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Has the second ‘running boom’ democratized running?
A study on the sociodemographic characteristics of finishers at the world’s largest half marathon

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\textbf{ABSTRACT}
Previous studies have shown that runners differ in terms of sociodemographic characteristics. However, given the increase in participants at running races, the question arises whether these sociodemographic differences have been erased and if the second running boom has democratized running. An online questionnaire was sent to a randomised sample (n = 2378) of finishers at the 2017 Gothenburg half marathon (Göteborgsvarvet). The self-reported sociodemographic variables were then compared to Swedish national averages. The results show that Göteborgsvarvet finishers are considerably more likely to be men, well-educated and employed, compared to the general population of Sweden. This study indicates, therefore, that half marathon finishers are still distinctly different in terms of sociodemographic variables compared to the general population. These differences need to be taken into consideration when conclusions are drawn concerning running and its health effects on runners.

\textbf{Introduction}

Although running and participating in races have been part of human societies for centuries, two distinct ‘running booms’ have been identified in which the attraction of running and participating in races has dramatically increased. The first ‘running boom’ occurred in the late 1960’s throughout high- and middle-income countries and can generally be described as a ‘jogging’ movement in which running was generally limited to personal physical activity and an activity often pursued alone. However, whilst largely an individualistic movement, different running communities and races also started to appear during the 1970’s and 1980’s (Haberman 2017). Despite this first running boom also attracting women and individuals in minority communities (Haberman 2017), studies from the time showed that the individuals participating in running races were distinctly skewed, with an overrepresentation of men in non-manual occupations (Smith 1998; Clough, Shepherd, and Maughan 1988; Summers et al. 1982).
In the late 1990s/early 2000s, however, a second running boom appeared in which a considerable increase in interest and participation in running throughout Europe and North America occurred (Scheerder, Breedveld, and Borgers 2015). Contrary to the first running boom, the second running boom more clearly involved participating and finishing organized races, an aspect that is seen in the number of finishers at road races of all distances in the United States which, between 1990 and 2013, increased by 300% (Running USA 2016).

Despite a decrease in competitors in 2014 and 2015, the general global trend of an increasing popularity of endurance events seems to continue (Mathews et al. 2012), with a particular increase in half and full city marathons (Running USA 2016). These half and full city marathons have been argued to be the most democratic of sports, not requiring any specific equipment (Douglas 2013) and attracting both participants and spectators from all social classes (Haberman 2017). Given the dramatic increase in races and participants as well as the growth of for-cause events and fundraising as a crucial part of participating, it has been argued that running may have become democratized, i.e. that running is less of a leisure activity for specific socio-demographic groups and more open to all social classes (Bridel, Markula, and Denison 2015). This is further supported by the fact that races are often marketed as ‘a race for the masses’ (Göteborgsvarvet 2018), thereby indicating that participants are a representative sample of the population.

From a public health perspective (Khan et al. 2012; Lee et al. 2017), endurance exercise, and running especially, has been shown to have considerable positive effects on individuals with regards to mortality (Chakravarty et al. 2008) as well as general physical and mental health (Haskell et al. 2007), but also specifically in reducing the risk of hypertension, hyperlipidemia and diabetes (Williams 2009). Although medical encounters are inevitable and relatively common during endurance events (Jones and Roberts 1991), and deaths not uncommon (Nilson and Börjesson 2018), from a public health perspective, running and participation in races are generally viewed as positive for society (Lane et al. 2012; Bauman, Murphy, and Lane 2009; Stevinson and Hickson 2013).

In summary, therefore, if running has become democratized, this would be exceedingly positive from a societal perspective. However, health is renowned for being differentiated by sociodemographic factors (Link and Phelan 1996) and participation in different sports and physical activities is strongly correlated to class (Bourdieu 1978). As such, the motivations for running and race participation are more complex than merely minimising the risks for various sedentary lifestyle-related diseases. Drawing on theories by Bourdieu (2013), as well as studies on runners (Nettleton 2013; Tulle 2007), arguments have been put forth that the social capital of being a runner is an important driving factor behind the choice to run and participate in races. Whilst new research has suggested that these aspects are less important than previously thought, at least with regards to casual runners (Hitchings and Latham 2017), in similarity to making other health-related choices, running can signal that an individual has acknowledged an understanding of the risks of inactivity, the benefits running can confer, has accepted recommendations of health experts, and is taking responsibility for managing his or her own risk (Shipway and Holloway 2010). Also, attaining the distance running body has been argued could be considerable ‘cultural capital’ given the Western society’s bodily ideals of representing healthiness (Bridel, Markula, and Denison 2015).

In line with these theoretical perspectives, as well as studies showing that ‘blue-collar’ workers are less physically active than ‘white-collar’ workers (Gilson et al. 2019), studies
after the second running boom have shown a continued overrepresentation of men (Chatton and Kayser 2013; Scheerder and Vos 2013) as well as participants in races having higher income levels and higher educational levels than non-participants (Chatton and Kayser 2013). However, studies have also shown a continuous democratization process among participants of running events since 1969 with broader socio-demographic backgrounds amongst participants (Scheerder and Vos 2013) and a study from Belgium showed no differences in gender or educational levels between participants in running races and non-runners (Van Dyck et al. 2017). Likewise, a general increasing trend of female finishers has also been seen (Van Bottenburg, Hover, and Scheerder 2010). Therefore, whilst some studies suggest that participants at running races have become more diverse after the second running boom, the evidence is limited and divided, requiring evidence from different countries and races. The aim of this study, therefore, is to contribute with updated knowledge regarding the socio-demographics of participants at running races from a new context by comparing the socio-demographics of a randomized sample of finishers at Göteborgsvarvet with the general Swedish population.

**Materials and methods**

**Materials**

Gothenburg's half marathon (Göteborgsvarvet), is the world's largest half marathon with around 45,000 participants annually. The race is run in May in central Gothenburg, Sweden's second largest city, with a population of 570,000. For this study, a dataset was collected by the organising committee of the 2017 event. An online survey (in Swedish) was e-mailed to a randomized group of finishers (2378, i.e. 5% of all finishers) with two separate reminders. As part of the terms and conditions agreed by the individuals, the organising committee received permission to share anonymized data with third party organizers. Data was delivered completely anonymously, grouped in 10-year age groups. Therefore, according to local ethical rules, no specific ethical approval was necessary.

As the aim of the survey was for the organising committee to collect information regarding the experience of the race in order to improve the experience for the runners, as well as for sponsorship reasons, the authors of this study had no input in the wording or type of questions. Of the 2378 e-mail recipients, 943 (40%) answered the survey. Given that the dataset was delivered anonymized, no analysis of non-responders could be done. Of the 943 respondents, 55 were either younger than 21 years or older than 60 years. For a number of reasons these age groups were eliminated from the results. Firstly, for the younger group, as these were aggregated into one group it was not possible to ascertain what their highest possible educational level could be meaning that comparisons with the national average were not possible. Similarly, for the oldest age group, the age of retirement is relatively flexible in Sweden though between 65 and 70 years. As there was no way of knowing the exact age of the respondents, it was not possible to compare rates with a correct national mean. As a consequence of removing the 55 cases, a total of 888 cases were analysed.

The available sociodemographic data were categorized into the following:

- Sex in the category’s men, women or unwilling to answer,
• Age in the age groups <20 years, 21–30 years, 31–40 years, 41–50 years, 51–60 years, and 61–years,
• Highest attained educational level. This was categorized into primary, meaning the compulsory level of education in Sweden, ending at the age of 15, secondary, meaning the level of education when leaving school at 19 (i.e. high school education), post-secondary non-tertiary, meaning a non-university schooling after secondary education, tertiary, meaning a university education of a minimum of 2 years.
• Employment, categorized in employed/self-employed, unemployed, retired or student. N.b. In Sweden, unemployment benefits are governed by the state and entitle the unemployed individual to approximately 80% of their wage. In regards to consumption, studies have shown a reduced rate of consumption of between 4.4 and 9.1% as a consequence of being unemployed (Kolsrud et al. 2018).
• Occupation, if employed/self-employed. This was categorized into executive, meaning a person with senior managerial responsibility, white collar worker, meaning a non-manual professional without managerial responsibilities (e.g. office personnel, teachers, healthcare professionals, etc.), blue collar worker, meaning a manual worker (e.g. workers in industry, mechanics, builders, etc.), student or non-classified.

In order to compare data from the recipients with the Swedish population, national data was collected from the freely available statistics at Statistics Sweden (Statistics 2019). Whilst national data on age, sex and educational level was available on a single year level, data on employment status was only available in 10-year aggregates. No comparable national data was available on occupation.

**Method**

The full dataset was analysed in SPSS (v.22). Due to the categorical nature of our data one sample chi-square tests (Agresti 2018) were used to test distribution in comparison to the Swedish national mean average for employment status and education grouped by age. Occupation was not analysed due to unavailable reference data in the Swedish population.

**Results**

The sex-specific distribution varied considerably in the age-specific groups with a large percentage of men in all groups, apart from the age group 21–30 years. As is also seen in Figure 1, a gradual reduction of women runners can be observed with increasing age, with three times as many men as women in the oldest age group (Figure 1 and Table 1).

Considerable differences can also be observed in the educational level of the runners compared to the general population. In all age groups the sample's educational level was higher compared to the general population. For all groups (21–60 years), a large majority (mean 64.87% (range: 58.43–71.86%)) had a university education compared to a mean of 26.11% (range: 19.93–36.21%) in the general population (21–60 years). Likewise, very few had a primary education as their highest attained educational level. In the Swedish national
**Figure 1.** The age distribution of runners and the national average.

**Table 1.** Age-specific comparisons of sociodemographic characteristics.

<table>
<thead>
<tr>
<th></th>
<th>21–30 years (N = 190)</th>
<th></th>
<th>31–40 years (N=263)</th>
<th></th>
<th>41–50 years (N = 269)</th>
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<th>51–60 years (N=166)</th>
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<tr>
<td></td>
<td>Sample (%)</td>
<td>National average (%)**</td>
<td>Chi2 (df=3)</td>
<td>Sample (%)</td>
<td>National average (%)***</td>
<td>Chi2 (df=3)</td>
<td>Sample (%)</td>
<td>National average (%)*</td>
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<td></td>
</tr>
<tr>
<td>Men</td>
<td>47.37</td>
<td>51.46</td>
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<td>58.56</td>
<td>51.29</td>
<td></td>
<td>64.07</td>
<td>50.78</td>
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<td>Women</td>
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<td>41.06</td>
<td>48.71</td>
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<td>35.56</td>
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<td>0.00</td>
<td></td>
<td>0.37</td>
<td>0.00</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>1.05</td>
<td>10.84</td>
<td>312.10*</td>
<td>2.28</td>
<td>10.91</td>
<td>214.61*</td>
<td>1.85</td>
<td>9.83</td>
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<td>Secondary</td>
<td>32.63</td>
<td>49.44</td>
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<td>23.57</td>
<td>38.39</td>
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<td>32.59</td>
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<td>19.79</td>
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<td>2.28</td>
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<td></td>
<td>1.11</td>
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<td>Non-tertiary</td>
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<td>19.93</td>
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<td>Unemployed</td>
<td>0.53</td>
<td>6.90</td>
<td>572.09*</td>
<td>0.00</td>
<td>5.40</td>
<td>35.84**</td>
<td>0.37</td>
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<td>1.90</td>
<td>6.90</td>
<td></td>
<td>0.37</td>
<td>2.20</td>
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<tr>
<td><strong>Occupation (if employed/self-employed)</strong></td>
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<td></td>
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<tr>
<td>Executive</td>
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<td></td>
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<td>10.80</td>
<td></td>
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<td>10.80</td>
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<td>White collar</td>
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<td></td>
<td>66.40</td>
<td>64.60</td>
<td></td>
<td>66.40</td>
<td>64.80</td>
</tr>
<tr>
<td>Blue collar</td>
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<td>28.60</td>
<td></td>
<td>23.10</td>
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<td></td>
<td>23.10</td>
<td>24.20</td>
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<tr>
<td>Student</td>
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<td>2.70</td>
<td></td>
<td>0.40</td>
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<td></td>
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<tr>
<td>Not classified</td>
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<td>0.00</td>
<td></td>
<td>1.10</td>
<td>1.10</td>
<td></td>
<td>1.10</td>
<td>0.70</td>
</tr>
</tbody>
</table>

*Indicates a statistical significant difference in distribution between national average and sample distribution using a chi-square test $p < .001$ for the whole model.

**21–30 years apart from employment data 25–34 years.

***31–40 years apart from employment data 35–44 years.

☆41–50 years apart from employment data 45–54 years.

*51–60 years apart from employment data 55–64 years.
population (21–60 years), an average of 11.53% (range: 9.83–14.52%) have a primary education as their highest attained educational level. Amongst the runner’s, however, an average of 2.35% (range 1.05–4.22%) had primary education as their highest level. Chi-square tests were significant at the 0.001 level for all age groups (Table 1).

The effect of education is also seen in the employment data. As is seen in Table 1, in all age groups the percentage that were unemployed was considerably less than in the national average and in the ages 31–60 years, the percentage that were employed or self-employed was higher than the national average. In all age groups, chi-square tests were significant at the 0.001 level. When broken down into type of occupation (as defined by the respondent), a clear pattern is seen with the percentage of runners defining themselves as having a blue-collar job being higher in the youngest age group and the percentage with white-collar jobs being higher in the older age groups. Most notably, the percentage of runners who class themselves as having executive positions is considerable in the oldest two age groups (Table 1).

**Discussion**

Few studies have been published with regards to the sociodemographic characteristics of amateur long-distance runners and those that have been published are either from before the second running boom of the late 1990s/2000s (Smith 1998; Clough, Shepherd, and Maughan 1988; Summers et al. 1982), merely on a sub-group of runners (Chatton and Kayser 2013) or using less robust collection methods (Van Dyck et al. 2017).

Based on a questionnaire from Göteborgsvarvet, this study reveals a number of interesting socio-demographic aspects regarding the finishers compared to Swedish national averages, that could also be indicative of the socio-demographics of a wider running community. Whilst the results are not necessarily generalizable to other countries or races, given that national differences may exist, it is worth noting that Sweden is known to be a country of very low gender- or class-based inequality (Judge, Mulligan, and Benzeval 1998). Therefore, it could be expected that socio-demographic differences would be lower in Sweden compared to other countries. Despite this, the fact that participation in races has increased considerably following the second running boom, as well as the increased equality in sports in general, the results presented in this study are surprisingly similar to the studies produced during the 1980s (Clough, Shepherd, and Maughan 1988; Summers et al. 1982).

The typical participant of Göteborgsvarvet is male, university educated and working in a white-collar job. As the survey was in Swedish, therefore restricting the respondents to Swedish speakers, the results can be compared to the Swedish population without risk of including foreign participants. As such, this study can show that Swedish participants at Göteborgsvarvet seem to differ considerably to the average Swede with regards to educational level and employment status. In similarity to Swiss data (Chatton and Kayser 2013), finishers of the world’s largest half marathon have a higher educational level and are also more likely to be employed compared to the Swedish norm.

One way to understand these results is the assumption of the idea of the body and the effects of running on the body. That is, the strength, health and beauty of the body and what the body is intended for, can be recognized socially (Bridel, Markula, and Denison 2015). Bourdieu (2013) has argued that whilst the working classes are more prone to focus
on the strength and use of the body, the dominant class (i.e. the group of people with higher socioeconomic status (SES)), are more attentive to the shape of the body. Furthermore, running is an individual, non-violent sport, with low level of body contact, which also signals ideals that the dominant classes value highly (Bourdieu 1978). Therefore, to train and run races such as Göteborgsvarvet fits into several factors that are in accordance with higher social positions. From this perspective, training for and competing in Göteborgsvarvet could be seen as an instrument that is preferably used by individuals with higher SES as a means to obtain a healthier and more attractive body (e.g. youthful appearance, maintenance or loss of body weight) and for the social profit it brings within the social context of the upper middle and higher classes.

Whilst the search for social profit, or the greater knowledge on the importance of health amongst higher educated individuals (Link and Phelan 1996) could explain the skewed socio-demographics at Göteborgsvarvet, it is important to add that the attractiveness of events is not merely defined solely by the participants. Rather, event organizers and marketers invest considerable resources in attracting specific groups or individuals, an aspect discussed at length by Cooper (1992) who highlights the importance amongst race organizers of attracting high SES individuals to their races. In terms of Göteborgsvarvet, the race has existed since 1980, starting as a consequence of the interest in running sparked by the first running boom (Göteborgsvarvet 2018). Considering the socio-demographics of race participants during the 1980’s, as shown in previous studies (Smith 1998; Clough, Shepherd, and Maughan 1988; Summers et al. 1982), it would seem likely that a similar socio-demographic distribution would have existed at Göteborgsvarvet. Consequentially, there may be cultures and traditions surrounding the race that still has an effect on the demographics of the participants. However, the race has increased considerably in the number of participants, particularly during the 2000’s, and is heavily marketed as ‘a race for the masses’ with sponsors who obviously attract different socio-demographic groups (Göteborgsvarvet 2018). Therefore, whilst traditions may have some effect in excluding certain groups, the race organizers seem to have made attempts to minimize the exclusion of socio-demographic groups.

Despite this, some groups may feel excluded. For example, given that there are costs involved in participating, this may restrict certain groups. From an international perspective, the price of participating is relatively high (entering Göteborgsvarvet (in 2018) cost between 625 SEK and 895 SEK (between €58/$65 and €84/$93 (exchange rate in August 2019)) depending upon how early you apply). Previous studies have shown that high prices can be a hindrance for participating (Van Dyck et al. 2017) and could explain the low number of participants who were unemployed, given that unemployment generally results in lower consumption, including the consumption of leisure activities (Kolsrud et al. 2018). The financial aspects could also help explain the differences between the percentages of white- and blue-collar participants with studies having showed an importance of price for low-income individuals in determining whether to participate in leisure activities (Steenhuis et al. 2009). Importantly, however, there are other hypothetical causes in understanding the differences. For example, the physical nature of blue-collar jobs could be a hinderance for wanting or managing to participate in physical activities outside of work.

However, there are several aspects that argue against the explanation of costs limiting participation. Firstly, as highlighted previously (Gilson et al. 2019), physical activity is generally lower amongst blue-collar workers compared to individuals in professions
requiring more education. Secondly, considering that the mean income amongst those 18–65 years in employment in Sweden is 34,600 SEK (3200€/3550$) per month (men: 36,500 SEK (3390€/3750$); women: 32,600 SEK (3020€/3350$)) (Statistics 2019), the after tax cost of participating is only approximately 3% of a monthly wage. Also, if price was a general hindrance for participating, it could be expected that the percentage of runners who were students should also be less. In Sweden, university education is free and all students receive a state-controlled income (approximately 10,000 SEK (€935/$1040) per month) meaning that although university students are not entirely socio-demographically representative of the population, they come from a broad variety of different economic and cultural backgrounds (Jonsson and Erikson 2000). As the percentage of finishers who were students was higher than the national average, this could indicate that the cost of running Göteborgsvårvet is not a determining factor for whether to participate.

Although this study shows results similar to those published in the 1980s (Clough, Shepherd, and Maughan 1988; Summers et al. 1982), thereby indicating that little democratization has occurred, one aspect indicates a possible emerging change. Recent studies have shown an increase in female participants (Van Bottenburg, Hover, and Scheerder 2010) and in this study there was a (very slight) majority of women in the youngest age group. Although we have no historic data and therefore cannot assess the sex-balance is changing, it is interesting to note that the percentage of women decreases for each increase in age group. Considering the large number of health benefits of running (Chakravarty et al. 2008; Haskell et al. 2007; Williams 2009; Warburton, Nicol, and Bredin 2006), the causes to why women are fewer in other age groups need to be studied further.

There are a number of limitations that are important to raise regarding this study. Firstly, collecting data through anonymous online surveys is a less than perfect method, especially when no analysis of non-responders can be performed. However, although this should be taken into consideration when interpreting the results, given a 40% (n = 943) answer rate and the large differences compared to the general population, the results clearly indicate that the participants differ considerably in most sociodemographic variables. Secondly, also with regards to the collected data, all is self-reported meaning that we cannot determine the accurateness of the data. Likewise, the question on occupation and occupational levels was largely a free-text answer meaning that the question could have been interpreted differently by different individuals. These issues, however, are likely to have a minimal effect on the results.

**Conclusion**

This study can show that although race participation has increased dramatically following the second running boom, the participants at Göteborgsvårvet are still considerably more likely to be men, be well-educated and be employed compared to the general Swedish population. From a Swedish perspective, these aspects need to be taken into consideration when conclusions are drawn concerning running and its health effect on runners. Also, whilst these results may not be generalizable to other countries or races as these may have different socio-demographics, considering the large differences between finishers and the general population, as well as previous research, the evidence does indicate that the second running boom has done little to change the socio-demographic makeup of participants of long-distance running races.
Disclosure statement

None of the authors declare competing financial interests.

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Data availability

Data is available upon request.

References


