

ANALYSIS OF LIVING SPORTS FACILITIES AND OFFICE WORKERS AT DAEGU METROPOLITAN CITY IN KOREA

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ABSTRACT

Public living sports must be well organized in various aspects such as facilities, leaders, groups and organizational and administrative systems, and sports education programs to exert synergy effects. Data were extracted using a review schema developed by the research team from South Korea's Ministry of Culture, Sports and Tourism and Daegu Metropolitan City. According to the criteria for classification of public sports facilities, a total of 98 public sports facilities were supplied to Daegu Metropolitan City out of 8 facility items as of 2020. The total population of Daegu Metropolitan City was 2,410,700 (21. As of Statistics Korea), and the number of public sports facilities per 100,000 people was 3.75. Although the significance could not be analyzed due to the small number of data in some regions and sports, there was a significant difference in the provision of sports facilities between the central urban area (Nam-gu, Seo-gu, Jung-gu) and the outer area. The decrease in the number of users of public sports facilities due to COVID-19 can lead to a decrease in physical activity, which can lead to various diseases such as obesity at the public health level. Thus, very structured exercise programs should start at low intensities for short durations and progress slowly to more intense physical activity or exercise periods of longer durations. Social interaction with sports for all is a functional interaction model in which the use of facilities, the composition of sports facilities, the evaluation of autonomous behavior of physical activities, and the feedback of activities have an organic relationship.

Keywords: COVID-19, Daegu Metropolitan City, physical activity, public sports facilities.

INTRODUCTION

Sports is a socializing, physically developing, competitive and cultural phenomenon that individuals do individually or professionally as a leisure or a full-time profession with or without equipment within certain rules and that develops abilities of the individuals that are gained while they are turning their natural environment to human environment (Turkay and Yetim, 2018). Social sports are life itself in that they grow physically, emotionally, socially, and economically in individuals, families, and society (Blanco, 2017). In modern society, daily sports are sports activities that ordinary people can easily do in their daily lives in contrast to elite sports. This is a health maintenance physical activity, and it is also a beneficial living culture for the formation of new human relationships. After Veblen's Theory of the Leisure Class at the end of the 19th century, economists and sociologists became aware of the value of leisure time (Causa, 2008). Therefore, daily sports provide opportunities for the government to participate in active and continuous sports activities by utilizing daily leisure time, promote physical, mental, and social development, and contribute to improving community consciousness with others. Meanwhile, various indicators of daily sports are becoming one of the measures to evaluate the welfare state.

Sports for all must be well organized in various aspects such as facilities and leaders, groups and organizational and administrative systems, and sports education programs to exert synergy effects. Since the 2012 electrical pandemic, including SARS and MERS, about 28% (1.4 billion won) of the world's population has been physically inactive, which is linked to various diseases such as obesity, cardiovascular disease, and diabetes (Kohl et al., 2112; Guthold et al., 2018).

Many countries around the world, including Korea, have caused many restrictions in the COVID-19 situation. It was added to mental and medical pathology caused by severe patients and deaths (WHO, 2020). The national system is not in place to adapt well to various social diseases, and the people are not presented with systems or guidelines to ensure self-directed power and are just expecting improvement in the situation (Kim and Kim, 2021).

The aim of this study is to survey an overview of perspectives and approaches to sports facilities focusing on sport facilities, sport participation and public offices towards sports at Daegu Metropolitan City in Korea.

METHODOLOGY

Subjects

Daegu is a Metropolitan city in North Gyeongsang Province, South Korea. It is the third-largest urban agglomeration in Korea after Seoul and Busan; it is the third-largest official metropolitan area in the nation with over 2.5 million residents. The Daegu basin is the central plain of the Yeongnam region. Daegu Stadium is the second largest sports complex in South Korea with a capacity off 66,422. Daegu Civic Stadium hosted some football matches at the 1988 Summer Olympics. Daegu was the host city of the 22nd World Energy Congress, the 2011 World Championships in Athletics and the 2003 Summer Universiade. It also hosted four matches in the 2002 FIFA World Cup. The Daegu Marathon is held here every year in April. This study analyzed sports facilities by receiving data from Daegu Metropolitan City.

Research limitations

Data were extracted using a review schema developed by the research team from South Korea's Ministry of Culture, Sports and Tourism (2020) and Daegu Metropolitan City (2021). The data gives insight into the use by adults.

RESULTS

In 2019, there were 19 living gymnasiums in Daegu where all citizens could play sports such as basketball, volleyball, and badminton (Table 1). Dalseo-gu had the largest number with 7 facilities, followed by Dalseong-gun with 4. There were three in Suseong-gu, two in Dong-gu, and one in the rest. It was the only one not installed in Jung-gu. All badminton facilities were equipped in the district. Next, there were six tennis courts and soccer courts each.

Table 1. Table 1. Status of establishment of living gymnasiums by districts or regions in Daegu Metropolitan City

Districts	Establishment	Management	Gymnasium
Nam-gu	Nam-gu National Sports Center	Nam-gu Sports Club	Badminton, table tennis, etc.
Dalseo-gu	Olympic Memorial Hall of Korea	Facility Management Corporation	Basketball, volleyball, table tennis, badminton, etc.
	Daegu Youth Training Center Gymnasium	Daegu Catholic Youth Association	
	Youth Training Center Gymnasium	Mahayana Buddhist Cultural Center	
	Dalgubeol Rehabilitation Sports Center	Jeonseok Welfare Foundation	
	Sungseo Industrial Complex Multipurpose Gymnasium	Industrial Complex Management Corporation	
	Wolbae National Sports Center	Dalseo-gu Sports Council	
	Songhyun Sports Center	Dalseo-gu Sports Council	Table tennis, free tennis
Dalseong-gun	Dalseong-gun Youth Center Gymnasium	Dalseong Welfare Foundation	Basketball, volleyball, table tennis, badminton, etc.
	Seojae Culture and Sports Center	Daegu Facilities Management Corporation	
	Dalseong-gun National Sports Center	Dalseong-gun Facility Management Corporation	
	Dalseong County Residents' Gymnasium	Dalseong-gun Facility Management Corporation	
Dong-gu	Ayang Art Center Gymnasium	Donggu Cultural Foundation	Basketball, volleyball, table tennis, badminton, etc.
	Gangdong Culture and Sports Center	Donggu Sports Council	
Buk-gu	Daebul Sports Center	Buk-gu Sports Council	Badminton, basketball, etc.
Seo-gu	Seo-gu National Sports Center	Seo-gu	Badminton, basketball, etc.
Suseong-gu	National Sports Center for the Disabled	Daegu Sports Council for the Disabled	Basketball, volleyball, table tennis, badminton, etc.
	Youth Training Center, Gymnasium	Mahayana Buddhist Cultural Center	
	Suseong National Sports Center	Suseong-gu	

Data : Ministry of Culture, Sports and Tourism, National Public Sports Facility (2020).

According to the criteria for classification of public sports facilities, a total of 98 public sports facilities were supplied to Daegu Metropolitan City out of 8 facility items as of 2020 (Table 2). Soccer fields were the most supplied to 31, with 20 living gymnasiums, 16 swimming pools and 14 baseball stadiums. By district and county, 26 facilities were built in Dalseong-gun, an agricultural and industrial area, the largest, followed by 23 in Dalseo-gu, an urban area, and Buk-gu, a residential mixed area. One area with the lowest supply of public sports facilities was recently created in Jung-gu in 2021, two in Nam-gu and six in Seo-gu. Although the significance could not be analyzed due to the small number of data in some regions and sports, there was a significant difference in the provision of sports facilities

between the central urban area (Nam-gu, Seo-gu, Jung-gu) and the outer area (Table 3, $p < 0.001$).

Buk-gu had the largest number of employees managing sports facilities with 356, followed by Dalseo-gu with 339 (Table 3). Jung-gu had the smallest number of people with 19.

Table 2. Distribution status by type of public sports facility

Districts	Track and field	Soccer stadium	Baseball stadium	Ball, speculative gym	Living gym	Swimming pool	Shooting range	Horseback riding course	Ice rink
Nam-gu	0	0	0	0	1	0	0	1	0
Dalseo-gu	0	4	1	1	7	8	0	2	0
Dalseong-gun	1	13	5	0	4	3	0	0	0
Dong-gu	1	1	2	0	2	2	0	0	0
Buk-gu	0	8	5	6	1	1	1	0	1
Seo-gu	0	3	0	0	1	2	0	0	0
Suseong-gu	3	2	1	0	3	0	0	0	0
Jung-gu	0	0	0	0	1	0	0	0	0
Total	5	31	14	7	20	16	1	3	1

Table 3. The office workers at the sports related facilities in Daegu Metropolitan City (unit: person)

Districts	Regular workers		Non-regular		Total
	Male	Female	Male	Female	
Nam-gu	4	4	23	29	60
Dalseo-gu	129	72	77	61	339
Dalseong-gun	74	35	4	3	116
Dong-gu	10	2	20	32	64
Buk-gu	177	67	82	39	365
Seo-gu	17	8	26	37	88
Suseong-gu	24	22	12	11	69
Jung-gu	0	0	2	17	19

Buk-gu had the largest number of sports facility users (Table 4). Buk-gu also had 55,931 people who entered on the 1st, the largest number. Jung-gu did not indicate the lack of data collection.

Table 4. The number of people who used the public sports facilities by year (unit: person)

Districts	Non-disabled		Disabled		Number of users per day
	Male	Female	Male	Female	
Nam-gu	18,198	15,657	266	81	17,595
Dalseo-gu	435,341	875,082	17,429	21,021	19,151
Dalseong-gun	121,229	25,685	821	933	23,096
Dong-gu	19,254	20,390	761	1,735	13,166
Buk-gu	535,722	213,653	9,792	5,322	55,931
Seo-gu	10,101	2,656	306	34	459
Suseong-gu	159,337	135,136	1,130	0	15,330
Jung-gu	-	-	-	-	-

The total population of Daegu Metropolitan City was 2,410,700 (21. As of Statistics Korea), and the number of public sports facilities per 100,000 people was 3.75 (Table 5). Among the 98 public sports facilities in Daegu Metropolitan City, three shooting ranges, horseback riding ranges, and ice rinks were excluded from the opening of sports facilities per proportion of the population in consideration of the characteristics of the Gu/Gun, site area, and professional sports. Dalseong-gun was the highest at 10.0 public sports facilities per 100,000 population, followed by Buk-gu 4.6, Dalseo-gu 3.7, Seo-gu 3.6, Dong-gu 2.4, and Suseong-gu 2.1, and very low public sports facilities were supplied with Jung-gu and Nam-gu 1.4 and 0.7. Soccer fields were the most supplied public sports facilities per 100,000 people in Daegu, with 1.5 soccer fields per 100,000 people supplied, followed by 0.8 living gymnasiums, 0.7 swimming pools, 0.6 baseball stadiums, and 0.3 ball and speculative sports stadiums and 0.2. Analysis of activities in the public swimming pools confirms that public sports facilities could reach a broader audience than other sports. There was a significant difference in the provision of sports facilities between the central urban area (Nam-gu, Seo-gu, Jung-gu) and the outer area (Table 6, $p < 0.001$).

Table 5. The number of public sports facilities per 100,000 population

Districts	Track and field	Football pitch	Baseball field	Ball games and speculation	Living gym	Swimming pool	Shooting range	Horseback riding course	Ice rink
Nam-gu	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.0
Dalseo-gu	0.0	0.7	0.2	0.2	1.2	1.4	0.0	0.4	0.0
Dalseong-gun	0.4	5.0	1.9	0.0	1.5	1.2	0.0	0.0	0.0
Dong-gu	0.3	0.3	0.6	0.0	0.6	0.6	0.0	0.0	0.0
Buk-gu	0.0	1.8	1.1	1.3	0.2	0.2	0.2	0.0	0.2
Seo-gu	0.0	1.8	0.0	0.0	0.6	1.2	0.0	0.0	0.0
Suseong-gu	0.7	0.5	0.2	0.0	0.7	0.0	0.0	0.0	0.0
Jung-gu	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0
Mean	0.2	1.5	0.6	0.3	0.8	0.7	0.04	0.1	0.04

Table 6. Validation of significance for public sports facility

Test	Central vs. others	
	Distribution status by type of public sports facility	The number of facilities per 100,000 people
Chi square	279.225***	782.227***

*** $p < 0.001$.

DISCUSSION

Restrictions on physical activities around the world have been reported due to COVID-19 (Kamyuka et al., 2020; Grant et al., 2020). Compared to the increase in the population participating in sports facilities in the past and now, it is true that the absolute amount of public sports facilities that can accommodate them is insufficient nationwide (Kim and Chae, 1996). The expansion of facilities and improvement of service quality were suggested early on as a priority for revitalizing domestic sports for all (An, 2011). Data showed that only a small part of the adult population actually uses the public sports facilities, because in practice one has to be a member of a sports club to get access to public sports facilities (Van Aline, 2018). In this study, The proportion of visits to sport centres by the disabled was not represented high (Table 4). Disabled sports participants are a small proportion of sports participants at English public sports centres; but they are important to the social inclusion agenda (Kung and Tayer, 2014). Thierfeld and Gibbons (1986) believed that one of the reasons contributing to the lower participation of disabled female adults in sports was that less encouragement was given to the disabled females to be active in sport in their childhood than disabled males. More physical activity was generally observed if participants had a history of depression or if participants were among the white-collar or urban subgroups (Lee et al., 2016).

The number of sports facilities was under Urban Services Department and Regional Services Department. Sports is the way to get away from difficulties in daily life, the stress of urban life, developing technology and the worries. There was a significant difference in the provision of sports facilities between the central urban area (Nam-gu, Seo-gu, Jung-gu) and the outer area (Table 3). Nam-gu and Seo-gu had the low number of sports facility users (Table 4). Thus, Reasonable planning of public sports facilities improves the urban space layout and facilitates the self-optimization and healthy development of an urban system (Sun, 2013).

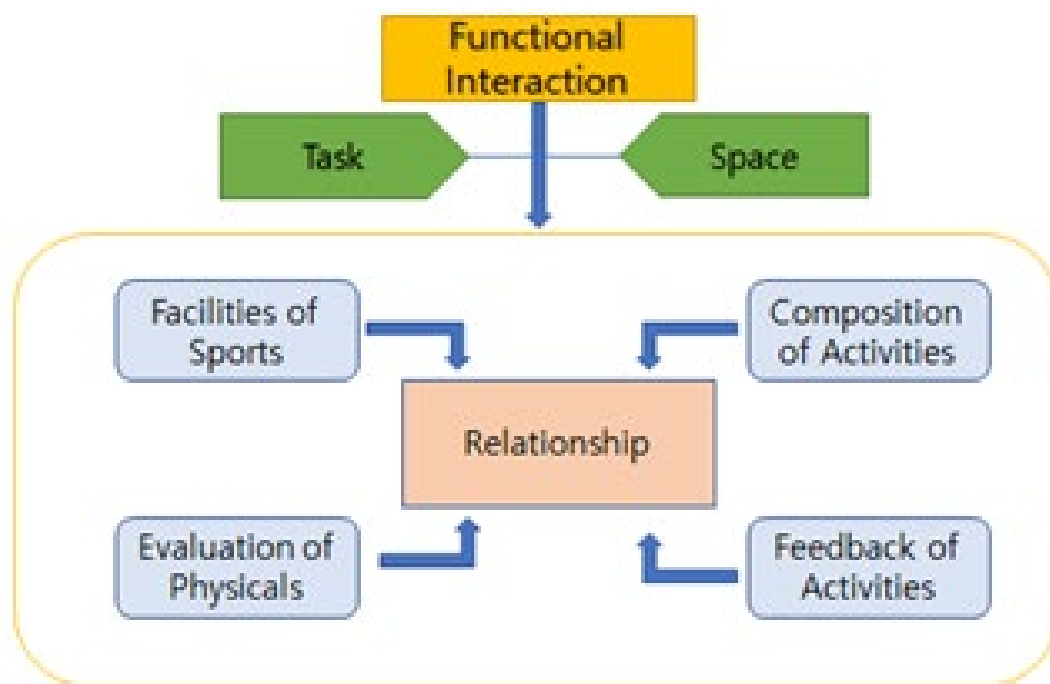


Figure 1. The diagram of task-space and relationships between social sports activities and government organization.

As shown in Figure 1, public officials also manage job-related spaces (facilities). Here, social interaction with sports for all is a functional interaction model in which the use of facilities, the composition of sports facilities, the evaluation of autonomous behavior of physical activities, and the feedback of activities have an organic relationship. For example, in a study by physical education de Mendonca et al. (2014), time and group showed significant differences in body fat composition in the composition of the program.

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