Athena SWAN in Higher Education Sector - a Built Environment Perspective

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Abstract
Higher education tends to recognise gender equality in terms of representation, progression and success for students and staff. Athena SWAN is a Charter which addresses gender equality. This paper is based on critical review of literature and secondary data analysis. A thorough literature review explores the best practices adopted by Universities in UK who were awarded Gold, Silver and Bronze. In doing so, 39 Universities were identified from the CHOBE members (Council of Heads of the Built Environment Heads of Department of Construction, Property and Surveying) in the year 2017 who have built environment students and staff. The results revealed that none of the Universities had gold award of Athena SWAN whereas 26 Universities had bronze awards. From the secondary data analysis of three years data from Equality in higher education, statistical reports on student and staff shows areas of concern for built environment where the female percent of student and staff are in the lower end of the spectrum. Therefore, initiatives and lessons learnt from other successful awarded Universities will be discussed in this paper so that awareness and adoption of the best practices by the built environment sector is encouraged.

Keywords: Athena SWAN, built environment, and gender equality

1. Introduction

Currently, there are about 27 million people employed in UK, with an almost even split of 50:50 ratio of 13.6 million men and 13.3 million women (Schouten, 2017). When looking into the built environment and in particularly construction industry, out of the 27 million employed populations, only 2.3 million works under the sector with only 296,000 occupied by women, making an unbalanced 87:13 split with the men (ONS, 2018). This shows that the construction sector is still a “male” dominated occupation. According to ONS figures (CITB, 2016), an additional million workers are required by 2020 to meet the demands of talent shortage in the industry; 200,000 new graduates recruitments plus 830,000 professionals to replace due to aging generation and changing demographic. This proves that the built environment is in desperate need to fill the talent void. Women are seen and said to help fill this void but acknowledging the barriers for said gender are usually forgotten thus making to achieve this solution a lot more complicated.

However, initiatives such as: WISE, The Big bang fair, Women’s Engineering Society (WES), National Association of Women in Construction (NAWIC) and Athena SWAN are evident in the UK to encourage women into the sector. The built environment also has the ‘Women in Construction Awards’ (Women in Construction Awards, 2016) and the ‘WICE Awards’ which recognises the success and achievements of women in the built environment. The Equality Challenge Unit (ECU) established Athena SWAN Charter in 2005. This was to encourage

and recognise commitment to advancing the careers of women in science, technology, engineering, maths and medicine (STEMM) employment in higher education and research. This paper explores the best practices adopted by Universities in UK. Furthermore, the paper discusses global perspective of women in higher education followed by methodology, data analysis and results.

2. Women in higher education

Women academics experiencing gender discrimination in terms of hiring, promotion and acceptance by scholarly journals has been observed around the world, even in developed economies where gender equality has been championed for decades. While in accordance with national laws and EU directives, current management approaches in universities in the Netherlands, Sweden and the UK for example actually re-emphasise the existing quo in various ways and enable more subtle forms of discrimination despite the existence of a veneer of equality (Teelken and Deem, 2013). Metz and Kulik (2014) describes women's advancement as a 'rocky climb' involving a great deal of effort relative to the amount of upward progression and with significant backsliding. They surmise that women's advancement is impeded by both traditional and modern barriers. In Nigeria, South Africa, Sri Lanka, Tanzania and Uganda, Morley (2006) found social practices and gendered power relations symbolically and materially construct and regulate women's everyday experiences of higher education. Modern barriers include 'gender fatigue' (Metz and Kulik, 2014). In Portugal, Carvalho and de Lurdes Machado (2010) questioned whether senior academic managers still reproduce the traditional stereotypes of managerial styles of women and men.

In terms of hiring, it was found that there is a prevalence of women among casual and fixed-term academic workers in Australian universities (Wilson *et al*., 2010). In Sweden, women are awarded 44 percent of biomedical PhDs but hold a mere 25 percent of the postdoctoral positions (Wold and Wenneras, 2010). Academic recruitment and selection processes in the Netherlands are characterised by bounded transparency and limited accountability at best as they are overwhelmed by micropolitics and gender practices (Van den Brink *et al*., 2010).

As for promotion, Australia records low numbers of women in senior academic positions (Wilson et al., 2010). The same applies to the Scandinavian countries of Denmark, Norway and Sweden (Seierstad and Healy, 2012). In Finland, the filling of professorships which is by invitation rather than open competition is said to discriminate against women (Husu, 2000). In Italy, female candidates for promotion to full professor are less likely to be promoted when the committee is composed exclusively of males (De Paola and Scoppa, 2015).

Promotion discrimination also affects manager-academics. In the UK, fewer women reach the higher ranks of manager-academic positions which can be attributed to continuing prejudice against them (Deem, 2003). In an eight-country study covering Australia, Ireland, New Zealand, Portugal, South Africa, Sweden, Turkey and the United Kingdom, it was found that roles within higher education senior management tend to be gendered (Bagilhole and White, 2011). The conclusion is that the traditional male academic career model continues to be considered the only path into senior management. In Australia, women experience discrimination in their role as manager-academics (White and Özlem, 2010).

Even in scholastic authorship, West *et al*. (2013) detect subtle gender inequalities. From their large scale analysis based on over eight million papers across the natural sciences, social sciences, and humanities, they found that in certain fields, men predominate in the prestigious first author positions. Additionally, women are significantly under-represented as authors of single authored papers.

Policy to increase women's share among university professors was found to have an impact on the reduction of the glass ceiling in the Netherlands (Timmers *et al*., 2010). In the United States, Monroe and Chiu (2010) observe that merely increasing the pool of qualified women has not led to a commensurate number of women rising to the top in academia. They recommend more aggressive policies to end discrimination.

"A key reason for this increased occupational gender segregation was that, with the repeal of the statute in 1814, any regulation rested with the early trade unions and masters associations, which tended to rely on custom and practice, including in the control over entry into the trades through apprenticeship, from which women were excluded" (The Smith Institute, 2016, pg 14).

The statement above refers to the situation in the UK where the exclusion of women in the industry between 1841 and 1861 where women dominated "female" jobs such as dressmakers and ribbon-makers because males were more accepted to do "male" jobs such as bricklayers, painters, masons and etc. Looking into recent data, gender inequality is still occurring, referring to previously mentioned articles by The Smith institute (2016), Randstad (2016), Schouten (2017) and more. Moris (2017) reported that the official statistics published by the UK government regarding the creative industries, like architecture and design, are experiencing a growth in women employees. However, he also mentioned that despite the gap slimming, the gender diversity is still lacking in the industry as a whole. The imbalance can be seen with the ratio mentioned previously 13:87 women to men respectively (CITB, 2016). The underrepresentation of women in STEMM fields has not gone unnoticed. For more than two decades, a range of programs have been developed to provide additional support to women in STEMM to move through the 'pipeline' (for example: ADVANCE in the US; Athena SWAN in the UK and Australia).

ECU (2018a) states what Athena SWAN is and its 10 key principles.

1. We acknowledge that academia cannot reach its full potential unless it can benefit from the talents of all.

2. We commit to advancing gender equality in academia, in particular, addressing the loss of women across the career pipeline and the absence of women from senior academic, professional and support roles.

3. We commit to addressing unequal gender representation across academic disciplines and professional and support functions. In this we recognise disciplinary differences, including:

• the relative underrepresentation of women in senior roles in arts, humanities, social sciences, business and law;

• the particularly high loss rate of women in science, technology, engineering, mathematics and medicine.

4. We commit to tackling the gender pay gap.

5. We commit to removing the obstacles faced by women, in particular, at major points of career development and progression including the transition from PhD into a sustainable academic career.

6. We commit to addressing the negative consequences of using short term contracts for the retention and progression of staff in academia, particularly women.

7. We commit to tackling the discriminatory treatment often experienced by transgender people.

8. We acknowledge that advancing gender equality demands commitment and action from all levels of the organisation and in particular active leadership from those in senior roles.

9. We commit to making and mainstreaming sustainable structural and cultural changes to advance gender equality, recognising that initiatives and actions that support individuals alone will not sufficiently advance equality.

10. All individuals have identities shaped by several different factors. We commit to considering the intersection of gender and other factors wherever possible.

Higher educations should demonstrate how the above principles are embedded in their respective organisations through an application form for an award. There are three levels of awards (Bronze, Silver and Gold), for which member institutions and departments within these institutions can apply. An entry-level Bronze institution award requires an assessment of gender equality, a 4-year action plan, and an organisational structure to implement the proposed actions. Department awards recognise that, in addition to institution-wide policies and actions, the department has identified particular challenges and is planning activities for the future. A Silver department award recognises that the department has successfully implemented the previously proposed actions and can demonstrate their impact. Peer review panels (comprised of academics, human resources or equality and diversity practitioners, and subject specialists) assess applications, make recommendations on awards, and provide applicants with constructive feedback. As more information on the effectiveness and impact of the Athena SWAN Charter becomes available, its membership is growing in the United Kingdom and expanding to other countries, such as Ireland and Australia (Ovseiko *et al* 2017). As of September 2018, there were 145 Athena SWAN members in the United Kingdom, holding 731 awards between them, and 28 Athena SWAN members in Ireland, holding seven awards between them (ECU 2018a). In Australia, a total of 40 institutions – including 30 of 43 Australian universities, six medical research institutes, and four government science organisations – are working towards an Athena SWAN Bronze institution award as part of the Science in Australia Gender Equity (SAGE) pilot run by the Australian Academy of Science in partnership with the Academy of Technology and Engineering (Ovseiko *et al* 2017).

3. Methodology

The starting point was to search for the keyword Athena SWAN in the organisation library database. This database has subscribed resources to enormous publications which include e-books, journals, conference proceeding, newspapers etc. This resulted in 983 results. Thereafter, the keyword of "built environment" was added and there were 4 results. Two of the four was from Guardian Education pages in the year 2014 and an article in 2017 about leadership in STEMM followed by a journal article in 2016. When investigated further they have mentioned Athena SWAN but not in the context in built environment sector. Therefore, 40 Universities were identified from the CHOBE members (Council of Heads of the Built Environment Heads of Department of Construction, Property and Surveying) in the year 2017 who have built environment students and staff. Later this was mapped with the Athena SWAN level of outcomes. Also explored the best practices adopted by Universities in UK who were awarded Gold, Silver and Bronze.

4. Results

The Athena SWAN looks into both the student and staff data so that the key principle of the Athena SWAN charter is embedded through innovative initiatives. Three years of student and staff data from ECU has been extracted from the ECU Equality in higher education: statistical report and presented in Table 1. This shows the percentages of female staff and students of architecture, built environment and planning which is considered as the built environment sector. A mean value of 36% female students and 33% staff were revealed. The staff comprised of Professors, non-professors, senior manager and other academics. The students are from undergraduate and postgraduate both taught and research.

Table 1: Percentages of female staff and students in UK HE Architecture, built environment and planning sector

Acad. year	Female staff	Students
2015/16	33.7	37
2014/15	32.7	36
2013/14	32.2	35
Mean value	32.8	36

Sources: Equality in higher education: Statistical reports 2013, 2014, 2015 and 2016 (Staff and student data. https://www.ecu.ac.uk/publications/equality-in-higher-education-statistical-report-/)

Council of Heads of the Built Environment Heads of Department of Construction, Property and Surveying (CHOBE) vision and objectives are: We support and represent with a voice of influence those with strategic responsibility for the development and delivery of graduate and postgraduate education and research within the disciplines of construction, property and surveying. Their mission is "To support and represent with a voice of influence those with strategic responsibility for the development and delivery of graduate and postgraduate education and research within the disciplines of construction, property and surveying." Universities in the UK who deliver built environment courses are members of CHOBE. 39 Universities were members as of the year 2017. Investigation was carried out to identify how

many universities have Athena SWAN awards at department and university level. At the University level it is shown in Table 2 that most of them have Bronze Athena SWAN Award with only one University having Silver. However, it is interesting to note that in the Departmental award, ten of them have bronze and only one department has received Silver. University College London has a University silver award but bronze department award whereas University of Reading has a bronze University award and Silver department award.

Table 2: COHBE Universities and their Athena SWAN status

University **Award**	1. University of Loughborough Bronze
2. Anglia Ruskin University Bronze	3. University of Manchester Bronze
4. Bath University Bronze	5. Northumbria University Bronze
6. Birmingham City University Bronze	7. Nottingham Trent University Member
8. University of Bolton member	9. Oxford Brookes University Bronze
10. University of Brighton Bronze	11. University of Plymouth Bronze
12. University of Central Lancashire Bronze	13. University of Portsmouth Bronze
14. Royal Agricultural University No	15. University of Reading Bronze
16. City University London Member	17. Robert Gordon University Member
18. University College of Estate Management No	19. University of Salford Bronze
20. University of Coventry Bronze	21. Sheffield Hallam University Bronze
22. University of Derby Member	23. Southampton Solent University No
24. Dublin Institute of Technology No	25. Teesside University Member
26. Glasgow Caledonian University Bronze	27. University of South Wales Bronze
28. University of Greenwich Bronze	29. University College London Silver
30. Heriot Watt University Bronze	31. University of Ulster Bronze
32. Huddersfield University Bronze	33. University of the West of England Bronze
34. Kingston University Bronze	35. University of Westminster Bronze
36. Leeds Beckett University Member	37. University of Wolverhampton Bronze
38. Liverpool John Moores University Bronze	39. London Southbank University Member

Work done by Ovesiko et al (2017) was grouped into four major themes and nine sub-themes (Figure 1) the study explored a range of experiences and perceptions of participation in Athena SWAN in medical science departments at one research-intensive university in Oxford, United Kingdom.

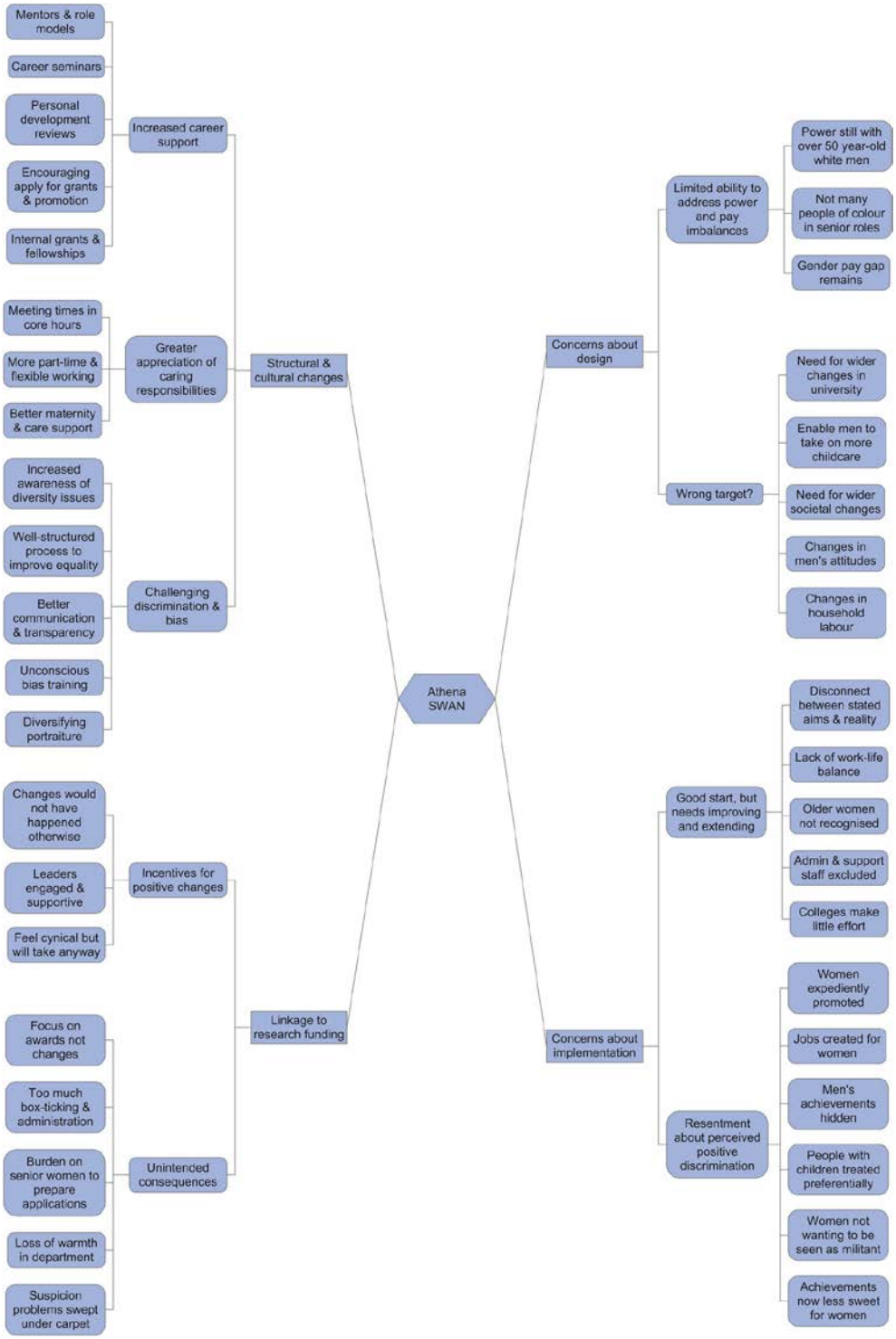

Figure 1: Major themes and sub themes

ECU (2018b) provides fifth Research Insight on the gender pay gap by using the public pay gap statements from 122 English higher education institutions (HEIs) to identify the most

frequently mentioned gender equality initiatives currently operating in English HEIs and their association with institutional size, mission group and Athena SWAN participation. Out of the 88 initiatives identified in the narratives, the actions that HEIs mentioned most frequently centred on flexible working options, leadership training and mentoring and unconscious bias training for staff. Additional comparisons revealed that specific HEIs were more likely to mention having unconscious bias training in place. However, for the most part, the types of actions an institution has implemented to help mitigate their gender pay gap tended to be unrelated to their total number of staff, mission group and Athena SWAN participation.

Furthermore, an analysis of 50 best practices was done (ECU 2018a). The best practice in the area of staff involved are: recruitment and promotion gender balance, culture gender balance, Work/life balance flexible working culture, career development, career breaks, accommodating caring responsibilities. Post graduate research student's initiatives involve: Career breaks, career development, recruitment, career development culture. UG and PG student's initiatives are: student recruitment, work/life balance accommodating caring responsibilities, gender balance culture.

The findings provide a valuable starting point to investigate further and address the concerns of women and men about Athena SWAN initiatives and their implementation in the built environment department context. Comparative research into convergence and divergence of Athena SWAN implementation across different built environment institutions may illuminate the effects of different approaches to Athena SWAN. Sustainability of the perceived positive changes in the post-award period is also a key aspect of Athena SWAN that would benefit from comparative research into Athena SWAN implementation. Despite the competitive relationships between higher education and research institutions, an Athena SWAN community of practice is developing to share good practice across institutional boundaries. The limited ability of Athena SWAN to address longstanding and entrenched power and pay imbalances may require a different approach and a longer-term view may be needed to address such imbalances. Different institutions may have different approaches to distributing the administrative burden of Athena SWAN work between women and men as well as different recognition and reward systems for their contribution to Athena SWAN initiatives, with implications for career advancement.

5. Conclusions

This paper provides insight into women in higher education and the role Athena SWAN plays. The key principles of Athena SWAN are: diversity in academia; retention and progression of women in academia; unequal representation; gender pay gap; obstacles at major points of career; short-term contracts; trans people; changes through active leadership; mainstreaming changes to all; and intersectionality. Both the findings from this study and insights from wider social science literature suggest that there may be limits to how much Athena SWAN can improve gender equality without wider institutional and societal changes. To address the fundamental causes of gender inequality would require cultural change. The findings make an original contribution to the emerging literature on gender equality schemes by extending the existing evidence base and drawing implications for practice and research. Furthermore, it raises awareness for built environment departments in the UK Universities and provides pathway for implementing initiatives related to Athena SWAN principles.

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