

SPORT PARTICIPATION RESEARCH PROJECT

THE COST OF PARTICIPATION IN SPORT

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TABLE OF CONTENTS

<i>LIST OF TABLES</i>	p 03
<hr/>	
<i>INTRODUCTION</i>	p 04
<hr/>	
<i>KEY INSIGHTS</i>	p 05
<hr/>	
<i>METHODS</i>	p 06
<hr/>	
<i>RESULTS</i>	p 09
<hr/>	



LIST OF TABLES

Table 1. Comparisons of three cost measures ¹ for three Sport Australia groupings of activities: by age group and year	11
Table 2. Changes from 2019 to 2021 in three cost measures ¹ for three Sport Australia groupings of activities: by age group	12



INTRODUCTION

The cost of participation in sport is a commonly reported barrier to participation [1, 2]. Participation in community club-based sport in Australia is dominated by children and youth [3]. The cost of participation may actually differ according to the age of player and family circumstance [1].

Whilst the financial dynamics influencing participation in sport is multi-dimensional, COVID-19 and the current economic crisis have impacted individuals' and families' ability to afford the cost of sport participation. Further, sport participation rates post COVID-19 government restriction, have not returned to pre-COVID level the same across sports, gender and age [1, 4].

The cost to play sport also differs according to the type of activity, with traditional teams sports such as Australian football, basketball, football, hockey, netball and tennis often less cost-prohibitive than some of the other sports and activities that require expensive equipment and/or access to water or snow, and private providers which often have a pay-and-play system rather than an annual membership [5].

Participation in sport can occur in different settings, but the great majority, especially for children and youth, takes place within community sports clubs [6]. Additionally, the availability of sports infrastructure can differ quite considerably across local communities, which impacts people's opportunities to access facilities to play casually, and sometime at no cost. Ultimately, individuals have limited sporting choices, depending on what they can afford to pay [1, 7].

It is important to define what is being considered 'sport' in the context of this report. Sport-related activities are those that are typically associated with a National Sporting Organisation (NSO), for example, athletics, cycling, football and netball. Non-sport (recreational) activities are those typically not run under the auspices of an NSO, such as fitness, yoga, bush walking and Pilates. If a sport can be played as an individual, it is recognised as an individual sport, even if it can also be played as a team, for example tennis or badminton.

The aim of this study was to explore the cost of participation across different types of activity (e.g. sport versus non-sport, team versus individual sport), age group, and pre-compared to post-COVID-19 restrictions (2019 compared to 2021).



KEY INSIGHTS

Cost of participation in children aged 15 years and younger.

For the under 15 years age group, there were no differences between sport and non-sport activities in the proportion who paid to play.

Regarding team and non-team comparisons, in both 2019 and 2021, a higher proportion of team participants paid to play.

In both years the amounts of money paid were higher for non-team activities.

Regarding the AusPlay three-way grouping (team sport, individual sport, recreational), there was no difference between the groups in regard to the proportion who paid.

The amounts paid differed in both years, with the highest amounts paid for individual sports and the lowest amounts for team sports.

Cost of participation in adolescents and adults (15 years +).

For the 15+ years age group, there were no differences between sport and non-sport activities in the proportion who paid to play.

Regarding the (15+) three-group comparisons, there was no difference between the groups in regard to the proportion who paid.

In both years the amounts paid by 15+ participants were higher for non-team activities.

For 15+ participants, the amounts of money paid were highest for individual sports and lowest for team sports.

For both age groups, the proportion of participants who paid decreased from 2019 to 2021.

The drop off in participants who paid was greater in the 15+ age group.

There was no indication that the amounts paid changed from 2019 to 2021.

Concluding insights

Overall, it seems that when people 'paid to play', there was no major difference between sport and non-sport in the proportion who paid. It is also clear that non-team sports were, and remained, more expensive than team sports, but that the amount paid for the various activities did not significantly increase. A trend of major concern for organised sport is that, compared to non-sport and recreational activities, fewer paid to engage in sport, and team sport in particular.



METHODS

Data collection

The AusPlay survey (AusPlay) is conducted quarterly under the auspices of Sport Australia. A detailed description of the AusPlay methodology as used can be found elsewhere [8]. Briefly, the target population for AusPlay is all Australian residents. Randomly selected Australian residents aged 15 years and over are interviewed directly in a computer-aided telephone interview (CATI). In AusPlay parlance, the term “adult” is applied to this sample. While the application of this term to persons as young as 15 years may be questionable, it provides a simpler alternative to repetitive use of a phrase such as “persons aged 15 years or more”, and it distinguishes the main survey sample from the secondary sample of “children” (aged 0–14 years). A more restricted set of data about children (with questions on topics such as motivation and costs of participation being omitted) is collected from adult respondents who are parents or guardians of at least one child in their household, with these respondents providing data about themselves and also one randomly selected child.

The annual target sample size for the AusPlay survey is 20,000 adults (aged 15 years and over) spread equally across the year, with 5,000 adult interviews being conducted each quarter. The AusPlay sample is stratified, with the overall target of 5,000 adult interviews being split into target sample sizes for each of 13 geographic strata based on States and Territories, and in the case of NSW, Victoria, Queensland, South Australia and West Australia, with further splits into the Greater Capital City Statistical Areas and the Rest of the State. For selecting the adult sample, an overlapping dual-frame approach was used, with a stratified sampling frame for fixed landlines and a separate frame for mobile phones, with random digit dialling within each frame, and random selection of respondents within each contacted household in the fixed landline sample.

The sample of respondents contacted in this way within each stratum (region) is unlikely to be representative of the population of the region in important ways, such as age and gender profiles. In order to ensure that the estimated counts and rates for the whole population based on the sample data are representative of the whole population, the data from each AusPlay respondent is assigned a weight. The weights were based on the estimated resident population population [9] in each of the 156 “cells” of a 3-factor classification: geographical region (13) \times gender (2) \times age (6). In principle, responses from respondents in cells which are under-represented in the AusPlay sample (relative to the population) are up-weighted (multiplied by a weight >1) and responses from cells which are over-represented in the AusPlay sample are down-weighted (multiplied by a weight <1). In practice, the weights must also include adjustments for household size and for other complexities relating to the combining of two sampling strategies. Finally,



weights are rescaled so that the sum of the weights for each quarterly sample is equal to the population of Australia (aged 15 years and over). The weights also sum to the population counts in each cell of the cross-classification. Consequently, weighted sample estimates of the numbers of persons with a particular characteristic (such as playing a particular sport) are direct estimates for the population or relevant sub-population. To maintain these properties, when data from more than one quarter are aggregated, the weights are divided by the number of quarters. Weights for child data are determined by a similar process, but include further adjustments for the number of children in the household. The weighting methodology is described in more detail in the AusPlay methodology reports [10].

The sampling uncertainty in estimated counts and rates (e.g. the number and percentage of women in Victoria aged 25-44 who play netball in non-club settings) can be expressed in terms of four measures: standard error, relative standard error, margin of error, or relative margin of error. These measures depend on the relevant sample size, and hence on the size of the estimate; the larger the estimated count, the larger the error but the smaller the relative error. These measures are tabulated and explained in detail in the AusPlay methodology reports [10].

The flow of the AusPlay interview and the questions asked are shown in two other AusPlay publications [11, 12]. After initial demographic questions, adult respondents were asked whether they had participated in any physical activity, for sport, exercise or recreation during the 12 months prior to the interview. Those who had done so were invited to nominate up to 10 types of physical activity (e.g. basketball, tennis, aerobics, walking). The scope included both sports as defined in Australia at the time (see Introduction above) [13] and other forms of recreational physical activity. For each physical activity type nominated, participants were then asked a number of further questions about the frequency, duration and the settings in which the activity occurred [12]. In accordance with the aims of the present study, our focus is on the settings reported for each of the 12 sports included in the study.

For each type of physical activity, adult respondents were first asked “In the last 12 months, did you do any of this through an organisation - like a club or a gym; or at a venue - like a pool or an oval?” Respondents who answered “Yes - all” or “Yes - some” were asked, for each organisation/venue mentioned, “Did you pay money to the {organisation/venue} for [14]?” Respondents who answered “Yes” were asked “How much did you pay to the {organisation/venue} in total for [14] in the last 12 months?” Regarding children, the responding adult was asked the same series of questions on behalf of the child, with appropriate 3rd-person variation to the wording.



Data preparation and statistical analysis

In preparation for the present study, data from calendar years 2019 and 2021 were analysed. Data for the two age groups (children aged <15 and adults aged 15+) were analysed separately throughout, because there were major differences in the sets of activities reported by the two groups.

Responses to the physical activity and cost questions were used to produce, for each age group, and for each sport and physical activity in each year, seven estimates for the whole of Australia: number of participants, percent of participants who paid, mean, standard deviation, median, minimum and maximum of the amount paid, and median.

Further, the sports and physical activities were categorised or grouped in three ways, in accordance with the three groupings defined by Sport Australia, as follows¹:

1. Sport / non-sport
2. Team / non-team
3. Team sport / individual sport / recreational

In the hybrid grouping 3, sport is separated into team and non-team, but non-sport is not separated; it is just re-labelled recreational.

In the present study, three key measures - percent of participants who paid, mean amount paid, and median amount paid - were investigated in two ways.

First, for each age group and for each year, comparisons were made between the groups in each of the three Sport Australia groupings. This involved comparing the mean values across the activities in each group. These means should not be confused with the mean amount paid, which is a mean across individual participants in each sport. These analyses were conducted using independent samples t-test (groupings 1 and 2: 2 groups) and one-way analysis of variance F-test with post-hoc pairwise t-tests (grouping 3: 3 groups).

Second, to investigate changes in the three measures between 2019 and 2021, for each age group paired t-tests were conducted, for the full set of activities and for the activities in each group of the Sport Australia groupings.

¹ Sport-related activities are those typically associated with a National Sporting Organisation (NSO), for example, athletics, cycling, football/soccer, netball. Non-sport-related activities are those typically not associated with an NSO, like gym/fitness, bush walking, recreational dance. If a sport can be played as an individual, then it is considered non-team.



RESULTS

A total of 88 for sport and physical activities were recorded for participants aged <15 years and 117 for participants aged 15+ years. As there was great volatility in the cost measures for activities with very small samples., analysis was limited to activities for which the estimated number of participants in Australia was at least 10,000 in each of 2019 and 2021. This comprised 41 activities for participants aged <15 years and 68 activities for participants aged 15+ years.

Table 1 shows the results for three measures of the cost of participation in sport/physical activity (percent of participants who paid, mean amount paid, and median amount paid) summarised across age groups, years and groupings of activities. The results tabulated are derived from 36 separate analyses (3 measures \times 2 age groups \times 2 years \times 3 groupings of activities), each with a single factor (the different groups of activities within each grouping) being compared. Table 1 also shows the p-values for statistically significant differences.

For the under 15 years age group, there were no statistically significant differences between sport and non-sport activities on any of the three measures, in either of the two years. However, regarding team and non-team comparisons, the percentage of participants who paid was statistically significantly higher for team activities in both years, while both the mean and median amounts paid were statistically significantly higher for non-team activities in both years. Regarding the three-group comparisons, there was no statistically significant difference between the three groups in the percentage of participants who paid, while both the mean and median amounts paid differed significantly in both years, with the amounts paid being highest for individual sports and lowest for team sports.

For the 15+ years age group, the pattern of group differences was similar across the whole table to that of the under 15s, but only three of the differences were statistically significant. There were no statistically significant differences between any of the groups regarding the percentage of participants who paid. The median amount paid in 2019 was statistically significantly higher for non-team activities than for team activities. The mean amount paid in 2021 was statistically significantly higher for non-team activities than for team activities. Finally, the three-group differences in the mean amount paid in 2021 were also significant, with individual sports having the highest mean cost.

Table 2 shows the results of comparisons of the three measures across the two years, for all of the activities within each age group, and for each of the Sport Australia groups.

For both age groups, there was a difference between years in the percentage of participants who paid, with lower percentages in 2021 than 2019, both for the full set of



activities and for each group of activities. Because of the small sample sizes within most groups, statistical significance is limited to the full set of activities in each age group, and two particular groups, the 15+ sport group (with the largest sample size) and the 15+ team group, for which the drop in the percentage who paid was greatest.

There was no evidence, for either age group, either for the full set of activities or for specific groups of activities, of any underlying change in mean or median amounts paid between 2019 and 2021.



Table 1. Comparisons of three cost measures¹ for three Sport Australia groupings of activities: by age group and year

Age group (yrs)	Sport Australia grouping	Sport Australia group	n ²	2019						2021					
				Percent who paid		Mean ³ amount paid (\$)		Median amount paid (\$)		Percent who paid		Mean ³ amount paid (\$)		Median amount paid (\$)	
				Mean ⁴	SD	Mean ⁴	SD	Mean ⁴	SD	Mean ⁴	SD	Mean ⁴	SD	Mean ⁴	SD
<15	1	Sport	34	84	18	568	463	346	274	82	19	653	773	292	172
		Non-sport	7	77	26	388	263	241	154	62	38	449	334	278	160
			<i>p-value</i>			<i>NS</i>		<i>NS</i>		<i>NS</i>		<i>NS</i>		<i>NS</i>	
	2	Team	12	90	5	228	91	169	41	89	6	240	91	173	52
		Non-team	29	81	23	665	462	394	283	74	27	775	804	338	176
			<i>p-value</i>		0.042		<.001		<.001		0.01		0.001		<.001
	3	Team sport	12	90	5	228	91	169	41	89	6	240	91	173	52
		Individual sport	22	82	22	753	480	442	299	78	23	879	885	357	180
		Recreational	7	77	26	388	263	241	154	62	38	449	334	278	160
		<i>p-value</i>		<i>NS</i>		0.001		0.006		<i>NS</i>		0.032		0.006	
15+	1	Sport	60	78	14	708	625	394	344	74	18	621	470	370	352
		Non-sport	8	70	27	652	223	367	254	67	29	645	314	345	279
			<i>p-value</i>		<i>NS</i>		<i>NS</i>		<i>NS</i>		<i>NS</i>		<i>NS</i>		
	2	Team	16	78	13	522	672	273	167	70	15	313	168	268	198
		Non-team	52	77	17	757	560	426	363	75	21	719	471	397	373
			<i>p-value</i>		<i>NS</i>		<i>NS</i>		0.023		<i>NS</i>		<.001		<i>NS</i>
	3	Team sport	16	78	13	522	672	273	167	70	15	313	168	268	198
		Individual sport	44	78	15	776	601	437	381	76	19	733	495	407	389
		Recreational	8	70	27	652	223	367	254	67	29	645	314	345	279
		<i>p-value</i>		<i>NS</i>		<i>NS</i>		<i>NS</i>		<i>NS</i>		.005		<i>NS</i>	

¹ Tabulated values are means and standard deviations (SD), across all activities in each group, of the values of the three measures for each activity.

² The total numbers of activities recorded were 88 for participants aged < 15 years and 117 for participants aged 15+ years. However, because of great volatility in the measures based on very small samples, analysis was limited to activities for which the estimated number of participants in Australia was at least 10,000 in each 2019 and 2021; this comprised 41 activities for participants aged < 15 years and 68 activities for participants aged 15+ years.

³ Measure = mean amount paid by participants in a particular activity.

⁴ Mean value of each measure (percent, mean or median) for the set of activities in each group.

* Boldface mean values are significantly higher ($p < .05$) than the mean(s) of the other group(s) in the grouping; based on independent samples t-test (groupings 1 and 2: 2 groups) and one-way analysis of variance F-test with post-hoc pairwise t-tests (grouping 3: 3 groups). NS = Difference not statistically significant ($p > .05$).



Table 2. Changes from 2019 to 2021 in three cost measures¹ for three Sport Australia groupings of activities: by age group

Age group (yrs)	Sport Australia grouping	Sport Australia group	n ³	Percent who paid			Mean ² amount paid			Median amount paid		
				Mean ⁴ 2019	Mean ⁴ 2021	p-value ⁵	Mean ⁴ 2019 (\$)	Mean ⁴ 2021 (\$)	p-value ⁵	Mean ⁴ 2019 (\$)	Mean ⁴ 2021 (\$)	p-value ⁵
<15	1	Sport	34	84	82	NS	568	653	NS	346	292	NS
		Non-sport	7	77	62	NS	388	449	NS	241	278	NS
	2	Team	12	90	89	NS	228	240	NS	169	173	NS
		Non-team	29	81	74	NS	665	775	NS	394	338	NS
	3	Team sport	12	90	89	NS	228	240	NS	169	173	NS
		Individual sport	22	82	78	NS	753	879	NS	442	357	NS
		Recreational	7	77	62	NS	388	449	NS	241	278	NS
	All activities	41	83	78	0.047	537	619	NS	328	290	NS	
15+	1	Sport	60	78	74	0.011	708	621	NS	394	370	NS
		Non-sport	8	70	67	NS	652	645	NS	367	345	NS
	2	Team	16	78	70	0.001	522	313	NS	273	268	NS
		Non-team	52	77	75	NS	757	719	NS	426	397	NS
	3	Team sport	16	78	70	0.001	522	313	NS	273	268	NS
		Individual sport	44	78	76	NS	776	733	NS	437	407	NS
		Recreational	8	70	67	NS	652	645	NS	367	345	NS
		All activities	68	77	73	0.005	701	624	NS	390	367	NS

¹ Tabulated values are means, across all activities in each group, of the values of the three measures for each activity.

² Measure = mean amount paid by participants in a particular activity.

³ The total numbers of activities recorded were 88 for participants aged < 15 years and 117 for participants aged 15+ years. However, because of great volatility in the measures based on very small samples, analysis was limited to activities for which the estimated number of participants in Australia was at least 10,000 in each 2019 and 2021; this comprised 41 activities for participants aged < 15 years and 68 activities for participants aged 15+ years.

⁴ Mean value of each measure (percent, mean or median) for the set of activities in each group.

* Boldface 2019 mean values are significantly higher (p<.05) than the 2021 mean values; based on paired t-tests. NS = Difference not statistically significant (p>.05).

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