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THE RELATIONSHIP BETWEEN LEISURE ACTIVITIES AND SUBJECTIVE WELLBEING AMONG MIDDLE-AGED CHINESE PEOPLE
FOCUSING ON MEN LIVING IN SHANGHAI, CHINA

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ABSTRACT

This study investigated and analyzed the relationship between leisure activities and subjective wellbeing among middle-aged people in China. Specifically, we conducted a web-based questionnaire survey of men living in Shanghai, one of the cities directly under the jurisdiction of the Chinese government, which did not show any significant change in the frequency of participation in leisure activities before and during COVID-19. Based on the survey results, we used SEM(Structural Equation Modeling) to analyze the relationship between the three categories of leisure activities and subjective wellbeing. The results showed that the disciplines classified as hobbies and sports sectors had a significant positive impact on positive emotions, one of the elements of subjective wellbeing.

Keywords: Middle-aged Chinese people, Leisure activity, Subjective Well-being

1 INTRODUCTION

1.1 Background

Subjective wellbeing is one of the areas of well-being that has recently received attention from research on design. According to "the U Shape of Happiness" proposed by David G, middle age is the period of lowest well-being in life [1], making it an important issue to focus on the wellbeing of middle-aged people Lyubomirsky has found that 40% of an individual's wellbeing is determined by intentional activities [2]. It is an important issue to understand the relationship between subjective wellbeing and leisure activities from a design perspective.

Most studies of subjective wellbeing in China have focused on older people and patients. The focus is on the relationship between factors such as personality, social support and education and subjective well-being. Many middle-aged people in China have psychological problems such as 'mid-life crisis'. There are few studies on wellbeing among middle-aged people in China. Leisure activities in China were positioned for the purpose of physical health and cultural learning, and the relationship with wellbeing was not emphasised among participants in leisure activities and providers of these leisure activities.

1.2 Purpose

Based on the above background, this study aims to understand the relationship between subjective wellbeing and leisure activities as a starting point for deriving guidelines for new initiatives on leisure activities, with middle-aged people in China as the target group.

2 RESEARCH TRENDS ON SUBJECTIVE WELLBEING

2.1 Definition of subjective wellbeing

Diener believes that subjective wellbeing refers to how people evaluate their lives and includes life satisfaction, positive feelings, as well as negative feelings. This theory is currently supported by a number of scholars.

2.2 Relevant factors of subjective wellbeing

Lyubomirsky found that an individual's wellbeing is determined 50% by genetics, 10% by environment and 40% by intentional activity. Hashimoto's research states that people's behaviors are formed by 'essential activities' that are indispensable for living, such as work and hospital visits, and 'leisure activities' that are not necessarily necessary for living, but from a design perspective, 'leisure activities' are mostly easy to implement. Therefore, we can say that design can change people's leisure activities and improve their wellbeing.

2.3 Components of subjective wellbeing

Diener proposed the SWB model in 1984. This model suggests that subjective well-being can be divided into cognitive and affective components. The cognitive component is the evaluation of and satisfaction with life, while the affective component is the impact of positive and negative emotions in the past period.

2.4 How subjective wellbeing is measured

Initially, most studies on subjective wellbeing used the single-item self-report scale method, which was mostly a life satisfaction survey. However, the single-item self-report scale method has only one question item and is susceptible to random errors. In view of the shortcomings of the single-item self-report scale method, a multi-item self-report scale was developed: the SWLS (Satisfaction with Life Scale) [3], published by Diener in 1985, is the most widely used multi-item overall satisfaction scale for life satisfaction. Also, in scales concerning emotional aspects. Widely used nowadays are PANAS by Watson [4] and MUNSH by Kozma and Stones [5].

3   THE RELATIONSHIP BETWEEN COVID19 AND LEISURE ACTIVITIES

3.1   Purpose

To understand the likely impact of covid 19 on the leisure activities of middle-aged people living in municipalities with high population density, which are considered to be more affected by covid 19 than other cities, and to determine the relationship between the frequency of participation in leisure activities before the end of 2019 when covid 19 occurs and currently after covid 19 occurs.

3.2   Method

Among the four municipalities under direct control, it was decided to select the area to be surveyed as 'Shanghai', which was considered to have been greatly affected by the covid 19, and 'Tianjin', which was less affected by the covid 19, taking into account differences in the number of infected people, deaths and other factors.

The survey included three questions on the subject's attributes (1) gender, (2) region, (3) age, and five questions on the frequency of participation in leisure activities before and during covid 19 (4) sports (28 activities), (5) hobbies (31 activities), (6) entertainment (22 activities), (7) tourism (12 activities) and (8) others (18 activities) [6-7].

The method of response was a single response for (1) to (3) regarding the subject's attributes. For (4) to (8) regarding leisure activities, a 6-point scale was used for the frequency of participation in each category before and during covid 19 (not at all = 1 - more than three times a week = 6).

The questionnaire survey was conducted via the web in September 2021, targeting members of the survey company aged 46-60 years living in Shanghai and Tianjin.

3.3   Analysis and Result

Based on the calculated means, t-tests of the means were conducted for each of the five leisure activities, categorised as a whole and by gender and region. The results show that, in terms of gender, the frequency of participation in the 'sports', 'hobbies' and 'entertainment' sector was significantly higher among women during covid 19 than before covid 19. On the other hand, the 'tourism' and 'others' remained unchanged. For men, the frequency of participation in all leisure activities did not change before and after covid 19. By region, the frequency of participation in the 'sports', 'hobbies' and 'entertainment' sector was significantly higher for those living in Tianjin during covid 19 than before covid 19. On the other hand, the frequency of participation in the 'tourism' sector was lower. There was no change in the frequency of participation in "others " sector. In Shanghai, participation frequency increased only in the 'hobbies' sector. The above results are summarized in Table 1. Therefore, we chose men in Shanghai, who are less affected by the covid 19, as the study population in Chapter 4.

Table 1. Mean frequency of participation in leisure time activities before and during the covid 19 and results of t-tests

				Sports		Hobbies		Entertainment		Tourism		Others	
Overall			Before	1.23	difference	1.64	difference	1.43	difference	1.62		1.94	
			During	1.28	exists	1.75	exists	1.50	exists	1.54		1.97	
	Gender	Male	Before	1.31		1.62		1.56		1.68		1.85	
			During	1.31		1.66		1.61		1.58		1.87	
		Female	Before	1.20	difference	1.65	difference	1.37	difference	1.59		1.98	
			During	1.26	exists	1.80	exists	1.45	exists	1.52		2.01	
	Region	Tianjin	Before	1.27	difference	1.58	difference	1.38	difference	1.52	difference	1.83	
			During	1.34	exists	1.68	exists	1.48	exists	1.45	exists	1.92	
		Shanghai	Before	1.20		1.71	difference	1.49		1.72		2.04	
			During	1.22		1.83	exists	1.53		1.64		2.02	

4 THE RELATIONSHIP BETWEEN SUBJECTIVE WELLBEING AND LEISURE ACTIVITIES

4.1 Purpose

The aim is to identify the relationship between the components of subjective wellbeing and the sectors and specific disciplines of leisure activities.

4.2 Identification of activity items

Based on the results of 3, we calculated the average frequency of activities in each of the five sectors and the average frequency of activities in all five sectors, compared the lower value with the average value for each sector, and selected the sectors above that value as the ones to be studied.

4.3 Survey on elements of subjective wellbeing and leisure activities

Based on the results of section 3, the study population was defined as middle-aged male residents of Shanghai who were not significantly affected by the covid 19 in their frequency of participation in leisure activities.

The survey included four questions on the subject's attributes (1) age, (2) work, (3) health, (4) residence and (5) household composition, and five questions on leisure activities (6) sports (8 activities), (7) hobbies (11 activities), (8) entertainment (7 activities), (9) tourism (7 activities) and (10) others (11 activities), and three questions on subjective wellbeing (11) life satisfaction (5 categories), (12) positive emotions (10 categories) and (13) negative emotions (10 categories).

The method of response was single response for (1) to (4) regarding the subject's attributes, and multiple responses for (5). Leisure activities (6) to (10) were rated on a 7-point scale (less than once a year = 1 to more than once a week = 7). For subjective wellbeing (11) to (14), a seven-point scale was used (not at all agree = 1 to very much agree = 7).

4.4 Relationship between elements of subjective wellbeing and leisure activities

First, the events in the 'tourism' sector were excluded because they were unlikely to be considered as daily leisure activities and the frequency of participation was the lowest. In addition, as the events classified as "other sectors" are diverse, it was decided to move them to one of the 'sports sectors', 'hobbies sectors' or 'entertainment sectors' based on their content.

A model diagram of the relationship between the three sectors 'sports', 'hobbies' and 'entertainment' and the three components of subjective wellbeing was developed, and 11 hypotheses were formulated for these sectors. The model diagram is shown in Figure 1 and the hypotheses in Table 2.
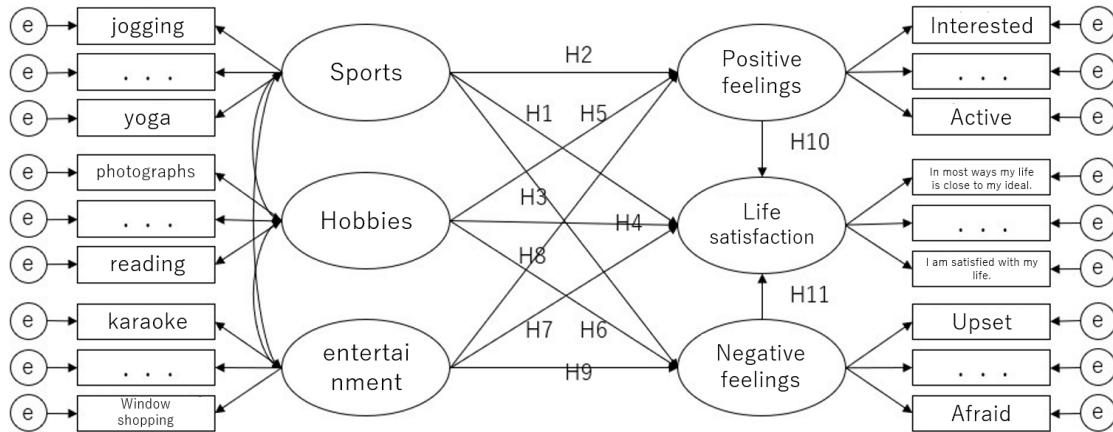

Figure 1. Relationship between the model diagram created and the 11 hypotheses.

Table 2. Details of 11 hypotheses

Number	hypothesis
H1	Sports sector activities affect life satisfaction
H2	Sports sector activities affect positive feelings
H3	Sports sector activities affect negative feelings
H4	Hobbies sector activities affect life satisfaction
H5	Hobbies sector activities affect positive feelings
H6	Hobbies sector activities affect negative feelings
H7	Entertainment sector activities affect life satisfaction
H8	Entertainment sector activities affect positive feelings
H9	Entertainment sector activities affect negative feelings
H10	Positive feelings affect life satisfaction
H11	Negative feelings affect life satisfaction

There are then six latent variables in the model and the corresponding observed variables are matched to these six latent variables. The latent and observed variables for leisure activities and subjective wellbeing are shown in Tables 3 and 4.

Finally, the data from the questionnaire was incorporated into a model based on the correspondence between latent and observed variables and use Structural Equation Model to analysis.

Table 3. Latent and observed variables on leisure activities.

Latent	Observed	Latent	Observed	Latent	Observed
Sports	Jogging, marathon	Hobbies	Photography	Entertainment	Karaoke
	Gymnastics, Tai Chi		Video production / editing		Video games (at home)
	Training		Watching videos		Game center, game corner
	Aerobics, jazz dance		Gardening, gardening		Billiards
	Table tennis		Cooking (excluding everyday items)		Eating out
	Badminton		Movies (excluding TV)		Bars, snacks, pubs, bars
	Cycling, cycle sports		Music appreciation		TV, radio
	Swimming (in the pool)		Tea		Barbecue
	Walking		Flower		Complex shopping center
	Yoga		Personal computer		Esthetic, home esthetic
			Learning, research		Online game
			Pets (play / care)		Window shopping
			Volunteer activities		
			SNS, digital communication		
			Reading		

Table 4. Latent and observed variables on subjective wellbeing.

latent	observed	latent	observed	latent	observed
life satisfaction	In most ways my life is close to my ideal	positive feelings	Attentive	negative feelings	Hostile
	The conditions of my life are excellent		Active		Irritable
	I am satisfied with my life		Alert		Ashamed
	So far I have gotten the important things I want in life		Excited		Guilty
	If I could live my life over, I would change almost nothing		Enthusiastic		Distressed
			Determined		Upset
			Inspired		Scared
			Proud		Afraid
			Interested		Jittery
			Strong		Nervous

The results show that the reliability Cronbach's Alpha values are greater than 0.7. And the SMC values of the observed variables were all greater than 0.5, the goodness of fit GFI of the model was greater than 0.8, the value of Chi-square/df was between 1.5 and 3 and the RMSEA value was less than 0.08, which were acceptable [8].

From the path significance probabilities, the hypothetical H2, H5, H9, H10 and H11 were validated, as paths with p-values less than 0.05 are significant paths Table 5.

Table 5. Hypotheses validated results

Number	Hypothesis	P	Result
H2	Sports sector activities affect positive feelings	0.003	Supported
H5	Hobbies sector activities affect positive feelings	***	Supported
H9	Entertainment sector activities affect negative feelings	0.004	Supported

H10	Positive feelings affect life satisfaction	***	Supported
H11	Negative feelings affect life satisfaction	0.005	Supported

The calculated path coefficients are added to the model diagram and shown in Figure 2. In terms of the relationship between the components of subjective wellbeing, positive and negative affect are independent of each other, with positive affect having a positive impact on life satisfaction and negative affect having a negative impact on life satisfaction. In terms of the degree of influence, positive affect (0.63) was found to be greater than negative affect (0.18). In terms of improving subjective wellbeing, positive emotions are more useful for improving subjective wellbeing.
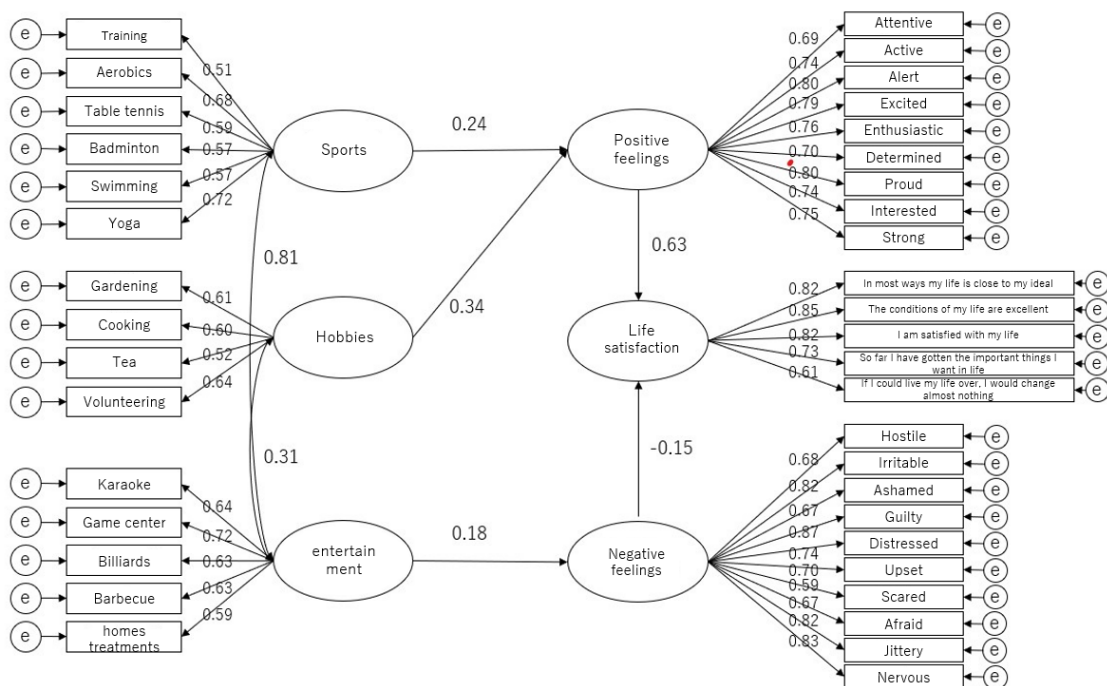

Figure 2. Standardized estimates of the default model.

In terms of the relationship between leisure activity sector and positive emotions, the sports and hobbies sectors have a positive influence on positive emotions. In terms of the degree of influence, the hobby sector (0.34) was found to be greater than the sports sector (0.24).

In terms of the relationship between the sports sector and positive affect, training, aerobics, table tennis, badminton, swimming and yoga were found to have a direct positive impact on the sports sector and an indirect positive impact on positive affect.

In terms of the relationship between the hobby sector and positive affect, gardening, cooking, tea ceremony and volunteering had a direct positive impact on the hobby sector and an indirect positive impact on positive affect.

5   CONCLUSION

In this study, based on the results of a web-based questionnaire survey of middle-aged 'male' residents of 'Shanghai', one of the direct-controlled cities that was considered to be relatively less affected by the covid 19 in terms of the frequency of participation in leisure activities, the relationship between subjective wellbeing and leisure activities was determined and the subjective The sectors and specific types of leisure activities that positively influence positive feelings of subjective wellbeing were clarified.

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