency of the comparison matrix, the expert consistency ratio (CR), and the CR value of the composite opinion, calculated according to Eqs. (3-4) and (3-5), are less than 0.1, which conforms to the consistency principle.

$$C.I. = (\lambda_{max} - n) / (n - 1) \quad (3-4)$$

$$C.R. = C.I. / R.I \quad (3-5)$$

4. Empirical results

In this study, the “hierarchical analysis questionnaire” is developed by using the question of two-pair comparison as the medium to find the weigh coding of key factors which influence parents of the school children to participate in the parent-child leisure movement, thus establishing the pairwise comparison matrix as well as calculating each factor and the eigenvector values.

4.1 Data processing of the hierarchical questionnaire

This investigation sends out a total of 100 questionnaires, takes back 100 questionnaires, one of which is an invalid questionnaire (2 answers are selected per question). There are 99 valid questionnaires, and the recovery rate is 99%. Aiming at the pair comparison questions in the questionnaires, this study uses the relative importance scale defined by Saaty to convert the answer code into a quantitative scale after the respondents give the answers [27].

4.2 Analysis of questionnaire results

The influence factors can be divided into three parts: the main criterion, the secondary criterion and the comprehensive analysis.

1) The analysis on importance of the main criterion. For example, Table 2. Gets the results of pairwise comparison matrix through pairwise comparison of the three main criteria.

Table 2. Matrix operations of key factors of the Parent-child leisure movement participation

	Benefits of participation	Personal factor	Family background	Weight	Ranking
Benefits of participation	1	3.677	2.729	0.589	1
Personal factor	0.272	1	2.599	0.258	2
Family background	0.366	0.385	1	0.153	3

After the calculation, λ_{max} (the maximum eigenvalue) = 3.180, w (weight) = [0.589, 0.258, 0.153] T, C.I. = 0.090, and R.I. (the random indicator) = 0.58. So the C.R. = 0.155. Therefore it is consistent with the consistency test. The results show that parents attach great importance to the participation benefit when they participate in parent-child

leisure sports. The main criterion highlights its importance by nearly 60%, which is 0.589. The second is personal factor, the weight is 0.2766. Then, it is the family background, the weight is 0.153. It is suggested that the “participation efficiency” is more important than “personal factors” and “family background”.

2) The importance analysis of the secondary criterion. The secondary criterion of the study includes 3 categories, 13 details. The following would analyze respectively the results of the study. For example, Table 3. gets the results of pairwise comparison matrix through pairwise comparison of the five secondly criterion under the participation benefit; Table 4. gets the results of pairwise comparison matrix through pairwise comparison of the four criterion under the personal factor; Table 5. gets the results of pairwise comparison matrix through pairwise comparison of the four criterion under the family factor.

Table 3. Calculation of the matrix of items under participation benefits

	Family relationship	Expand experience	Social contact and friendship	Emotional expression	Physical and mental health	Weight	Ranking
Family relationship	1	3.354	3.807	2.898	2.143	0.450	1
Expand experience	0.298	1	2.600	2.700	2.400	0.228	2
Social contact and friendship	0.263	0.385	1	2.100	1.800	0.133	3
Emotional expression	0.345	0.370	0.476	1	2.600	0.095	4
Physical and mental health	0.467	0.417	0.556	0.385	1	0.095	4

Table 4. Calculation of the matrix of items under personal factors

	Living environment	Personality characteristics	Educational concept	Time management	Weight	Ranking
Living environment	1	1.671	1.459	1.237	0.312	2
Personality characteristics	0.598	1	2.426	2.500	0.319	1
Educational concept	0.685	0.412	1	2.748	0.224	3
Time management	0.808	0.400	0.364	1	0.145	4

Table 5. Calculation of the matrix of items under family backgrounds

	Profession	Salary	Family structure	Parent-child relationship	Weight	Ranking
Profession	1	1.609	2.178	0.719	0.294	1
Salary	0.621	1	2.916	1.089	0.274	2
Family structure	0.459	0.343	1	2.400	0.209	4
Parent-child relationship	1.390	0.919	0.417	1	0.223	3

Under the "participation benefit" factor, the most important consideration of the parents' choice of parent-child leisure sport is to "promote family relations", which account for 0.45. For parents to participate in parent-child leisure activities, the Condensation force of the family can be gathered through the interaction between each other, so as to establish a good parent-child relationship. The emotional expression and the promotion of physical and mental health in the project attract less attention.

In the "personal factors", the greatest impact is the personality traits, different personality traits have different preferences, whether parents of school children are outgoing and positive, thus affect the participation in parent-child sport. Rank 2 is the personal living environment, accounting for 0.312 tight closely follow up, the gap between the two is not big. Traffic convenience, whether access to resources is easy, the gap between urban and rural areas and other factors will affect the participation of parent-child sport.

In the "family background", the parents' occupation and salary income rank in the top two, because different occupations will produce different life patterns and leisure life, and thus affect the participation of parent-child leisure sports, and sometimes, the participation of parent-child sport is also a Consumer behavior, it need money expenditure. So whether the relationship between the Parent and the child is good and the different family development stage has little effect to the parents involved in leisure sports.

3) Comprehensive analysis, after all of them meet the consistency requirements, you can further understand the relative importance of each factor through Table 6 and sum up the priority of parents' choice of the leisure sports.

Table 6. The ranking table of the key factors of Parent-child participation decision reference indicator

Indicators	Weighting (%)	Evaluation Item	Weighting (%)	Overall weight	Ranking
Benefits of participation	0.589	Family relationship	0.450	0.265	1
		Expand experience	0.228	0.134	2
		Social contact and friendship	0.133	0.078	5
		Emotional expression	0.095	0.056	8
		Physical and mental health	0.095	0.056	7
Personal factor	0.258	Living environment	0.312	0.080	4
		Personality characteristics	0.319	0.082	3
		Educational concept	0.224	0.058	6
		Time management	0.145	0.037	11
Family background	0.153	Profession	0.294	0.045	9
		Salary	0.274	0.042	10
		Family structure	0.209	0.032	13
		Parent-child relationship	0.223	0.034	12

For the Overall evaluation criteria, the biggest influence is to promote family relationship. Other influence in sequence are: Expanding life experience benefits, personal personality traits, personal living environment, the promotion of social friendship, the influence of family education concept, the promotion of the physical and mental health, the improvement and promotion of the emotional performance, Parents' occupational influence, household salary income, independently use of personal time, parent-child relationship, family demographic structure, these 13 criteria's are the key factors of the decision-making reference indicator of this research .

Based on the above results, the combination of the three criteria layers and 13 criteria layers shows that the first to the third of the overall weight rankings are respectively, promotion of the family relations (0.265), extending life experience (0.134) and personality traits (0.082). These three criteria layers' accounts for 48% of the total weight.

Example is better than precept. The education of parent and child Interactive is the key factor in the successful education. The education mode of parent to child is also deeply influenced the life quality of the national citizen and social competition. Family is the most important place of leisure socialization, the values and preferences of parents can affect their children, so the family is the most important place of socialization, according to the results, it shows that parents generally believe that the promotion of family relations is the most important things to do, so the attitudes and behavior of encourage family members to actively participate in leisure sports is very important. The ranking of "Population structure "has less attention shows that the family in different stages of development, the age of the family members, different population number have little effect on the parent participation of leisure sports.

5. Conclusion and Suggestions

This study explored the key factors of parents' participation in the parent-child leisure sports, and proposed the reference indicators of the key factors in literature review and modified Delphi method. It then determined the key factor weight by Analytic Hierarchy Process and to understand the rank of the key factors.

According to the analysis results, the top five key factors that influence the parents' participation in leisure sports are "promoting family relationship", "extending life experience", "personality traits", "living environment" and "social friendship". In the topic of participation in the parent-child leisure movement, this study has initially completed the investigation and analysis work, confirmed its key factors, and also proved that the analysis Mode of the analytic Hierarchy Process Method can provide a good research method for multi-criteria issues, this evaluation criteria can be provided to the Follow-up study on the participation of the parent-child leisure sports in the future.

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