

The Effects of Scuba Diving on Fun Recognition and Self-realization - Focused on Middle and High School Students

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Abstract

In this study, In the leisure industry society where interest in marine sports is increasing, this study investigated how the scuba diving experience of middle and high school students affects their perception of fun, and how it affects their inner development and emotional formation. The summary of the analysis results derived from the empirical analysis is as follows. First, as a result of verifying H1 that the marine (scuba diving) experience will have a positive (+) effect on the perception of fun (interest, social, recognition), the sub-factor of the scuba diving experience is statistically related to the interest and recognition of fun perception. It was found to have a significant effect. However, it was found that entertainment experience, a sub-factor of scuba diving, had a significant effect on socialization of fun perception, and deviation experience and education experience were not statistically significant. These research results complement the research results, and it was possible to interpret that the experiential (experiential) economic theory could be applied to recognize fun. Second, as a result of verifying H2 that the ocean (scuba diving) experience will have a positive effect on self-realization, it has a statistically significant influence, and it has an effect on the research and socialization. These research results can be interpreted as having a positive effect on one's own behavior psychologically with marine activities, which have higher achievements after experience than those on the ground. Third, the perception of fun (interest, social, recognition) has a statistically significant influence on the self-realization of positive (+) intention. It is supported by the study that the perception of fun in exercise and physical activity affects self-realization. These findings can be interpreted as having an effect on self-realization through the perception of fun through physical education activities, as having fun through scuba diving experiences, meeting new people, improving knowledge, and receiving support from one's own abilities.

Keywords: Scuba diving, fun perception, self-realization, marine sports

1. INTRODUCTION

The industry in the 21st century is growing at a high rate every year, with the most pronounced growth trend being the oceans [1]. Recently, the marine-centered class has been on the rise [2], and the government has been establishing 10 regional marine development plans in the 10-year Basic Plan for Marine Development (OK21), including the implementation plan for the marine sector. In Korea, the Ministry of Maritime Affairs and Fisheries is expanding its infrastructure to foster marine sector based on the basic maritime promotion plan and detailed implementation plan for marine promotion [3]. Against this backdrop, it can be seen as a central increase in elements, an adventure that can be creative and thrilling, and a fulfillment of a desire for a new role, beyond physical activity for personal health, along with an increase in national income. However, although it is suggested [4] that the share of domestic marine industries will increase from 26% in 2006 and 31.4% in 2010 to 40.8% in 2020, it is true that the value of the ocean for leisure is insufficient and that maritime police, including the ocean, are still weaker than that of Southeast Asia. Scuba diving, one of the marine sports, became popular in 2012 as it contains various experience elements that cannot be felt on the ground under buoyancy with breathing equipment in water.

The number of Koreans working for scuba diving associations established at home and abroad is estimated to be more than 250,000 [5]. Scuba diving is recognized as a sport that cannot be experienced without special equipment in human body structure. A study in scuba diving involves scuba diving and the ability of leaders [6], [7], [8] and the research related to the capabilities of the leaders [9], [10]. Recently, studies related to scuba diving experiences [11], [12], [13] have been reported, but partial research is aimed at adults and research on middle and high school students is hard to find. Therefore, we would like to find out how the marine type scuba diving experience has a sense of fun and self-realization for middle and high school students, and further propose policy previews for middle and high school students to participate in marine activities.

2. THEORETICAL BACKGROUND

2.1 EXPERIENCE OF MARINE LEISURE

A marine tourism is an activity [14] that performs marine recreational activities on land and sea due to shorelines, which can be defined differently depending on goals, space, and behavior. First, the goal is defined as an activity that seeks change away from daily life, and secondly, the space is interpreted as an activity of a goal occurring in a community on the sea and coast. Finally, in terms of behavior, it can be defined as directly or indirectly dependent on or associated with marine space. Such ocean demand is spreading from beaches that used to be centered around beaches to oceans such as yachts, ship fishing, jet skiing, water skiing, wake boarding, and skin scuba. Ocean sports means the form of activities carried out in the ocean using water as a medium and differs from general activities or sports in that the purpose of activities varies according to individual tastes and personalities, such as improving individual health and fitness, healthy leisure and social activities [15]. The ocean sports can be seen as a leisure activity requiring extreme experience, whether directly involved or viewed, and in 1990 the increase in economic growth and leisure time changed desires, thereby expanding new demand, while at the same time changing subdivisions, diversification and high-flowers [16]. The ocean sports has established itself as an activity that will lead the 21st century with excellence in educational value as an experience education utilizing nature, along with the physical health and emotional purification and stress relief of those who have a desire for new attempts [2], [17]. In general, experience is mixed and used. Experience refers to the knowledge or information emotion gained in any activity and is known to serve as a kind of intrinsic reward for the psychological response that appears during the act [18]. However, as part of the experience, experience refers to the process directly experienced in the place) [19], which is not simply viewed, but actually seen, heard, and experienced, which translates into total knowledge or dexterity gained in the process and implies a high number of intervention in the experience [20]. In behavioral research, experience can be seen as a very important concept, as it plays a role in understanding the motivation, which is the general paradigm of behavioral research, and satisfaction, which is the subsequent evaluation stage. This is because activities create value through the consumer's direct experience, recognize satisfaction, and bring about psychological and physical changes of the person, which leads to internalized self-change.

2.2 ENJOYMENT REALIZATION

In the fields of general psychology and sports psychology, scholars have tried the rationale for the theory of fun [21], [22], a concept that is difficult to define as a function expressed because fun itself is the main factor and can be explored in various situations depending on the individual. In general, fun is the emotion felt during the activity and includes a sense of psychological stability and happiness as an emotional response, and is defined as a state of mind in which the body and mind feel comfortable [23]. Izard (1991) distinguishes fun from sensory-based pleasures, where sensory pleasures, such as sight and taste, form a relationship between sensation and pleasure by direct stimulation, while fun may not be the result of sensory pleasures from such direct stimulation. But the feeling suggests that it is affection and brings

pleasure. The reason humans are fundamentally different from animals is to constantly create new needs and try to meet them [24]. Thus, human perceptual fun has strong motivational properties, and the more fun one feels, the more one can maintain social relationships, play an important role in human relationships, and further interact with other emotions or situations [23]. Leisure has a significant causal relationship with fun [25], suggesting that psychological effects such as acquisition of technology, achievement experience, and stress relief are factors that convey fun [26]. Therefore, a good understanding of the concept of fun should allow individuals to experience a sense of accomplishment and provide them with opportunities for decision-making and choice in various activities [21].

2.3 SELF-REALIZATION

The term self was first used by James in the term "ego" or "self" and can be defined as a psychological state, a conceptualized self-assessment in which the feelings, thoughts, attitudes, perception, etc. of individuals interact with each other [27]. Human beings are more than capable of developing, using, and exercising their mental and physical talents and abilities to the fullest extent possible [28] and are commonly used in three meanings: the process of being, the state of being, and belief [29]. Maslow expanded and embodied the theory of self-realization to be both a human desire and a supreme goal (Joe, 1992 re-adoption) [43] by fully exercising potential possibilities for individuals. Schultz (1977) [30], who supports Maslow's argument, defines self-realization as a process of self-fulfilling by exercising one's potential in the future and achieving one's ideals. Buruno (1983) [31] conceptualized it as an effort towards the completion of an organism and an achievement of potential. Meanwhile, in a domestic study, Yoon Pal (1980) [32] defined the inherent potential as realizing the potential of self by fulfilling its calling, invoking humanity, and further achieving valuable tasks. Jeong Beom-mo (1997) [33] saw that if humans could create their own life worth living and happiness beyond success and failure, that would be self-realization. Kim Jae-woon (2004) [34] said that self-realization is not a lack of self, but a condition to become a human being, and Kim Dong-Hwang (2012) [35] stated that self-realization means to achieve their own self and further develop and achieve the ultimate goal, not because they lack self-reliance. To sum up the views of various scholars, self-realization is a human effort to move on to the state of being a gentle person for the purposes of education as well as the highest value pursued by human beings.

2.4 SCUBA-DIVING

Scuba diving (SCUBA Diving: Dive) can be seen as diving, but SCUBA is a compound word that takes the lead character of the word Self Contained Underwater Breaching Apparatus, which means diving using a self-contained breathing apparatus. Generally called skin scuba diving, thus it is necessary to distinguish between skin diving and scuba diving. Skin Diving is called snorkeling because it uses snorkeling to enjoy sleep while watching hydroponics by wearing only basic equipment such as swimming, pins, snorkeling, and masks. However, scuba diving involves the use of self-contained underwater breathing apparatus. Besides skin-diving equipment, it is a sport where you can dive deeper and enjoy the unique and beautiful underwater environment by using respiratory, buoyant early, air canister, regulator, and residual pressure meter. Today's rampant scuba diving is referred to as Aqua diving, which combines a regulator into a compressed air tank to create a river or sea in 1943 when a marine scientist, Jacques Yves Cousteau, and a regulator designed by liquid air engineer Emil Gagnam, from Lance, was introduced. Scuba diving has become popular as a full-scale marine activity since the introduction of hydraulics in 1970. This background has been established as a marine sport in which people with weak stamina, women, the elderly, children and the disabled can also challenge scuba diving as the shape and size of hydroponics have diversified due to technological advancement. Of course, scuba diving can be seen as an ocean sports that requires special equipment such as water-borne breathing equipment, but according to the manual of scuba diving educational organization, which is a part of the international associations, education programs are prepared and implemented not only for the non-disabled but also for the physically handicapped, including

children and the elderly. Generally, you can start experience at the age of 8 (maximum depth of 2M) in the water or restricted area, and gradually increases the water depth experience according to age, such as 10 (maximum depth of 6M), 12 (maximum depth of 12M), and 15 (maximum depth of 18M) in the open or sea area [13].

3. RESEARCH AND RESEARCH DESIGN

3.1 SETTING UP RESEARCH MODELS AND HYPOTHESES

Emotions such as fun and pleasure are reported to have positive psychological effects through physical activities in general sports sites, and Lee Dong (2006) [45] emphasized the nature of fun awareness with a study that the factors of fun awareness have the effect of achieving the persistence of exercise. Kim Deok-jin and Yang Myeong-hwan (2004) [46] said, "Through marine sports education programs, the perception of self-realization such as self-expression and self-discovery turns positive." In addition, scuba diving is reported to be a means of not only relieving stress, handing over physical strength, self-efficacy and social and physical satisfaction [47], [48] but also to improve mental health [49]. As the result of this prior study suggesting that the scuba diving experience will have positive effects on the perception of fun and self-realization, the following hypotheses were established.

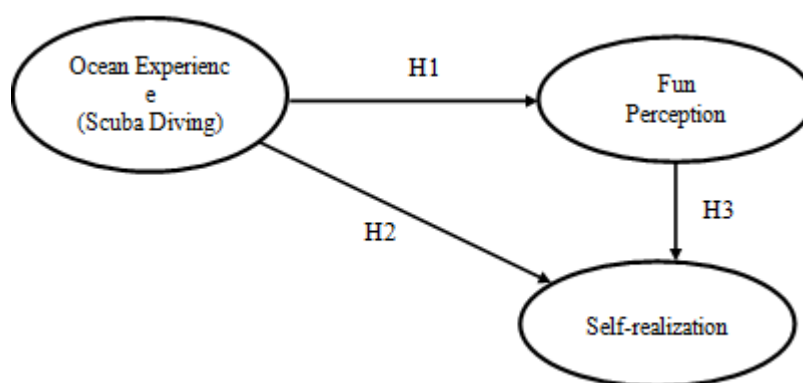


Fig.1 Research Design

H1. The perception of the ocean (scuba diving) experience will have a positive (+) scent for fun perception.

H2. The perceived ocean (scuba diving) experience will have a positive (+) scent on self-realization

H3. Perceived perception of fun will have a positive (+) scent on self-realization.

3.2 RESEARCH METHOD

Ocean experience was defined as a scuba diving experience in confined waters, including a water depth of up to 5 m[36], focusing on measurement items developed based on the theory of Pine & Glilmore (1999) [37]. Choi Song Hak and Lee Chung-ki (2011) [38] and Seo, Min-jung (2012) [12] modified and supplemented the questions and scales in the experiences used in the study. It is composed of 12 questions and uses the Likert 5-point scale.

Fun recognition is defined as a positive (+) emotional reaction that creates interest and creates a satisfactory relationship with others through scuba diving experience in restricted waters. In addition, the scale used in the study by Sang-hoon Park and Rock (2014) [13] was modified and supplemented to constitute 12 questions of the Likert 5-point scale.

Self-realization is defined as the tendency to develop one's own talent or ability and to grow chastity. The scales used in the research of Kim Jae-won (2004) [34] and Moon Dong-kyu (2007) [39] were modified and

supplemented to fit this study, consisting of eight Likert 5-point scales.

4. EMPIRICAL ANALYSIS

4.1 GENERAL CHARACTERISTICS OF A SAMPLE

A total of 160 middle and high school students in Jeju Island participated from July 2017 to July 2019. They are the participants who experienced scuba diving in restricted areas as a special program for summer vacation. The final valid responses used for data analysis are 152.

4.2 RELIABILITY AND VALIDITY OF VARIABLES

1) Analysis of Factors for the Marine (Scuba diving) Experience and Reliability Analysis

Table 1. Analysis of Factors for the Marine (Scuba diving) Experience and Reliability Analysis

Factor	Measurement Item	Factor Load Capacity	Eigen Value	Variance Explanation Power	a
Recreational Experience	<i>It was interesting because it was a new experience.</i>	.831	.3146	33.215	.810
	<i>Various Viewing and experience were effected.</i>	.743			
	<i>The diving activities of the other divers were good to see.</i>	.825			
	<i>I could enjoy myself participating in diving activities.</i>	.781			
Deviant Experience	<i>I think I have been active here as another me.</i>	.810	2.922	24.842	.794
	<i>It made me feel like I was someone else.</i>	.746			
	<i>I felt like I was in a different world.</i>	.808			
	<i>A new experience made me forget my daily life.</i>	.774			
Educational Experience	<i>Acquire knowledgeand Learn may things.</i>	.810	2.108	20.121	.831
	<i>It stimulated my curiosity to learn something new.</i>	.745			
	<i>It was educational.</i>	.810			
	<i>I improved my underwater skills.</i>	.784			

Exploration factor analysis and question analysis were conducted by checking whether the measurement scale for scuba diving experience was reasonable and reliable. The main component factors analysis of the 12 questions were divided into three factors. Factor 1 is associated with the excitement and charm of the experience, and with the joy of scuba diving, Factor 2 is named as the 'entertainment experience' because it is related to the experience of a new world, and Factor 3 is named the 'education experience' because it is

related to the excitement of curiosity and learning new knowledge and skills through scuba diving experience (Table 2). In addition, the reliability analysis is performed by checking the reliability. As a result, the tolerance for each factor was determined to be relatively stable in the exploratory researchers with .810 (entertainment experience), .794 (deviation experience), and .831 (education experience).

2) Factor Analysis and Reliability Analysis for Fun Perception

The search factor analysis and the item analysis were performed by confirming that the measurement scale for fun recognition was valid and reliable. As a result of performing principal component factor analysis, all items were classified into three factors as the upper limit of the researcher without the ambiguity of structural division. Factor 1 is 'interesting' because it looks like you're looking good, stressful and satisfying your body and mind, factor 2 is 'socialization', and factor 3 because it's related to the pleasure of interacting with new people and forming relationships. Factor 3 has been named 'recognition' because of the compliments from others and his satisfaction with himself (Table 3). In addition, the analysis of internal resistance was performed by checking the reliability. As a result, the internal resistance of each factor was .791 (interesting), .813 (socializing), and .729 (acknowledged).

3) Factor Analysis and Reliability Analysis for Self-realization

The main component factors analysis of eight questions were divided into Self- realization factors. Factor analysis results for the self-realization scale were shown as a factor, and as a result of the endometric analysis, Cronbach' α is shown as .824, showing a relatively stable number (Table 3).

Table 2. Factor Analysis and Reliability Analysis for Self-realization

Factor	Measurement Item	Factor Load Capacity	Eigen Value	Variance Explanation Power	a
Self Realization	<i>I do what I must do today.</i>	.772	3.28	366.124	.824
	<i>I had an experience that I felt very satisfied with my life.</i>	.801			
	<i>I do most of the work myself.</i>	.792			
	<i>I have confidence in my own decisions.</i>	.711			
	<i>Being faithful to my self is more important than anything else.</i>	.798			
	<i>I do my best and devote myself to what I do.</i>	.816			
	<i>I have confidence.</i>	.784			
	<i>I can live my life the way I want to.</i>	.754			

5. VERIFICATION OF RESEARCH THEORY

5.1 The perception of the ocean (scuba diving) experience will have a positive (+) scent for fun perception.(H1)

Multiple regression analysis (stepwise) was performed by checking the influence of an independent scuba diving experience on perceptual fun recognition, and the results of the analysis are presented in Table 4 (assumption H1). In Table 4 the Durbin Watson statistics, which verify the existence of autocorrelation in

the regression model, are 1.808, 1.831, and 1.827, indicating that no self-image exists. Since the tolerance limits are small (<0.1) or do not correspond to VIF values (>10), the problem of coherence does not exist.

As a result of the positive regression analysis (H1-1, 2,3) in which the scuba diving experience will have a positive effect on the interest, the degree of influence of the variables involved in the regression analysis is entertainment experience ($\beta=.293$), deviant experience ($\beta=.232$), followed by educational experience ($\beta=.191$), and the following subcomponents of scuba diving experience: entertainment experience ($p<0.001$), deviant experience ($p<0.005$), and educational experience ($p<0.005$) which were all significant statistics; thus, hypotheses (H1-1, 23) were adopted. As a result of the regression analysis, the degree of influence of the variables used in the regression analysis is entertainment experience ($\beta=$) as a result, the degree of influence of the variables involved in the regression analysis is entertainment experience ($\beta=.302$), deviant experience ($\beta=.129$), followed by educational experience ($\beta=.116$), and entertainment experience ($p<0.001$), a subcomponent of scuba diving experience, was found to be significant by statistics. However, only the Na Tana hypothesis (H1-4) was adopted as the statistics were not significant for deviant and educational experiences. As a result of the regression analysis, the degree of influence of the variables in the regression analysis is education experience ($\beta=.314$), and entertainment experience ($\beta=.314$).202), deviation experience ($\beta=.181$), and the subcomponents of scuba diving experience, such as the entertainment experience ($p<0.001$), the deviant experience ($p<0.05$), and the educational experience ($p<0.001$), were all significant statistics, so the hypothesis (H1-7, 8, 9) was adopted.

Table 3. Multiple Regression Analysis of Scuba Diving on the Recognition of Fun

Independen t variable	Depend ent variable	Non-standar dization factor	Standar dization factor	Stan dard Erro r	t	P- value	Coelastic statistic	
		B	Beta				tolera nce limit	VIF
Recreational experience	Interest	.285	.293	.078	5.224	.000***	.687	1.2 32
Deviant experience		.241	.232	.068	2.368	.015*	.725	1.3 48
Educational experience		.194	.191	.066	2.272	.027*	.731	1.4 71
R ² =.382 Adjusted R ² =.365 F=16.248 p = .000*** Durbin Watson = 1.808 *p<0.05, **p<0.01, ***p<0.001								
Recreational experience	Social	.289	.302	.072	5.577	.000***	.671	1.2 22
Deviant experience		.132	.129	.068	1.527	.164	.732	1.2 89
Educational experience		.128	.116	.064	1.420	.176	.754	1.5 19
R ² =.401 Adjusted R ² =.396 F=18.127 p = .000*** Durbin Watson = 1.826 *p<0.05, **p<0.01, ***p<0.001								

5.2 THE MARINE (SCUBA DIVING) EXPERIENCE WILL GIVE A POSITIVE FLAVOR TO SELF-REALIZATION (H2).

A stepwise analysis was conducted by checking the influence of an independent scuba diving experience on perceptual self-realization, and the results of the analysis are presented in Table 5 (assumption H2). In Table 5 the Durbin Watson statistic, which verifies the presence of autocorrelation in the regression model, is 1.826, which is assumed that no self-image exists. In addition, since the tolerance for balls is small (<0.1)

or does not correspond to VIF values (>10), the problem of airworthiness does not exist. As a result of the regression analysis conducted by verifying positive (H2-1, 2,3) that the scuba diving experience will have a positive effect on self-realization (H2-1, 2,3), the degree of influence of the variables involved in the regression analysis is entertainment experience ($\beta=.277$, $\beta=.228$), and education experience ($\beta=.193$) was followed by the following, and the hypothesis (H2-1,2,3) was adopted: the entertainment experience ($p<0.001$), the deviant experience ($p<0.001$), and the educational experience ($p<0.05$), which are the sub-components of the scuba diving experience.

Table 4. Multiple Regression Analysis of Scuba Diving on Self-realization

Indepen dent variable	depend ent variable	Non- standardiz ation factor	Stand ardizat ion factor	Stan dard Error	t	P- valu e	Coelastic statistic	
		B	Beta				toler ance limit	VIF
Recreati onal experien ce	Self - Realizati on	.281	.277	.071	5.125	.000 ***	.663	1.312
Deviant experien ce		.232	.228	.067	4.124	.000 ***	.717	1.372
Educatio nal experien ce		.196	.193	.066	2.351	.0/2 0*	.743	1.539
R²=.401 Adjusted R²=.396 F=18.127 p = .000*** Durbin Watson = 1.826 *p<0.05, **p<0.01, ***p<0.001								

5.3 FUN PERCEPTION WILL HAVE A POSITIVE (+) SCENT ON SELF-REALIZATION (H3).

Multi-regression analysis (stepwise) was performed by confirming the influence of fun perception, an independent variable in perceiving self-realization, and the results of the analysis are presented in Table 6 (hypothesis H3). Referring to Table 6, the Durbin Watson statistic that verifies whether autocorrelation exists in the regression model is 1.849, and it is assumed that the autophase does not exist. Since the tolerance limit is small (<0.1) or the VIF value (> 10) is not applicable, it can be said that there is no problem of collinearity. Fun perception will have a positive (+) scent on self-realization (H3-1,2,3). As a result of regression analysis by verifying, the degree of influence of the variables in the regression analysis is social ($\beta = .364$), Interest ($\beta = .259$), Recognition ($\beta = .219$), and Interest ($p < 0.001$), Social ($p < 0.001$), and Recognition ($p < 0.001$) which are all statistically significant, so the hypothesis (H3-1,2,3) was adopted.[51]

Table 5. Multiple Regression Analysis of Interesting Perception on Self-realization

Inde pend ent varia ble	Depend ent variable	Non- standardiz ation factor	Standar dization factor	Stand ard Error	t	P- value	Coelastic statistic	
		B	Beta				toleran ce limit	VIF
Inter est	Self - Realizati on	.262	.259	.070	4.531	.000** *	.782	1.5 33
Socia l		.376	.364	.068	7.128	.000** *	.645	1.3 97
Reco gniti on		.214	.219	.066	3.783	.000** *	.792	1.5 83
R ² =.389 Adjusted R ² =.366F=19.857p = .000*** Durbin Watson = 1.849 *p<0.05, **p<0.01, ***p<0.001								

6. CONCLUSION

In the leisure and industrial society where interest in marine sports is increasing, this study conducted an analysis on how scuba diving experiences of middle and high school students affects their perception of fun and their inner development and emotional formation. The summary of the analysis results derived by performing empirical analysis is as follows. First, as a result of verifying H1 that the marine (scuba diving) experience will have a positive (+) effect on fun recognition (interesting, socializing, and acknowledgment), the sub-factor of the scuba diving experience is statistically related to the interest and recognition of fun recognition. However, it was found that scuba diving's sub-factor entertainment experience had a significant effect on fun-aware socializing, and deviation experience and educational experience were not statistically significant. These research results complement the research results of Seo Min-jung et al. (2013) [40], and it can be interpreted that the experience (experience) economic theory can be applied to recognize fun. Second, as a result of verifying H2 that the marine (scuba diving) experience will have a positive (+) effect on self-actualization, it has a significant effect as a statistic and has a significant impact on research and socialization, similar with the results of Lee Sung-bok (2014) [41]. It can be interpreted that these findings have a positive effect on psychological behaviors of marine activities with high achievement after experience compared to activities on the ground. Third, verifying H3 that fun perception (Hungmi, socializing, recognition) will have a positive (+) direction on self-realization yielded a statistically significant effect. Fun perception of exercise and physical activity affects self-realization. Insane was found to support Kang Seong-il's (2010) [42] research. These findings can be interpreted as having fun awareness through physical activity affecting self-realization, having fun through scuba diving experiences, meeting new people, improving knowledge, and receiving support from one's own abilities.

7. LIMITATION

This study found several limitations. First, there is a limit to generalizing the experience of open water (actual sea experience) because it limits the scuba diving experience to the limited waters. Second, diving can be done because it does not take into account that there may be a difference in the response to the experience depending on the environmental impact such as training time, open water environment, water temperature, etc. It has problems such as excluding the nature of the activity. However, despite several limitations, this study is significant as an early study that explored the relationship between the middle and high school students' marine (scuba diving) experience, fun perception, and self-care. Of these attempts, we hope to solve the cornerstone of the marine activities and social adjustment of high school.

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