

Beating bias: Facing gender equality in the built environment sector through the support of technology

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BEATING BIAS: FACING GENDER EQUALITY IN THE BUILT ENVIRONMENT SECTOR THROUGH THE SUPPORT OF TECHNOLOGY

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The INSTINCT ('Inhibiting Stress in the Construction Industry')
Project – in its final stage

CONTENT

- Introduction
- Brief literature review
- Problem, aim, objectives
- Methodology
- Results
- Conclusions

INTRODUCTION

- The difference between males and females that are pursuing a career in Construction in most European countries is quite disproportionate: male dominated (@ 90-92%)
- The Construction Industry (CI) in the UK employs approximately 2.1 million people,
 - its employment gender gap is one of the highest

PSYCHOLOGICAL DIMENSIONS (LITERATURE)

Stereotype perceptions (biases) against women in the CI

1. Implicit Personality Theory
2. Social Cognitive theory

A RESEARCH IN THE UK

- Aim: study the development of stress among construction (male and female) workers and how they cope with it

Objectives include:

- The impact of job roles on stress
- The development of an App to deter stress

OVERARCHING RESEARCH METHOD

- Mixed-methods
- Ethnography including interviews & Content analysis – the basis of today's presentation
- Questionnaire survey & Correlation (type) analysis

RESEARCH METHOD: THIS PRESENTATION

- The ethnographic study – 6 months
- 3 Construction organisations
- Observations, field notes, two-prong (unstructured and semi-structured) interviews and colloquial discussions.

OBSERVED / INTERVIEWED

| Gender | Number | Percentage |
|--------------------------|---------------|-------------------|
| Males | 42 | 93.33% |
| Females (interviewed) | 3 | 6.67% |
| Females (observed) | 4 | 8.89% |

DATA ANALYSIS

- Content analysis - Conceptual
- Critical and cross-evaluation of field notes

RESULTS

| Activity observed (3 out of 19: 15.8%) | Performed by | |
|--|--------------|---------|
| | Males | Females |
| Review of documents | ✓ | ✓ |
| Contacts with occupiers/tenants | ✓ | ✓ |
| Painting | ✓ | ✓ |

SOURCE: RIVA, CHINYIO & HAMPTON: FRONT. PSYCHOL., 15 JANUARY 2019
[HTTPS://DOI.ORG/10.3389/FPSYG.2018.02472](https://doi.org/10.3389/fpsyg.2018.02472)

Results: Activity observed - Performed by Males only

(SOURCE: Riva, Chinyio & Hampton: Front. Psychol., 15 January 2019 <https://doi.org/10.3389/fpsyg.2018.02472>)

| | | |
|----------------------------|---|--------------------|
| Contracts | Concrete slabs | Insulation |
| Bids & contracts | Heating, ventilation and air conditioning | Drywalling |
| Grading & building permits | Plumbing work | Floor finishes |
| Site work | Electrical work | Final walk-through |
| Foundation | Roofing | |
| Rough carpentry | Exterior finishes | |

RESULTS SEEM TO CONFIRM:

- The gender gap persists
- Male~Female role differentiation
- More efforts needed to bridge the gap

WHAT TO DO? TECHNOLOGY MAY HELP

- Tools, devices can be used by both men and women
- Monitoring work activities remotely (gender equally distributed)
 - Drones
 - Virtual reality
- Robotics

Technology may inform new policies for gender equalities @ work

WHAT TO DO? POLICY LEVEL

- Promoting policies of gender equality in the workplace.



- Cognitive psychological research suggests that many biases disappear when people work and cooperate with each other.
- Promoting actions in this direction may help to reduce the gender gap in the CI.

WHAT TO DO? POLICY MAY RECOMMEND

- Job rotation may also facilitate a more gender-balanced CI environment



different job assignments for broader work experience,
leading to future managerial positions for both males and
females

WHAT TO DO? POLICY MAY RECOMMEND

- “job crafting,” promotes more equal opportunities for men and women



specific proactive behaviors in which employees initiate changes in the levels of job demands and resources

Job crafting provides a proactive coping mechanism for reducing stress and burnout, and appears to be new in the CI

WHAT TO DO? POLICY MAY RECOMMEND

- “nudging” is “any factor that significantly alters the behavior of humans”



Nudges can change organizational practices and the way people are hired, promote employees in different ways and create a more equal playing field for men and women. For example, the human resources departments of CI organizations could set a nudging “default option” of prioritizing the recruitment of women whenever the percentage of their male employees disproportionately exceeds a certain threshold.

CONCLUSION

- Need to increase social communication and public campaigns on gender equalities
- Changing of stereotype mind-sets can start from school age
- To factor-in the cognitive processes behind gender differences
- Can use Cognitive Psychology to bridge the wide gender gaps in construction

REFERENCES

- Bandura, A., (1986). *Social foundations of thought and action: a social cognitive theory*, Englewood Cliffs, N.J.: Prentice-Hall.
- Bussey, K., and Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, 106(4), 676. <http://dx.doi.org/10.1037/0033-295X.88.4>.
- Clarke, L., Michielsens, E., Snijders, S., & Wall, C. (2015). *No more softly, softly: review of women in the construction workforce*. Westminster, UK: ProBE Publication.
- Leaper, C. (2015). *Gender and Social-Cognitive Development. Handbook of child psychology and developmental science*, Hoboken, NJ, US: John Wiley & Sons.
- Lent, R.W., Brown, S. D., & Hackett, G. (2002). Social cognitive career theory. *Career Choice and Development*, 4, 255-311.
- Rhodes, C. (2015). Construction industry: Statistics and policy (Briefing Paper: Nor. 01432). House of Commons Library. Available online at www.parliament.uk/briefing-papers/sn01432. pdf. (Accessed on 12/07/2016).
- Schneider, D.J. (1973). Implicit personality theory: A review. *Psychological Bulletin*, 79(5), 294. <http://dx.doi.org/10.1037/h0034496>
- Schunk D.H. (1989) Social Cognitive Theory and Self-Regulated Learning. In: Zimmerman B.J., Schunk D.H. (Eds.) *Self-Regulated Learning and Academic Achievement*. New York, NY: Springer.
- Stoet, G., and Geary, D. C. (2018). The gender-equality paradox in science, technology, engineering, and mathematics education. *Psychological science*, 29(4): 581-593.