



Swimming in Ireland: A Statistical Analysis

Commissioned by:

Swim Ireland and the Irish Sports Council

Written by: Dr. Elish Kelly & Dr. Pete Lunn

Economic and Social Research Institute (ESRI)

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SUMMARY

- Swimming has enjoyed strong growth in recent decades and has become the most popular sport and exercise activity among adults in Ireland in recent years.
- An estimated 6.7% of adults aged 16 and over swim each week, equivalent to approximately 230,000 people.
- Most swimmers swim once or twice a week, for half-an-hour to an hour, on their own or with family/friends, expending sufficient effort to gain health benefits.
- Women tend to swim more than men, especially as young adults.
- This different pattern among men and women may be linked to motivation: women participate in sport and exercise more for health reasons, while men (especially younger men) are more driven by performance and competition.
- There is a general decline in swimming with age, which is a “cohort effect” rather than an “age effect” – the present generation of younger adults swim more than their predecessors did and are therefore likely to continue to do so as they age.
- People with higher educational attainment are much more likely to swim.
- Swimming is less common among people in lower-skilled occupations, the disabled and immigrants from non-English speaking non-EU countries.
- The Border and West regions have the highest levels of participation in swimming.
- There is demand for more swimming pools in all regions, by both swimmers and non-swimmers, but especially in the Mideast region.
- People whose mothers were active in sport and exercise when they were children are much more likely to be regular swimmers.

Policy Implications

- Swimming has a good case for being granted a high share of any funds made available for new sports facilities.
- Various strategies may be considered to target groups with lower participation rates: young men, people in lower socio-economic groups, the disabled, certain nationalities, and fathers.

FOREWORD

On behalf of the Irish Sports Council I am pleased to welcome the publication of this report on swimming among adults in Ireland. The report has been jointly commissioned with Swim Ireland, the national governing body for the sport in Ireland.

I would like to take this opportunity to compliment Swim Ireland for their initiative in helping bring the report to fruition. I believe that it provides valuable insights and hopefully will enable Swim Ireland to better support the development of the numbers swimming in Ireland.

At a time when we wish to encourage people to take more and more exercise it is gratifying to see in the report that swimming is making real in-roads amongst adults as an activity which they incorporate into their lifestyle.

This particular report is the first sports-specific research commissioned by the Council. Our previous research has sought to look at sports participation more broadly in a public policy context. Reports such as “Fair Play”, “Sporting Lives” and “Sports Participation and Health Among Adults in Ireland” all provide insights about social gradients in sport, historic trends and the relationship between participation and health.

The current report has been made possible due to the existence of a number of large-scale data sets on sports participation, including the Council’s own Irish Sports Monitor (ISM), a system for tracking participation among adults over time which is based on a large scale survey. The ISM is one of the key sources of material for the current report combined with another large-scale survey undertaken by the Central Statistics Office.

The combination of these large data sets has provided hard data in relation to swimming which ultimately allow for the development of really robust conclusions which we are confident will inform the “participation” agenda for Swim Ireland for some time to come. As the report makes clear swimming is one of the most popular participation sports in Ireland, a sport that holds appeal right through a person’s life and which has the potential to make a major contribution to the health and well-being of Irish people at every life stage.

For both the Irish Sports Council and Swim Ireland there is a common agenda in commissioning the report – for the Council operating as it is in a public policy context which increasingly recognises the importance of the benefits of engaging its citizens in healthy activity - and for Swim Ireland which is seeking to encourage and grow participation in its sport.

I hope that this will be the first of a number of such collaborations with sporting organisations around profiling participation in their respective sports.

In publishing the report I would like also to both acknowledge and thank the two authors, Dr Pete Lunn and Dr Elish Kelly of the Economic and Social Research Institute, for their excellent work.

John Treacy
Chief Executive
Irish Sports Council

FOREWORD

On behalf of Swim Ireland I am delighted to welcome the publication of this report. The report, which we jointly commissioned with the Irish Sports Council, really does contain a lot of very positive information for swimming in Ireland. As ever we are delighted to work with the Irish Sports Council and look forward to working with them further as we take on board the findings of the research and ensure that they are used well for swimming into the future.

Currently Swim Ireland is in the middle of a new strategic planning cycle. As the governing body of swimming (as well as other aquatic disciplines) our original remit focused very much on swimming clubs and of course on our high performance programme.

In the new strategic planning cycle we have also put a focus on recreational swimming which we believe is really important to the health and fitness of our nation.

Against that background we are delighted to see the results of the research which point to the fact that already swimming attracts the highest number of adults when it comes to swimming for health, fitness and recreational purposes.

Interestingly since the London Olympics our clubs have reported waiting lists for new members again indicative of the growing recognition that swimming is perhaps one of the best forms of exercise.

I always say that it is the only form of exercise that an individual can actually undertake right throughout their life or, as I say, from cradle to grave.

I think it is fair to say that medical experts all over the world promote swimming as an excellent form of exercise as it allows the maximum input for fitness with the minimum amount of stress on the body.

We see the research, positive as it is, as a stepping stone on the way to increasing the numbers of people swimming for health and fitness throughout the country.

To that end we are going to work with all people involved in swimming in the country including those that own the facilities, coaches, instructors, etc to ensure that the widest number of people possible have access to this fantastic form of exercise.

As John Treacy has said in his introduction, the Irish Sports Council and Swim Ireland had a common agenda commissioning the report. The Council operates in the public policy context which increasingly recognises the importance of the benefits of engaging its citizens in healthy activity and Swim Ireland is seeking to encourage and facilitate participation in the sport.

In conclusion I would like to both acknowledge and thank the two authors of the report, Dr Pete Lunn and Dr Elish Kelly of the Economic and Social Research Institute for their excellent work and Peter Smyth from the Irish Sports Council for encouraging and supporting Swim Ireland in relation to this research.

Sarah Keane
Chief Executive
Swim Ireland

1. INTRODUCTION

Swimming is one of the most popular sport and exercise activities in Ireland. This popularity derives from its attractiveness to both sexes and the fact that swimming can be participated in by people right across the age spectrum. Such broad appeal means that swimming makes a significant contribution to overall levels of physical activity; a contribution that is important for public health and, consequently, for wider society. A body of international evidence demonstrates that our level of physical activity is linked to our chances of developing chronic life-threatening conditions, including heart disease, various cancers, stroke, diabetes and osteoporosis. Thus, as a sport and exercise activity that attracts a broad range of individuals, swimming plays a direct role in efforts to combat degenerative disease.

The contribution of swimming obviously extends beyond public health, however. In addition to the simple enjoyment of the physical activity, learning to swim can assist personal safety. Moreover, like other sporting activities undertaken by groups and among friends and families, swimming contributes to social capital through local swimming pools and swimming clubs, creating relationships and social networks through common interest.

This report provides evidence relating to the level of participation in swimming in Ireland and the factors that underpin it. The focus is primarily on adults aged 15 and over, though some results are also presented that relate to children's swimming.

1.1 DATA

Table 1 provides a summary of the data sources employed. Most of the findings are derived from two large, nationally representative surveys of sport and exercise activity, one conducted by the Central Statistics Office (CSO) in 2006, the other by the Economic and Social Research Institute (ESRI) during the period 2007-2009. The former was a special survey module on sport and social capital undertaken as part of the *Quarterly National Household Survey (QNHS)*. The QNHS is one of the primary vehicles for collecting national data on population and labour market trends. It is a face-to-face survey carried out with adults aged 15 and over in people's own homes. The available sample amounts to over 41,000 cases, which is very large by the standards of social surveys. The second survey is the *Irish Sports Monitor (ISM)*, which was commissioned by the Irish Sports Council and designed specifically to monitor trends in sport and exercise. The data collection was undertaken by the ESRI using trained telephone interviewers. The total sample for the 2007-2009 period was more than 26,000 adults aged 16 and over – also a large sample. As well as some methodological differences and somewhat different questionnaires, the two surveys differ in the “reference period” over which respondents were asked to describe their activity: the QNHS survey asked

over the previous 12 months,¹ while the ISM asked respondents only to consider activities undertaken within the last 7 days. Yet, as we will see, despite these differences both surveys produce similar rates of participation in swimming for different social groups. Any discrepancies, which are small, are arguably best understood as differences that arise once more “irregular” swimmers are included as well as regular ones, although it is possible that other differences between the survey instruments may play a role.

Table 1: Data Sources

Survey	Date	Sample	Age Range	Method	Reference Period
QNHS	2006	41,275	15+ years	Face-to-face	12 months
ISM	2007-2009	26,377	16+ years	Telephone	7 days
SSPE	2003	3,080	18+ years	Face-to-face	12 months

One earlier data-source is also made use of. The *Survey of Sport and Physical Exercise* (SSPE) was a baseline survey of participation in sport commissioned by the Irish Sports Council and conducted by the ESRI in 2003. This face-to-face survey of adults aged 18 and over was unique in the level of detail it asked respondents about their sporting history – the activities that they used to play regularly and at what ages they participated. From the responses it proved possible to study sporting activity in Ireland over a period of three-to-four decades. Participation in swimming underwent considerable change during this period and thus some of the findings of the SSPE are described to set the historical context for the analysis that follows.

1. 2 STATISTICAL ANALYSIS

Most of the charts presented contrast percentage participation rates in swimming for different social groups, i.e. the proportion of that group that participated in swimming within the past 7 days (ISM) or past 12 Months (QNHS). However, reporting simple participation rates like this can be misleading. For example, young adults are more likely to swim than older ones. This may mean that age reduces the tendency to swim, perhaps because of health reasons. But, on average, younger adults have higher educational attainment – another factor linked to swimming. So, is age or education the crucial influence?

To answer such questions, we use multivariate statistical techniques (i.e. regression models) that estimate the individual impact of a given characteristic (e.g. gender, age, educational attainment, etc.) while simultaneously controlling

¹ The frequency, intensity and time information that is captured in the QNHS is based on active participation undertaken during the previous four weeks.

for other background characteristics that can affect participation. The Appendix presents the full results of two sets of statistical models, one for each of the two main data-sources. Readers comfortable with interpreting such tables are invited to examine them, but the key results that they produce are more straightforwardly summarised in the text that accompanies the charts. The key intuition here is that not all of the differences in levels of active participation in swimming that are apparent in the charts are, in fact, statistically significant. Thus, the accompanying text aims to draw the reader’s attention to those differences that are significant and to explain what might lie behind some differences that appear to be significant at first glance but are probably caused by a hidden factor.

1. 3 LIMITATIONS

All statistical surveys are approximate. Measurement error may be caused by people recalling activity inaccurately, respondents wishing to paint themselves in a good light, failure to sample hard-to-reach groups, any mistakes made by interviewers, and so on. All participation rates therefore have margins of error and small differences should not be over-interpreted as meaningful. The statistical results presented in the Appendix employ techniques designed to ensure that the inferences drawn are given appropriate weight.

Nevertheless, the two surveys that provide the bulk of the statistical evidence uncovered here are high quality instruments that use large samples. Furthermore, the data are re-weighted by socio-economic and socio-demographic characteristics to match the population profile as supplied by the CSO. Given the close correspondence in the findings between the face-to-face survey and the telephone survey, despite the difference in the respective reference period, we can be confident that the main effects described are robust.

One specific source of measurement error surrounds the definition of swimming. In surveys such as these it is not possible to interrogate respondents precisely and extensively regarding the activities they undertake. In the QNHS, respondents ticked a yes/no box to say whether they had swum within the last 12 months. We therefore have no way of knowing whether they would have ticked the box had they participated in swimming related activities such as water polo, diving, aqua-aerobics, triathlon and so on. In the ISM, the participation questions were more open-ended, leaving people to describe their activity in their own words. In the results reported here, we include water polo, diving and aqua-aerobics as swimming, but not triathlon.² In practice, changing the definition adopted would make only a very marginal difference to the analysis we report, because the swimming-related activities mentioned are very much less common than simply “going swimming”. A much larger difference might result if we were able to look

² In the QNHS sports module, ‘other sport’ was another response option that individuals could have selected when specifying their main sporting activity. Fifty-one of the individuals that chose this option indicated that they undertook a swimming related activity (water polo, aqua-aerobics or diving). For consistency with the ISM swimming definition, these individuals have been included in the analysis undertaken in this report.

separately at competitive and recreational swimming. While some relevant evidence does appear in Section 2.2, for the purposes of this report active participation in swimming encompasses both recreational and competitive swimming.

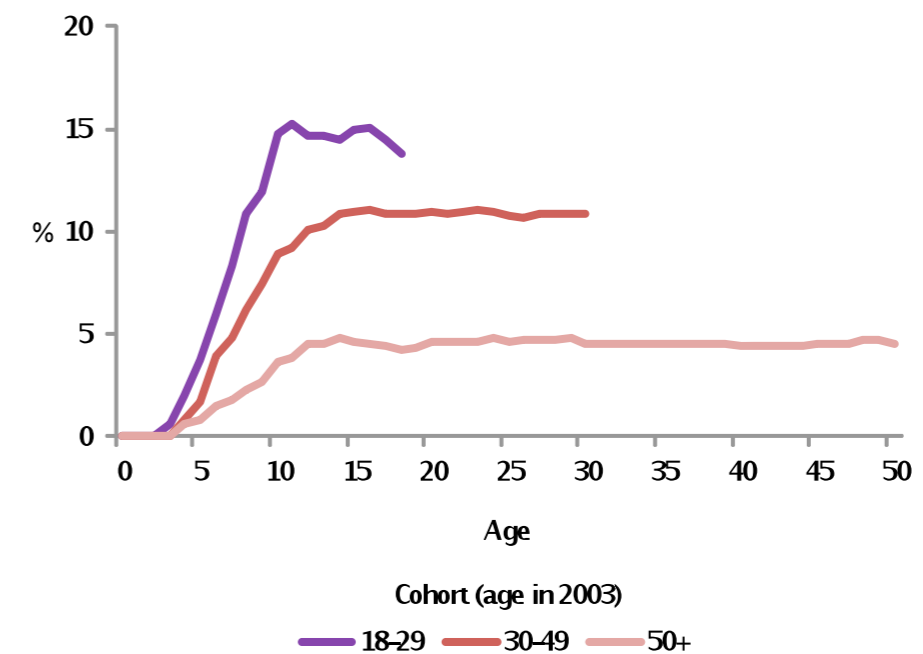
2. RESULTS

2.1 HISTORICAL CONTEXT

While the results to be presented mostly offer a “snapshot” of participation in swimming during the 2006-2009 period, the 2003 SSPE also allows us to analyse how participation in swimming has changed over recent decades. In particular, we can determine whether people in more recent generations are more likely to swim and how the long-term trend in swimming compares to that of other popular sporting activities. The analysis offers a clear message: participation in swimming has greatly increased over the past three to four decades and this growth surpasses that of other popular sporting activities over the same time period. This provides useful historical context for the analysis that then follows.

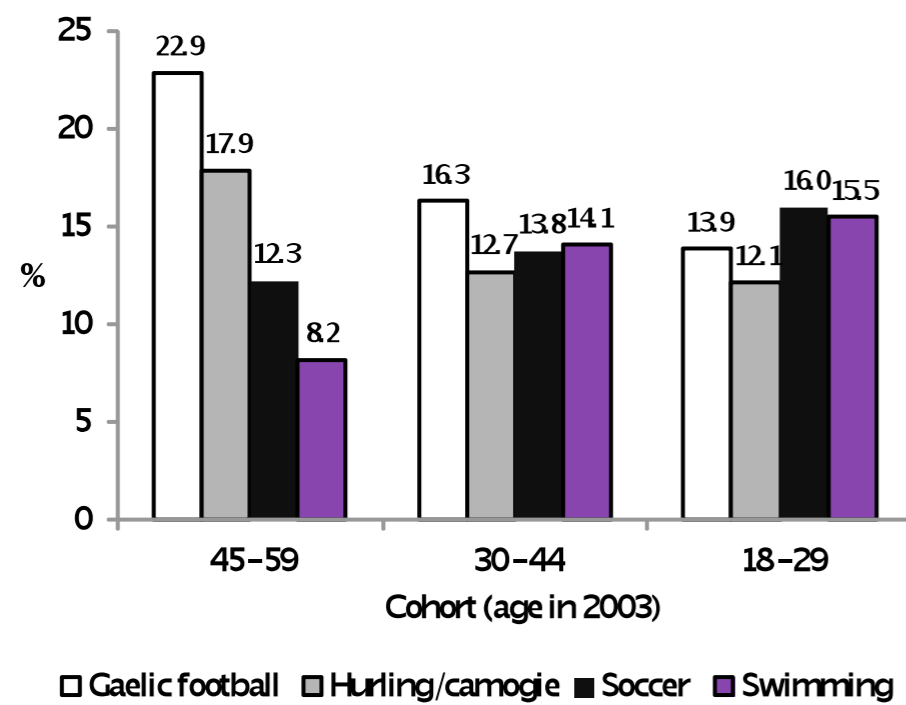
The 2003 SSPE asked respondents to recall which sport and exercise activities they used to participate in regularly, what age they started each activity and when they stopped. “Regularly” was not strictly defined, but the survey question followed others where the term was used to cover activities that were undertaken at least once a month. Figure 1 compares the responses given with respect to swimming by three different cohorts of adults in 2003: those aged 50 plus (i.e. people who were born prior to 1954), those aged 30 – 49 years and those aged 18 – 29 years. The results reveal a strong pattern of increased participation in swimming over recent decades, whereby more children swam regularly and the difference in participation sustained into adulthood.

Figure 1: Proportion participating in regular swimming by age for three cohorts (SSPE data)



Various techniques were employed in the original reconstruction of individual sporting histories to ensure that the results did not merely reflect older cohorts “forgetting” activity.³ Most obviously, the strong increase depicted in Figure 1 did not occur for all sports, but only among some. The result of these trends was that swimming began to account for a greater share of children’s sporting activity. Figure 2 shows the proportion of the total sporting activity of children (aged less than 18) accounted for by the most popular four activities, which together covered more than half of all the sporting activity of children throughout the period. Again, three cohorts are compared (note the slight change in the age groups from Figure 1, needed to preserve sample size). Gaelic games had by far the greatest share of activity when those aged 45 – 59, who were born between 1943 and 1958, were children. Since then, the growth of soccer and swimming has resulted in their accounting for a much increased proportion of children’s sport, with the growth in swimming in particular being very strong.

Figure 2: Proportion of all under-18 recreational sport and exercise activities accounted for by the most popular four children’s activity by cohort (SSPE)



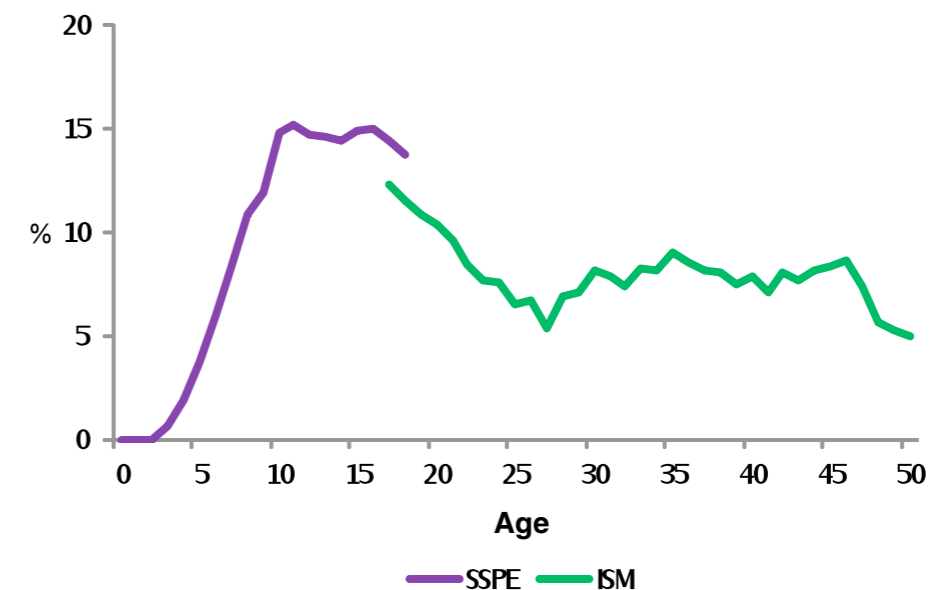
From Figures 1 and 2, we can conclude that swimming has greatly increased in popularity over recent decades. Many more children and adults swim regularly than was the case 30 – 40 years ago. Some other sports, especially individual sporting activities, experienced much growth over this period also. But by the

³ See Sporting Lives: An Analysis of a Lifetime of Irish Sport, at http://www.esri.ie/publications/search_for_a_publication/search_results/view/index.xml?id=2528

standards of sports generally, the growth in swimming was large and the result was that the activity nearly doubled its share of children’s sporting activity.

It might reasonably be asked whether results based on a study of recall data are reliable, notwithstanding the efforts made to control for any recall biases. One way to test this is to compare the age profile of the most recent cohort of adults who recalled swimming regularly when asked in the SSPE, with the more up-to-date data from the ISM. Figure 3 performs this task, reproducing the curve for the activity by age of the most recent cohort in 2003 and joining it to the ISM data. The comparison should not be exact, since the ISM asked people whether they swam in the previous seven days, while the recall data from the SSPE counted someone as swimming regularly if they recalled participating more than once a month. Thus, the SSPE data should produce a slightly higher participation rate. As Figure 3 shows, the consistency between the two surveys is very good, suggesting that the recall data and the trends they record match the more recent data well. (Note that the fall in participation evident in early adulthood in Figure 3 is dealt with more fully in Section 2.3).

Figure 3: Proportion engaged in regular childhood swimming (at least monthly), as recalled by 18-29 year-olds in the SSPE in 2003, compared with adult swimming (weekly) as recorded in the ISM between 2007 and 2009



Following the recent decades of growth, swimming has become the most popular sport and exercise activity among adults in Ireland.⁴ Overall, the ISM data reveal

⁴ This statement depends somewhat on whether the very many different forms of personal exercise activity are all categorised together. If going to the gym, exercise classes, aerobics, and home work-outs are combined into a single category then the overall participation rate for such personal exercise is

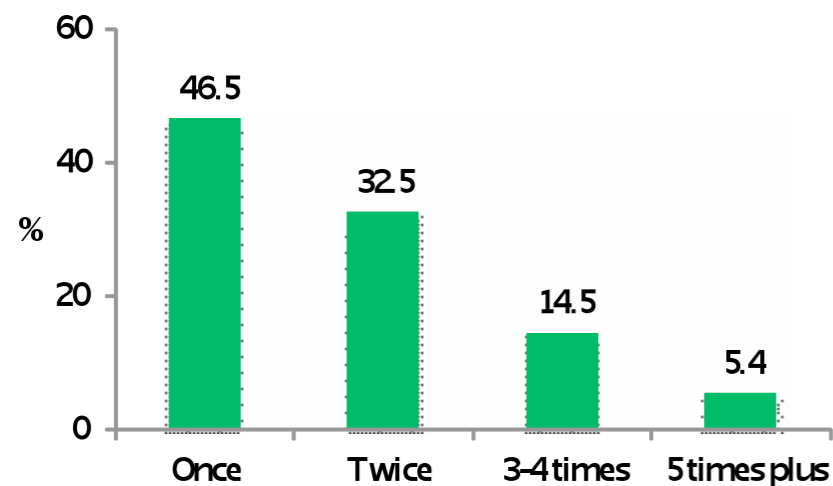
that 6.7% of adults aged 16 and over interviewed between 2007 and 2009 had been swimming within the previous 7 days. The QNHS data record that 8.6% of adults aged 15 and over had been swimming within the past year. The ISM estimate equates to more than 230,000 adults aged 16 and over swimming each week.

2.2 FREQUENCY INTENSITY TIME AND TYPE (FITT) ANALYSIS

This section analyses the nature of a typical swimming session for participants. It uses only the ISM data, because respondents' recollections of the details of sessions are likely to be much more accurate when the reference period over which they are asked to recall activity is only 7 days. The ISM gathered information on: (i) the number of times that the respondent participated in the activity (i.e. frequency), (ii) the duration of a usual session, (iii) the effort exerted during the activity, and (iv) the context in which participation took place. The results reveal a straightforward picture of what constitutes a typical swimming experience for participants. Note that the percentage figures provided throughout this section relate to the proportion of people who have swum in the previous 7 days that fall into a given category.

As can be seen from Figure 4, more than half of swimmers had swum more than once during the previous 7 days, while around one-in-five had engaged in the activity three times or more during the previous week.

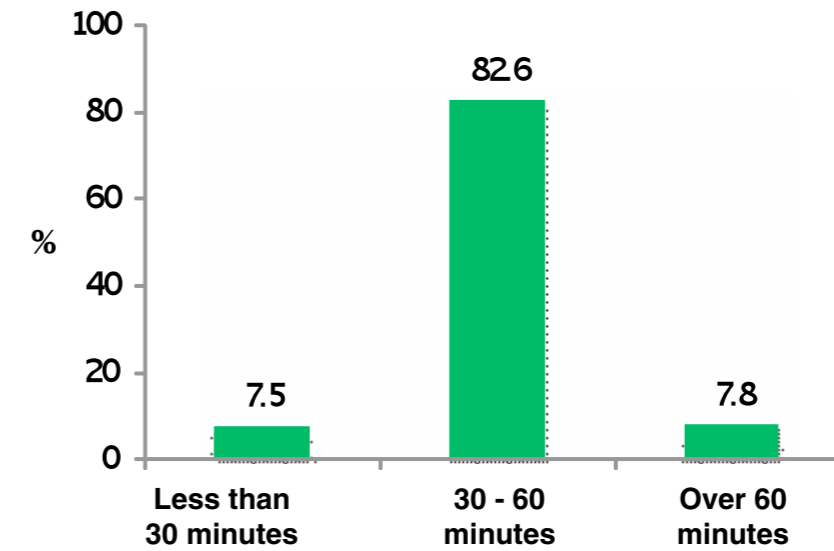
Figure 4: Number of sessions undertaken by swimmers in previous 7 days (ISM)



similar to that for swimming. See The Irish Sports Monitor, Third Annual Report 2009, available at http://www.esri.ie/publications/search_for_a_publication/search_results/view/index.xml?id=3271

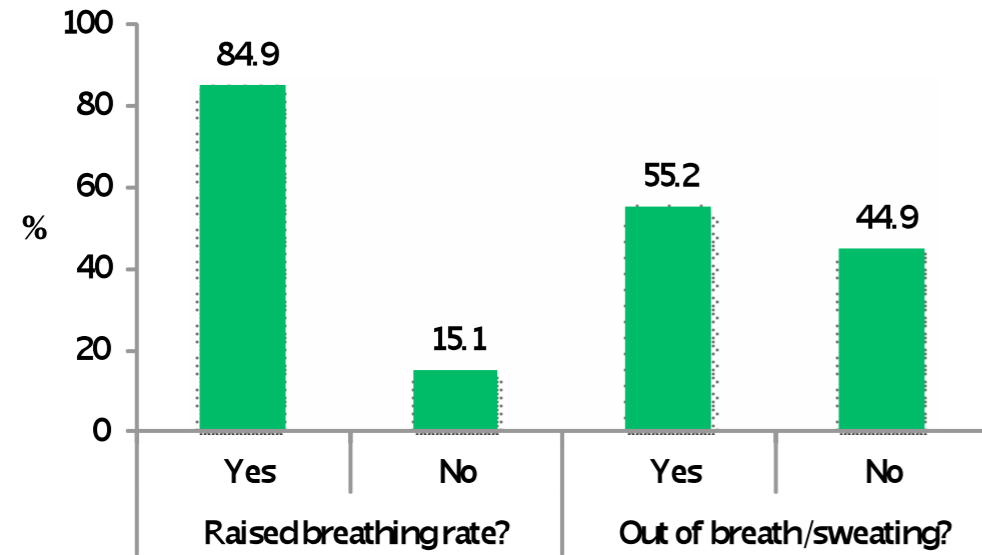
Figure 5 shows the duration of a typical swimming session. The large majority of swimmers undertake the activity for between 30 and 60 minutes at a time, with equally small minorities of individuals swimming for more than an hour or for less than 30 minutes.

Figure 5: Duration of sessions of swimming (ISM)



The measure of the intensity of activity collected by the ISM employs the standard practice in self-reported physical activity surveys, whereby respondents are asked whether the effort exerted during their activity was enough to raise their breathing rate or to be out of breath or sweating. Figure 6 illustrates that for 84% of those who swam in the last 7 days, swimming raised their breathing rate, while it caused 55% of individuals that swam in the last 7 days to be out of breath or sweating.

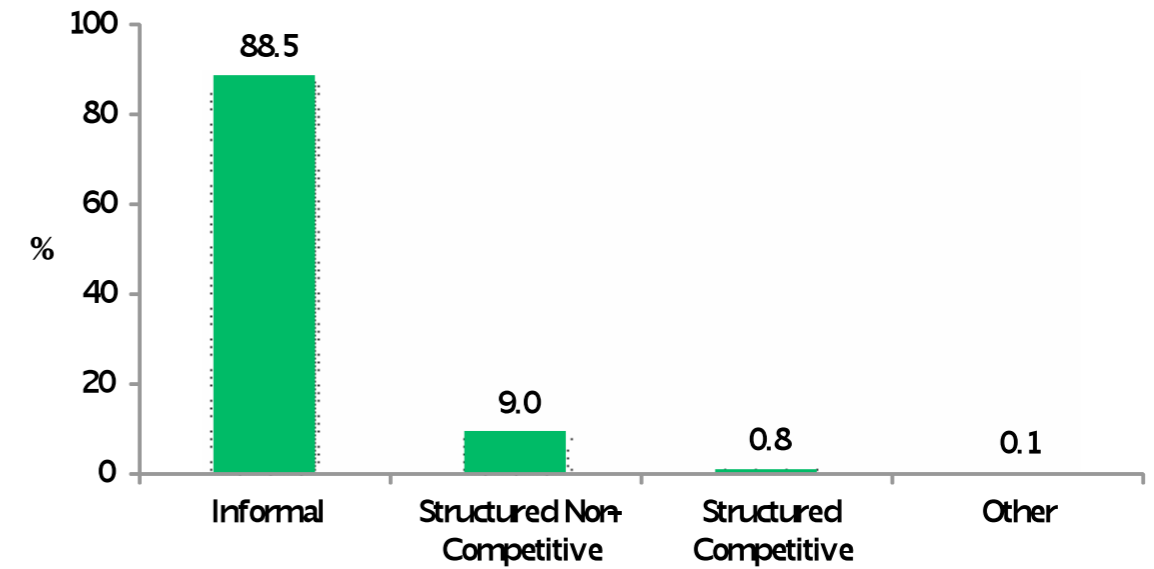
Figure 6: Proportion of swimming sessions that raised breathing rate and caused participants to be out of breath/sweating (ISM)



Combining the information from Figures 4-6 confirms the potential contribution to health being made by swimming. The large majority of swimmers are swimming often enough, for a long enough duration, and with sufficient effort to be making a significant contribution to their fitness and health.

Lastly, as can be seen from Figure 7, almost 90% of swimmers carry out the activity in an informal setting, either on their own or with family and friends. Organised training, coaching or lessons account for less than one-in-ten sessions of swimming while competitive swimming accounts for less than 1%.

Figure 7: Type of activity undertaken (ISM)

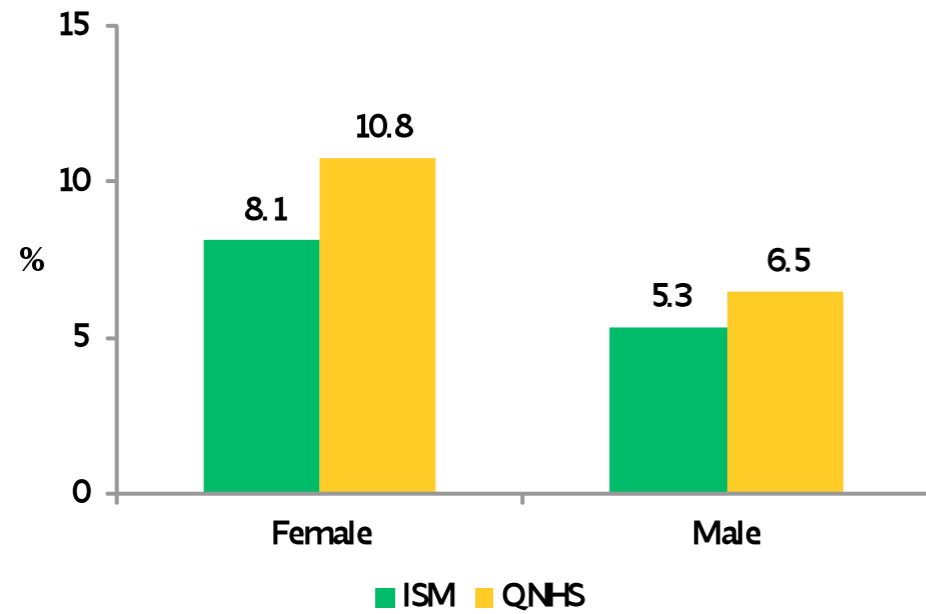


Overall, the evidence presented in this section provides us with a clear idea of the way people engage in swimming in Ireland. The large majority of swimmers swim once or twice a week, for half-an-hour to an hour, with sufficient effort to be gaining valuable exercise, and they carry out this activity on their own or with family and friends, rather than in any kind of structured or organised setting.

2.3 DEMOGRAPHY AND ACTIVE PARTICIPATION

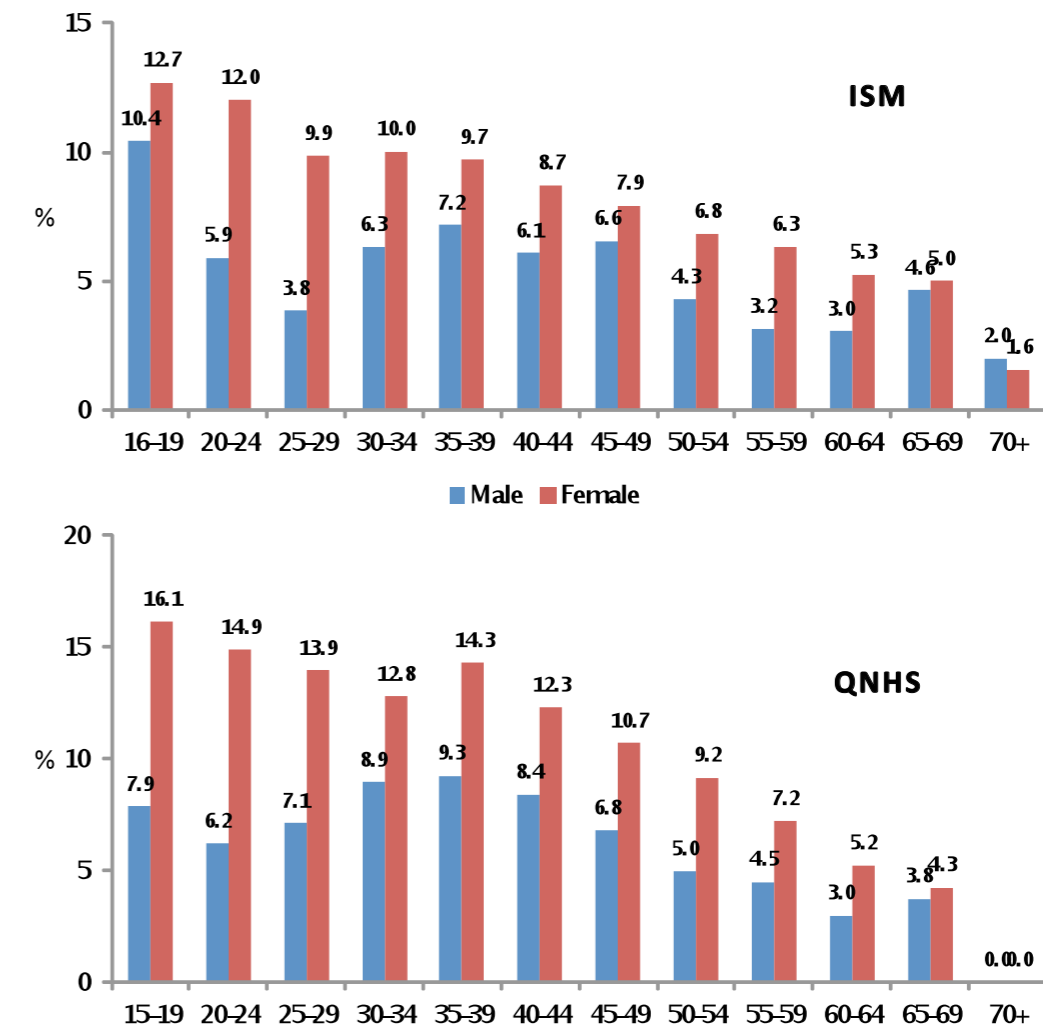
Swimming is more popular among women. Figure 8 shows that the gender gap is fairly narrow, but consistently so across the two surveys. For every 3-4 men who swim, there are 4-5 women. This difference is statistically significant. The multivariate analysis (see Appendix) reveals that the gender difference remains even after controlling for a range of other background characteristics such as educational attainment, occupation, employment status, region, disability etc.

Figure 8: Proportion swimming by gender



Greater insight can be had into this pattern by looking at the age profile of swimming by gender. Figure 9 records an interesting pattern that is again common across the results of the two surveys. Generally speaking, the proportion who participate declines with age. It is likely that the impact of age is exaggerated by this analysis, however. The reason for this has already been demonstrated: it may not be age that is related to the likelihood of swimming, but cohort. Cohorts born longer ago were less likely to learn to swim as children and less likely to participate as adults. Thus, we can expect that the cohort currently in its late 30s, among which the ISM figures record 9.7% of women and 7.2% of men swimming regularly, will record higher participation rates when it reaches its late fifties than the 6.3% and 3.2% recorded for that age group presently.

Figure 9: Proportion swimming by gender and age



The crucial thing to note about Figure 9 is the different shape of the age profile for men and women. For women, there is a fairly steady decline in the proportion who swim with age, albeit that the decline is arrested somewhat in people’s 30s. However, the pattern among men is quite different. There is a definite decline in the amount of swimming men undertake in their 20s, followed by a sharper increase in their 30s. Again, the multivariate statistical analysis confirms that there is a statistically significant interaction between gender and age, controlling for other available background characteristics.

We explored a number of possible reasons for this dip in activity among men in their 20s. One possibility would be that young men are more interested in team sports and that this makes them less likely to swim. While possible, this seems unlikely given that the peak age for participation in team sports is 15 years of age, yet there is a decline in male participation between the late teens and twenties in both surveys.

An alternative but related possibility is that the different gender profiles result from different motivations for participation. We hypothesised that adult swimming might be largely motivated by the desire for health benefits and that health might be a stronger motivator for participation among young women than young men, who might be more inclined to play sports in order to engage in competition.

Figure 10 tests the first part of this explanation using data on motivation captured in the QNHS survey. Specifically, individuals were asked to indicate which of the following options was their main reason for participating in sport/exercise: i) improve health, ii) improve performance, iii) participate in competition, iv) social element or v) other. More than two-thirds of adult swimmers list their main motivation as improving health, much higher than improving performance or participating in competitions, and well ahead of the second most popular motivation, which is the social element of participation. The analysis therefore confirms that health benefits dominate the motivation for swimming. Furthermore, Figure 10 also shows that swimmers place a somewhat greater emphasis on health and less emphasis on competition than participants in other sports.

Figure 10: Main motivation for active participation (QNHS)

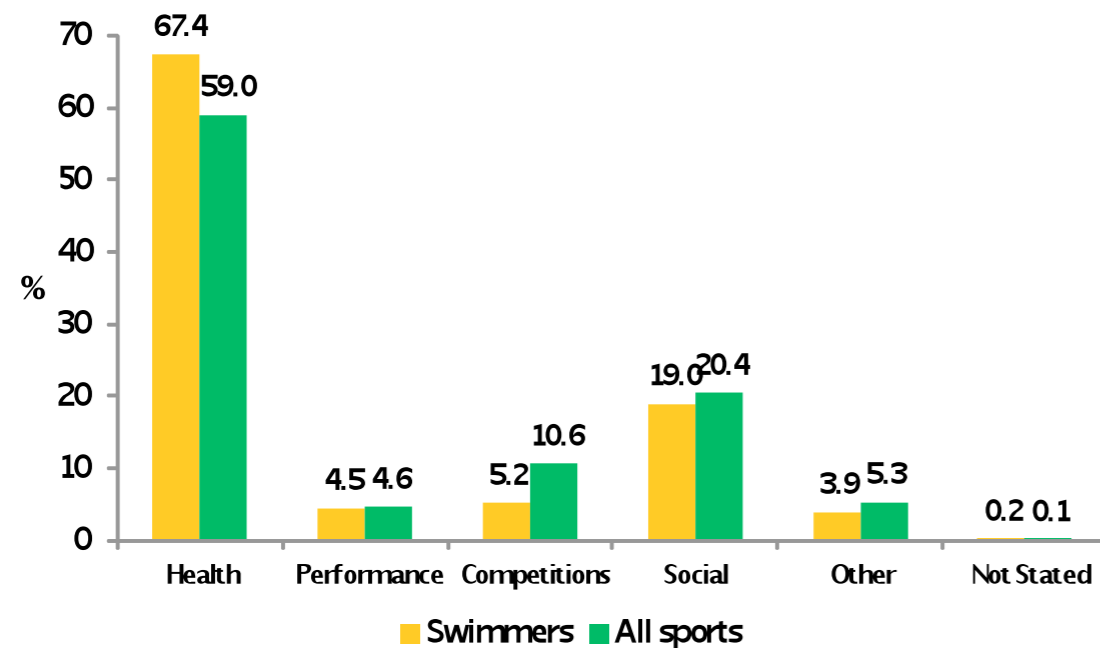
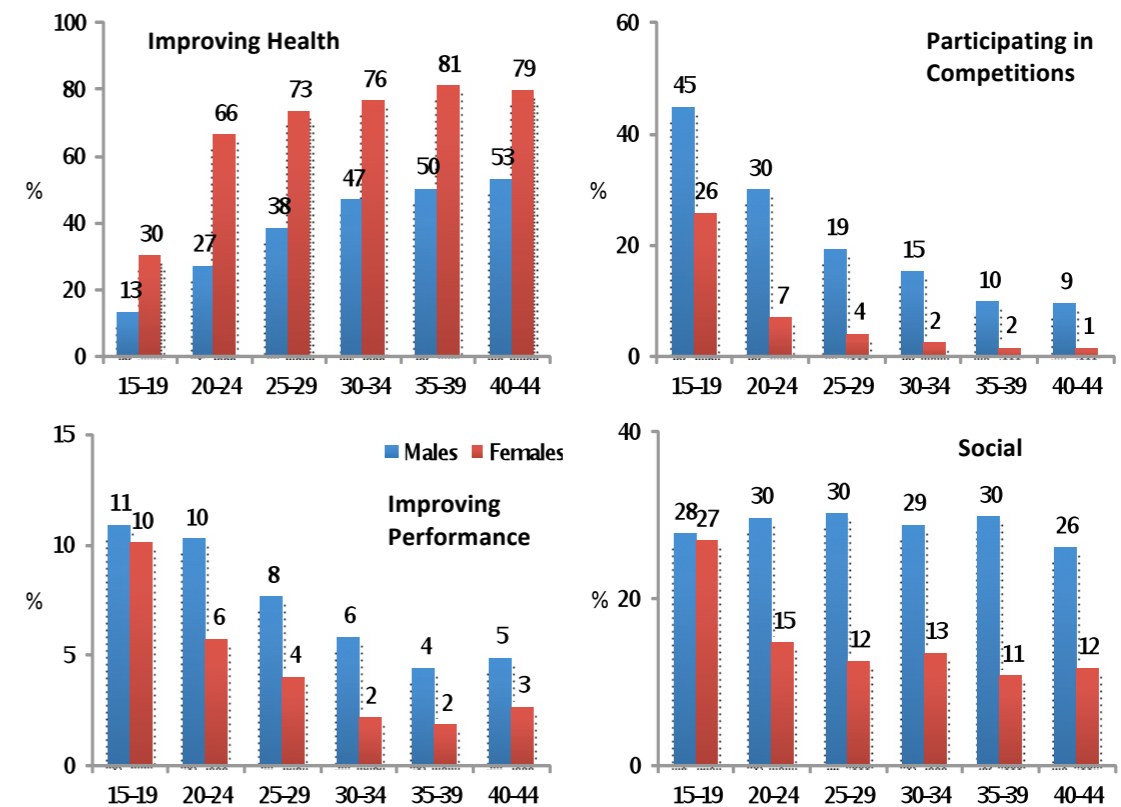


Figure 11 expands the analysis to look at the four main motivations for participation in sport generally, which are then broken down by age and gender according to the likelihood that individuals will cite the motivation as their “main motivation” for participation in sport. The four figures reveal striking gender differences.

For women, the primary motivation for participation in sport is health, which by 20 years of age is the main motivating factor for more than two-thirds of women. Contrastingly, men are motivated much more by performance and competition, especially when young, but also more by the social scene surrounding sport. Health as a motivator begins to dominate for men only by the late 20s and early 30s.

Putting Figures 10 and 11 together provides support for our explanation of why participation in swimming dips among men in their twenties. Men make the transition to playing sport for health reasons much more slowly and less completely than women. Since health is the main motivator of swimmers, this makes swimming less attractive to men generally, but particularly for younger men, for whom health features less prominently as a motivator than competitions and the social element of sport.

Figure 11: Main motivation for active participation in sport (QNHS)



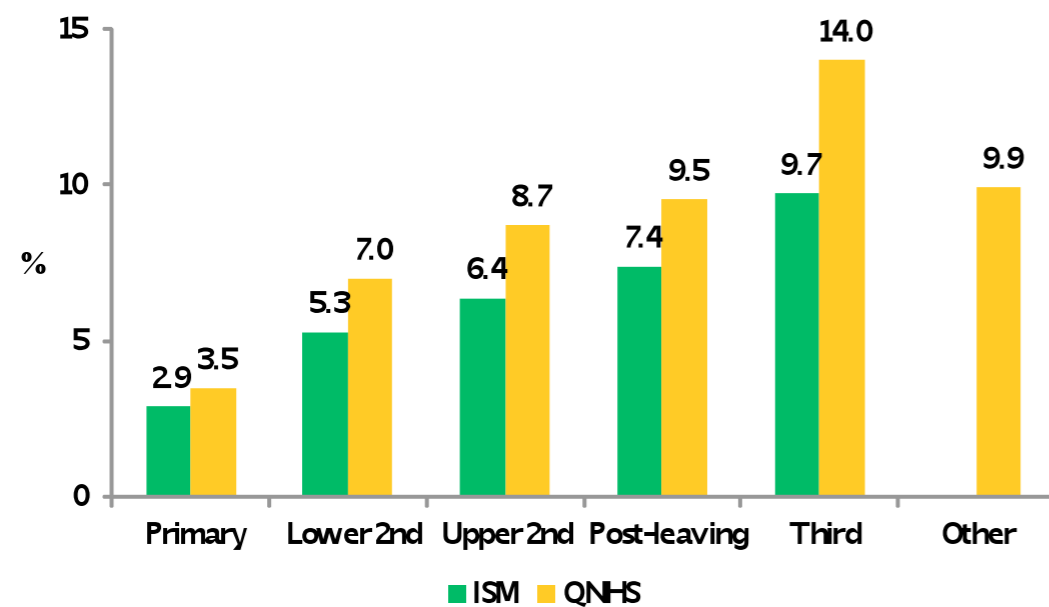
2.4 SOCIO-ECONOMIC STATUS AND ACTIVE PARTICIPATION

Participation in sport and exercise activities tends to be strongly related to socio-economic status, and swimming is no exception. Initial analysis revealed the

participation rate for swimming to be strongly related to educational attainment, income and occupation. Yet such results can be difficult to interpret, because people with higher education are also likely to have higher incomes and to work in higher-level occupations, for example as professionals or managers. Determining which of these background characteristics is most strongly related to the likelihood of swimming helps to identify the source of disadvantage.

The multivariate statistical models allow us to estimate the relative strength of each of these factors while controlling for the others. This analysis shows that of the three main indicators of socio-economic status referred to above, income is the least significant and educational attainment the most significant. The strength of the association between educational attainment and swimming is apparent from Figure 12. (Slight differences in educational attainment categories between the surveys necessitate the “other” category for the QNHS data). According to both data sources there is a strong and steady increase in the likelihood of participation in swimming associated with each and every additional qualification gained.

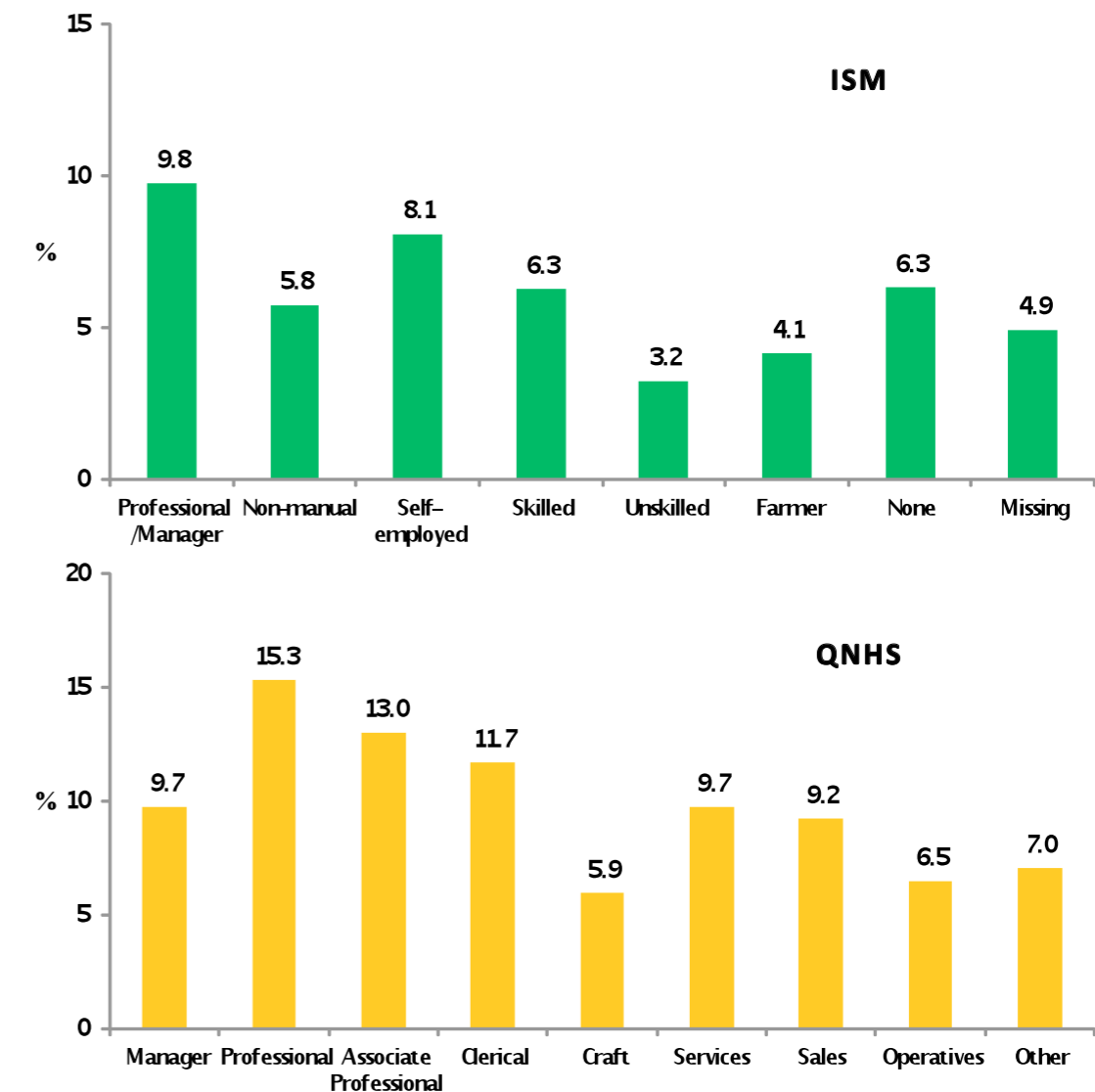
Figure 12: Proportion swimming by educational attainment



That educational attainment rather than income is the greater factor means that it is likely that this finding reflects individuals’ different experiences as young people, rather than differences in their current circumstances, e.g. their ability to afford fees etc. Staying later in the education system often affords young people cheap access to facilities, as well as greater flexibility and time to continue in activities. It is probably much harder to maintain an activity like swimming for a young person who leaves the education system and enters the labour market at a younger age.

Over and above the impact of educational attainment, the occupation people enter also has an impact on their likelihood of swimming. The association with occupation is apparent from Figure 13. Two charts are used to present the findings, because the occupational categories used by the different surveys are not the same. To assist comparison, occupations that generally require higher occupational skill-levels are grouped on the left in both charts. While the pattern in these charts is not as consistent as is the case for educational attainment in Figure 12, a clear effect nevertheless stands out. Those in high-end professional occupations (categories on the left) are significantly more likely to swim, both regularly (ISM) and occasionally (QNHS), than those in lower skilled occupations (categories on the right).

Figure 13: Proportion swimming by occupation



To some extent, professionals may obtain easier access to opportunities to swim through workplaces themselves. Organisations employing greater proportions of professionals may be more likely to have deals with local health clubs and other locations with pools. An alternative and less direct explanation is the importance of social networks. Those in higher occupations are surrounded much of the time by more other people who swim, which may make it likely that they will too.

The statistical analysis also found some small effects of employment status on the likelihood of swimming. Controlling for age and other background characteristics, retired people and students are more likely to swim than working people. More free time does not necessarily increase the likelihood of swimming, however, because the unemployed and those in home duties are somewhat less likely to swim than working people, although once other background factors are controlled for, these two differences are not statistically significant.

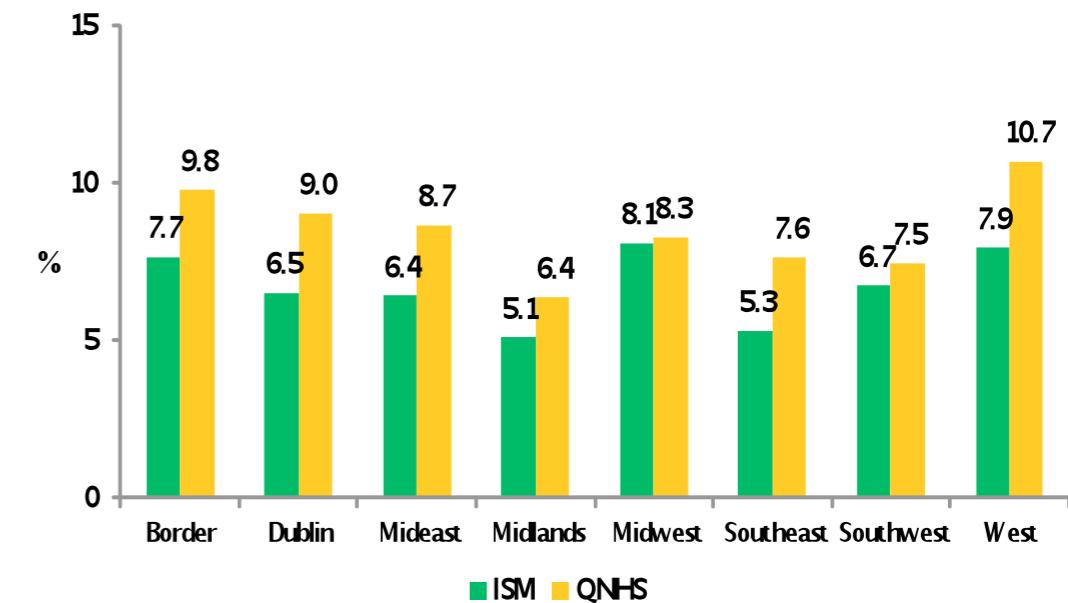
Overall, given the series of charts in this section and the results of the multivariate analysis, the impact of socio-economic factors on the likelihood that people swim should be considered very strong. People who are socio-economically disadvantaged, especially those with lower levels of education or who work in lower-skilled occupations, are much less likely to enjoy the benefits of swimming, including the health benefits.

2.5 GEOGRAPHY AND ACTIVE PARTICIPATION

The proportion of adults who swim also has a geographic dimension, i.e. people in some parts of Ireland swim more than people in other parts. Figure 14 shows participation rates by region, using the European Union's classification system, which divides Ireland into eight regions (the "Nuts 3" regions). It is important not to over-interpret these descriptive differences, however, because regions differ in their demography. For instance, we would expect a region that has a younger age profile and higher proportions of students and graduates to have more swimmers per head of population and hence to have a higher participation rate. The multivariate analysis presented in the Appendix controls for these factors, allowing us effectively to estimate the influence of living in each region on people who share the same socio-demographic and socio-economic characteristics.

The results suggest that some of the differences apparent in Figure 14 are not the product of different population profiles. Controlling for all available background characteristics, participation in swimming is significantly higher than elsewhere in the Border region and in the West region. We can be confident of these findings, because they are consistent across both surveys. The lower level of participation in the Midlands may also be significant. In this case the result is only statistically significant with respect to the QNHS data, however, so the finding should be considered suggestive rather than clear cut.

Figure 14: Proportion swimming by region



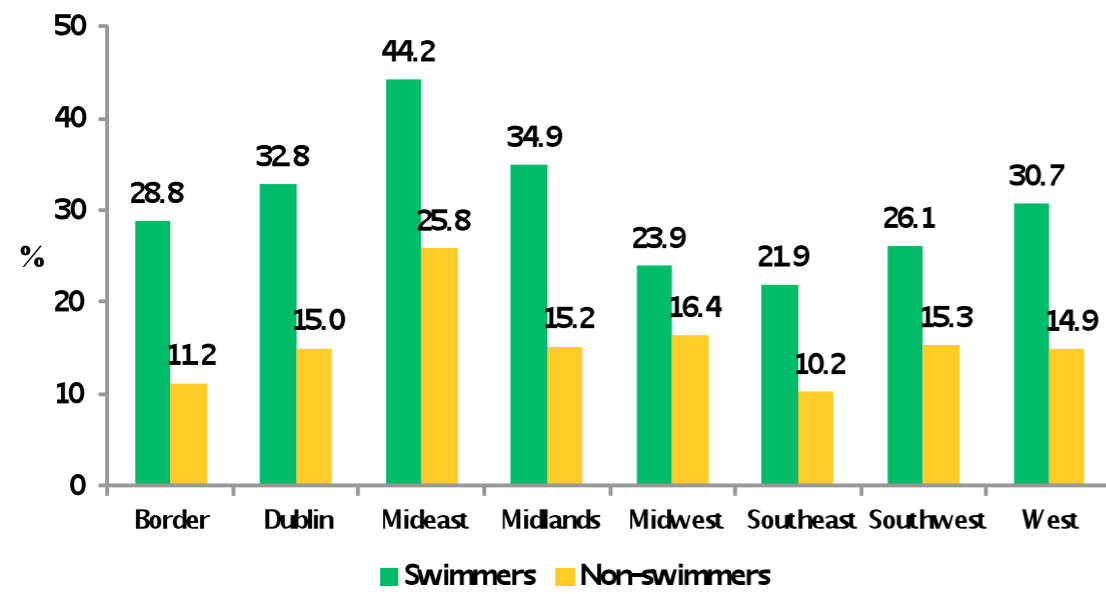
One consistent result to emerge from previous research looking at participation in sport in Ireland is that the availability of facilities does not seem to be an important factor driving active participation. Most participants state that they located facilities fairly easily; very few non-participants state that lack of facilities is a barrier.

However, swimming appears to be something of an exception. The data from the QNHS show that of all the additional facilities members of the public think would be likely to increase participation, swimming pools rank highest. One interesting question, therefore, is to ask whether there is any relationship between the participation rates in different regions and the demand for more pools by region.

Figure 15 provides the variation in the proportion of the population who thought that additional pools would encourage greater participation separately for swimmers and non-swimmers. A higher proportion of swimmers compared to non-swimmers thought that more pools would increase participation, yet in all regions more than one-in-ten non-swimmers agreed. Interestingly, the pattern across regions is similar for swimmers and non-swimmers, with the highest proportion of both groups who thought that additional pools would encourage greater participation coming from the Mideast. This region includes many of the belt of "commuter counties" that surround Dublin and may hence reflect the availability of sporting infrastructure in areas that saw very high growth in housing during the boom. Yet, comparing Figures 14 and 15, there is no clear relationship between the demand for more pools and the level of participation in swimming. Thus, while there is important variation in the demand for more pools, with some areas feeling

alike, lack of facilities is not a primary factor driving different levels of swimming across regions. This leaves open the question of what does lie behind the greater participation in the Border and West regions, as it is not obviously linked to other variables recorded in the two surveys.

Figure 15: Demand for more swimming pools by region (QNHS)



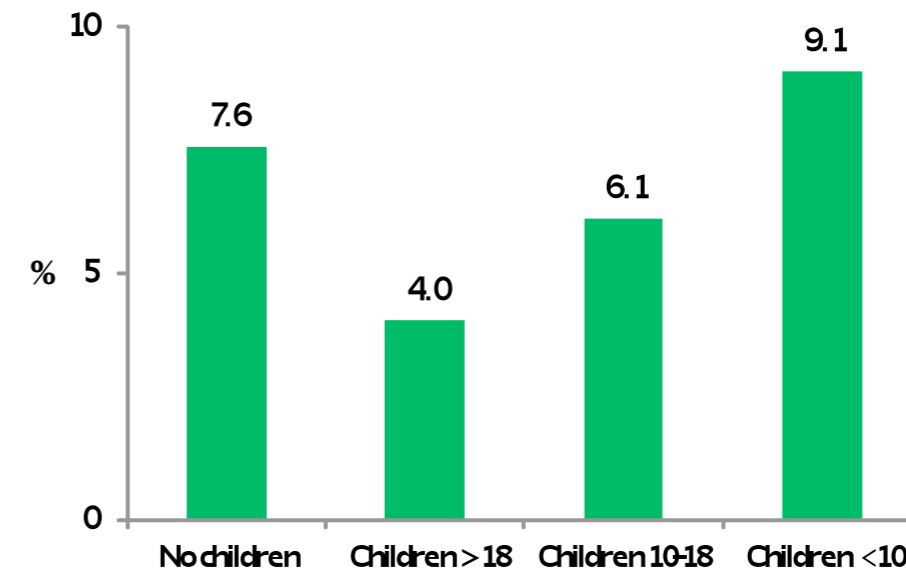
2.6 OTHER DETERMINANTS OF ACTIVE PARTICIPATION

Swimming, anecdotal evidence would suggest, is often a family activity. Given this, we explored whether the likelihood that people swim is strongly related to their family structure. We found no significant differences according to marital status, but we did find some when we examined the impact of having children. The QNHS data does not contain any information on the age of children in the house, only their presence. The age of the children turns out to be important, so the analysis here is confined to the ISM, which records the age of the youngest child.

Figure 16 presents the proportions who participate in swimming by whether the individual has children and the age of the youngest child. Again, some caution is required in interpreting this result, since the age of children is obviously related to the age of parents. Those whose youngest child is aged over 18 are likely to belong to a cohort with lower participation generally. We have already seen that age (or cohort) is an important variable for swimming. Once we control for age, gender and other characteristics in a multivariate model, the only difference depicted in Figure 16 that turns out to be important is the higher rate of participation for people with a child aged under 10. That is, comparing individuals of the same age,

gender and other characteristics, having a small child significantly increases the likelihood of going swimming.

Figure 16: Proportion swimming by whether individual has children and age of youngest child (ISM)



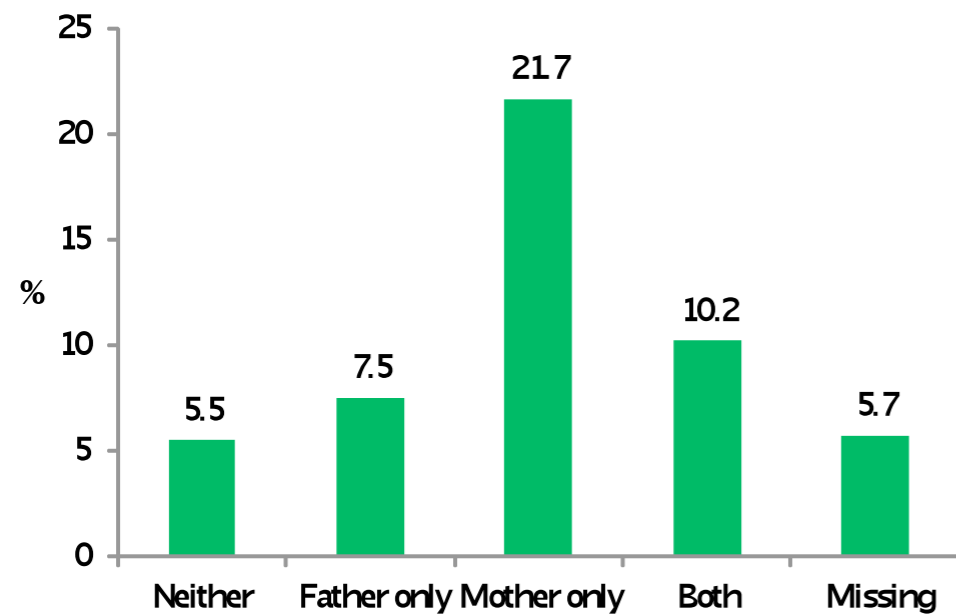
It should of course be noted that this result may be due to adults swimming with their children, in which case the focus of the participation may be more on teaching the children to swim than exercise for the adult. We have no way to test this with the present data.

The sporting habits of families have strong effects on the sporting habits of children. Previous research has shown this across all sporting activities, but there is reason to hypothesise that the effect might be particularly powerful for swimming, which is something that tends to be taught to children over a relatively long period, certainly compared with many other activities. Furthermore, parents who cannot swim or who cannot swim well may be more inhibited in taking their children swimming and less able to teach them. Thus, we might anticipate that intergenerational transfer (the extent to which one generation mimics the one that precedes it) may be particularly strong with respect to swimming.

Figure 17 confirms that this is the case, although it also shows that there is a very powerful gender dimension to the effect. The ISM questionnaire asks respondents whether, while they were at second-level school, their parents actively undertook sport or exercise. The question is not specific about which activities the parents were engaged in. Nevertheless, the impact on the likelihood their children swim once they become adults is strong. It is important to control in this analysis for

socio-economic status, because where a person has high socio-economic status then they and their parents are more likely to be involved in sport for that reason, as previously discussed.

Figure 17: Proportion swimming by whether parents were active in sport and exercise when individual was at school (ISM)



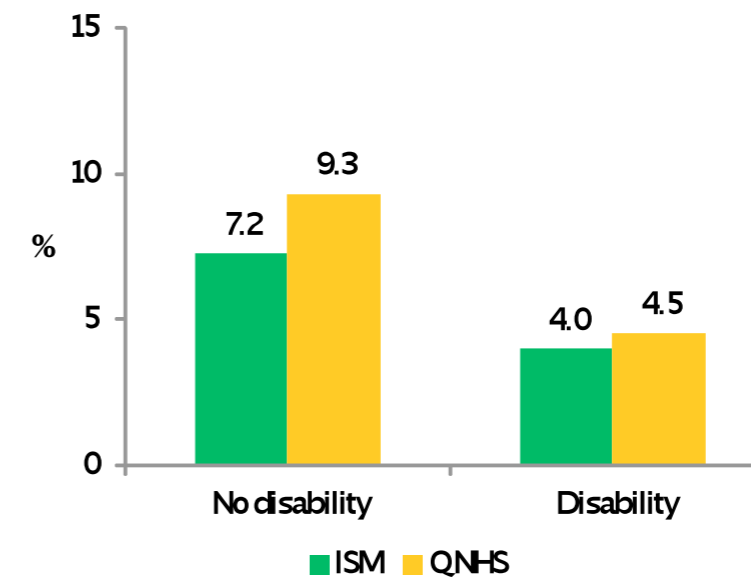
Once we control for all available background characteristics in the multivariate statistical models in the Appendix, the very strong relationship implied by Figure 17 holds in the following way: there is no significant impact on the likelihood of swimming where the father was active in sport, but a very strong effect where a person’s mother was active, especially if she was active and the father was not.

This finding is not easy to interpret, beyond the realisation that mothers are more powerful forces in whether children learn to swim than fathers. Given the popularity of swimming among women, it is possible that where the mother only was involved in a sport and exercise activity it was particularly likely to be swimming. Whatever the explanation, the statistical models reveal that having a mother involved in sport and exercise (especially where she is the only parent who is) is the most powerful influence on whether a person swims of any of the factors studied here. Nevertheless, it is important not to focus too much on this result, despite the strong influence of active mothers, because the proportion of the population affected is small. Only 13% had a mother who was active in sport and exercise when they were at second-level school, falling to 2% of cases where she was the only active parent.

Another factor known to be related to participation in sport generally is disability. Unsurprisingly, this too has an impact on the likelihood that a person swims, as

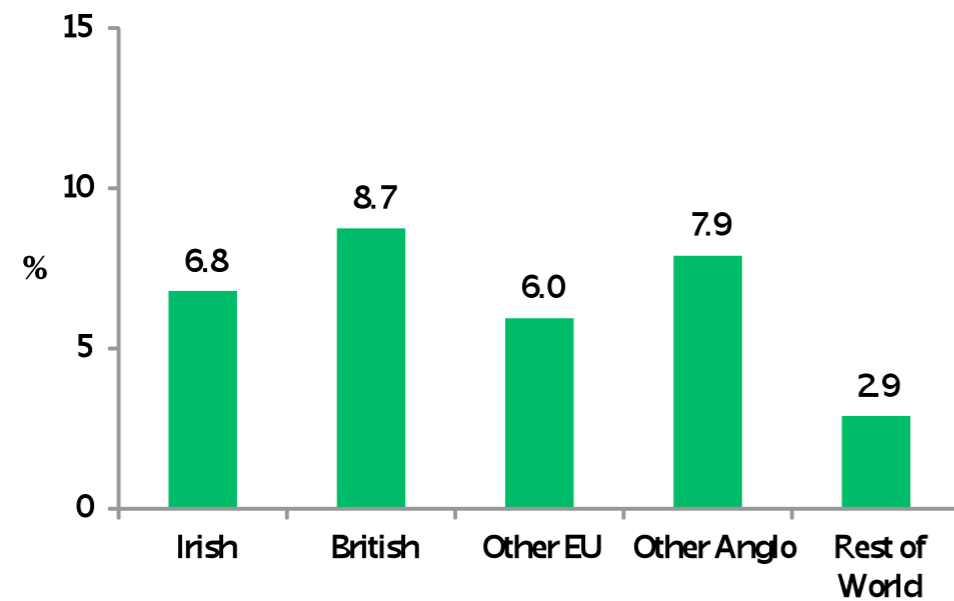
shown in Figure 18, using data from both surveys. This difference is statistically significant regardless of what other background factors we control for. Disabled people are simply less likely to swim.

Figure 18: Proportion swimming by self-reported disability



The ISM data also allows an analysis of participation in swimming by nationality. Differences in the proportion who swim between the five groups listed in Figure 19 are not statistically significant with the exception of the lower rate of participation among the “Rest of the World” category. These are people whose nationality comes from outside the European Union and who are not from a country where English is the first language (e.g. America, Australia etc.).

Figure 19: Proportion swimming by nationality (ISM)



Lastly, the ISM data reveal that controlling for all available background characteristics, people who own a car are more likely to swim, with a participation rate of 7.3%, versus 3.2% for those who do not own a car.

2.7 SOCIAL PARTICIPATION

Social participation in sport is usually analysed in three categories: volunteering, membership of clubs and attendance at sporting events. The ISM collects data on each of these aspects of social participation, which are not available from the QNHS data. Because the social participation rates reported here are based on one data source and the rates for swimming are low, as they are for other individual sporting activities, the figures provided in this section must be considered approximate estimates. Percentage rates below 1% are not estimated precisely, even with a large-sample survey like the ISM.

The definition of volunteering covers a broad range of activities that might be related to sport, including coaching, officiating, assistance with transport, maintenance of equipment, and so on. The data record 0.4% of adults as having undertaken some sort of volunteering activity associated with swimming in the previous 7 days. While this proportion may seem low it is worth noting that this estimate amounts to more than 13,000 adults helping out in swimming in a given week. Most volunteering for sport is associated with children.

Measuring membership of swimming clubs is difficult, since it is not clear what to count. The ISM survey asks people whether they are members of sports clubs and, if so, what sport is involved. But many clubs that provide access to a pool may do so as part of a suite of sporting activity associated with a sports centre or health club. The definition adopted here is clubs where the survey respondent specifically mentioned swimming as part of their club's activities. By this measure, 2.0% of adults were recorded as belonging to a club that offers opportunities to swim.

Lastly, the ISM records that 0.2% of adults had attended an event in order to watch swimming during the previous seven days.

These levels of social participation are low relative to team sports, such as soccer or Gaelic games, where many more people who no longer play (or perhaps even never played) the sport are club members, turn out to watch weekly games, or may be involved in organising the club. Nevertheless, the figures are fairly high relative to other individual sports, which is unsurprising given the overall popularity of swimming as an activity.

3. CONCLUSIONS

3.1 STATISTICAL FINDINGS

Swimming has grown greatly in popularity among children and adults over the past few generations and, given its broad appeal, is now the most popular sport and exercise activity in Ireland. The 6.7% participation rate recorded by the ISM translates into one in every 15 adults having swum during the previous week, or roughly 230,000 people.

The large majority of swimmers swim once or twice a week, for half-an-hour to an hour, with sufficient effort to be gaining valuable exercise. Most swim on their own or with family and friends, rather than in any kind of structured or organised setting.

Women are more likely to swim than men, among whom there is a distinctive pattern of participation with age. Male participation in swimming declines in early adulthood, before recovering again to a peak in the late 30s. Among women, participation in swimming declines more steadily with age. This differential pattern of swimming by gender is probably related to the fact that over two-thirds of swimmers are primarily motivated by the desire to improve their health. Health is a stronger motivating factor among women than men, especially during young adulthood, when men are more concerned with competition and enjoying the social dimension of sport than with its health benefits.

The overall fall in participation among older age groups largely reflects a 'cohort' rather than an 'age' effect, meaning that the present generation of younger adults swims more than previous generations did at the same age, and is hence likely to continue to do so as older adults.

There is also a strong socio-economic dimension to swimming – the better-off in society are much more likely to swim. This pattern is typical of active participation across the spectrum of sporting activities. The relationship between swimming and socio-economic status does not seem to reflect problems of affordability, however. Rather, people are more likely to swim if they stay in education for longer and enjoy the benefits of belonging to a more physically active social network.

Swimming is most popular in the Border and West regions, perhaps also in the Midwest, while participation is lowest in the Midlands. There is no obvious relationship between participation rates by region and the proportion of the population, both swimmers and non-swimmers, who state that more swimming pools would increase the likelihood of participation. Nevertheless, there is particularly high demand for more pools in the Mideast region.

A range of other factors are linked to the likelihood of swimming. People are more likely to swim if they have young children, access to a car and no disability; less likely to do so if they are an immigrant from a non-English-speaking country. Yet the strongest of all the factors related to swimming identified in this study is the sporting behaviour of people's parents – specifically mothers. The 13% of people who, when they were schoolchildren, had mothers who were active in sport and exercise are very much more likely to swim as adults. We cannot be sure of the reasons behind this finding. It may reflect greater belief in the importance of physical activity among sporting mothers. Or, given the popularity of swimming among women, mothers who are physically active may be more likely to be good swimmers and thus to teach their children to swim. Whatever the causal connection, it has a lasting effect.

3.2 POLICY IMPLICATIONS

The results presented suggest that the demand for opportunities to swim is likely to continue to grow. Later cohorts are swimming more than previous cohorts as young adults and are hence likely to want to swim more as older adults too, raising the participation rate for adults in general. Indeed, the fact that swimming has proved to be one of the fastest growing sporting activities in recent decades may partly explain why people continue to demand more swimming pools, despite evidence showing that participation in sport generally is no longer hindered by lack of facilities. Given this cohort effect and the fact that more than one-in-ten non-swimmers in every region state that facilities would be likely to increase participation, in this extended period of pressure on public funds, swimming has a statistical case for receiving a high share of any funds that are made available for sports facilities.

From the perspective of efforts to increase participation in swimming, the different pattern of swimming with age for men and women is notable. Although the evidence identifies the problem of maintaining or attracting young men's interest in swimming, it does not identify a solution. We offer two potential strategies. First, it may be possible to promote the health benefits of swimming to younger men. There is no reason to assume that the difference in motivation between the genders is set in stone. Second, it may be possible for swimming clubs and others aiming to market swimming to find ways to appeal more to men's competitiveness and desire for sociable sporting activity. In this regard, we note that there is no similar fall-off in the likelihood that men in their twenties go to the gym. Is it possible that swimming can be marketed in a way that young men find similarly appealing?

The strong socio-economic influences on swimming are largely beyond the control of organisations seeking to promote the activity, since they cannot affect such things as how long people stay in education. Yet the findings still have implications for how swimming might be promoted. The analysis links the likelihood of

swimming more to educational attainment and to occupational categories than to income. The implication is that the reduced participation of people in lower socio-economic groups is connected to opportunities and social networks, especially as young adults. There is no implication of a lower level of interest in swimming. Thus, there may well be greater untapped interest in swimming among young adults who do not enter third-level education, making them a good target for marketing the activity. Similarly, there may also be greater untapped interest among the disabled and people from non-English-speaking countries.

Those seeking to get more children swimming might note the key role played by mothers. In this respect, there is something of a dilemma. While there are reasons to try to improve the marketing of swimming to young men, the return from raising participation further among young women may ultimately be higher, because success appears to be more likely to carry through to the next generation. Arguably, however, impressing upon fathers the benefits of teaching their children to swim would resolve this dilemma.

This final suggestion exemplifies an important general point. The statistics provided here offer insights into reasons why some people swim and others do not. These insights are suggestive of possible ways to market swimming more effectively, including by identifying patterns of participation that point to potential target groups. But the analysis cannot determine what aspects of these patterns might most easily be changed and what aspects will prove resistant to promotions and other interventions. Efforts to increase participation are therefore bound to involve trial and error, which can be made more effective by devising systems to evaluate interventions.

Appendix

Table A1: Multivariate statistical model of active participation in swimming in past 12 months, estimated by probit analysis using QNHS data

		(1)	(2)
		<i>Basic Model</i>	<i>With Age*Gender Interaction</i>
<i>Variables</i>	<i>Variables</i>		
Gender	Male	-0.038*** (0.003)	-0.034*** (0.007)
Age	15-19	0.002 (0.007)	0.013 (0.010)
	20-24	-0.014*** (0.005)	-0.006 (0.007)
	25-29	-0.015*** (0.005)	-0.010* (0.006)
	30-34	-0.009* (0.005)	-0.014** (0.006)
	40-44	-0.005 (0.005)	-0.007 (0.006)
	45-49	-0.014*** (0.005)	-0.014** (0.006)
	50-54	-0.023*** (0.004)	-0.020*** (0.006)
	55-59	-0.028*** (0.004)	-0.029*** (0.006)
	60-64	-0.039*** (0.004)	-0.039*** (0.005)
	65-69	-0.040*** (0.005)	-0.043*** (0.006)
	70-74	-0.038*** (0.005)	-0.040*** (0.006)
	75-79	-0.052*** (0.004)	-0.053*** (0.005)
	80-84	-0.060*** (0.004)	-0.064*** (0.004)
	85+	-0.066*** (0.003)	-0.065*** (0.003)
Age*Gender	15-19*male		-0.019** (0.008)
	20-24*male		-0.019** (0.009)
	25-29*male		-0.012 (0.010)
	30-34*male		0.016 (0.012)
	40-44*male		0.005 (0.011)
	45-49*male		-0.001 (0.011)
	50-54*male		-0.010

Table A1 cont...	55-59*male		(0.010) 0.005 (0.013)
	60-64*male		-0.002 (0.014)
	65-69*male		0.017 (0.019)
	70-74*male		0.009 (0.019)
	75-79*male		0.006 (0.025)
	80-84*male		0.050 (0.055)
Educational Attainment	Primary	-0.022*** (0.004)	-0.022*** (0.004)
	Upper 2 nd level	0.017*** (0.004)	0.018*** (0.004)
	Post 2 nd level	0.034*** (0.007)	0.034*** (0.007)
	Third level	0.059*** (0.006)	0.060*** (0.006)
	Other	0.046*** (0.015)	0.046*** (0.015)
	Nationality	Irish	0.008 (0.005)
Urban-Rural	Rural	-0.010*** (0.003)	-0.010*** (0.003)
Disability	Disabled	-0.009** (0.004)	-0.010** (0.004)
Region	Border	0.019*** (0.005)	0.019*** (0.005)
	Mideast	-0.002 (0.004)	-0.003 (0.004)
	Midlands	-0.014*** (0.005)	-0.014*** (0.005)
	Midwest	0.003 (0.005)	0.003 (0.005)
	Southeast	-0.002 (0.004)	-0.002 (0.004)
	Southwest	-0.008** (0.004)	-0.008** (0.004)
	West	0.024*** (0.006)	0.024*** (0.006)
Employment Status	Unemployed	-0.002 (0.009)	-0.003 (0.009)
	Student	0.038*** (0.010)	0.036*** (0.010)
	Home duties	-0.013* (0.007)	-0.010 (0.007)
	Retired	0.007 (0.010)	0.003 (0.010)
	Other	-0.012 (0.009)	-0.012 (0.009)
	Occupation	Professional	0.014** (0.006)
Associate professional		0.002	0.003

Table A1 cont...	Clerical	(0.006) -0.005 (0.005)	(0.006) -0.003 (0.006)
	Craft	-0.011** (0.005)	-0.011* (0.006)
	Services	-0.009* (0.005)	-0.009 (0.006)
	Sales	-0.012** (0.006)	-0.012** (0.006)
	Operatives	-0.005 (0.007)	-0.005 (0.007)
	Other	-0.011* (0.006)	-0.009 (0.006)
	Missing	-0.003 (0.008)	-0.002 (0.008)
	Observations	41275	41111
	Pseudo R-squared	0.0680	0.0680

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table A2: Multivariate statistical model of active participation in swimming in past 7 days, estimated by probit analysis using ISM data

Variables		(1)	(2)
		<i>QNHS Match</i>	<i>ISM Model</i>
Gender	Male	-0.018** (0.008)	-0.018** (0.008)
Age	15-19	0.032 (0.020)	0.044* (0.022)
	20-24	0.013 (0.011)	0.021* (0.013)
	25-29	-0.002 (0.008)	0.004 (0.009)
	30-34	0.005 (0.009)	0.006 (0.009)
	40-44	0.007 (0.007)	0.008 (0.008)
	45-49	0.002 (0.007)	0.009 (0.008)
	50-54	-0.007 (0.007)	0.004 (0.008)
	55-59	-0.012* (0.007)	-0.003 (0.009)
	60-64	-0.015** (0.007)	-0.005 (0.009)
	65-69	-0.024*** (0.007)	-0.015* (0.009)
	70+	-0.051*** (0.005)	-0.043*** (0.006)
Age*Gender	15-19*male	0.001 (0.017)	0.001 (0.017)
	20-24*male	-0.014 (0.012)	-0.012 (0.012)
	25-29*male	-0.021** (0.010)	-0.020* (0.010)
	30-34*male	0.004 (0.014)	0.006 (0.014)
	40-44*male	-0.006 (0.011)	-0.006 (0.010)
	45-49*male	-0.000 (0.011)	-0.001 (0.011)
	50-54*male	-0.009 (0.011)	-0.011 (0.010)
	55-59*male	-0.002 (0.013)	-0.003 (0.013)
	60-64*male	-0.003 (0.013)	-0.003 (0.012)
	65-69*male	0.007 (0.015)	0.006 (0.015)
70+*male	0.019 (0.018)	0.016 (0.017)	
Educational Attainment	Primary	-0.009	-0.007

Table A2 cont...

	Upper 2 nd level	0.007 (0.005)	0.006 (0.005)	
	Post 2 nd level	0.026*** (0.008)	0.021*** (0.007)	
	Third level	0.033*** (0.006)	0.030*** (0.005)	
Nationality	Irish	-0.001 (0.005)		
	British		0.005 (0.008)	
	Other EU		0.010 (0.013)	
	Other English-speaking		0.025 (0.018)	
	Rest of world		-0.036*** (0.006)	
Urban-rural	Rural	-0.004 (0.003)		
Disability	disabled	-0.013*** (0.004)	-0.011*** (0.004)	
Region	Border	0.014** (0.006)	0.013** (0.006)	
	Mideast	0.003 (0.005)	0.000 (0.005)	
	Midlands	-0.005 (0.007)	-0.004 (0.007)	
	Midwest	-0.003 (0.005)	-0.004 (0.005)	
	Southeast	0.012* (0.006)	0.012** (0.006)	
	Southwest	0.005 (0.005)	0.003 (0.005)	
	West	0.013** (0.006)	0.013** (0.006)	
	Employment Status	Unemployed	-0.009 (0.007)	-0.007 (0.007)
		Student	-0.004 (0.009)	-0.005 (0.008)
		Home duties	-0.004 (0.004)	-0.006 (0.004)
Retired		0.012* (0.007)	0.013* (0.007)	
Other		-0.003 (0.012)	-0.003 (0.012)	
Occupation	Missing	0.006 (0.025)	0.008 (0.025)	
	Non-manual	-0.012*** (0.004)	-0.011*** (0.004)	
	Self-employed	-0.003 (0.005)	-0.003 (0.004)	
	Skilled	-0.018*** (0.004)	-0.017*** (0.004)	
	Unskilled	-0.029*** (0.005)	-0.026*** (0.005)	
	Farmer	-0.026***	-0.026***	

Swim Irelands Mission

Swim Irelands Mission is to foster and develop swimming, diving, water polo and associated aquatic disciplines, both competitive and otherwise and to promote the development of physical and social qualities that come from swimming and associated sports

ISC Vision

The Irish Sports Council's vision is one where sport contributes to enhancing the quality of Irish life and everyone is encouraged and valued in sport; young people see sport participation as an integral and enjoyable part of their busy lives; individuals can develop their sporting abilities and enhance their enjoyment, limited only by their talent and commitment; and Irish sportsmen and women achieve consistent world-class performance, fairly.

ESRI

The ESRI produces research that contributes to understanding economic and social change in the new international context and that informs public policymaking and civil society in Ireland.

