



# **Sport Data on Participation and Attendance: How do Results from the Australian Bureau of Statistics and Sweeney Research Compare?**

**A report prepared by  
the National Centre for Culture and Recreation Statistics,  
Australian Bureau of Statistics  
Adelaide, SA**

**July, 2001**



## Preface

At present, a range of government, industry and other organisations collect statistical data of relevance to Australia's cultural, sport and leisure activities. However, there is a lack of awareness across the sector of the existence and nature of these data sources, despite the fact that the data may significantly contribute to the monitoring and evaluation of the nation's cultural, sport and leisure activities, and to the development of related policies and programs. Thus, one of the goals of the National Centre for Culture and Recreation Statistics (NCCRS) – a research unit within the ABS – is to gain and disseminate information on all Australian culture, sport and leisure statistics, whether the ABS or other organisations collect them.

For many in the sport sector, reliable information on overall levels of participation in sport and attendance at sporting venues and events is vital. Likewise, many seek accurate data on rates of participation and attendance in relation to individual sporting activities (e.g., golf, cycling, cricket, soccer, etc.). There are two key sources of national data on these topics in Australia – the Australian Bureau of Statistics and Sweeney Research – with both organisations regularly releasing statistics on these topics. However, when these data are compared, significant differences are observed, and the data collected by Sweeney Research consistently suggests higher sport participation and attendance rates than does the ABS data.

As a result of both NCCRS' aim to disseminate information on available data and the conflicting nature of the two key participation and attendance data sources, NCCRS has prepared this report. The key aim of the report is to increase understanding within the sector of the details of the ABS and Sweeney collection methodologies and data, and to present possible reasons for the observed differences in the statistics.

It should be noted that only limited detail on various aspects of the collection procedures for the Sweeney data are available in the reports they publish. However, we were able to obtain some additional information directly from Sweeney Research, and we thank Martin Hiron from Sweeney Research for his assistance. Nevertheless, it is possible that we are unaware of some factors in their collection procedures that may have also impacted their statistics and, as a result, it is possible that additional explanations for the observed differences to those offered in this report may exist.

The National Centre for Culture and Recreation Statistics welcomes any comments or queries readers may have about the information provided in this report. Such comments or questions can be directed to Dr. Adriana Vanden Heuvel, Director of NCCRS, Australian Bureau of Statistics, GPO Box 2272, Adelaide, SA 5001, or by email to [nccrs@abs.gov.au](mailto:nccrs@abs.gov.au).

## Table of Contents

	<b>Page</b>
<b>Preface</b> .....	i
<b>Introduction</b> .....	1
<b>Participation statistics</b> .....	1
Sweeney data .....	1
ABS data .....	2
Comparing Sweeney and ABS data .....	3
Explaining the differences .....	4
<b>Attendance statistics</b> .....	7
Sweeney data .....	7
ABS data .....	8
Comparing Sweeney and ABS data .....	9
Explaining the differences .....	10
<b>Conclusion</b> .....	13
<b>Endnotes</b> .....	15
<b>Appendices</b> .....	17
A: Comparison of Sweeney and ABS sport participation rates .....	17
B: Comparison of Sweeney and ABS sport attendance rates .....	19

## **INTRODUCTION**

Sweeney Research regularly collects data on participation in sport and attendance at sporting events (along with other sport-related information) and it publishes a report entitled *The Sweeney Sports Report*.<sup>1</sup> The Australian Bureau of Statistics (ABS) also produces sport participation and attendance statistics. When comparing the results reported by the two organisations, significant differences are apparent.

The first objective of this paper is to describe the results from the relevant surveys. The second objective is to compare the methodologies used, as a means to explore reasons for the observed differences. In order to maximise the comparability of the data from the Sweeney and the ABS surveys, 1998-99 data are used in all cases (even though more recently collected Sweeney data and 1999-2000 ABS participation data are available).

## **PARTICIPATION STATISTICS**

### ***Sweeney data***

#### *Survey methodology*

The Sweeney survey was conducted to assess a number of issues related to sport and cultural activities, and one of the topics it covers is participation in sport. The survey was introduced to respondents as a survey on "sporting interests and activities" and participation in this survey was voluntary. The sample size for the survey was approximately 1,500 people, which consisted of approximately 400 respondents from each of Sydney and Melbourne, 200 each from Perth, Brisbane and Adelaide, and 100 from Canberra. The gender mix of the sample was split evenly between men and women. Only persons living in the capital cities, excluding Hobart and Darwin, were included in the sample frame. Thus, persons living in Tasmania and the Northern Territory, as well as those in non-metropolitan areas are not represented by the Sweeney results. This means that, considering geographical location only, the Sweeney results are applicable to about 62 per cent of the Australian population.

All respondents included in the survey were aged between 16 and 65 years, with the sample stratified by age: one-third of respondents were aged between 16 and 29 years, one-third were aged between 30 and 44 years, and one-third between 45 and 65 years. The sample was weighted (using ABS data) by age and sex to represent the age-sex distributions of the populations of each mainland city.

In the Sweeney survey, data were collected via computer assisted telephone interview (CATI) methodology, with random digit dialling used to generate the selected telephone numbers. No mention of the number of call backs to unanswered numbers is made in the Sweeney reports, nor

is there any discussion of response rates, but we do not expect response rates to be high (in relation to ABS surveys), given the voluntary nature of this survey.

### *Participation question*

To determine whether respondents participated in sport, each person was first asked: "Which of the following sports, if any, are you interested in? That is, participate in yourself, regularly attend as a spectator, watch on TV, listen to on radio or read about in newspapers?" A total of 56 sports were then read out, one by one. For each sport that the respondent said he or she was interested in, a follow up question determined whether they participated in that sport, attended as a spectator, etc. Thus, those who said they participated in the sport were considered to be participants. Note that the relevant time period regarding the individual's participation in each of the sports (be it in the past week, month, year, etc.) was left up to the respondent to decide.

### **ABS Data**

#### *Survey methodology*

ABS data on participation in sport and physical activities have been collected quarterly via the Population Survey Monitor (PSM) in recent years. Annual results from this collection have been released in the ABS publication *Participation in Sport and Physical Activities*.<sup>2</sup>

Each quarterly PSM survey used a multistage area sample of approximately 3,250 private dwellings, resulting in an annual total of approximately 13,000 dwellings. The survey was conducted in both rural and urban areas in all States and Territories of Australia, but did not cover sparsely settled parts of Australia. This means that less than 1 per cent of the population was not represented in the sample frame for this survey. Furthermore, the exclusion of these persons would have had only a minor impact on any aggregate estimate that was produced for an individual State or Territory, with the exception of the Northern Territory, where such persons account for over 20 per cent of the population.

Persons aged 18 years and over who were usual residents of private dwellings were included in the scope of the survey (therefore, people in non-private dwellings, such as those in hotels and motels, gaols, some patients in hospitals, and members of the Defence Forces, were excluded from the survey).<sup>3</sup> Information was collected by a personal face-to-face interview with one adult member of the selected household. Because the PSM was conducted under the Census and Statistics Act of 1905, response rates were very high (generally over 90 per cent).

#### *Participation question*

In the PSM, respondents were asked if they had "taken part in any physical activities or sports in the last 12 months". Concurrently, the respondent was shown a prompt card, which included a list of eight types of sports and physical activities (such as fitness, health activities, ball sports, racquet sports, water sports), with each type followed by a number of specific examples (e.g., tennis, squash and badminton were listed for racquet sports).<sup>4</sup>

All respondents who indicated that they undertook at least one sport or physical activity were then asked to indicate the capacity in which they were involved in all of the various sports or physical activities they noted, with the options being: 'player or participant', 'coach or teacher', 'referee, umpire or official', 'administrator' and 'other' (with multiple responses allowed). All those who indicated involvement as a 'player or participant' in one or more of the sports or physical activities were coded as participants, with all others coded as non-participants.

Note that while the prompt card was shown to respondents, the interviewer did not read through the card with the respondent. Further, whether an activity was regarded as a sport or physical activity was left to the opinion of the respondent; thus, respondents could name sports or physical activities not listed on the prompt card and still be considered a participant.

### ***Comparing Sweeney and ABS data***

There is a large difference in overall participation rates for 1998-99 reported by the ABS and Sweeney Research. The Sweeney results indicate a participation rate of 88 per cent. In contrast, the ABS calculated a participation rate of 59.4 per cent.

When participation in individual sports and physical activities is examined, large differences are again readily apparent. Before highlighting some of the key findings, it is worth noting that a number of differences in the classifications of sports exist between the two surveys. Some examples follow. First, the Sweeney survey did not include 'walking' in their list of sports considered, although they did include 'bushwalking and hiking'. In the ABS results, 'walking' is included and 'bushwalking and hiking' is one component of this category. Second, the categories which indicate participation in gym activities (other than weight training) differ in the two surveys, with Sweeney including two categories, namely 'gym workout' and 'aerobics'. In contrast, the ABS data included one category to cover these types of activities: 'aerobics and fitness' (defined to include callisthenics, gym, exercise bikes and circuits). Third, the Sweeney research had four categories that described participation in ice and snow sports (namely, 'snow skiing - cross country', 'snow skiing - downhill', 'snow skiing - snow boarding' and 'ice skating'), while the ABS had only one category ('ice and snow sports'). Due to differences such as these in the way sports and physical activities are grouped and classified, caution is required when comparing the results from the two surveys for a number of the individual sports and, furthermore, it is impossible to make a comparison for some of the sports. In this report, we have only compared sports which we believe were classified on a similar basis.

Appendix A provides a comparison of the participation statistics as published in the Sweeney and ABS publications. It is evident that for each of the activities for which a comparison can be made, the results from the Sweeney survey indicate higher participation rates, with those rates usually being at least three times greater than those suggested by the ABS results.

In Table 1, the ten activities with the highest participation rates in each of the two surveys are shown. While the Sweeney survey indicates that 'swimming' attracted the most adult participants (a participation rate of 39 per cent), it is 'walking' that tops the ABS participation rates (23 per cent), followed by 'swimming' (15 per cent). According to the Sweeney data, 'bushwalking' is the second most common sport or physical activity with 27 per cent of respondents participating. It

is also notable that of the ten most popular activities, seven appear in both 'top ten' lists (i.e. swimming, fishing, tennis, snooker, billiards, pool, golf, running and cycling). Nonetheless, the participation rate from the Sweeney survey for each of these seven sports was at least double that of the ABS rate, and ranged from 2.1 times larger for the golf figures to 7.7 times larger for the snooker, billiards and pool figures.

**Table 1: Comparing Sweeney and ABS Data: Top Ten in Terms of Participation**

Sweeney survey	Participation rate (%)	ABS survey	Participation rate (%)
Swimming	39	Walking	22.7
Bushwalking, hiking	27	Swimming	15.3
Fishing	25	Aerobics, fitness	11.1
Gym workout	25	Golf	9.8
Tennis	24	Tennis	7.7
Snooker, pool, billiards	23	Fishing	6.7
Golf	21	Cycling	5.9
Jogging, running, marathons, fun runs	20	Running	4.8
Cycling	20	Netball	3.2
Tenpin bowling	19	Billiards, snooker, pool	3.0
<b>Total participation rate (a)</b>	<b>88</b>	<b>Total participation rate (a)</b>	<b>59.4</b>

Notes: (a) Includes sports not shown.

Sources: Brian Sweeney & Associates, *The Sweeney Sports Report 1998/1999*.

Australian Bureau of Statistics, *Participation in Sport and Physical Activities, Australia, 1998-99* (Catalogue no. 4177.0).

### ***Explaining the differences***

Part of the explanation for the different participation results observed between the Sweeney and the ABS surveys lies in the differences in the populations represented by the two surveys. First, as noted earlier, unlike the ABS participation survey, the Sweeney survey excluded people aged over 65 years and included those aged 16 and 17 years. This difference is important to note since age is closely related to participation rates. For instance, the ABS results indicated that participation rates were the highest for the 18 to 24 year age group (80.4 per cent), and so it is likely that the participation rates for 16 to 17 year olds would also have been relatively high. At the same time, the ABS data show that participation declined steadily with age, and the lowest participation rate was observed for those aged 65 years and over (36.8 per cent). Therefore, it can be expected that the different age composition of the samples would result in higher participation rates in the Sweeney survey than in the ABS survey.

Differences in the geographic coverage of the two surveys are also likely to have an impact on the participation rates. As noted earlier, the sample for the Sweeney survey comprised six capital cities, and thus excluded Hobart, Darwin and all non-metropolitan areas. Results from the ABS survey indicated that participation in capital cities (60.0 per cent) was slightly higher than participation in other areas of Australia (58.2 per cent). In turn, the differences in geographical



coverage of the two surveys suggest that the Sweeney survey will result in participation rates higher (albeit to a limited extent) than the ABS survey.

In an attempt to take age and geographic differences of the ABS and Sweeney data into account, a set of adjusted participation rates was calculated using the ABS data by, first, excluding those aged over 65 years and, second, by including only those respondents who lived in metropolitan areas other than Hobart and Darwin. Note that since people aged 16 and 17 years were not included in the ABS survey, no alteration to the ABS data could be made to take into account this particular difference between the surveys.

The participation rate for the ABS survey, when adjusted to better reflect the age and geographic coverage of the Sweeney survey, was 63.6 per cent. This is higher than the published rate from the ABS survey (59.4 per cent) but is still significantly less than the rate indicated by the Sweeney research (88 per cent).

Table 2 illustrates the impact of the age and geographic modifications to the ABS sample on the top ten sports. As can be seen, calculated ABS participation rates increased (as expected) in all cases but one ('fishing' fell from 6.7 to 5.6 per cent). However, it is notable that the changes in the calculated ABS participation rates for the ten sports were fairly small with the largest change in the calculated ABS participation rates observed for 'aerobics and fitness' (where the rate increased from 11.1 to 14.3 per cent).

**Table 2: Comparing Sweeney and ABS Data, Including Adjusted ABS Data: Top Ten in Terms of Participation**

Sweeney survey	Participation rate (%)	ABS survey	Published ABS participation rate (%)	Adjusted ABS participation rate (%)*
Swimming	39	Walking	22.7	24.2
Bushwalking, hiking	27	Swimming	15.3	18.0
Fishing	25	Aerobics, fitness	11.1	14.3
Gym work-out	25	Golf	9.8	9.9
Tennis	24	Tennis	7.7	8.7
Snooker, pool, billiards	23	Fishing	6.7	5.6
Golf	21	Cycling	5.9	7.2
Jogging, running, marathons, fun runs	20	Running	4.8	5.9
Cycling	20	Netball	3.2	3.4
Tenpin bowling	19	Billiards, snooker, pool	3.0	3.8
<b>Total participation rate (a)</b>	<b>88</b>	<b>Total participation rate (a)</b>	<b>59.4</b>	<b>63.6</b>

Notes: \* The adjusted ABS figures show ABS results when those aged over 65 years are excluded, as well as those living in Hobart, Darwin and non-metropolitan areas.  
(a) Includes sports not shown.

Sources: Brian Sweeney & Associates, *The Sweeney Sports Report 1998/1999*.  
Australian Bureau of Statistics, *Participation in Sport and Physical Activities, Australia, 1998-99* (Catalogue no. 4177.0) and unpublished data.

The last column of Appendix A shows the full list of adjusted ABS participation rates. While either no change or an increase in participation rates is observed for the majority of sports listed, there are some exceptions, with the two most notable declines being observed for fishing (as noted earlier) and lawn bowls (the participation rate decreased from 2.6 to 0.9 per cent). Nonetheless, the adjusted results shown in Appendix A indicate that even with the modifications to the ABS sample to take into account a large proportion of the age and geographic differences, the ABS results are still different from the Sweeney results.

Given that it seems that differences in the scope of the survey (in terms of age and geography) are only a small part of the answer, how can the large differences in the results between the ABS and Sweeney surveys be explained? The following are probably the key factors.

First, we suspect that one of the main factors relates to differences in the use of prompt cards and the naming of individual sports in the two surveys. As noted earlier, in the Sweeney research, each person was asked if they participated in any of 56 sports, with each of these sports named explicitly. By contrast, in the ABS survey, respondents were shown a prompt card with examples of the types of activities to be included in their responses. The naming of specific sports and physical activities in the Sweeney survey may serve to 'jog' the memory of some respondents to include activities they might not have otherwise thought of (especially those activities undertaken infrequently or a relatively long time ago) which would, in turn, lead to higher recorded participation rates.<sup>5</sup>

Second, while both surveys measured participation in sport and physical activity, the time frames to which the participation questions referred were different. The ABS survey asked explicitly about participation over the previous 12-month period. The ABS believes that the specification of the time frame allows for a clearer monitoring of participation trends from one year to the next. In contrast, no time frame was provided in the Sweeney survey; instead respondents were simply asked about sports and physical activities they 'participate in themselves'. The time frame that respondents would have in mind when replying to such a question is not clear. On the one hand, the higher participation rates reported by Sweeney suggest that it is likely that a proportion of respondents reported on participation that occurred more than a year ago. On the other hand, the use of the present tense in the question (i.e., "Which of the following sports, if any, *are* you interested in? That is, *participate* in yourself...") could have encouraged people to consider only sports they were then involved in at the time of the survey. Such an interpretation would be expected to have a dampening effect on the recorded rates. Yet, if the majority of respondents had interpreted the question in this way, one would not expect to see the high rates of alpine or downhill skiing (15 per cent) and other winter sports (e.g., snowboarding rate of 4 per cent) that were observed, given the survey was undertaken in December and January. Without undertaking cognitive testing of the question, it is difficult to suggest what time frame respondents tended to consider in their responses to the Sweeney participation question. Thus, although we expect it to have had some impact, the exact nature of the impact on the observed differences between the two surveys cannot be determined.

Third, the Sweeney survey was a voluntary survey and thus persons who were telephoned could choose whether or not to respond to the questions. Conversely, the ABS survey on sports participation was part of an official survey with high response rates. Therefore, the achieved

sample is likely to be more representative of the adult population of Australia. Furthermore, it may be the case that because the Sweeney survey was introduced to potential respondents as being one on "sporting interests and activities", those persons interested and involved in sport may have been more likely than others to agree to respond to the survey questions.

Fourth, seasonality may play a role in the differences observed, particularly so for some sports that are more common at specific times of the year. While the ABS data were collected on a quarterly basis, the Sweeney survey was conducted in December and January. Given that respondents are more likely to recall an activity if it was recently undertaken, this factor, in particular, may partially explain the much higher rates observed for activities which are more common in spring and summer (such as athletics, outdoor cricket, sailing, surfing, swimming and water skiing).<sup>6</sup>

Fifth, the Sweeney survey included 16 and 17 year olds in their sample, while the ABS survey did not (and no adjustments for this age difference could be undertaken when we calculated adjusted participation rates, as noted earlier). People aged 16 and 17 years are likely to have relatively high participation rates and thus this difference also would go some way to explaining why the results from the Sweeney survey were higher than those recorded in the ABS research.

Sixth, the sample sizes used in the surveys were vastly different. Approximately 13,000 respondents replied to the ABS participation survey. By comparison, the Sweeney survey's sample size was relatively small, with 1,500 interviews being conducted. Thus, the results from the Sweeney survey would be subject to greater sampling variability (i.e., higher margin of error) than the ABS surveys.

Seventh, the nature of participation that is being identified in the survey may differ to some extent. As noted earlier, the ABS results focus on involvement as a 'player or participant', rather than on participation in some other role, such as coach, teacher, referee or administrator, and a question is specifically asked of respondents regarding the nature of their participation in activities in which they were involved. In the Sweeney survey, there is no attempt to clarify the nature of participation in the sports and physical activities. Thus, it is possible that in the Sweeney research, people who 'personally participated' in various sports or physical activities as coaches, officials, administrators, etc. were included in the participation rates recorded. This too could help explain the higher levels of participation being observed in the Sweeney research, although we suspect that this is not likely to be one of the major factors.

## **ATTENDANCE STATISTICS**

### *Sweeney data*

#### *Survey methodology*

The 1998-99 attendance data reported by Sweeney were collected on the same survey vehicle as the participation data. That is, as described in detail earlier, the Sweeney results were based on a sample of about 1,500 people who lived in six of the capital cities and were aged between 16 and

65 years of age. Data were collected via computer assisted telephone interviews, and random digit dialling was used to generate the selected telephone numbers.

### *Attendance question*

As was noted earlier, in the Sweeney research, each respondent was asked: "Which of the following sports, if any, are you interested in? That is, participate in yourself, regularly attend as a spectator, watch on TV, listen to on radio or read about in newspapers?" A total of 56 sports were then read out, with each of the sports named separately. For each sport a respondent indicated interest in, a follow up question determined whether they regularly attended that sport as a spectator. The percentage who said they did so was used as the attendance rate. Note that, as for the participation questions, the relevant time period was unspecified. In addition, what 'regularly' meant was left to the individual respondent to determine.

### **ABS data**

#### *Survey methodology*

Information on sport attendance has been collected in the Monthly Population Survey (MPS), which is the ABS vehicle used to collect monthly data on the labour force and supplementary topics. Information on sport attendance is collected as a supplementary topic approximately every fourth year, with the most recent collection taking place in April 1999. The results of this survey were published in *Sports Attendance, Australia, April 1999*.<sup>7</sup>

The sample for the MPS is selected using multistage sampling techniques and includes approximately 30,000 dwellings. The survey covers urban and rural areas across all States and Territories of Australia but, similar to the PSM, excludes persons living in remote and sparsely settled parts of Australia (which equates to less than 1 per cent of the population). The scope of the survey is those persons aged 15 years and over living in either private or non-private dwellings, with only a few exceptions.<sup>8</sup> Data in the MPS are collected under the Census and Statistics Act of 1905 and, as a result, response rates are very high (generally around 97 per cent).

Approximately 25,200 interviews were conducted to collect the ABS data on sport attendance.<sup>9</sup> Most interviews (80 per cent) were conducted by telephone while the remainder were conducted via a face-to-face interview.

### *Attendance question*

To measure attendance in the ABS survey, the respondent was asked, "Have you been to any sporting matches or competitions as a spectator since this time in April last year? Please exclude school and junior competitions." Regardless of their response to this question, all respondents were also asked four questions which ascertained whether they had attended any motor sports, horse races, harness races or dog races in the previous year. These four sporting events were singled out for specific mention since testing indicated that many respondents did not mention attendance at these events without a prompt, thus leading to a significant undercount of

attendance at these sporting activities. Those respondents who answered 'yes' to either the initial question or any of the four follow-up questions were classified as having attended a sporting event.

### *Comparing Sweeney and ABS data*

According to the ABS research, during the 12 months ending April 1999, 7.0 million persons, or 47.1 per cent of the Australian population aged 15 years and over attended sporting matches or competitions (excluding junior and school competitions). In the 1998-99 Sweeney Sports Report, 65 per cent of the population aged 16 to 65 years attended sporting fixtures.

Attendance rates for individual sporting events are shown in Appendix B. As was the case with the participation data, the categories of the individual sports are not strictly comparable and thus caution must be taking when comparing attendance rates for some of the sports. As noted earlier, in this report, only those sports which we believe were classified on a similar basis are compared.

Again, clear differences are apparent when the results of the two surveys regarding attendance at individual sporting events are compared. With one exception, the Sweeney survey recorded higher attendance rates than the ABS survey. The one exception is horse racing: while the Sweeney data suggested that 8 per cent of respondents attended horse racing, the ABS data suggested that 11.8 per cent did so. This one exception may be explained by the fact that unlike the other sports that are comparable between the two surveys, a specific question was asked in the ABS survey about whether respondents attended this sporting event. The fact that this sport was mentioned specifically is likely to have affected the observed rate since asking respondents about specific sports may help them remember instances of attendance they may have otherwise overlooked. Because of this, we would expect the results for horse racing to be more comparable to the Sweeney results (as in that survey, all sports are named specifically). Note, though, that this can only be part of the explanation, since it does not help explain why the ABS rate is actually higher than the Sweeney rate. Further, in the ABS survey, three other sports were also named specifically: motor sports, harness racing and dog racing. Unfortunately, for these other sports, the categories are not comparable between the two surveys. That is, in the Sweeney study, 'motor sports' is divided into two categories: 'motor car racing' and 'motor cycle racing'. Meanwhile, no categories for 'dog racing' or 'harness racing' are listed in the Sweeney report.

Table 3 provides a comparison of attendance rates of the ten sports attended by the largest proportion of respondents. According to both the Sweeney and ABS results, Australian Rules football tops the attendance list, with the Sweeney results indicating an attendance rate of almost one in four respondents (23 per cent), compared with about one in six (16.8 per cent) in the ABS results. Second in line, according to the Sweeney research, is outdoor cricket which attracted 19 per cent of the respondent group, while the ABS estimates place outdoor cricket fifth, with an attendance rate of 6.3 per cent. Of all of the ten sports listed, eight of the sports fall into both lists but, with the exception of Australian Rules football, they are in a different order in terms of their placement in the top ten. The sports that do not make it into both lists are as follows: 'motor car racing' and 'netball' are in the Sweeney list and not the ABS list, while 'motor sports' and 'harness racing' are part of the ABS list, but not the Sweeney top ten.

**Table 3: Comparing Sweeney and ABS Data: Top Ten in Terms of Attendance**

Sweeney survey	Attendance rate (%)	ABS survey	Attendance rate (%)
Australian Rules	23	Australian Rules	16.8
Cricket (outdoor)	19	Horse racing	11.8
Rugby League	12	Motor sports	10.6
Basketball	11	Rugby League	10.1
Soccer	10	Cricket (outdoor)	6.3
Rugby Union	9	Soccer	4.2
Motor car racing	8	Harness racing	3.6
Horse racing	8	Basketball	3.5
Tennis	8	Rugby Union	3.0
Netball	6	Tennis	3.0
<b>Total Attendance Rate(a)</b>	<b>65</b>	<b>Total Attendance Rate(a)</b>	<b>47.1</b>

Notes: (a) Includes sports not shown.

Sources: Brian Sweeney & Associates, *The Sweeney Sports Report 1998/1999*.

Australian Bureau of Statistics, *Sports Attendance, Australia, 1999* (Catalogue no. 4174.0).

### ***Explaining the differences***

As with the participation rates, it is likely that part of the explanation for the different attendance results between the two surveys lies in the differences of the population represented by the two studies. First, unlike the ABS attendance survey, the Sweeney survey excluded people aged 15 years and people aged over 65 years. This difference is important to note since age is closely related to attendance rates. For instance, the ABS results indicate that attendance rates were the highest for those aged 15 to 24 years (at 63.1 per cent) and lowest for those aged 65 years and over (at 21.8 per cent). Given the number of those aged over 65 years in the population is greater than the number of 15 year olds, one would expect that the net effect of these age differences would be that the ABS results would be lower than that of the Sweeney results.

Differences in the geographic coverage of the two surveys are also likely to have an impact. As noted earlier, Sweeney's sample comprised six capital cities (it excluded Tasmania, the Northern Territory and all non-metropolitan areas). Meanwhile, the ABS data indicated that attendance in capital cities (46.3 per cent) was slightly lower than attendance in other areas of Australia (48.5 per cent). Thus, considering only the differences in geographical coverage of the two surveys, we would expect somewhat lower attendance rates in the Sweeney survey than the ABS survey.

To take these age and geographic differences into account, a set of adjusted attendance rates was calculated using the ABS data by excluding those aged 15 years and those aged over 65 years and by including only those respondents who lived in metropolitan areas except Hobart and Darwin. The adjusted attendance rate for the ABS survey was 50.4 per cent which is higher than the published rate for the ABS survey (47.1 per cent). However, it is still significantly less than that of the Sweeney survey (65 per cent).

The effect of these modifications on the attendance rates for the top ten individual sports is shown in Table 4. As can be seen, adjusted ABS attendance rates increased in each of these ten

cases but two – that is, attendance rates for 'Rugby League' and 'horse racing' fell marginally. Yet, even with this marginal decrease in the attendance rate for horse racing, the ABS rate for this sport is still considerably higher than that indicated by the Sweeney research. The adjusted ABS results also considerably narrowed the difference between the Sweeney and the ABS results for 'Australian Rules football', with the adjusted ABS result indicating an attendance rate of 20.4 per cent for this sport, compared with the Sweeney attendance rate of 23 per cent. For the majority of other sports shown in this table, though, attendance rates from the two surveys still show large differences.

**Table 4: Comparing Sweeney and ABS Data, Including Adjusted ABS Data: Top Ten in Terms of Attendance**

Sweeney survey	Attendance rate (%)	ABS survey	Published ABS attendance rate (%)	Adjusted ABS attendance rate*
Australian Rules	23	Australian Rules	16.8	20.1
Cricket (outdoor)	19	Horse racing	11.8	11.7
Rugby League	12	Motor sports	10.6	10.7
Basketball	11	Rugby League	10.1	10.2
Soccer	10	Cricket (outdoor)	6.3	7.7
Rugby Union	9	Soccer	4.2	5.4
Motor car racing	8	Harness racing	3.6	3.5
Horse racing	8	Basketball	3.5	3.9
Tennis	8	Rugby Union	3.0	3.9
Netball	6	Tennis	3.0	3.8
<b>Total Attendance Rate(a)</b>	<b>65</b>	<b>Total Attendance Rate(a)</b>	<b>47.1</b>	<b>50.4</b>

Notes: \* The adjusted ABS figures show ABS results when those aged 15 years and over 65 years are excluded, as well as those living in Hobart, Darwin and non-metropolitan areas.

(a) Includes sports not shown.

Sources: Brian Sweeney & Associates, *The Sweeney Sports Report 1998/1999*.

Australian Bureau of Statistics, *Sports Attendance, Australia, 1998-99* (Catalogue no. 4174.0) and unpublished data.

The final column of Appendix B provides a complete list of the adjusted ABS attendance rates. The results show that for the majority of sports, some degree of increase in ABS attendance rates was observed but the change was minimal in many cases. In terms of decreases in attendance rates, the two most notable instances are observed for 'netball' (decrease from 1.7 per cent to 1.3 per cent) and 'bowls' (decrease from an attendance rate of 0.6 per cent to 0.2 per cent).

As was the case for the participation data, the overall conclusion that must be drawn from examining the results of the adjusted attendance data is that age and geographic differences are only a partial explanation for the observed differences in Sweeney and ABS attendance data as, clearly, the results of the two surveys still differ significantly after controlling for these differences. Thus, it is necessary to speculate about other potential factors that may explain the

remaining differences. Some of the possible factors are similar to those suggested earlier in relation to the comparison of the results from the participation surveys.

First, the ABS measure of attendance does not require a certain number of attendances before a person is considered to have attended a sport. Thus, all those who attended one or more times (within the specified year) would be classified as having attended that sport. In contrast, the Sweeney research makes use of the concept of 'regular' attendance in its question. While the definition of 'regular' is left for individual respondents to determine, one suspects that an one-off attendance is less likely to be included in responses to the Sweeney research. The overall result of the inclusion of the concept of regular attendance would serve to dampen the attendance rates recorded by Sweeney.<sup>10</sup>

Second, the use of lists and prompt cards differs in the Sweeney and ABS research. In the Sweeney research, each person was asked if they attended any of 56 sports as a spectator, with each sport named individually. By contrast, in the ABS survey, the selected person was first asked about their attendance at sporting matches or competitions as a spectator without the listing of any individual sports or the use of prompt cards. This was then followed up with specific questions that ascertained attendance at motor sports, horse races, harness races and dog races. As noted earlier, the naming of all of the specific sports in which they were interested in the Sweeney survey may serve to 'jog' the memory of some respondents to include activities which they might not have thought of otherwise.<sup>11</sup>

Third, while both surveys are measuring sport attendance, the time frames over which this attendance applies is likely to be very different. The ABS survey asks explicitly about attendance over the previous 12-month period. In contrast, no time frame is provided in the Sweeney question; instead respondents are simply asked about sports they attended regularly. As discussed earlier in this report in relation to the participation data, the time frame which respondents tended to take into account when responding to the Sweeney questions is unclear, and thus the overall impact of this difference between the Sweeney and ABS results cannot be determined.

Fourth, attendance at junior and school sporting competitions is specifically excluded from the ABS survey, and the wording of the ABS question notes this exclusion. In contrast, no mention is made of junior or school sport in the Sweeney question and presumably some respondents would be including this type of attendance in their responses. This difference would also be expected to lead to higher rates of attendance at sporting events in the Sweeney study.

Fifth, as noted with regards to the participation survey, the Sweeney survey is a voluntary survey that was introduced to potential respondents as dealing with "sporting interests and activities". It is feasible that persons interested in sport were more likely than others to agree to respond to the survey questions. This, in turn, could lead to higher observed attendance rates. Conversely, the ABS survey on sport attendance is part of an official survey with high response rates.

Sixth, the number of respondents in the surveys were very different. The ABS conducted approximately 25,000 interviews for the attendance survey compared with the 1,500 conducted



to gather data for the Sweeney survey. Thus, the results from the Sweeney survey would be subject to greater sampling variability than the ABS surveys.

## **Conclusion**

Two regular sources of national participation and attendance data in Australia are the ABS and Sweeney Research. For those in the sport sector interested in gaining an understanding of the top sports in terms of attendance and participation, the findings of this report provide some good news, since results from the ABS and Sweeney surveys on this topic are fairly similar. That is, with regards to the attendance data, eight of the top ten sports observed in the ABS research also fall into the top ten of the Sweeney research. For the participation data, there is a match between seven of the top ten sports in the Sweeney and ABS results.

However, for those in the sport sector who are interested in actual rates of participation and attendance either for the population as a whole, or for particular sports, the news provided in this report is not as good. There are often significant differences in levels of participation and attendance recorded in the ABS and Sweeney research. Indeed, when the rates of participation for individual sports are compared, it is often the case that the Sweeney rates are at least three times higher than the ABS rates.

A close examination of how the two surveys were carried out leads to the conclusion that some of the differences between the ABS and Sweeney results would be due to differences in the scope and coverage of the surveys, while others are likely to have resulted from the different methodologies employed. In an attempt to increase the comparability of the results, adjusted ABS results are presented in this report that take into account (to the extent possible) differences in scope in relation to age and geography. The adjusted overall participation and attendance ABS figures were higher (by 3 to 4 percentage points) than the published rates. Yet, the same conclusion made earlier still applied: large differences between the ABS and Sweeney surveys in levels of participation and attendance exist.

No adjustments to the results could be made to take into account a large range of other feasible factors that may have resulted, at least to some degree, in the differences observed between the ABS and Sweeney studies. A number of these factors apply equally to the participation and attendance results. First, in the Sweeney research, respondents were not given a time frame to consider when responding to the questions. In the ABS surveys, respondents were asked about participation and attendance in the past 12-month period. Second, prompt cards and lists were used differently in the studies. Most importantly, unlike the ABS research, in the Sweeney study, all of the sports under consideration were listed individually. Third, participation in the Sweeney survey by potential respondents was voluntary; in contrast, the ABS surveys were official government surveys with response rates of 90 per cent or more. Fourth, the sample size of the Sweeney research was much smaller than the sample sizes of the ABS studies.

In addition, a number of other factors were unique to either the participation or the attendance study. For example, ABS participation data were collected at four different points of time over the year compared with the Sweeney data which was collected at one point of time. As well, in

the ABS participation survey, the nature of participation was clarified to ensure participation in roles such as coaches, administrators and referees was not included in the participation data; such clarification did not occur in the Sweeney research.

With regards to the attendance data, other factors that might have had an impact on the results include the fact that the ABS questions on attendance explicitly excluded junior and school sporting events, while the Sweeney research did not so. As well, the Sweeney study used the concept of 'regular' attendance in their question wording, while ABS recorded all attendances (within the 12-month period) regardless if it was an one-off occurrence.

In conclusion, this report emphasises the extensive differences in the scope, coverage, methodology and question wording of the Sweeney and ABS research on sport participation and attendance data. All of these differences are likely to impact the results that are obtained in some way. Consequently, potential users of the two data sources should be aware of the specific methodologies and questions utilised in the surveys and, in turn, determine the value of each in relation to their specific data needs and the questions they want answered.

## Endnotes

1 Sweeney Research (formerly called Brian Sweeney & Associates) has collected annual data on sport since 1986. In addition, they have more recently added a second collection of sport related data per year which focuses on 22 sports (rather than 56) and makes use of a smaller sample size (1,000 respondents rather than 1,500). According to Sweeney Research, the aims of their sport survey are threefold: to enable sponsors and advertisers to become more evaluative in selecting the sports and activities or sporting personalities with which they wish to be connected; to provide a measure of sponsor awareness; and to assist sports in their business. The Sweeney data referred to in this report were derived from the following report: Brian Sweeney & Associates, 1999, *The Sweeney Sports Report 1998/1999*, Sydney. That report provides details on the data collected by Sweeney Research in December 1998 and January 1999 (and does not include information on the data collected in their second yearly collection undertaken in mid 1999). Additional information on the methodology employed to gather the Sweeney sport data was obtained via personal communication with Martin Hirons at Sweeney Research.

2 The ABS participation data referred to in this publication were derived from the 1998-99 Population Survey Monitor collections. Results from this survey can be found in the following publication: Australian Bureau of Statistics, *Participation in Sport and Physical Activities, Australia, 1998-99* (Catalogue no. 4177.0). Note that the PSM was discontinued after the November quarter 2000 collection.

3 Data from the PSM are representative of people who are usual residents of private dwellings with the exception of the following: members of the permanent Australian Defence Forces; certain diplomatic personnel of overseas governments; overseas residents in Australia; and members of non-Australian Defence Forces posted in Australia. Also, all those living in non-private dwellings, such as residents of hospitals, motels and gaols, are excluded.

4 The prompt card shown to respondents included groups of sport and physical activities, as well as examples for each group as follows:

- fitness/health activities (e.g., swimming, aerobics, cycling, circuit/gym, athletics/running, walking);
- other leisure time physical activities (e.g., golf, lawn bowls, fishing, archery, tenpin bowling, horse riding);
- ball sports (e.g., Australian Rules football, Rugby League/Union, soccer, netball, basketball);
- racquet sports (e.g., tennis, squash, badminton);
- other team sports (e.g., cricket, hockey, softball, baseball, volleyball, croquet);
- water sports (e.g., water polo, surfing, rowing, sailing, diving, aquarobics, canoeing, scuba diving);
- other sports (e.g., skiing, boxing, wrestling, martial arts, fencing, handball, lacrosse); and any other physical activities (e.g., snooker, darts, table tennis, marching, etc.).

5 Note that it could also be argued that when confronted with a long list to respond to, some respondents who had not participated in, or had not attended, any (or many) sports felt compelled to respond in the affirmative at times to give a 'socially desirable' response. If this was the case, this too would serve to increase the rates observed in the Sweeney research relative to those observed in the ABS research.

6 Given that Sweeney Research is now also conducting a second collection of sport related data each year (as noted in endnote 1) in June and July, some potential exists to examine the impact of seasonality on the Sweeney data. The ABS has not seen the data from the June and July collection and thus cannot comment. However, Sweeney Research has indicated that comparisons of the two data sets suggest seasonality is not a key factor.

7 Australian Bureau of Statistics, *Sports Attendance, Australia, April 1999* (Catalogue no. 4174.0).

8 Unlike the PSM survey, the ABS survey of sport attendance covered both private and non-private dwellings. However, it excluded: members of the permanent Australian Defence Forces; certain diplomatic personnel of overseas governments; overseas resident in Australia; members of non-Australian Defence Forces, posted in Australia; and boarding school pupils not resident in households, some patients in hospitals and sanatoria and inmates of reformatories and gaols.

9 Note that for efficiency reasons, interviews were not necessarily conducted with the selected person; instead, another adult in the household could have supplied the information about the selected person. Testing indicated that the use of this methodology had little impact on the quality and nature of the data collected, as other adults in the household were able to report on sporting event attendances of others in the household to a high degree of accuracy.

10 It is interesting to note that according to the ABS data on frequency of attendance of those who did attend individual sports, a number of sports stand out as ones which respondents are most likely to have attended only once or twice over the course of the year. Examples of these are horse racing, motor sports, harness racing, tennis and dog racing. In contrast, those who attended Australian Rules football, soccer and netball did so more often throughout the year.

11 See also endnote 5.

## Appendix A: Comparison of Sweeney and ABS Sport Participation Rates

Sport or Physical Activity	Sweeney participation rate (%)	Published ABS participation rate (%)	Adjusted ABS participation rate# (%)
Aerobics	11	n.a.	n.a.
Aerobics, fitness	n.a.	11.1	14.3
Air sports	n.a.	0.3	0.4
Aquarobics	n.a.	0.9	1.0
Archery	n.a.	0.3	0.3
Athletics, track and field	5	0.4	0.5
Australian Rules football	4	1.2	1.3
Badminton	4	0.6	0.7
Baseball	3	0.3	0.4
Basketball	8	1.9	2.5
Board diving	1	n.a.	n.a.
Boxing	2	0.3	0.5
Bushwalking, hiking	27	n.a.	n.a.
Canoeing, kayaking	9	0.6	0.8
Carpet bowls	n.a.	0.3	0.0**
Cricket (indoor)	8	1.1	1.1
Cricket (outdoor)	11	2.2	2.6
Cycling	20	5.9	7.2
Dancing	n.a.	0.8	0.9
Darts	n.a.	0.9	0.8
Fishing	25	6.7	5.6
Golf	21	9.8	9.9
Gym workout	25	n.a.	n.a.
Gymnastics	2	1.4	1.7
Hockey	3	0.5	0.4
Horse racing	1	0.1*	0.0**
Horse riding, equestrian [Horse riding]	7	1.9	1.6
Ice, snow sports	n.a.	1.8	2.4
Ice skating	6	n.a.	n.a.
Jogging, running, marathons, fun runs [Running]	20	4.8	5.9
Lawn bowls	3	2.6	0.9
Martial arts	6	1.7	2.1
Motor car racing	2	n.a.	n.a.
Motor cycle racing	1	n.a.	n.a.
Motor sports	n.a.	0.3	0.2*
Netball	10	3.2	3.4
Rock climbing	n.a.	0.3	0.5
Rollerblading, skating [Roller sports]	11	0.4	0.7
Rowing	2	0.2	0.2*
Rugby League	4	0.6	0.7
Rugby Union	2	0.5	0.5
Sailing	8	1.2	1.3
Scuba diving	n.a.	1.0	1.2
Shooting sports	n.a.	0.4	0.3

....continued on next page

## Appendix A: continued

Sport or Physical Activity	Sweeney participation rate (%)	Published ABS participation rate (%)	Adjusted ABS participation rate# (%)
Snooker, billiards, pool	23	3.0	3.8
Snow skiing - Cross country	3	n.a.	n.a.
Snow skiing – Downhill	15	n.a.	n.a.
Snow skiing - Snow boarding	4	n.a.	n.a.
Soccer	7	2.4	3.3
Softball	5	0.4	0.3
Squash [Squash, racquetball]	13	2.6	3.0
Surfing [Surf sports]	11	2.2	2.2
Swimming	39	15.3	18.0
Table tennis	13	0.9	0.9
Tennis	24	7.7	8.7
Tenpin bowling	19	2.7	3.2
Touch football	8	1.4	1.2
Triathlons	2	0.1*	0.1*
Volleyball (beach)	5	n.a.	n.a.
Volleyball (indoor)	7	n.a.	n.a.
Volleyball	n.a.	1.0	1.2
Walking	n.a.	22.7	24.2
Water polo	1	0.1*	0.2*
Water skiing [Water-skiing, powerboating]	9	1.4	1.2
Weight lifting [Weight training]	4	1.3	1.7
Wind surfing	4	n.a.	n.a.
<b>Total participation rate (a)</b>	<b>88</b>	<b>59.4</b>	<b>63.6</b>

Notes: # The adjusted ABS figures show ABS results when those aged over 65 years, as well as those living in Hobart, Darwin and non-metropolitan areas, are excluded.

[ ] Activities in square brackets are the closest ABS equivalent of the Sweeney nominated activity.

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution.

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

(a) Includes sports not shown. Total is less than the sum of the components as some people attended more than one type of sporting event.

Sources: Brian Sweeney & Associates, *The Sweeney Sports Report 1998/1999*.

Australian Bureau of Statistics, *Participation in Sport and Physical Activities, Australia, 1998-99* (Catalogue no. 4177.0) and unpublished data.

## Appendix B: Comparison of Sweeney and ABS Sport Attendance Rates

<b>Sport or Physical Activity</b>	<b>Sweeney attendance rate (%)</b>	<b>Published ABS attendance rate (%)</b>	<b>Adjusted ABS attendance rate# (%)</b>
Australian Rules football	23	16.8	20.1
Athletics (track and field)			
[Athletics, track and field, running]	6	0.3	0.3
Baseball	4	0.4	0.5
Basketball	11	3.5	3.9
Boxing	2	0.1	0.2
Cricket (indoor)	3	0.1	0.2
Cricket (outdoor)	19	6.3	7.7
Cycling	2	0.2	0.3
Dog racing	n.a.	1.9	1.9
Golf	5	0.9	1.0
Gymnastics	2	0.1	0.1*
Harness racing	n.a.	3.6	3.5
Hockey [Hockey (outdoor)]	3	0.7	0.5
Horse racing	8	11.8	11.7
Horse riding, equestrian events	1	0.3	0.2
Ironman, Oceanman	3	n.a.	n.a.
Lawn bowls [Bowls]	1	0.6	0.2
Martial arts	2	0.2	0.3
Motor car racing	8	n.a.	n.a.
Motor cycle racing	5	n.a.	n.a.
Motor sports	n.a.	10.6	10.7
Netball	6	1.7	1.3
Rodeo	n.a.	0.1	0.0**
Roller sports	2	0.1	0.1*
Rowing	1	0.1	0.1
Rugby League	12	10.1	10.2
Rugby Union	9	3.0	3.9
Sailing	2	0.1	0.2
Soccer	10	4.2	5.4
Softball	3	0.4	0.3
Squash	2	0.1	0.1*
Surf lifesaving	3	0.2	0.1*
Surfing [Surf sports]	4	0.3	0.2
Swimming	4	0.3	0.4
Tennis	8	3.0	3.8
Touch football	2	0.3	0.2
Triathlon	1	0.1	0.1*
Volleyball (beach)	3	n.a.	n.a.
Volleyball (indoor)	2	n.a.	n.a.
Volleyball	n.a.	0.3	0.3
Water-skiing, powerboating	2	0.1	0.1*
<b>Total attendance rate (a)</b>	<b>65</b>	<b>47.1</b>	<b>50.4</b>

....continued on next page

## Appendix B: continued

Notes: # The adjusted ABS figures show ABS results when those aged 15 years and over 65 years, as well as those living in Hobart, Darwin and non-metropolitan areas, are excluded.

[ ] Activities in square brackets are the closest ABS equivalent of the Sweeney nominated activity.

\* Estimate has a relative standard error of between 25% and 50% and should be used with caution.

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

(a) Includes sports not shown. Total is less than the sum of the components as some people attended more than one type of sporting event.

Sources: Brian Sweeney & Associates, *The Sweeney Sports Report 1998/1999*.

Australian Bureau of Statistics, *Sports Attendance, Australia, 1999* (Catalogue no. 4174.0) and unpublished data.