Qualitative Data Gathering: Ethnic Minorities and Socio-Economically Disadvantaged Groups in Engineering

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AIM AND OBJECTIVES

Aim
Develop a better understanding of the issues and challenges faced by ethnic minority people and those from socio-economically disadvantaged backgrounds in engineering as a profession.

Objectives
• Increase understanding of barriers to participation for those from BME and SED backgrounds
• Understand the information key stakeholders would find useful
• Identify key themes to act as a catalyst to increasing diversity
• Identify options to remove barriers for the two groups
BACKGROUND AND CONTEXT

• Negative perceptions and invisibility of engineering (FreshMinds, 2010)
• Diversity crucial to innovation and creativity (Özbilgin and Tatli 2011; EIMD, 2013)
• Business case for widening access to the profession (Castle, 2013; Royal Academy of Engineering, 2013)
• 20% BME eng grads / 6% in eng employment (EngineeringUK, 2013)
• SED group underrepresented in professions generally (Milburn, 2012)
• Disparity between employers’ stated and realised equality and diversity objectives
• Discrepancy between the aspirations of those from BME and SED groups and their experiences in the engineering sector
RESEARCH DESIGN

Qualitative approach

• 17 scoping interviews
  – Engineering employers, Social enterprises, Engineering institutions, Other engineering bodies

• Focus groups and interviews
  – 12 focus groups (75 individuals)
  – 65 one-to-one individual interviews

• Reach - London and the South East of England, the Midlands, and the North of England

• Sample - Engineers, engineering students and apprentice engineers.
**RECURRENT ISSUES**

- **Negative perceptions of engineering**

  *I thought it was the guy who goes into the schools to fix stuff. I never thought engineers designed buildings or stuff like that* (White Male Apprentice Engineer – Leeds)

- **Non-existent, limited or poor careers advice**

  *We went to careers and they asked me what I wanted to do and I said I wanted to work outside and one of the officers said “What about working on the bins?”, so with that, my parents and myself just walked out* (Interviewee 48 – White Male Engineer)

- **Perceived lack of school expertise in feeder subjects**

  *I like Maths, we have a good tutor, but in school I just hated it, they show one thing on the board and then move on, but now we are learning it* (BME Apprentice Engineer – London)
KEY FINDINGS: THEMES

1. Impact of BME and SED parents on career choice
2. Initiatives and priorities of schools
3. Policies and practices of engineering employers
4. The qualification process
5. Obscurity of ethnic and class diversity in engineering
6. Fragmentation of diversity initiatives
1. IMPACT OF BME AND SED PARENTS ON CAREER CHOICE

- **BME lack of role models – career direction shaped primarily by parents**
  
  So within, like, my family and culture, everyone wants to know what everyone else's children are doing and my parents will be like “engineering”? It has to be law or medicine. You have to be smart and this is what they want you to do (Interviewee 57 - BME Female Engineer)

- **SED lack of role models and parental knowledge on professional careers**
  
  I saw my [own] situation and also people you saw… well they did not come from the same background as me, council estate, they came from good backgrounds (Interviewee 3 - White Female Engineer)
2. INITIATIVES AND PRIORITIES OF SCHOOLS

• **Engineering discouraged**

  *It was in a state school [my brother] said the teacher there used to threaten them “if you don’t do well in your exams, you are going to have to go work with [engineering company name]” and that was the threat she gave to the class that if they did not do well, they would end up in engineering* (Interviewee 23 – White Male Engineer)

• **Focus on academic route and league tables**

  *When my brother said he would go into [apprenticeship], the school wrote to my parents like “it’s a bit of a tragedy really; he’s a very bright boy. What a shame that he just wants to go into industry” and that certainly was the attitude* (Interviewee 23 – White Male Engineer)
Some evidence of good practice, however:

• **Working with exclusive schools**

  Some companies select the schools they go to. There was a school that was literally five minutes away from the work place but it was not a work placement school and that is because they thought it was a rubbish school, that's the way it works and some of the young people there I know are capable but don’t have the opportunity (Interviewee 54 – BME Female Engineer)

• **Budget cuts to school engagement**

  The main issue of getting kids into engineering is that schools don’t teach it and the second part is that a lot of engineering companies have no budget to go into schools. It happened when the schemes were there and the engineering companies were falling over themselves to get into schools (Interviewee 4 – BME Male Engineer)
3. POLICIES AND PRACTICES OF ENGINEERING EMPLOYERS

Graduate recruitment practices

- ‘Milk rounds’ focus on Russell Group Universities

- A scoping interviewee –
  
  *Employers not only recruiting from five to six particular universities but have target numbers for each*

- Practices framed around ‘meritocracy’ and the desire to employ the ‘best’
  
  *The standards, the criteria that we set for people to come into the organisation, are really high. We’ve always been acutely aware of that so typically someone coming to join us as a software engineer, we would be looking for: number one - a graduate; number two - a graduate who really has only straight ‘A’s throughout their academic background. So these are our main criteria (Scoping Interviewee 11 – Employer)*
3. POLICIES AND PRACTICES OF ENGINEERING EMPLOYERS
Internships and work experience

• **Reluctance to provide such experience**

> It was not easy. Organisations are not willing to take a student. It was very difficult, I spent days and nights. Even before the start of the summer, I started looking for organisations who can do paid employment and just summer (Interviewee 8 – BME Female Engineer)

• **Lack of transparency**

> Where I used to work, there was not an official internship scheme, but every summer you would see four or five 15 to 16 year olds coming to do a work experience and it was very informal where you would just speak to HR and say “my friend's son is coming in for two or three weeks” (Interviewee 55 – BME Male Engineer)

> I see lots of trainees coming through, none of them are black …in terms of career engineering, I have not seen any but all these companies do it (Interviewee 11 – BME Male Engineer)
Apprentices from the Liverpool focus group benefitted from this practice:

I got a job because of my mum and dad, the company they are in and it just kind of rolled over into that and into an apprenticeship. My dad was a project manager for [the company] and my mum was the receptionist, so I just got it that way (White Male Apprentice – Liverpool)

My dad is a mechanical engineer and he was one of the managers on the site, so he spoke to the people there and they needed help, so I started working with them and it was more mechanical that I was doing, but I got shown some of the civil stuff (White Male Apprentice – Liverpool)

The opportunity came up because my dad plays for a football team and one of his mates worked at [the company] and my dad asked him to let him know if any opportunities came up and one did and I didn’t want to throw it away so I took it (White Male Apprentice – Liverpool)
3. POLICIES AND PRACTICES OF ENGINEERING EMPLOYERS

Exclusionary Organisational Cultures

- **Non-English names**
  
  *I know an engineer and she has an English name and a German name and she gets to the interview and people are surprised that it's a black woman and she has had really awful experiences of phone interviews and then people reacting to her because she is Black* (Interviewee 58 – BME Female Engineer)

- **“She will not be able to communicate”**
  
  *I was talking to a recruiting agency that said “Your name, some people look at your name, oh [foreign sounding surname], oh she will not be able to communicate or socialise” because in engineering you have to be able to socialise as well* (Interviewee 20 – BME Female Engineer)

- **“Keep it British”**
  
  *I was born in London but …we moved, so for a while I had two nationalities and I would put it on a CV and my dad said “No, keep it British” and I thought it was unusual but he was saying it from experience* (Interviewee 57 – BME Female Engineer)
3. POLICIES AND PRACTICES OF ENGINEERING EMPLOYERS

Exclusionary Organisational Cultures

- **Moving the goal posts**
  
  After graduating...when I applied to various jobs...each time they said I did not have enough practical experience. So I went somewhere to get my experience...I came back and said “Right, I want to work in this organisation because I think I have the experience” and it was still the same response (Interviewee 53 – BME Female Engineer)

- **When the face doesn’t ‘fit’**
  
  At that time it was like everyone looked at me, oh engineer, black person but if you go on the shop floor, there are black technicians (Interviewee 10 – BME Male Engineer)

  [Where] I started all the engineers were dressed in suits and ties. We had a call [for an engineer] and this woman said “leave the tray outside” and I said “I am not here to scrub the floors” and she reported me for being rude (Interviewee 4 – BME Male Engineer)
3. POLICIES AND PRACTICES OF ENGINEERING EMPLOYERS
Exclusionary Organisational Cultures

• **Ethnocentric image of the archetypal ‘professional’**

   *It is about risk, it’s about accent, it is about dress code, it’s all these things, the idea that “you are or you are not what our clients expect and if you are not what our clients expect then I couldn’t put you in front of our clients”* (Scoping Interviewee 2 – Social Enterprise)

   *I have four equity partners, two of them come from high stakes background… I bang on the door for promotion and whether it is the language that I use or the manner, there is that little bit of a barrier there* (Interviewee 1 – White Male Engineer)

   *My friend had long dreadlocks, and he worked on the factory floor. He went to do a mechanical engineering degree. He wanted to move into an office-based job…and before the interview he cut off his dreadlocks and he got the job and after that he asked the manager, “Would you have offered me the job if I had my dreadlocks? “ and the manager said he would not have gotten the job. He wanted people to look the part* (Interviewee 11 – BME Male Engineer)
4. THE QUALIFICATION PROCESS

- A lack of clarity in the routes to professional qualification

- A lengthy and involved professional registration process

- Apprenticeship route was often seen by schools, parents and young people to have a lower status to the academic route

  *I came home and said to my dad “I want to do an apprenticeship in electrical engineering” and he said “you don’t want to do an apprenticeship that is what people do when they fail their GCSEs”. So even my dad had that perception* (White Male Apprentice – Leeds)
5. OBSCURITY OF ETHNIC AND CLASS DIVERSITY IN ENGINEERING

- Global firms’ focus on international recruitment obscures the lack of ‘home grown’ talent

- Engineering employers tend to see diversity primarily in terms of gender equality

- ‘Silence’ about class, particularly in consulting firms
  Some ‘working class’ engineers who had progressed to senior positions spoke of how their backgrounds and/or accents had been negatively perceived by others. As such there was a tendency to try and hide their backgrounds and hence class, in general, failed to reach the diversity agenda.

- Lack of an understanding of the rationale for pursuing diversity

- Tendency to externalise the problem of lack of ethnic/class diversity
6. FRAGMENTATION OF DIVERSITY INITIATIVES

- Failure to partner and co-operate to address lack of ethnic and class diversity in the sector

- Little communication of good practice in promoting diversity between the different PEIs.

- Limited communication between PEIs and employers.
RECOMMENDATIONS

• Schools need to work with engineering employers and PEIs to promote engineering as a profession

• Careers services need to be knowledgeable about the variety of disciplines in engineering

• Value and promote different routes to qualification, particularly in the light of the Government’s renewed interest in apprenticeships

• Clarify diverse routes into profession

• Promote and support the apprenticeship route to professional registration
RECOMMENDATIONS

• Reach out to the community and parents
  
  *The communities themselves have a negative opinion of it so you have to do a lot of enlightening of the communities rather than just the students…the parents should be hearing about it too* (Interviewee 7 – BME Female Engineering Student)

• Marketing initiatives must have relevance for the particular communities
  
  e.g. Highlight links between specific communities and local engineering structures or engineers

• Involve existing employees in the design and delivery of initiatives
  
  *I think 13 or 14 is a better age to start and I would really like to get to those people. I certainly want to get into the careers fair at the school* (Interviewee 1 – White Male Engineer)
RECOMMENDATIONS

• Engage with a broader range of schools and universities

• Provide transparent and relevant work experience opportunities
  – Robust and sustained engagement with the communities in which they live.
  – Find innovative ways of communicating existence of opportunities

• Recruitment and selection
  – Broaden recruitment channels
  When you look at Metro, working class people may read that more, a different audience. If you put more black or minority faces there…they find out that this employer is quite supportive; I think that is one of the ways (Interviewee 8 – BME Female Engineer)
  – Fair and equitable selection (mixed selection panels)
  – Properly trained selectors – internal processes and cultural awareness training
• **Retention strategies**

*Once someone is in here, we have employee resource groups and I am part of one. They are sort of networks, I am part of a network and one thing we look at is helping [the company] maintain the diversity within the company, so asking members about their development, letting them know about courses that they are unaware of to help them progress in their career* (Interviewee 30 – Mixed Race Male Engineer)

• **Training**
  – identify and develop talented employees from under-represented groups
  – develop cultural intelligence
RECOMMENDATIONS

• Partnerships and co-operation
  – Support the work of social enterprises and charities
  – Work with specialist recruitment agencies
  – Partnering with Professional Engineering Institutions and other employers

• Collect and analyse statistical data on different strands of equality protected characteristics

• Identify and appoint diversity champions at the highest level in the organisation and PEIs
Discussion