

INCREASING WOMEN'S PARTICIPATION IN STATISTICS - DOES IT MATTER?

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1. Introduction

It is very important that we have diversity in our profession if we are to maintain the relevance of the International Statistical Institute (ISI). Diversity takes many forms.

- We need broad geographic and ethnic representation
- We should have diversity of age, young as well as older statisticians
- We need a blend of statisticians who prefer to work on theoretical and research aspects with those who have a practical bent.

Gender is another important dimension of diversity and the topic of this paper.

Women are becoming influential in other fields of endeavour particularly public policy. Unless statisticians can keep up with this trend their relevance becomes threatened. Furthermore, women bring networking skills and collaborative skills that have increasing importance to current management practice. Women are often more proficient at these skills than men.

Up front, I would like to say that change will not happen very quickly. It must evolve. However, it is important to establish the right direction and to remove any barriers that exist.

I will talk first about barriers to the increasing participation of women in statistics and then the specific situation in the ISI. My comments are based on my personal experience in both the Australian Bureau of Statistics (ABS) and Statistics New Zealand (SNZ) as well as studies we commissioned at the Australian Bureau of Statistics into why we have lost too many professional women,

We have had success at both the ABS and SNZ at increasing the number of women in the senior professional ranks.

- 40% of SNZ managers are women; and
- more than 50% of recent promotees to senior positions in the ABS have been women although overall they remain in the minority (but this will change over time).

I should add that my experiences are based very much on an Anglo-Saxon culture and may not

translate directly to other cultures.

2. Florence Nightingale

Florence Nightingale's proficiency as a statistician is not as well known as her nursing skills. Yet she was an excellent and early example of the blend of skills that a woman can bring as a statistician. My co-presenter, Sue Wilson, will be providing a more detailed analysis of Florence Nightingale's contribution so I will only highlight a few relevant points that are relevant to my theme.

- Nightingale highlighted the importance of context in drawing conclusions from statistical analysis. In her case, the "subject matter" was the analysis of illnesses, a topic on which her expertise in nursing served her well. Because of this she understood the importance of factors such as age and sex on mortality rates. (More generally, women have made major contributions to statistical work on social and psychological issues, professions in which women have played a leading role. This contrasts with economic statistics which have been male dominated.)
- She used networking skills to great advantage. Partly because of her privileged family background, she knew a lot of influential men including statisticians. She was able to use these networks to give her work more prominence.

Florence Nightingale was the first woman elected to the Royal Statistical Society in 1858. There would have been an expectation that, 141 years later, women would have had a more influential role in the Society. It took that long for the first woman (Denise Lievesley) to be elected President.

3. Barriers

I will talk about four possible barriers.

First, the most important "barrier" is that there are not enough women in the feeder groups. When you analyse, promotions by sex, females in Australia and New Zealand are now getting somewhat more than their expected share of promotions given the sex ratio of possible contenders. They are still in minority in senior positions because there are not enough women in feeder groups. This goes back to schools and universities where there are still not enough young women taking the mathematics and statistics option. There is certainly scope for collaboration between the national statistical associations on the marketing of statistics as a career among women.

There is another aspect to feeder groups. We have put additional effort into helping young women already in statistical organisations to increase their promotional potential. Possibly, the most effective staff development initiative is to ensure they have a range of working experiences that accelerate the learning experience, including work in high profile areas.

The second "barrier" is keeping women in statistics. Certainly in Australia, after a good grounding in statistics, too many women are leaving for alternative disciplines, albeit disciplines that make significant use of statistics. We have researched the reasons for their departure at the ABS and the predominant reason is a perceived lack of opportunities for promotion. They perceive a barrier of predominantly male managers unlikely to change their working habits or move to other jobs. By and large, young women seem to be more ambitious than young men or more willing to change organisations. This requires us to be more inventive in finding new challenges for more of these young

women in order to keep them in statistics as well as ensuring there are sufficient promotional opportunities.

The third "barrier" is a lack of understanding of the differences between the way a typical man and a typical woman work. Studies have shown that on average women pay greater attention to detail and also are better communicators. This can be seen to be threatening or unhelpful by male dominated cultures. On the other hand, women should not exhibit these desirable behaviours to such extremes that they are seen as dogmatic or talking too much. This barrier can be overcome if we continue to explain and demonstrate the value of diversity of thinking and approaches in management teams.

The fourth "barrier" is that many organisations do not have family friendly staffing policies. These policies should:

- recognise that women need to work from home occasionally because of their greater caring responsibilities in most families;
- allow staff members to work part-time hours (eg. school hours);
- provide for carer's leave in situations of family illness; and
- easy access to child care facilities (perhaps in the same building).

4. Women in ISI

Turning now to be ISI, women are under-represented by several measuring sticks. Only 9% of ISI members are women. This is considerably lower than the Sections even though it appears that women are also under-represented in the Sections. The percentage of women ISI members is also considerably less than the percentage of women in the national statistical associations with which I am familiar.

I suspect it is not a problem of positive discrimination. At least, I have not observed that although, because I am a male, I am not in a good position to do so. There is likely to be a more subtle form of discrimination. ISI is dominated by males and statisticians of the same sex tend to more frequently associate with each other. As a consequence, women statisticians may not be sufficiently well known by male ISI members and therefore not being nominated in sufficiently large numbers for ISI membership or participation in other ISI activities. Males may inadvertently be gatekeepers preventing increased membership of women in the ISI.

ISI needs to actively seek more women members by:

- (a) looking for potential members in the Sections;
- (b) looking at senior women in national statistical associations; and
- (c) developing a country network of "women sympathetic" ISI members with the specific task of identifying potential women members.

Please note that the country network could include males who are actively promoting diversity. Indeed, there may be distinct advantages in having diversity in such a network.

The ISI could also adopt more family friendly policies by arranging childcare facilities at their ISI Sessions. This should increase the participation of women with children at the ISI Sessions. These facilities don't necessarily have to be subsidised. It would be a valuable service to simply provide ready access to a quality service in an unfamiliar country.

5. Conclusion

Increasing the participation of women in statistics does matter. We can and should do more to increase the participation of women in statistics. The profession will certainly benefit from the increased diversity. In fact, it risks becoming a group of modern time dinosaurs if it doesn't. The emerging statistical questions facing official statistical agencies (eg health, alternative working arrangements, environment and various social cohesion issues) are those where women have a better understanding of the context. However, we must expect evolution rather than revolution, but it will not happen if we sit on our hands and simply wait. I hope this meeting can agree about what we should do about the problem rather than simply discuss the problem itself.

6. Acknowledgment

My thanks to Len Cook, Government Statistician who has made many helpful suggestions which I will use in my presentation as well as in this paper.

7. Summary

This paper briefly outlines the reasons it is important to increase the participation of women in statistics. It describes the barriers to increased participation and how that might be overcome. It concludes with some suggestions with how the ISI might increase the participation of women in its own activities.

Cet article donne un aperçu bref de l'importance d'augmenter la participation des femmes dans la statistique. Il décrit les barrières à l'augmentation de cette participation et comment les surmonter. A la fin il ya quelques idées sur l'encouragement de la participation des femmes dans les activités de l'ISI.