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THE RETENTION OF WOMEN IN THE UK
CONSTRUCTION INDUSTRY.

BY

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Dissertation Submission Checklist

Items that need to be included	Tick to show that they are included
Coursework submission CASPA Sheet available from http://caspa.lboro.ac.uk/	✓
Word count - please state the final word count here:	17,499
A full list of correctly formatted references	✓
Include the following in the <u>appendices</u> to the dissertation:	
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Abstract

Despite the increasing supply of female graduates from construction related degrees almost in parity with the number of males from the focus on retention, there is still a lack of women represented in the construction workforce upon graduation which are retained. It has been found there is a high drop-out rate in the first few years for young women in the construction industry. There has been increasing awareness on the issue of the low number of female construction professionals and numerous initiatives have been introduced to encourage representation. This dissertation highlights the initiatives and policies in place which aid the retention of early stage women in construction. Significant contributors to the retention of early stage women included mentoring, flexible working and training which increased motivation to remain in the industry, but the culture was a significant barrier to retention. The findings from a qualitative approach enabled recommendations for improving the retention of early stage women, which could be applied to all types of companies in the construction industry.

Keywords Female, Graduate, Initiatives, Policy, Construction Industry, Retention, Early Stage.

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List of Abbreviations

RICS	Royal Institute of Chartered Surveyors
ICE	The Institution of Civil Engineers
CIOB	The Chartered Institute of Building
RIBA	Royal Institute of British Architects
CITB	Construction Industry Training Board
WISE	Women into Science and Engineering
CCS	Considerate Constructors Scheme
CLC	Construction Leadership Council
CIPD	The Chartered Institute of Personnel and Development
WICE	Women in Construction and Engineering

1.0 Background to the Study

As the construction industry continues to grow, the demand for a skilled workforce needs to be matched. According to Barnes (2019) the construction industry is expected to need over “168,500 construction jobs between 2019-2023” to fulfil the expected increase in housing and projects. Despite women consisting of almost half of the total UK labour force, according to the latest employee statistic released by the Office for National Statistics, during July-September 2019 there were 1,411,113 people employed in construction with women only accounting for around 17% at 249,670 (ONS, 2019). This figure has remained fairly stagnant for the 22 years of data collected on employees, fluctuating between 12-20% of women in the construction industry. The progression has been slow, considering Latham mentioned in *Constructing the Team 1994* as the underrepresentation of women being inexcusable, with there being little progress since. The trend suggests that the industry has not been able to “retain and develop the skilled women they are fortunate to recruit in the first place” (Rawlison, 2019).

1.1 Research Problem

Despite efforts of implementing gender equality policies and initiatives, the retention of women in construction has been faced with multiple barriers to retention at early stages of their careers (Oo, et al. 2019; Morello, 2018; Kamardeen and Sunindijo, 2017; Barreto, 2017; Worrall, 2012). Hence, considering there are numerous growing initiatives in place in construction it must be questioned why females are not being successfully retained, particularly early stage women. RIBA's Equality, Diversity and Inclusion Strategy highlights the barriers to progression, presenting evidence that “women disproportionately leave the professional practice in early and middle professional career stages” (RIBA, 2019a).

As the Baby Boomer generation which represent 40% of the workforce reach retirement, the “millennial generation requires a special approach” to prepare for the shift of workforce from an ageing population (WICE, 2017). The need for inclusion has become a pressing topic, as WICE (2017) suggest “over 50% of the workforce will be from the millennial generation by 2020”, therefore plans should be fostered to best understand how to retain the workforce. Hence, initiatives must be reflective of the workforce to be effective in retention, as Deloitte (2020) has shown that different generations find different initiatives more effective; Those under thirty which are considered Generation Y, voted the following retention initiatives as the most effective: company culture, flexible work arrangements, new training programmes, support and recognition from supervisors or managers whilst older generations focused on financial incentive (Deloitte, 2020; Fernando, et al., 2014; CIPD, 2006). Considering the high cost of investment put in to recruiting graduates, it is a wasted opportunity to not retain talented

employees and push them beyond administrative work (Elena Navarro-Astor, 2017; Tyers et al, 2003). Half of the talent pool is ignored which is bad for business as women could aid the skills shortage, whilst improving productivity and business performance to win the “war for talent” as found in Hunt et al (2018). However, Morris (2018) found women typically voluntarily leave the industry due to facing barriers rather than due to lack of competency or ambition. Therefore, from developing effective initiatives early stage women can be better retained, since initiatives intend to develop employees to their full potential which is beneficial for the business to gain from inclusivity and diversity in organisational culture (Gale & Davidson, 2006).

For the purpose of this research the term ‘early stage’ woman will be determined based upon the period of experience gained in the industry. The European Commission refers to Early Stage Researchers being in their first four years of full-time research (Ministry of Higher Education and Science, 2020). Although early stage researchers have not been explicitly defined, a self-defined definition can aid the basis of this research by following the definition’s guidance. The Construction Industry Council and ConstructionSkills (2009) have undertaken sufficient research to find that majority of women leave the industry within approximately five years of joining. Hence, women within their first four years within the industry since graduating from a full-time degree at university would be considered as ‘early stage’ women.

The focus will not be on site-based construction roles due to being able to relate other successful office-based sectors initiatives to the construction industry’s office-based roles. Since site-based employees can be susceptible to working in many locations, involving taking into consideration travelling to varied locations and relocation. Therefore, research on tradeswomen would not be included in the review of the construction industry, particularly since tradeswomen only make up a small minority of that sample which did not have in depth research in to the ‘early career’ stage (Gerrard, 2019). Research has shown the differences in site and office based roles as females face physical challenges from working conditions amongst the barriers faced in office roles (English & Jeune, 2012). For example, tradeswomen have found improved job satisfaction from sufficient personal protective equipment (PPE) which would not be as significant for an office based role (Heidi Wagner, 2013).

1.3 Aim and Objectives

The aim of this research project is: “To improve the retention of early stage women in UK construction industry by providing recommendations”.

The following objectives have been set to address the aim of the research:

1. To identify the barriers to the retention of early stage women in construction
2. To examine the retention policies for women in construction
3. To identify current initiatives for retaining early stage women in construction
4. To review initiatives for retaining early stage women from other sectors
5. To provide recommendations for retaining early stage women in construction

1.4 Structure of Dissertation

A guide of the dissertation will follow the framework set out in Figure 1 below.

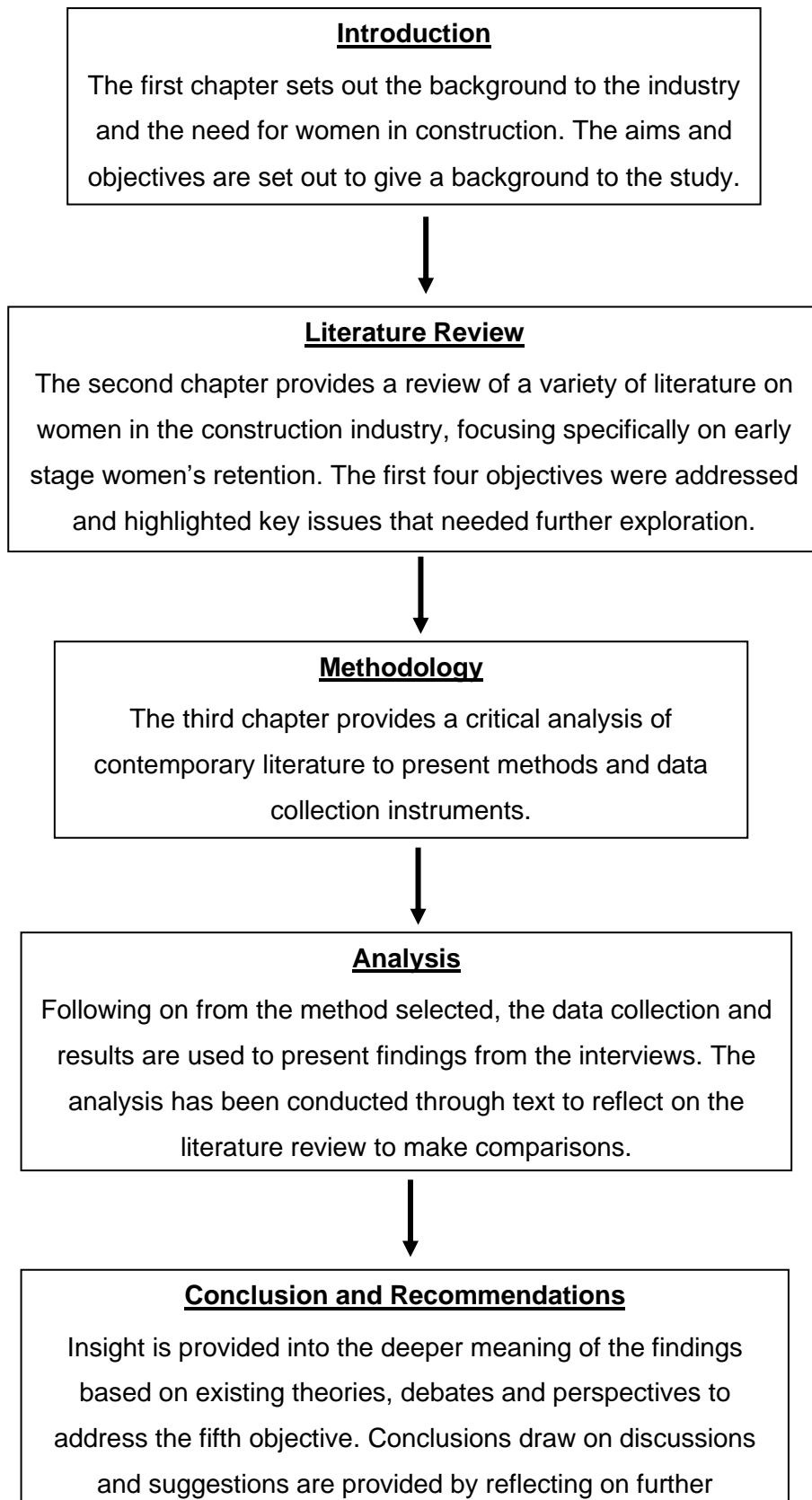


Figure 1 Dissertation Structure

2.0 Literature Review

The construction industry struggles with the representation of women due to retention issues which lead to a significant turnover rate. Therefore, the research project aims to break down the retention of early stage women in construction by reviewing the barriers to retention, identifying policy and initiatives in construction, then providing solutions for retaining early stage women. Retention is defined as “the ability of a company to keep its employees and stop them from going to work somewhere else” (Cambridge Dictionary, 2020), therefore lessons from other sectors will also be reviewed to better construction’s early stage women’s retention.

2.1 Barriers to the Retention of Early Stage Women in Construction

Women’s employment will be reviewed to find the barriers to retention for early stage women due to the need to implement effective initiatives and policy for retention. Barriers to retention are identified from the career pattern, such as the leaky pipeline, appraisals, glass ceiling, sexual harassment and culture in construction

2.1.1 Career Pattern

Morello (2018) identified that the pattern for women in construction tends to follow a ‘zig-zag’ pattern in comparison to a traditional linear path for men, it is clear that initiatives need to look wider than standard career paths through strategic planning since ‘one size cannot fit all’ (French & Strachan, 2015). Men seemed to use intra-organisational strategies, whilst women presented the need to move from organisation to organisation for advancement to find their preferable workplace, highlighting ongoing horizontal segregation (Elena Navarro-Astor, 2017; Dainty, et al., 2000). Hype Collective & ISE (2019) reported concern from employers of Generation Z being considered ‘job-hoppers’ as importance was not placed on longevity with a company, since progression was believed to be achievable through leaving companies. King (2006) claimed some graduates experience a ‘new’ career which involves “lateral moves and employer changes”.

In architecture, Matthewson (2015) found women joined the industry at only slightly lower rates than men in the first five years from graduation, then progressively left during their early career increasing the gap, whilst men remained in the industry until much later. The ‘leaky pipeline’ concept recognises the gap from employment to retention, as a high number of women leave the industry year on year (Gurjao, 2006). Hence, Matthewson (2015) described the leaky pipeline as ‘disappearing women’ in modern times.

Galea (2015) found a lack of performance appraisals meant “reduced staff engagement and retention”. Additionally, Francis (2017) and RICS (2016) found evidence of possible gender

bias occurring for promotion, particularly due to lack of training but Matthewson (2015) and Galea (2015) suggested formal processes allowed for bias to not occur against women. Therefore, Morello (2018) provides a useful approach to using a merit-based system for appraisal and promotion for fairness.

Further research looked at the 'glass ceiling' which Thomas et al (2019) described as the "invisible, systemic barrier that prevents women from rising to senior leadership" but it was found women experience a lack of progression from entry level due to the 'broken rung'. Aptly, women aged 18-24 "more frequently expressed an interest in leaving the industry" than ages 25-64 (Morello, 2018). Obstacles were faced by women before even reaching the glass ceiling as Furhmans (2019) claimed barriers are faced earlier than realised. Ling and Poh (2004) disclosed that sexist attitudes still exist in the construction industry through the perception that female graduates face a glass ceiling, which are not given equal opportunities and are given desk bound jobs. Whilst Barreto et al (2017) found females had experienced "invisible barriers in their career development" requiring more effort to be put in in comparison to men, confirming evidence of a glass ceiling as found by English and Jeune (2012), which found there was determination to shift the culture and remain retained.

2.1.1.1 Sexual Harassment

Oo, et al., (2019) focused on females who had graduated from a construction management programme in the last five years with at least a year work experience after; Sex harassment was voted the lowest as a barrier, opposing many researching findings that frequently suggest sexual harassment being a barrier as one of the biggest issues. For example, Elena Navarro-Astor (2017) research found confounding evidence over 15 years of harassment and a lack of respect being a prominent barrier causing women to quit their jobs, although this was particularly experienced on site. In agreement Barreto et al (2017) reported "both male and female respondents in this study agree that sexual harassment is yet another obstacle faced by women in the construction field". Contrastingly, Kamardeen and Sunindijo (2017) found sexual harassment as ranking lower as an issue than career progression but it was necessary for measures to be implemented. Whilst, (Francis, 2017) reported similar findings that organisational factors such as sexual discrimination negatively correlated with women's career advancement but those who faced it were more likely to be hindered in their career facing less support. Perhaps early stage women do not face this barrier until progressing further into the industry or maybe the industry has evolved with better practice through the increased representation of women. Worrall's (2012) research showed that "sexist attitudes, perception and behaviours" were also the main barrier faced by younger women in the construction industry, such as stereotyping of less capability or assumptions of admin work. Despite the

barriers expressed, the respondents in Oo, et al (2019) suggested high overall job satisfaction, showcasing signs the industry is improving towards satisfying the modern workforce, particularly through workplace culture.

2.1.1.2 Culture

According to Oo et al (2019) the barriers for 'early career women' in construction were found to be: "difficult to integrate in to masculine culture in the industry, stressful and competitive working culture, long and inflexible working hours and lack of informal networks for career opportunities". Employees had little loyalty due to employers prioritizing the bottom line over the workforce, society and the environment (Deloitte, 2018) Worrall (2012) suggested deterring from a profit-based culture to becoming people focused to facilitate retention and progression of women. There is a need to improve the culture, as Deloitte (2018) found "69% of Generation Z and millennials...stated that they would stay more than 5 years at a business if they were diverse and inclusive". In support, Kamardeen and Sunindijo (2017) reported work stress as threatening gender diversity in construction causing females to exit the industry prematurely due to the "poor psychological health". Therefore, females experience a 'contest' rather than being aided along their career path (Francis, 2017). Morello (2018) added reasons for desire to leave the industry was due to reasons such as "dislike of the industry, lack of enjoyment of the work, a loss of interest". Furthermore, Worrall (2012) identified an "old boy" and "white male dominated" culture which had negative perceptions of females in the industry. In addition, Barreto et al (2017) found the male culture consists of informal male networks and lack of flexibility. Therefore, women gave negative reasons for leaving a company in comparison to men, finding the industry not worthwhile being in whilst citing a lack of respect (Matthewson, 2015). Hence, CIPD (2006) suggested 12% of female graduates believe their gender is a career limitation whilst no males deemed their gender to be a barrier to progressing.

2.1.2 Summary of Retention Levels

It has been found that women's retention has faced barriers from the leaky pipeline, appraisals, glass ceiling, sexual harassment and the culture. Kamardeen and Sunindijo (2017) recommended norms should be improved before introducing interventions to improve the retention of female construction professionals.

2.2 Policies for Retaining Women in Construction

Despite policies and regulations in place, the construction industry still faces difficulty in the representation of early stage women. The construction industry has addressed the gender disparity through expectancy of adhering to, the Sex Discrimination Act 1975 and gender pay gap reporting. It is important to have policy in place due to enforcing legal duties on to companies to provide protection from indirect and direct discrimination, harassment and victimisation for those identified under the protected characteristics, such as gender (GOV, 2015). Galea (2015) suggests company policies are ineffectively designed without taking into consideration the effects on gender, whilst informal practices are relied upon through 'manager's discretion' so policy cannot be properly implemented. Therefore, Yousaf and Rasheed (2014) suggest that females can be retained through "sophisticated work life policies which are very important in reducing the turnover rate" by the organisation. In agreement, Barreto et al (2017) research concluded "the incorporation of gender equality policies could ensure sustainable development" by a management system to implement the company strategy.

Construction companies are required to adhere to gender pay gap reporting of average earnings of males to females since 2017 for companies with more than 250 employees, otherwise legal action can be sought (GOV, 2020). The construction industry has seen a decrease from 36% in 2018 to 20% in 2019 for the gender pay gap in construction, but the disparity in pay for genders increases consistently with age despite action being taken for transparency of diversity (Ing, 2019). Barnes (2019) suggested there needs to be better auditing and governance to ensure full commitment from companies that is a true portrayal, since "99% of construction is made up of SMEs" which results in unreported data. Figure 2 shows the gender pay gap is prominent even at the early stages of female's careers immediately upon graduation, which is concerning considering the increase of females graduating. The Department for Education (2019) report as the number of years since graduating increases so does the disparity in pay.

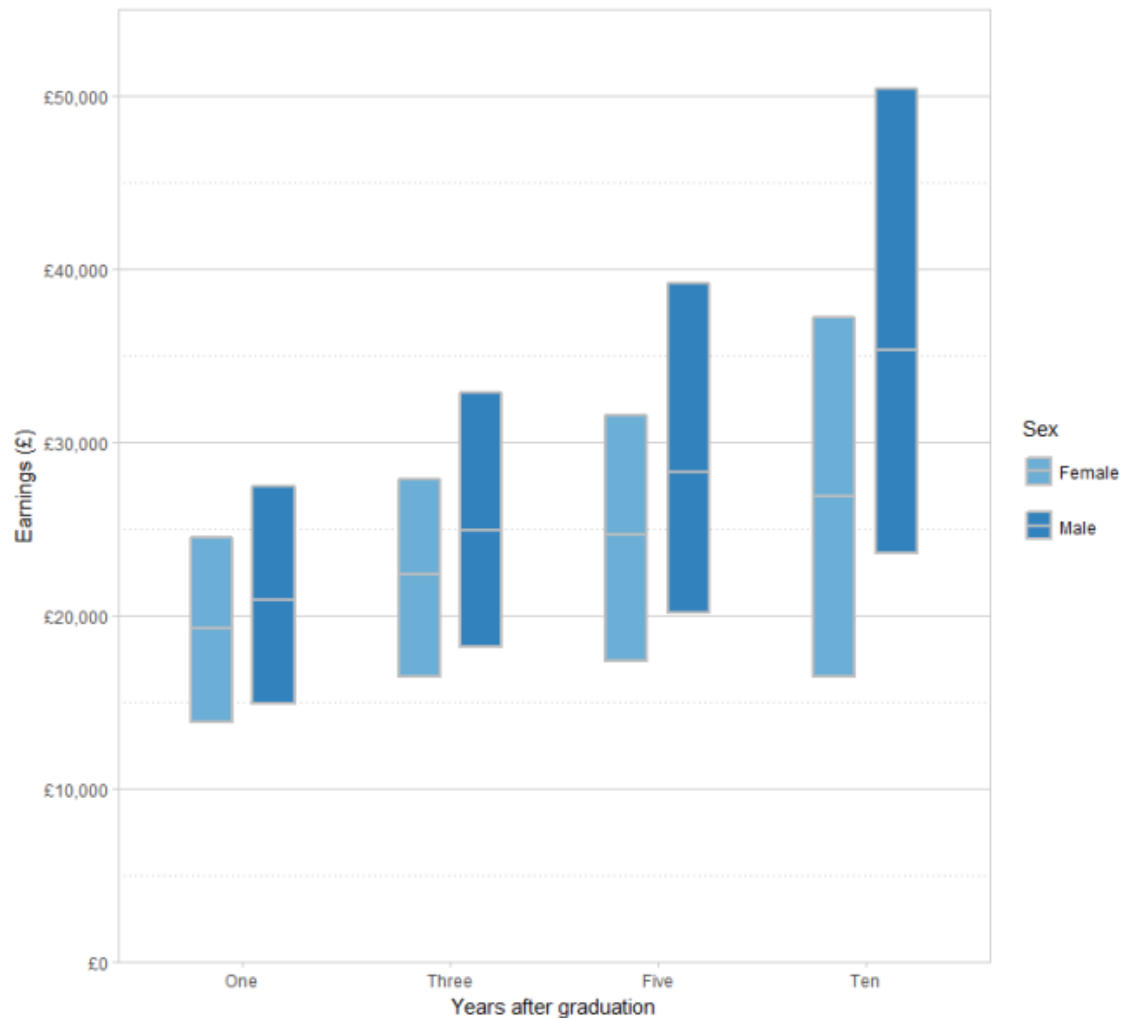


Figure 2 Earnings of graduate males and females (Department for Education, 2019)

2.2.1 Construction Reports

CIOB recognised the need for the professional bodies to align with each other which has a bigger impact for a 'cultural shift', instead of individual 'disjointed' schemes (Barnes, 2019). Ling and Poh (2004) suggested professional bodies should highlight the issues of unequal opportunities for women by encouraging companies to "work towards improving career prospects for women within the construction industry". Whilst Gale and Davidson (2006) recommend women's involvement from professional bodies or government in initiatives, through "male politicians and policymakers" engaging women that are facing difficulty in construction.

However, more specifically within construction reports, the government produced the Construction 2025 report in 2013 which had not indicated any specific strategy for retaining women. Whereas The Farmer Review (2016), 'Modernise or Die', referred to the "manpower shortage, a widening skills gap...inadequate training, and a lack of policy". Therefore, recommendations were provided from the report for the Construction Industry Training Board to be reformed to address these issues and for the Construction Leadership Council (CLC) to implement a system for skills and training. The Construction Sector Deal (2019) arose from the two reports, which detailed policies for the CLC to organise policy in construction, so challenges can be highlighted by "government officials, academics, construction firms and construction clients" (Rhodes, 2019). Another policy from the Construction Sector Deal includes The Transforming Construction Programme which places focus on high quality training for the development of skills (Rhodes, 2019). However, despite focusing on training to retain the workforce there is only some focus on diversity regarding gender. The report suggests an action was to "develop programmes to engage and retain the current workforce" so people are equipped with the necessary skills for the future (GOV, 2019). It has been highlighted diversity is essential in the construction industry, but reports do not specifically mention retention strategies for early stage women.

2.2.2 Policies for Retaining Early Stage Women in Construction

Dainty (2000) addressed the issue of informal practices for progression and the reliance on stereotypes of women's future responsibilities that may impact their job role. Rules can conflict with formal rules of policy which act as a barrier to the implementation of effective formal gender equality policies. More recently, Galea (2015) addressed 'formal' policies relating to the retention of women as lacking a connection between company values, suggesting policies require flexibility for robustness and revisability, "which impacts on their capacity to genuinely challenge the gendered norms, practices and narratives of the sector". An example of informal rules in play would be the expectancy of presenteeism disrupting and undermining the shift of gender equality as company values do not align with allowing flexible working (Galea, 2015). Barreto et al (2017) reiterated this, recommending removal of informal practices in the workplace structure and promotion through a "certification program in management system for gender equity" for "equality and fairness for all workers". However, French and Strachan (2015) found there was not a correlation between the increasing number of women in non-traditional roles to equal employment policy because conformity to legislation by companies does not result in change for women's representation. It has been recommended by Gale and Davidson (2006) for policy to incorporate feminist research for more realistic solutions, since French and Strachan (2015) found the industry lacks in committing to 'equal employment issues' as policies tend to be generalised for both genders. Additionally, it appears there is a

lack of gender policies in place for those in junior positions in comparison to senior levels, as depicted by Thomas et al (2019) in Figure 3, which suggests “formal enforcement mechanisms” are required, particularly for promotions so that informal systems do not act as a barrier to progression (Galea, 2015).

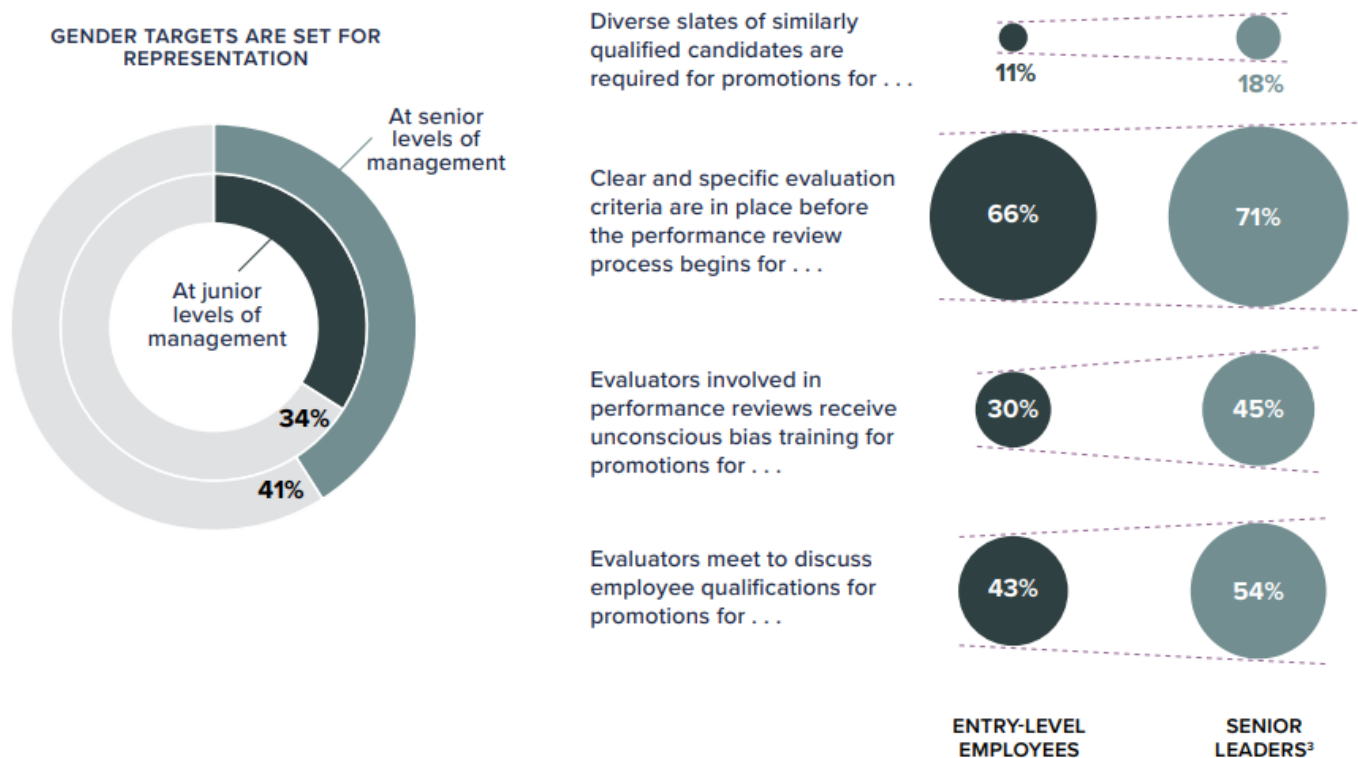


Figure 3 Policies in place for senior levels and junior levels (Thomas, et al., 2019)

2.2.3 Monitoring

The construction industry has policies in place for gender equality, but there seems to be a lack of monitoring of correct implementation for desired impact to provide an answer for why graduates leave, which would allow for future planning (Tyers, et al., 2003; RICS, 2016). Galea (2015) suggested through monitoring transparency from high up positions there is a commitment to communication as it was found a lack of monitoring by “formalised analysis processes and feedback loops” lead to talent loss. Although, RICS (2016) found despite processes being in place, “there was a lack of supervision and scrutiny” of implementation, therefore progression was unknown from a lack of data capture.

However, the Considerate Constructors Scheme implement policy through the Code of Considerate Practice extending from the statutory legislation set out above. The scheme is endorsed by the government, ensuring construction companies cater for the workforce through company equality policy. Industry standards are encouraged to be raised by Monitors collating best practice from initiatives implemented addressing equality and diversity (CCS,

2017). Additionally professional bodies promote monitoring as the basis of the ICE Action plan uses the WISE 10 Step Plan, shown in Figure 4, which places emphasis on monitoring progress, progression transparency and lastly sharing the outcome of best practice, as can be seen in Figure (ICE, 2015).

However, English and Jeune (2012) argued “existing legislation is insufficient unless a fundamental change in the construction industry occurs from within”. Therefore, adhering to policies which set out procedures for monitoring and responsibility of implementation is just one way to improve the retention of early stage women, hence initiatives will also be discussed.



Figure 4 WISE Ten Step Plan (ICE, 2015)

2.3 Initiatives in Construction

An initiative has been defined as “a new plan or process to achieve something or solve a problem” (Cambridge University, 2020). Gale and Davidson (2006) describe initiatives as ‘generic’, similarly to policy mentioned in Section 2.3 there is a need to target specific groups. Jusoh et al (2011) suggested the expectation gap can be narrowed through employers and graduates themselves taking initiative rather than waiting on government intervention. There is encouraging evidence of increasing initiatives being produced targeted at supporting women, through mentoring, affinity groups, training and personal development, flexible working, awards.

2.3.1 Mentoring

Worrall (2012) found a lack of mentoring was one of the top barriers for females aged 25-35 years old. Supporting this, Francis (2017) found that mentoring was valuable for making women not leave the construction industry. RIBA have implemented a Mentoring Programme for guidance and career progression, recognising the need to support people “new to the profession” and those “under-represented” (RIBA, 2019b). In support, Ling and Poh (2004) recommended young graduates should be provided with mentors which ideally act as role models by supporting them to work up the ladder. However, RICS (2016) found role models can be inspiring and encourage retention but they do not exist in the workplace which results in lack of engagement. According to Ely et al (2011) young women found it difficult to aspire to leadership roles due to the scarcity of senior women that would highlight the future. Whilst Drury et al (2011) identified female role models were more effective for retention of females than male role models due to the ability to aid disidentification. There has been some advancement towards initiatives encouraging role models, such as the Young Professionals’ Board which is a part of WISE, that is made up from young role models for “informing strategy and providing insight” (WISE, 2020c). Although, Morello (2018) found a lack of support for a correlation of having a mentor or networking and a desire to remain in the industry for females.

2.3.2 Affinity Grouping

RICS (2016) suggested networks and employee representation groups fall under affinity groups, which are a group that come together based on similar characteristics that enable challenges to be addressed. Francis (2017) found networks were a “valuable deterrent” in women leaving the construction industry because the construction industry typically uses informal networks for development, which can favour men due to allowing homosociality among junior staff (Matthewson, 2015). Additionally, Worrall (2012) suggested a lack of networking resources was a top barrier for women aged 25-35 years old. Gale and Davidson (2006) found this may be due to a lack of awareness of women lead initiatives which results

in difficulty obtaining women. There appears to be more effort in the construction industry in developing networks for women, such as Novus which is a network for young professionals for networking opportunities for the next generation (Barnes, 2019).

2.3.3 Training and Personal Development

Tyler et al (2003) reported “further professional qualifications were highly valued” as graduates seemed to view longevity in their careers due to “greater freedom, and improved employability and market value” which increased retention. Significance of progression was shown from graduates selecting “getting on the career ladder” as clearly the most important prospect a year after graduating (Connor, et al., 2003). Jusoh et al (2011) addressed the relationship between expectations and job satisfaction of graduates, where development ranked as the most important highlighting the cruciality of improvement through training, so career opportunities can be bettered. In support, Deloitte (2018) found “73 percent of those who plan to stay with their employers more than five years say their organizations are strong providers of education and training”. Importance is placed on enhancing employability, therefore employers are expected to support ‘long-term development’, particularly in the first few years of employment which lead to leadership in the future (King, 2006).

However, graduates expectations were not being fulfilled as an expectation gap was found from job satisfaction, particularly with training but graduates were not dissatisfied enough to leave the company due to strong managerial relationships (Jusoh, et al., 2011). Fernando et al (2014) suggested training can assist employee retention as individuals wanted to continue improving, therefore opportunities within the company would mean that employees would not look outside of the business. However, women face barriers towards progression from a lack of opportunities, which prevents them from rising on the career ladder and ultimately have low job satisfaction (Gurjao, 2006). Worrall (2012) suggested women are aided through soft skills training for career progression as CIPD (2006) reported female graduates had voted confidence as holding them back more in their careers in comparison to men. Ling and Poh (2004) provided similar findings as women in construction lacked confidence to work well with males. There have been numerous training programmes developed to aid retention of women, such as a career development programme by Skills 4, which provides guidance and coaching.

The Women of the Future programme focuses on retaining women through mentoring, networking and development by partnering with WISE and Every Woman Network. The programme promotes female growth into leadership and creates an open forum for integral conversations (Mace, 2016). Morello (2018) suggested companies with retention programmes had a higher representation of women, highlighting their effectiveness. Graduate

schemes have evolved to allow for increased diversity Morello (2018) hypothesises that recruitment and inclusion programmes potentially effectively recruit or retain women in construction, since companies with 21-50% women were more likely to have implemented these programmes. Matthewson (2015) described programmes which develop staff as highly beneficial for changing the culture towards by allowing diversity towards leadership positions.

2.3.4 Flexible Working

Randstad (2019) reported 44% of women would be persuaded to re-join the industry if there was better flexibility. RICS (2019) supported this statement as inflexible hours and conditions were found to be a top reason for women leaving the industry. Although, CIOB in Barnes (2019) specifically addressed retention initiatives for women in construction from an inquiry, whereby flexibility was suggested for both genders for family commitments. In support, Worrall (2012) found that inflexible working practices were of more concern to women of an older age rather than early stage women, finding that flexibility was seen as something that should be considered for later on in life when pressures increase. Whilst RICS (2016) stated flexible working is “not just a right reserved for employees who are parent and/or carers”. In agreement, Conor et al (2003) suggested there is high demand for flexibility from work-life balance by modern graduates early in their careers, but this is difficult to achieve alongside progression due to “long hour cultures and expectations”. In support, Deloitte (2018) found millennials remained longer at their workplace if there were flexible working arrangements in place, as shown in Figure 5.

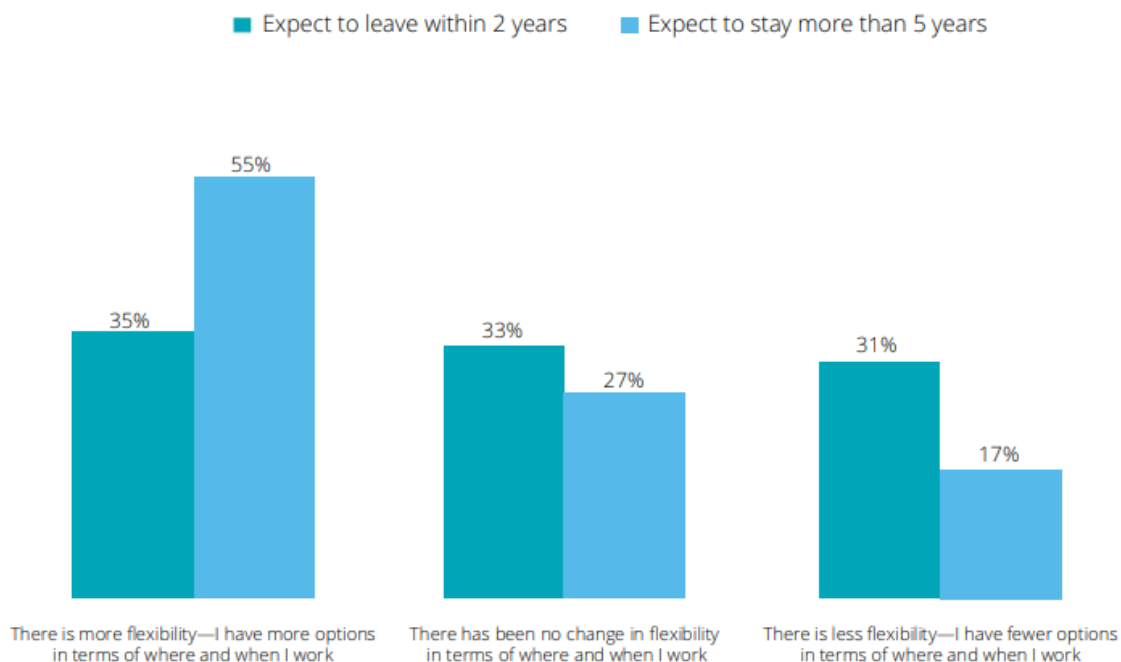


Figure 5 Flexibility in working practices in correlation with retention of millennials (Deloitte, 2018)

Similarly, Arup have restructured policies as they recognised the need to cater towards new generation employees through flexible working, therefore younger employees have reported higher satisfaction due to benefits being related to their preferences (Crawford, 2015). Although, there has been negative connotations for flexible working which leads to them being “informal, hidden or not widely discussed” but better ways of working must be adapted to face competition for the best employees (Constructing Excellence, 2009). RICS (2016) teamed up with EY which are renowned for diversity to produce a report on inclusivity, focusing on staff retention through flexible work, “development, reward and recognition”, finding that despite processes and policy in place there is low engagement due to informal uptake, therefore tracking should be implemented to monitor performance.

2.3.5 Awards

Table 1 below shows the awards available for young women in construction, as ICE (2015) suggest industry awards encourage best practice towards diversity through celebrating professionals.

Table 1 Awards available for early stage women

Award	Description	Reference
Best Young Woman in Construction	Females with under 5 years' experience in construction, under 30 years of age, which have given a positive contribution.	(WICE, 2020)
Women of the Future	Provides recognition of young people and “offers a platform for real role models for the next generation”.	(Goldsmith, 2016)
Rising Star	Focuses on the early stage woman that has been “identified as a potential star in her chosen profession”.	(WISE, 2018)

2.3.6 Summary of Construction Initiatives

The initiatives reviewed above provide an insight into the ways organisations have implemented to retain women, whilst Table 2 below provides an overview of retention initiatives available early stage women can take part in. Overall, there are few initiatives in

place specifically for early stage women in construction as many companies tend to approach initiatives through gender as a whole for diversity and inclusion. Despite numerous initiatives for women overall in construction, many appear to be fairly recently adopted in response to attempting to increase diversity, which RICS (2016) suggest “there is a lack of planning, implementation and monitoring that is required to see real change happen”.

Table 2 Initiatives used for the retention of ‘early stage women’ in construction

Initiative	Mentoring	Training	Affinity Group	Awards	Flexible Working	Reference
Company						
Mace	Women of the Future programme	Graduate Development Programme	Women’s network	Star Awards	Options available	(Mace, 2016) (Mace, 2018)
Balfour Beatty	Executive Committee reverse mentoring	Future Leaders Programme, Aspiring Leaders Programme	Gender Equality Affinity Network	x	Ad hoc	(Hudson, 2020)
Laing O’Rourke	NAWIC Mentoring Programme	Graduate programme modules	Connecting Women network	Graduate of the Programme	Flexible work programmes	(Laing O’Rourke, 2018) (Laing O’Rourke, 2017)
Aecom	mCircles	Graduate Development Programme	Growing Professional Skills programme	x	Company wide	(Cass, 2016) (IET, 2020)
Arup	Available on graduate programme	Arup University Training	Connect Women Network	x	Company wide	(Arup, 2015)

2.4 Other Sectors Initiatives

Other sectors outside of the construction industry have implemented initiatives to retain women which could be of use to construction industry professionals by highlighting what works successfully. Barnes (2019) recommends construction to “learn from initiatives in other sectors and share this with their own supply chains”. Technology companies have been looked at in particular which have a high representation of women.

2.4.1 Amazon

The movement of women from the construction industry could be reflected upon in comparison to successful retention of women from companies such as Amazon. The Amazon Amplify programme came about from partnering with WISE which consisted of numerous initiatives, including an interactive training programme that offers career development through training managers, affinity groups and soft skills (WISE, 2019). Similarly to the construction industry, females reported confidence, adapting to a male dominated environment and lack of senior recognition as a barrier, therefore mentoring programmes, peer support and coaching were successfully put into place. Amazon’s female staff claim to stay due to the commending the culture that allows the opportunity to innovate and create with unlimited progression opportunities and responsibility for graduates (Where Women Work, 2020).

2.4.2 PWC

PrincewaterhouseCoopers (PWC) have prioritised retaining women, which is shown from their high retention rates for women than men. Unlike construction companies, PWC focus on “turning policies into effective action” using “strategic clarity, accountability, measurability and transparency” (PWC, 2019). Women represent 49% of the workforce as career development is emphasised through the Women’s Leadership Programme that is ran by men to support women, which in turn challenges the culture affecting women’s progression (Construction Industry Council & ConstructionSkills, 2009). Initiatives such as mentoring, networking and women’s networks for “professional and personal development” that enable role models are inclusive of both genders. Additionally, flexible working is made available to everyone including junior staff, with company wide support for work-life balance. It has been suggested other sectors which are of similar pressure to the construction industry have enabled a better balance for work and life, allowing for increased flexibility for a varied workload and retaining valuable staff (Construction Industry Council & ConstructionSkills, 2009). Furthermore, PWC recommend diversity to align with the business strategy that is prioritised by everybody and supported by human resources so progress is measured by data (PWC, 2019). In support, Google suggest to “set inclusion targets and, track and share results” to retain a diverse workforce but most importantly to integrate diversity into the business strategy (Slocum, 2019).

Companies can use technology tools to predict and identify issues that cause women to leave organisations

2.4.3 Microsoft

Microsoft add that culture needs to be committed to diversity and inclusion for growth through initiatives. Similarly, Facebook have taken the approach of focusing on improving their culture to become inclusive through resource groups and programmes through addressing bias and inclusivity. The Women at Microsoft resource group provide mentoring, role models and professional development which has been around for 30 years (Microsoft, 2019). Similarly to the other companies outside of the construction sector, Microsoft ensure a 'growth mindset' culture through learning, development and role models which are lacking in construction. Accountability of ensuring retention of women in the workforce is a paramount issue which can be seen from the entire workforce involved in "inclusive well-being policies" (Microsoft, 2019). For example, Microsoft specifically refer to advocating policies by teaming up with government so there is fairness (Microsoft, 2019).

2.4.4 Summary of Other Sector Initiatives

Rawlinson (2019) suggested it can be argued that women have good reason to leave the industry for careers in other sectors which can provide the flexibility and culture they require, particularly due to being limited from potential of maternity and dealing with male dominated environments (Matthewson, 2015). However, Ling et al (2015) reported no difference in work satisfaction of construction and non-construction professionals, showing "construction industry professionals are not significantly worse off than professionals working in other industries". Although, the construction industry can learn from other sectors by aligning company values with effectively implemented initiatives, as it can be assumed that other sectors have a favourable culture from positive encouragement by seniors to company-wide. Similarly to other sectors, Thomas et al (2019) suggests the construction industry could set targets for diversity and metric sharing so leaders can be held accountable then the issues would be imperative not optional. Therefore, the construction industry can learn from other sectors by tracking for clarity and awareness of progression through technology.

3.0 Methodology

3.1 Introduction

This chapter will focus on selecting the most appropriate research method and methodology so the initial aims and objectives can be achieved. This research study seeks to develop recommendations for retaining early stage women in construction by looking at initiatives. The methods and rationality used for gathering data is considered for effectively targeting females in the construction industry. A variety of research approaches are detailed and discussed in this chapter to provide the best insight of research methods, whilst covering research philosophy for the research methodology.

3.2 Research Philosophy

Methodology involves encompassing the philosophical assumptions which affect research methods, therefore the ontological and epistemological conceptions have to be taken in to consideration to understand the influence of paradigms on knowledge (Knight & Ruddock, 2008). Table 3 below sets out the assumptions of ontology, epistemology and methodology.

Table 3 Assumptions by researchers (Fellows & Liu, 2009)

	Continuum	Assumptions
Ontology	Nominalism–realism	Whether the object of investigation is the product of consciousness (nominalism) or whether it exists independently (realism).
Epistemology	Anti-positivism–positivism	What our grounds of knowledge are.
Human nature	Voluntarism–determinism	Whether humans interact creatively with the environment (voluntarism) or whether they are passive objects (determinism).
Methodology	Ideographic–nomothetic	Ideographic (“concrete”) or nomothetic (abstract) approaches to evidence collection.

3.2.1 Ontology

The ontological assumption relates to the “conceptions of reality” and “existence or being” (Knight & Ruddock, 2008). According to Knight and Ruddock (2008), ontology can be defined from an objectivist and constructivist phenomena, which Bryman (2012) differentiates by organisation and culture.

Objectivist ontology differentiates between social phenomena and social actions (Bryman, 2012). This means that they act independently of one another as external factors outside of

our control. Whilst constructivism ontology relates to social interaction allowing social phenomena to be produced (Knight & Ruddock, 2008). By a constant state of revision meaning can be achieved by social actors (Bryman, 2012).

3.2.2 Epistemology

Epistemology looks at “what should be regarded as acceptable knowledge” (Knight & Ruddock, 2008). Research suggests an “epistemological appreciation” needs to be reflected to avoid a narrow focus on solely quantitative research (Fellows & Liu, 2009). Epistemological issues focus on the interpretivist and positivist approach but their connections in research must not be heavily relied upon as they may be considered an “oversimplification of reality”, so philosophical differences simply provide guidance (Knight & Ruddock, 2008).

Positivism falls into a descriptive group, using a deductive and partially inductive approach to develop ideas, by relating theory and research (Bryman, 2012). Quantitative data is typically relied upon as the natural sciences are applied to social reality for hard data (Bryman, 2012). There is an objective approach as the observer remains uninfluenced when observing the facts (Fellows & Liu, 2009). However human decisions impact what is being observed so the natural world reality is separated from the observer (Fellows & Liu, 2009).

Interpretivism contrasts to positivism as the terms proposes that human’s behaviour must be interpreted typically through qualitative data, since the observer constructs the reality (Bryman, 2012; Fellows & Liu, 2008). Phenomena can be observed through interviewing to understand the actions of humans and fundamentally their subjective meanings in a “social scientific frame” (Bryman, 2012). The realities of people differ due to socialisation which means that “truth and reality are social constructs” and not independent of one another, requiring discussion to be revealed and verified (Fellows & Liu, 2009).

3.3 Research Methods

It is important to differentiate between research methods and methodology; as methodology consists of “principles and procedures of logical thought processes which are applied to a scientific investigation” so a guide on research is followed for data collection, whereas methods of research concern the availability of techniques, which can be narrowed down to the technique to be used for research (Fellows & Liu, 2009). Quantitative and qualitative research fall in to the two types of research strategies to be discussed to provide a framework for research methods (Knight & Ruddock, 2008; Naoum, 2013). There are three modes of reasoning which assist in the research methods: deductive, inductive and abductive.

Deductive theory focuses on producing a hypothesis attached to concepts that can be researched to gather data (Bryman, 2012). The process is linear typically between theory and

research, but it may not be logical if relevant recent data had been released altering the researcher's viewpoint. Reasoning occurs from theory to data to make inferences for a specific outcome (Fellows & Liu, 2009).

The opposite of the deductive approach would be induction, which concerns findings based on inferring findings which are reflected upon the knowledge gained to provide a theory (Bryman, 2012). Induction allows advances in research to be made by producing hypotheses and increasing the information available from data to theory for a generalised outcome (Fellows & Liu, 2009).

The abductive epistemological orientation looks to offer the best explanation from the observations gathered utilising both the deductive and inductive approach (Rahmani, 2018). The outcome which is predicted may be true, but the basis is ambiguous due to being based on imperfect observations.

3.3.1 Quantitative Research

A summary of the main contrasts between quantitative and qualitative research can be seen in Table 4. Naoum (2013) suggests quantitative research is used for fact finding which is based upon a deductive approach of testing a theory (which is the theoretical framework and literature) corresponding with data, therefore being of an objective nature. This means a reductionist approach is used to defer from social realities so factual information can be gained which “undermines ecological validity” (Knight & Ruddock, 2008). A scientific approach is followed by producing aims and

Table 4 Contrasts between research methods (Bryman, 2012)

Quantitative	Qualitative
Numbers	Words
Point of view of researcher	Points of view of participants
Researcher distant	Researcher close
Theory testing	Theory emergent
Static	Process
Structured	Unstructured
Generalization	Contextual understanding
Hard, reliable data	Rich, deep data
Macro	Micro
Behaviour	Meaning
Artificial settings	Natural settings

objectives to be tested from a literature review, providing instantaneous results (Fellows & Liu, 2009). Since previous knowledge is built on, the research is based on measuring what and how from findings, therefore relating to positivism (Fellows & Liu, 2009). Hard and reliable information is provided from factual data whilst statistical methods and scientific techniques are used to analyse the data, resulting in measurable results (Bryman, 2012; Fellows & Liu, 2008).

3.3.2 Qualitative Research

Qualitative research is based upon a subjective approach to understanding experiences, providing detailed and rich data (Fellows & Liu, 2008; Naoum, 2013). Ecological validity is focused on, which looks at the social aspect part of the research (Knight & Ruddock, 2008). Theories emerge from gathering information by seeking out the why's to find "meanings which people attribute to events, processes and structures", resulting from an inductive or abductive view (Bryman, 2012; Fellows and Liu, 2009). The assumptions and perceptions of people are tested to comprehend behaviours and performance from opinions and beliefs (Fellows & Liu, 2009).

Exploratory research uses techniques such as interviews which seek to gain an understanding since the researcher is able to find limited knowledge (Naoum, 2013). The use of interviews allows for a discovery of ideas in order to develop a hypothesis. Whilst attitudinal research focuses on subjectivity by considering a person's perception towards a particular object (Naoum, 2013). The researcher focuses on attitudinal research for beliefs to be understood from a subjective viewpoint. It is realised that "meaning is socially constructed" so research can result from observing participants (Fellows & Liu, 2009).

Qualitative data faces the risk of bias due to the subjectivity of how the researcher interprets the information, therefore facing scrutiny from objectivity. Analysis can be difficult due to the techniques involved for categorising in comparison to quantitative data (Fellows & Liu, 2009). Transcribing interviews may result in "external environmental variables" to affect the data, particularly due to the researcher's high level of involvement (Fellows & Liu, 2009).

3.4 Research Strategy

The research strategy is dependent on the need to address the objectives of the study. In this case Objective 5: To provide recommendations for retaining early stage women in construction, was to be fulfilled from the research undertaken. Therefore, the most appropriate research method was to be selected, which was prominent in "reliability, validity and replication" (Bryman, 2012).

From observing the retention of early-stage women in the construction industry and the comparison of other sectors through a literature review an inductive approach resulted. Following on was a deductive approach looking at the explanations for the ways to retain early-stage women. Since an inductive and deductive approach was used, this resulted in the abductive approach being utilised to give the best prediction possible. The interpretivist epistemological position was taken on with the constructivist ontological position

The research study's purpose is to gain an insight into the initiatives which early stage women require for retention in the construction industry. A qualitative approach was favoured over a quantitative approach for the purpose of this study to investigate individual's perceptions of the industry (Fellows & Liu, 2009). A qualitative research design allows for the participant's point of view to emerge so deeper and descriptive data is enabled. Theories can develop through the constructivist paradigm which can be reflected against the findings in the literature review to emphasise validity.

From a review of research methods, identifying the advantages and disadvantages, the research data was to be collected from primary sources by conducting semi-structured interviews on females within their first four years of their construction career after graduating from university, following the steps highlighted in Figure 7. Semi-structured interviews were found to be the best research method to use for this research purpose because people could be understood better rather than using simplified quantitative data. An interpretive paradigm was emphasised to reflect a reality constructed by individual's perspectives; therefore, the researcher was expected to ensure the sample's responses reflect their truth.

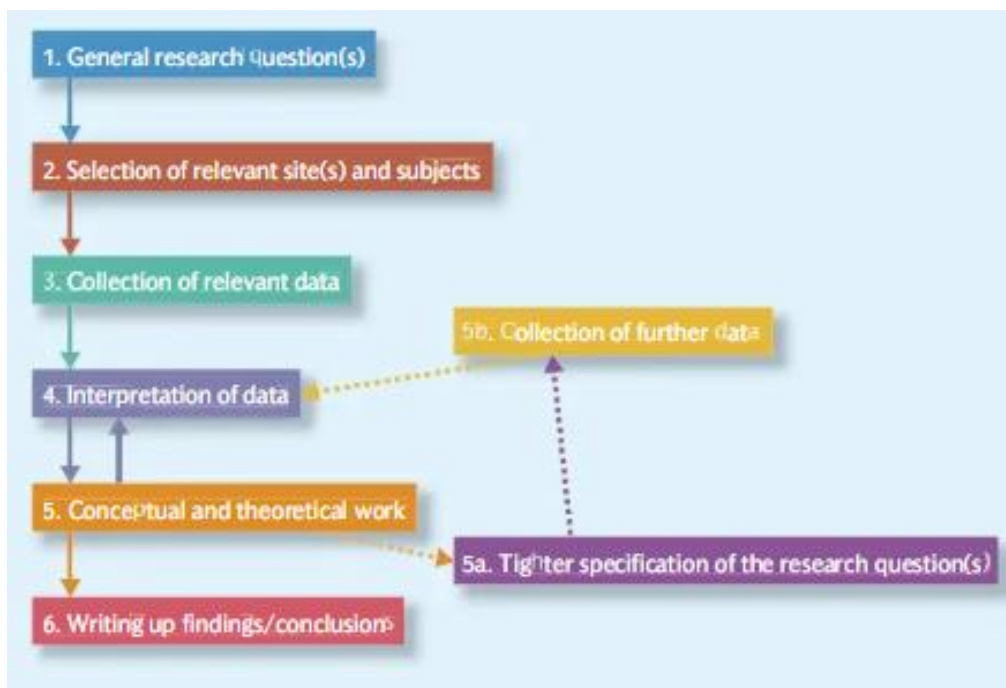


Figure 6 The steps of qualitative research (Bryman, 2012)

The rationale for targeting this category as the study population was to gain in depth information into the real experiences to understand which initiatives are vital for retention, therefore the research respondents were selected purposely for the interviewing. The contacts the researcher had gained in the construction industry enabled for snowball sampling, particularly through LinkedIn. However, only a small sample could be used due to the narrow

sample population available, therefore there is difficulty in generalising the data to the wider population.

3.5 Research Design

Bryman (2012) defines a research design as “a framework for the collection and analysis of data”. Interviews were selected as the basis for collecting data to address the fifth objective of the research which can be used comparatively to the literature review. Outlined below is the different formats of interviews to be selected from and the design that shall be taken forward.

3.5.1 Interviews

Cannell & Kahn (1968) suggest there are three things for a successful interview: *accessibility, cognition, motivation*. Then, accurate information can be acquired which is understood by the interviewee. The purpose of interviews are to explore the systems individuals which include their “subjective knowledge, opinions and beliefs” (Knight & Ruddock, 2008). Therefore, Interviews allow for a subjective experience to be shared whilst the researcher remains as objective as possible (Fellows & Liu, 2009). The researcher must act in a way whereby the relationship between the interviewee and interviewer is a partnership to allow for negotiation of detailed data (Knight & Ruddock, 2008). The interview allows for an exchange with the participant that is open to provide an insight to their world. The researcher attempts to give a fair portrayal of the interviewees subjective view (Fellows & Liu, 2009). Although, it is recognised that interpretation is subjective due to the perception from the interviewer, but meanings found can still be insightful. Interviews are of high popularity in the built environment due to their flexibility, there are three types of interviews: unstructured, semi-structured and structured, highlighted in Figure 7 (Knight & Ruddock, 2008).

Structured interviews limit responses being explored further as the respondent is expected to answer a questionnaire formally (Fellows & Liu, 2009). The standardised approach allows for closed responses for quantitative data from predetermined questions that can be generalised and are kept controlled by the researcher (Knight and Ruddock, 2008; Naoum, 2013). The interviews can be reciprocated to increase reliability whilst remaining objective to not influence the interviewee (Knight & Ruddock, 2008). However, answers from the interviewee will be restricted so the quality of the answers are dependent on the questioning since expression is limited so depth may not be achieved (Knight & Ruddock, 2008). Despite the limitations the structured approach may allow for more accuracy, increased interviewee's responses and the ability to figure out the reasoning for the responses (Naoum, 2013).

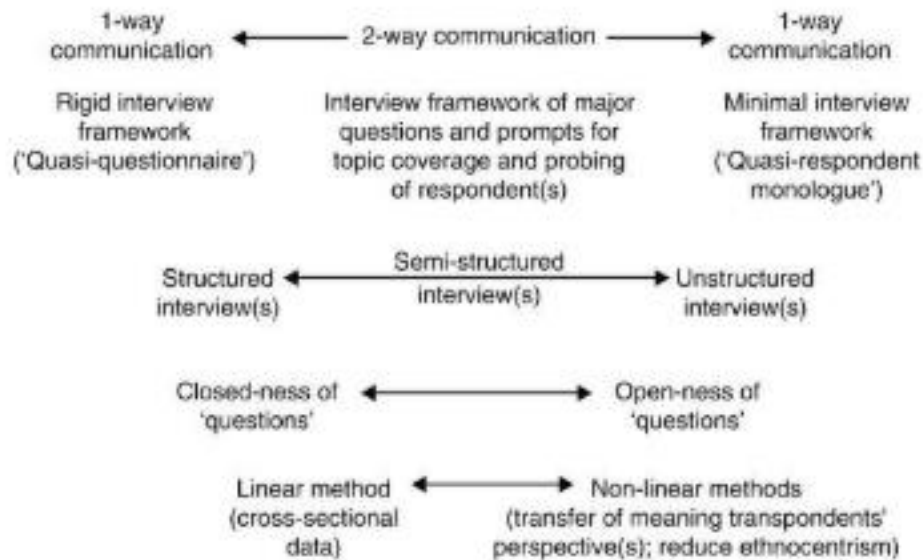


Figure 7 The types of interviews (Fellows & Liu, 2009)

Unstructured interviews are the complete opposite in nature to structured interviews allowing for free-flowing statements as questions are not pre-determined, enabling more qualitative data (Knight & Ruddock, 2008). The questions are open-ended so there is no ordering to the way questions are asked but this format is typically used for exploratory research (Naoum, 2013). A conversational interview allows for concepts to come out, whilst the researcher is able to express their beliefs to encourage the respondent so new themes can occur (Knight & Ruddock, 2008).

However, semi-structured interviews fall in between the other two types of interviews by allowing for probing and covering essential topics. Bryman (2012) suggested the researcher is able to keep a broad mind so “concepts and theories can emerge out of the data” from open ended questions. Depth is enabled and there is opportunity to expand on questions. A mixture of open and closed ended question can be asked for discovery of specific issues identified with the subject and for querying (Naoum, 2013). Due to the one on one experience there is less likelihood of “cross-respondent influences” despite being a time consuming approach (Fellows & Liu, 2009).

3.5.2 Interview Structure

Based on the limitations and benefits set out above, the semi-structured interview was chosen to be based on selected themes which could draw out the information required. The key questions were set for the interview to allow for specific initiatives to be discussed in depth with a chance to speak upon other motivators for retention so the objective could be adequately addressed. Knight and Ruddock (2008) proposed that “different levels of meaning need to be explored” with a variety of identities. Despite a structured approach, there would be an allowance for probing for detail and new information for less structure through the method shown in Figure 8.

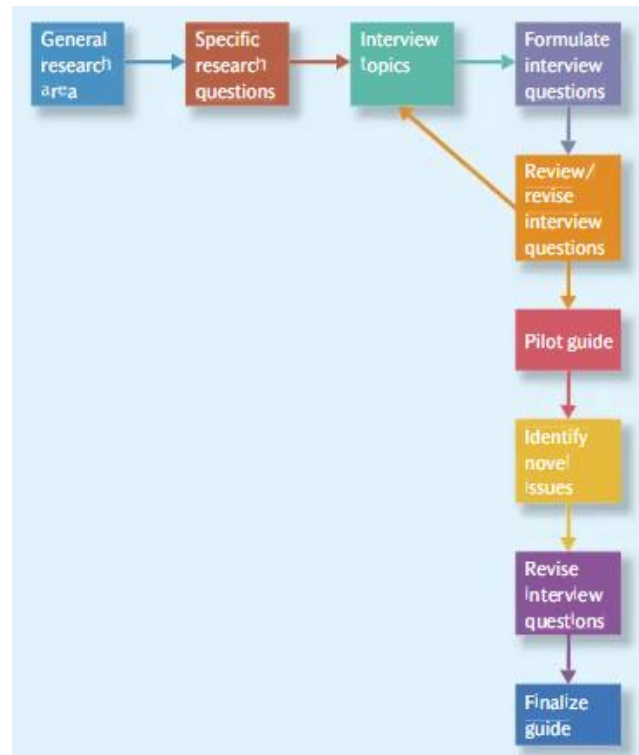


Figure 8 Interview guide (Bryman, 2012)

Telephone interviews were selected as the basis for conducting the interviews rather than face-to-face because of the speed from using technology (Naoum, 2013). Since the interviewer can also not be seen the respondent answers would not be affected by giving answers that would be deemed as desirable (Bryman, 2012).

Questions for the interviewee were left open-ended to allow them to elaborate on their answer so a clear insight into their experiences, then bias could be reduced. Although researcher bias can occur when attempting to infer the responses for analysis, further clarity would be sought from participants when the researcher needed further detail (Fellows & Liu, 2009). Bryman (2012) advised that research questions should be clear, researchable, linked, and offering an original contribution.

3.5.3 Limitations

The planning, conducting and analysis of interviews can be a time-consuming process (Knight & Ruddock, 2008). Interviewing involves a one person at a time approach which is laborious for analysis (Fellows & Liu, 2009). There can be difficulty in analysing the information due to the rigorous approach required (Naoum, 2013).

Bias can be an undermining factor of the research which comes from the researcher influencing the research resulting in not receiving the truth from the interviewee, affecting the

accuracy (Knight & Ruddock, 2008). Therefore, phrasing of questions should be of an appropriate length, easy to understand and avoid double negatives (Knight & Ruddock, 2008). Hence, when questioning the interviewee, the questions should not be loaded with a suggested answer which the researcher wants as the outcome but instead should offer clarity. The interviewee should be given the confidence to voice their opinions, particularly those that are not popular to avoid misinterpretation from “unspoken communication” (Knight & Ruddock, 2008). Particularly since presumptions made by the researcher which are not accurately reflective of what the interviewee has said can elicit bias.

Other people’s perspective may be interpreted differently by the researcher; therefore, a perfect reflection may not be achieved. Particularly when the researcher has to categorise the data, the opinion of the researcher and the interaction may affect the information (Fellows & Liu, 2009). Additionally, the researcher may not transcribe the interviews exactly as they were undertaken which leaves the issue of incompleteness (Knight & Ruddock, 2008). Whilst Cotterill (1992) reported that power was left with the researcher when interviewing females as they are in control of the interpretation of data to give meaning to people’s reality. Sources of error may occur from coding the transcripts as the researcher’s opinion is used to categorise (Fellows & Liu, 2009). Therefore, successful interpretation is difficult, but this is aided by the responsibility in honestly interpreting data (Cotterill, 1992).

Fellows and Liu (2008) suggested “reliability concerns the consistency of a measure” therefore the results need to be able to be reproduced with consistency. Whilst, validity of data is recognised by “integrity of the conclusions that are generated from a piece of research” (Bryman, 2012). The different types of validity include measurement, internal concerning causal relationships, external concerning generalisation of results, and ecological concerning applicability to general life (Bryman, 2012). However, reliability and validity are difficult to accept for qualitative research, therefore trustworthiness should be looked at through credibility, transferability, dependability and confirmability (Bryman, 2012).

3.5.4 Pilot Interview

A pilot interview was conducted to ensure the questions could be understood easily and produced sufficient answers from clear requirements (Fellows & Liu, 2009). Therefore, a family member not working in the construction industry was selected to ensure reliability beyond a selected sample to allow for a reflection (Knight & Ruddock, 2008). The pilot interview allowed the respondent to provide feedback on aspects of improvement so that the ordering and coherence of the questions could be adjusted. Therefore, when the interviews were to be conducted on the selected sample there would be lack of errors occurring from modification, providing increased validity as can be found in Appendix E. The process ensured that the

finalised questions were not superfluous and there would be high quality responses for analysis (Fellows & Liu, 2009). Hence, opinion questions were reviewed to ensure they would be perceived well due to being highly sensitive in comparison to factual questions (Fellows & Liu, 2009).

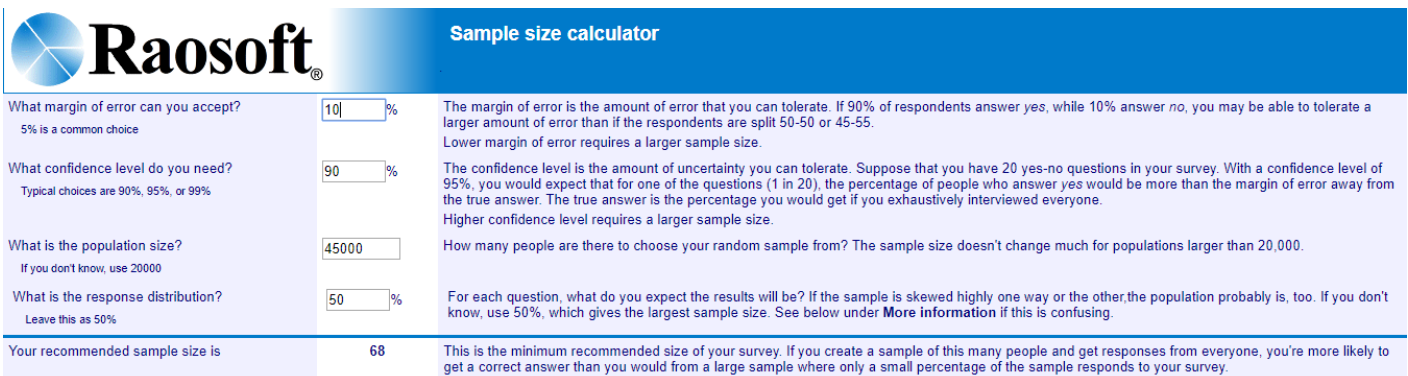
3.5.5 Sample Selection

A 'sample' has been defined as a "specimen or part of a whole population which is drawn to show what the rest is like" (Naoum, 2013). Characteristics should be representative of the population, which can be identified through "statistical theory" determined by the context of the research (Fellows & Liu, 2009).

The sampling was constrained to only consider one part of the population which means using snowball sampling by limiting to the characteristics of particularly 'early stage women' (Fellows & Liu, 2009). Within the sample of a small group of known people, other participants which would fit the characteristics required were reached out to due to being a "hard-to-reach population" (Bryman, 2012). The 'snowball' approach was found through action by the researcher as the original sources gathered through trusted relationships during experience in the industry recommended others for the research (Fellows & Liu, 2009). Since the research sample was specific and narrow, the progressive approach overcame the difficulty of finding participants by reaching people further in the target population. The approach was convenient but bias may result so a higher response rate was aimed for (Fellows & Liu, 2009). The relationship between the interviewee and interviewer allows for exploration of quality responses whilst the interviewer can remain in control. This was more appropriate than a random sample so questions will have similar meanings to the respondents instead of resulting in ambiguity (Naoum, 2013).

Fellows and Liu (2008) recommend a minimum of 32 responses which are useable for analysis, therefore a higher sample size should be aimed for to take into consideration non-responses. Although, there is no pre-agreed specific response rate, Fowler (1984) advises to use "rigorous calculations and judgements". Using Raosoft, a sample size calculator, the minimum sample size was recommended on the following assumptions. Based on the population size of women in construction being at 249,670 in July-September 2019 (ONS, 2019), there needed to be an allowance made to consider how many women in the population size had graduated from a construction related degree in the last four years, now working in a professional role. Since women working in skilled manual trades were not accounted for by the researcher, 2% of the construction population of 1,411,133 which reduced the sample size to 221,447 (Gerrard, 2019). Since 22,000 people undertook an apprenticeship in construction, planning and the built environment (Foley, 2020), it has been estimated for every 56 male

construction apprentices there is 1 female (Young Women's Trust, 2016), reducing the sample to 221,054. Additionally, 39,982 females of the construction employee population were self-employed which further reduced the sample to 181,072 (ONS, 2019). An allowance was made for the number of women expected to be over four years into their career, not working in professional office-based roles and those who had not obtained a degree which could be discounted to around 45,000. As can be seen in Figure 9 below, the minimum recommended sample size was 68 people, therefore the researcher attempted to reach as close as possible to 68 interviewees.



Raosoft Sample size calculator

What margin of error can you accept? <small>5% is a common choice</small>	<input type="text" value="10"/> %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? <small>Typical choices are 90%, 95%, or 99%</small>	<input type="text" value="90"/> %	The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.
What is the population size? <small>If you don't know, use 20000</small>	<input type="text" value="45000"/>	How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.
What is the response distribution? <small>Leave this as 50%</small>	<input type="text" value="50"/> %	For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under More information if this is confusing.
Your recommended sample size is	68	This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Figure 9 Raosoft sample size calculator

A sampling error of 10% was allowed for the size of the sample as decreased precision allowed for a lower sample size to be utilised (Fellows & Liu, 2009). It is also difficult to make an assumption of a whole population based on a small sample size which can result in bias, therefore the “largest sample should be adopted” (Fellows & Liu, 2009).

3.6 Analysis Techniques

The interviews required recording the interviewees to enable the responses to be written up appropriately whilst being able to take into consideration observations. For example, Knight and Ruddock (2008) suggest the researcher can reflect on the confidence of answers, contradictions and emotions shown by the interviewee. Ritchie and Spencer (1994) recommend familiarisation of the data collected, a thematic framework to filter the data, indexing through NVivo, charting by under headings, mapping and interpretation through analysis.

Software is a tool that enables qualitative data to be assessed in its entirety with transparency, driven by the philosophical and methodological assumptions (Knight & Ruddock, 2008). The software, NVivo, was used for collating data because of the faster approach which allows for easier analysis and efficiency by the researcher in comparison to manually processing data

(Knight & Ruddock, 2008). NVivo defined coding as “the process of marking passages of text in a project’s documents with nodes”, whilst a node was defined as “a collection of references about a specific theme” (Bryman, 2012).

The data would be analysed by a grounded theory framework using coding allowing for data to be processed in to sections for minimised data, so sequences and links can be found to relate to literature (Bryman, 2012). Interview results have been analysed using thematic analysis through coding from incorporating transcripts in to NVivo. Thematic analysis splits the information into themes and subthemes for analysis (Bryman, 2012). Knight and Ruddock (2008) suggest the interview data should be integrated into topics of the paper which are supporting, contradicting and new ideas. Categories are coded from the researcher’s interpretation of themes to break down the data using “sufficient care and independent checking”, keeping an open mind initially (Fellows & Liu, 2009). Then coding can be more focused by data being “re-explored and re-evaluated” for categories to emerge from concepts (Charmaz, 2006).

3.7 Ethical Considerations

Informed consent informs participants on the information and requirements of the study allowing them to make a decision on participation, as can be seen from the informed consent sheet in Appendix H. The informed consent form also allows the choice of withdrawing from the process and to ask questions to aid them at any moment (Fellows & Liu, 2009). The participant takes part in the research unpressured and voluntarily, so they are unlikely to face harm or invasion of privacy (Bryman, 2012). Whilst the risk assessment allowed the risk of the research to be identified, shown in Appendix D. There were no significant hazards that would lead to a problematic risk which confirmed ethical approval.

Anonymity ensures that “providers of data cannot be traced from the output of the research” as agreed upon from ethical approval in Appendix C (Fellows & Liu, 2009). Hence, the identities of the participants cannot be revealed, so only information that was relevant to the research was included about individuals which would not identify who they are (Knight & Ruddock, 2008).

Confidentiality ensures that data is used in the way agreed between the participant and researcher, therefore the “express, informed consent of the respondents must be obtained and adhered to rigorously”, as can be found from the participant information sheet in Appendix G (Fellows & Liu, 2009). The identity of the individual must not be revealed, particularly in qualitative data where it is more difficult to conceal (Bryman, 2012). The Data Protection Act

(1998) allows data to be protected by legislation in terms the period the information can be kept for its purpose.

Results are validated through using techniques that are most appropriate correctly (Fellows & Liu, 2009). However, a significant issue with qualitative research undertaken by a female to interview females means that the research may not be accurately informed if it is influenced, therefore it is essential to be objective (Bryman, 2012). However, a female interviewer may elicit more open responses from female interviewees.

4.0 Analysis and Discussion

4.1 Introduction

The objectives of the research question were addressed by semi-structured interviews to identify the motivator factors for retaining early stage women in the construction industry from reviewing initiatives. The key findings are highlighted below from the interview transcripts through an in-depth analysis of themes and literature.

4.2 Interviews

The demographic of respondents is set out below in Table 5, whereby interviewees were found through snowball sampling, which resulted in 42 interviews conducted in total. Questions one to six were factually based to ensure the participant fell into the research category and to allow for background information for grouping. Whilst the questions that followed were to gain an understanding of personal experiences from initiatives and motivators for retention to enable objective five to be addressed.

The semi-structured interviews aimed to gather the opinions of office-based female professionals with under four years' experience in the construction industry since graduating, which a sample transcript for can be found in Appendix H. The interview questions were broken down into the initiatives found in literature, all participants fell in to the 'early stage woman' category holding between six months to four years' experience in construction, at 22-32 years of age. Majority of the participants were from leading contracting and consulting organisations with only a few from smaller companies, with 45.2% of participants at consultancy firms and 54.8% at contracting firms. The opinion of early stage women in construction was required therefore job roles were requested. Although, there was a mixture of job roles, bias was introduced from some job roles being highly represented compared to others.

Research findings were grouped into the categories which were the themes found from an inductive approach of coding that allowed for new ideas to emerge systematically, such as the initiatives, policies and other motivators to retention.

Table 5 Interviewee Demographic

Interviewee	Age	Time in industry	Job role	Consultancy	Contracting	Location
1	23	8 months	Project Manager	✓		London
2	23	1.5 years	Project Manager	✓		London
3	25	1.5 years	Sustainabilty Graduate		✓	Yorkshire
4	23	1 year	Quantity Surveyor		✓	London
5	27	4 years	Architect	✓		London
6	29	3 years	New Business Manager	✓		London
7	25	1.1 years	Project Manager		✓	London
8	24	3 years	Quantity Surveyor		✓	Surrey
9	24	3 years	Quantity Surveyor		✓	London
10	25	1.5 years	Quantity Surveyor		✓	London
11	25	3 years	Interior Designer	✓		London
12	25	2 years	Deisgn co-ordinator		✓	London
13	23	6 months	Construction Manager		✓	Croydon
14	23	1 year	Sustainabilty Graduate		✓	London
15	24	1.5 years	Project Manager	✓		London
16	25	2.5 years	Design Manager		✓	London
17	23	6 months	Construction Assistant		✓	London
18	26	4 years	Quantity Surveyor	✓		London
19	25	3 years	Engineer	✓		London
20	26	3.5 years	Section Engineer		✓	London
21	24	3 years	Quantity Surveyor	✓		London
22	31	2 years	Quantity Surveyor	✓		London
23	25	4 years	Quantity Surveyor		✓	Scotland
24	23	2 years	Site Manager		✓	London
25	26	2 years	Civil Engineer	✓		London
26	26	4 years	Project Manager	✓		London
27	27	2 years	Project Manager	✓		London
28	24	2 years	Project Manager	✓		Manchester
29	24	2 years	Project Manager		✓	London
30	22	2 years	Building Surveyor	✓		London
31	24	1.5 years	Quantity Surveyor	✓		London
32	24	3 years	Design Manager		✓	London
33	27	4 years	Quantity Surveyor	✓		London
34	24	1.5 years	Sustainabilty Graduate	✓		London
35	25	1.5 years	Project Manager	✓		London
36	24	2.5 years	Quantity Surveyor		✓	London
37	24	1.5 years	Civil Engineer		✓	London
38	32	4 years	Project Manager		✓	London
39	26	1.5 years	Engineer		✓	London
40	23	1 year	Civil Engineer		✓	Leeds
41	23	6 months	Engineer		✓	London
42	27	4 years	Engineer		✓	London

(Table 5 continued)

Interviewee	Construction related degree	Non-construction related degree	Professional Body
1		Mechanical Engineering	Pursuing CIOB
2		Mechanical Engineering	Pursuing CIOB
3		Environmental science	Pursuing IEEMA
4	Quantity Surveying and Commercial Management		Pursuing RICS
5	Architecture		ARB and RIBA
6		Business Enterprise Development	No
7	Civil Engineering		Pursuing ICE
8	Quantity Surveying and Commercial Management		Pursuing RICS
9	Commercial Management and Quantity Surveying		Pursuing RICS
10	Commercial Management and Quantity Surveying		Pursuing RICS
11	Interior Design		No
12	Architecture		No
13	Construction Management		Pursuing CIOB
14		Environmental science	IEEMA
15		Mechanical Engineering	Pursuing CIOB
16	Civil Engineering		Pursuing ICE
17	Architectural Engineering and Design Management		Pursuing CIOB
18	Real Estate		RICS
19		General Engineering	Pursuing ICE
20	Civil Engineering		Pursuing ICE
21		Physics with Geography	Pursuing RICS
22	Construction Management		Pursuing RICS
23	Commercial Management and Quantity Surveying		RICS
24	Construction Engineering and Management		Pursuing CIOB
25	Civil and Structural Engineering International		Pursuing ICE
26		History and Politics	Pursuing RICS
27		Hispanic Studies	Pursuing CIOB
28	General Engineering		Pursuing ICE
29	Architecture		Pursuing CIOB
30	Building Surveying		Pursuing RICS
31		Mathematics with management	Pursuing RICS
32	Architecture		Pursuing CIOB
33		Economics	RICS
34	Sustainability and Environmental Management		ICRS
35		International Business Studies	Pursuing CIOB
36	Quantity Surveying		Pursuing RICS
37	Civil Engineering		Pursuing ICE
38	Construction Project Management		Pursuing CIOB
39	Civil Engineering		Pursuing ICE
40	Civil Engineering		Pursuing ICE
41	Architectural Engineering		Pursuing ICE
42	Civil Engineering		Pursuing ICE

4.2.1 Professional Body

Majority of the interviewees were pursuing accreditation but felt that the professional body was not a motivator in aiding retention, particularly due to the amount of work and time-consuming process. Since many saw the professional body accreditation as something that needed to be done there was a lack of engagement with the professional bodies. Those in sustainability job roles found professional bodies less motivating due to taking them up for personal interest in comparison to quantity surveyors and construction assistants which some found pivotal to undertaking their role. Interviewee 15 found chartering “a big motivator for keeping me here at the moment” due to wanting to work towards a goal. However, positivity was inferred from the responses which listed benefits consisting of increased pay, being taken more seriously and enabling international work. However, it was suggested people tend to leave after chartership maybe due to reasons such as they’re not being recognised, for a bigger salary at another company or they hit a milestone.

Interviewee 3 suggested “I think if there was a bit more support in getting it that would be useful, like someone visible in the company to get help from.” Interviewee 9 also found there was nobody RICS qualified on their job which was demotivating so more support is required. Although, Interviewee 38 found “CIOB’s young professionals’ group, Novus, has been instrumental in my professional development” highlighting the effects of networks introduced by professional bodies for support.

4.2.2 Mentoring

The findings from the interview correspond with the attitudes towards mentoring in research from academics such as Francis, (2017) and Ling and Poh, (2004) which identified mentoring as key for retention. Most people had a positive attitude towards having a mentor whether it was formally or informally implemented, seeing it as a motivator to remain in the construction industry due to the guidance provided, contradicting the view of Morello (2018). Interviewee 3 did not have experience with a mentoring scheme and found “it would make you see your potential career options and what’s available whereas at the moment I’m questioning what else is out there”. This highlights the need for more structure to some companies mentoring as there was uncertainty on visibility of mentoring schemes and the need for senior mentors to take out more time to mentor properly. Interviewee 8 recalled the mentoring scheme as unstructured due to an understaffed company which meant that it is unable to operate properly therefore resulting in looking for another graduate scheme, however this may be due to a smaller company lacking the infrastructure to properly implement a mentoring scheme. It was found by Interviewee 5 that the RIBA student mentoring scheme “needs to be monitored and promoted a bit better” which was consistent with majority of mentoring at companies.

Although, many interviewees did not have experience of a mentoring scheme since a lot of the mentoring schemes were recently introduced but interviewees chose a mentor themselves which they were encouraged to learn from. This was moderately contradictory with Worrall (2012) finding a lack of mentoring for women being available being a barrier as women found adequate support from a line manager. For example, Interviewee 2 found it useful being accountable to someone. However, some schemes were quite formal by pairing up people based on location and chartership route then assigning a mentor, which involved regular meetings and reporting to human resources on the progression, but the relationship was informal. Additionally, some interviewees preferred to have a female mentor due to sharing similar aspirations and experiences, that they would go out of their way to reach a specific mentor such as Interviewee 28, correlating to Drury et al (2011).

4.2.3 Role Model

A lot of interviewees wished they had a role model but recognised the difficulty of there being women to look up to in their field, as Interviewee 39 cited they would not be able to relate as much to a mentor from another function, in support of RICS (2016). Additionally, some suggested a female in a higher position motivated them more, with some finding it disheartening not seeing many women in senior positions whilst others had role models based on the person regardless of their gender, which was consistent with Worrall (2012) due to being a “source of advice and guidance”. The reason for looking up to strong women managers was due to showing there is potential for progression from extensive experience, as Interviewee 40 found there was only one senior woman at the company in a human resources role, supporting findings of Ely et al (2011) and Drury et al (2011). The lack of seniority in construction made young women feel that there was no chance of them progressing, therefore there was a need expressed for increased construction female role models that show a potential career path, as a few interviewees only had family members as role models. However, Interviewee 32 suggested senior women were not supportive of each other as they behave more aggressively.

Mentors acted as a role model for many people which was seen as a motivator to remain in the industry as Interviewee 6 expressed “early in construction you’ll find people that are older and set in their way which don’t make an effort to teach you” whereas ‘buddies’ assigned was younger and pushed learning. Although, many interviewees saw their line manager as motivator in the form of a role model due to being an informal point of contact.

4.2.4 Networking

There are a lot of networking events which early stage women can take part in that are encouraged externally such as the Women in Construction Summit, Inspire Me and CPD which take place regularly that were praised, contradictory to Morello (2018) and Worrall (2012). It was found early stage women were encouraged to network to build up contacts, as Interviewee 33 expressed involvement in a programme for the next generation of construction professionals for discussions for a similar age group that are at the beginning of their career. However, the majority had a negative experience as Interviewee 23 described the women in construction events as “preachy” where they talk about women not being treated right which was inconsistent with her experience, resulting in not attending the events. Interviewee 9 had a similar experience finding women in construction events “cringe, it was a bit like ‘go women’”, finding it “causes more of a divide than making it more inclusive” due to being forced. Therefore, attendance of men is low, but equality is being pushed for so a forum for discussion of diversity is in fact enabled. Although women can come together to discuss, excluding men was described as counter intuitive. The networking events were considered to consist of people complaining whereas proactivity to solving problems was preferred. A way forward from this was to introduce “a gender balance group” which Interviewee 30 described as being more accessible for women to come together. It appeared some networking events required more support as Interviewee 3 found “there’s another graduate networking but that’s kind of died out so I don’t know if they just kind of lost support for it”.

4.2.5 Affinity Grouping

Some of the forms of affinity groups were listed as a women’s network, gender equality network, employee representation groups. From the interviewee’s responses it can be suggested that most affinity groups/networks are relatively new to the company as the interviewees had not attended the events but we’re aware of the networks. The groups seem to be a motivating factor to remain with a company for open discussions rather than to stay in construction. Interviewee 5 stated “I am aware of them but I don’t engage with them as much as I could or should”, showing that the initiative possibly doesn’t get a higher involvement than it could in attaining members, contradictory to Francis (2017). Interviewee 3 found agreement, “I think they need more help to get the word out”, in support of Gale and Davidson (2006) recommending better advertisement. Therefore, involvement could be improved since there is awareness of networks for support but a lack of representation in attendance to the meetings and event. Due to majority of the network being a voluntary lead, Interviewee 10 suggested there was a lack of leadership as the network has disappeared whilst Interviewee 36 found them time consuming. Despite not having experience with the affinity groups, the interviewees

still stated having the affinity groups in place as being a motivating factor in remaining in the construction industry. Only Interviewee 15 found a women's network integral to remaining in the construction industry due to driving policy change which had been "overwhelmingly positive" disagreeing with those that find the networks as putting people in boxes. For example, a group set up just for women was described as "mocked by men" by Interviewee 23 therefore finding them unhelpful due to the stigma. Therefore, the involvement of both genders needs to be made clear to address the gender balance or training to create awareness of the network initiatives.

4.2.6 Training and Personal Development

Academics outlined training and personal development as a key motivator for young females in construction. These findings support the findings in literature by several researchers; such as Tyler et al, (2003); Connor et al; (2003); Fernando et al, (2014); King (2006), who all identified training as key to retention of women.

Graduate programmes had fixed training which appeared to be structured for personal development and specific to the role, as majority of interviewees saw it as a motivator. Outside of the graduate scheme some companies had training that was sponsored and voluntary for enrolling on, however some found this lacked advertisement or communication. The training courses were particularly useful for those with non-construction related degrees for learning construction skills but also presentation and communication skills, agreeing with Worrall (2012) on soft skills aiding retention. However, one non-cognate, interviewee 33, recalled that "the first two years were very tough and I doubted myself all the time, thinking is this really what I want to do, should I leave and do something else. Also, I felt like I was held back to take the APC at my previous company. That was the two experiences where I thought shall I leave the industry.

Majority of interviewees had their qualification training funded for by the company and were encouraged to become chartered through continued professional development. Interviewee 5 supported this with training being a motivator due to "constantly improving and developing even when you're qualified because you have to keep up with construction and technology", in support of Deloitte (2018). This training was not specifically for early stage women in construction but company-wide, particularly encouraged on the graduate scheme, disagreeing with Worrall (2012) and Gurjao (2006) which suggested there was a lack of training opportunities.

Interviewee 3 stated there was a new programme, Empower, that was set up for young females who have completed the graduate scheme, allowing women to progress into senior

roles. Interviewee 14 stated there is an Aspire training and development scheme for soft skills and Inspire for professional development into senior roles for everyone. A range of training in and beyond the graduate scheme was one of the highest motivators to remain in construction due to providing opportunities to grow and excel but this had to be taken on your own accord. However, Interviewee 10 found the training had to be self-driven as “what the company say is lip service so anything you actually want to do you have to push for yourself”. Despite majority of interviewees providing positive responses on training and development, Interviewee 38 suggested there was a “lack of opportunities for progression” which leads to questioning the future.

4.2.7 Flexible Working

Flexible working appeared to be an informal ad hoc practice in most companies which was at the discretion of a line manager despite some company’s policies incorporating flexible working, supporting RICS (2016) and Constructing Excellence (2009). Interviewee 4 stated a frequently expressed point as, “I think it’s something that should be more structured and would motivate me to stay in construction”, in confirmation of Crawford (2015). The interviewee provides a valid argument because of the inflexible hours identified by Barreto et al (2017) and Oo et al (2019). However, there seems to be some movement towards flexibility in the workplace with the ability for employees to adjust their core hours with many interviewees mentioning the ability to start earlier or leave later.

The initiative seemed to still be “frowned upon” and “heavily questioned”, perhaps being acceptable for women with families rather than company-wide despite appearing in contracts and being advocated by companies, as Interviewee 7 noted “I’ve always seen it as something for if you have kids”, supporting the findings of Galea, 2015; Worrall, 2012; Barnes, 2019. This was a pattern recognised amongst mainly contracting roles which seem to be slower than consultancy firms in implementing a strategic way of working flexibly since they seem to be at the initial stages of piloting for company-wide rollout. As Interviewee 12 considered construction as “backwards and we’re so behind in terms of modernity, technology or diversity...compared to other incentives other companies offer”. There was a perception that flexible working would depend on your job role in construction. Consultancy based firms seemed to have structured flexible working practices in place in comparison to contractors which had to do site visits so they could not work from home with Interviewee 6 claiming it was “impossible”. As the interviewee was an Engineer, she found her job role restricted her in the ability to work flexibly whilst others could do their job from anywhere with the capability of working from home a day a week. Interviewee 14 supported this with, “I think people are far back in the mindset of construction whereas other parts like consultancy are more forward

thinking so it's difficult to balance the two". Interviewee 34 suggested there was a need for a culture change particularly in construction due to the informal imbalance, in support of Galea (2015) that is not fair as "I think we just need to be less archaic about it especially because I work on a construction site". Flexible working could be considered hindering women's retention in the construction industry as Interviewee 19 suggested men don't see the need to implement flexible working therefore the flexibility was better in the office where there was a higher representation of women. However, despite many having not experienced flexible working they expressed how much of an impact it could make to balance work and life whilst improving quality of life to motivate them to stay in construction in support of Conor et al (2003) and Deloitte (2018).

Although, Interviewee 6 from a contracting firm stated "the company are implementing agile working which is the concept of as long as you're putting the hours in then work when you want, provided it suits the business" but this again was dependant on the team. There seemed to be a move towards hot desking which encourages working from home due to limited space, but it is currently in the works. Due to always being on the go in construction it helps to have different workspaces that can be accessed but Interviewee 11 believes this would be difficult for a bigger company. Technology has helped in aiding flexible working such as skyping but trust was seen as a big aspect since "they don't like new people working from home if you're a new starter on the grad scheme they tend to discourage it" as Interviewee 14 found. However, Interviewee 40 mentioned Flex40 that is a structured process that allows for overtime worked to be transferred into time off, showing a movement towards programmes that are specifically for improving long hours and diversity.

4.2.8 Awards

Awards were found to improve employability, pay and opportunities with many glad the initiative is there to make use of. Some of the awards implemented by companies recognise individuals internally or take place externally, which include employee excellence, a young achiever and graduate of the year. It was found that despite the fact that many companies were involved in awards, interviewees did not get involved with them extensively as recognition on a daily basis was favoured. Interviewee 4 reinforced this with the fact that "they are not a motivator to remain in the construction industry in spite of being fun since other initiatives are more effective". A reason for this was "the awards market is so saturated as there are so many awards here and there so it takes away the credibility" from Interviewee 6's perspective.

Additionally, a negative review of awards was given by interviewee 39 due to being given based on senior manager friendships as Interviewee 33 found "awards are not true because

they don't represent the whole industry", therefore the initiative was only motivating to stay if it was fair in engaging people equally.

Interviewee 5 found it "reassuring to see women win prestigious awards" but found "there should be more highlighting of young architects/emerging professionals in the industry". Therefore, some would prefer if more awards were developed for women and young people as it was felt they were lacking in the company and construction. Considering the range of awards available, perhaps it would be necessary to create awareness of opportunities. Interestingly, awards were considered as one of the least motivating factors in comparison to the other initiatives to remain in the construction industry. This came as a surprise due to the want for recognition and praise being expressed. This implies, daily recognition through praise or appraisals for positive feedback were desired more and considered more impactful for retention.

4.3 Policies

Majority of interviewees were not aware of any policies in place supporting findings of Galea (2015) and Thomas et al (2019) but interviewees suggested there were parental policies and systems in place for sexual harassment. Interviewee 3 stated "I know they encourage us and younger people in construction but mainly focused in recruiting" as Interviewee 12 experienced retention strategies being pushed aside, supporting French and Strachan (2015) finding a lack of engagement. Despite these findings majority of interviewees failed to acknowledge gender policies being in place outlined by the academics mentioned above, highlighting that informal rules take precedence in support of Barreto et al (2017).

4.3.1 Informed By

Almost all interviewees were not aware of what initiatives were informed by but some guessed through statistics, good for diversity, people in firms, lack of women at board level, high attrition rate of female graduates, gender pay gap analysis, company policy for diversity targets. Interviewee 27 mentioned that the initiatives align with the company's core values of inclusion, showing support of Galea (2015), however majority of interviewees failed to address the use of a clear procedure to inform initiatives. Therefore, further effort would need to be implemented towards a structured process for initiatives can align with policy.

4.3.2 Monitoring

For most of the initiatives the interviewees were not aware of any monitoring, in support of Tyler et al (2003) and RICS (2016) but updates seemed to be consistent through graduate schemes. Training and networks were monitored through feedback forms, surveys and business tracking. Whilst flexible working was the least likely to be monitored due to being an

informal practice amongst most interviewees, supporting Galea (2015). Also, despite mentoring schemes in place there was reliance on the mentor and mentee to maintain their relationship rather than monitoring through a third party which resulted in the relationship not being as consistent. Interviewees which stated their company had processes in place seemed to be more positive about their mentoring experience. For example, it was found human resources run the mentoring scheme, so feedback is done through them. This supports the findings of Galea (2015) who claimed the initiatives need to be monitored to allow for robustness and revisability, then they can be improved upon for greater effectiveness.

4.4 Effectiveness of Initiatives

Questions on the effectiveness of current initiatives for early stage women were aimed to find the opinions of what would be best for retention, addressing objective five. The respondents believed beyond the initiatives already mentioned that more effort was required with initiatives for early recruitment which would lead to increased retention. Interviewees were glad the initiatives were in place and that there was a range of them because it shows there's a movement towards a fair and equal industry but Interviewee 13 found "I think people would stay if there was a lot more initiatives". Interviewee 12 suggested "we're not doing enough to track early stage women in the construction industry", in support of Thomas et al (2019). This suggests there is still room for improvement on focused initiatives, as it was pointed out it differs which initiative works effectively for individuals and how progressive the company are. The most favoured recommendations for retention were mentoring, training and flexible working due to providing the most support in and out of work. Some initiatives work better than others for different people, but it may come down to intrinsic motivation which requires resilience, with a few suggesting it's up to the individual to drive progress. Additionally, the team around you can have an impact as Interviewee 14 found after the graduate scheme "motivators do change as lots of people do move on", therefore some people have a negative experience without a supportive team.

4.4.1 Financial Incentive

Unsurprisingly, monetary gain was not a significant factor in driving retention although it was something that was positively received. Interviewee 12 suggested bonus schemes would "make you want to stay where you're working, I think money and bonuses are a big driver", due to aiding in feeling like you're being rewarded for the work put in over time. Although, majority of the early stage women were driven by other factors, Therefore, there was support of Deloitte (2018) findings, as many interviewees found the actual work of the company a motivator, such as care about sustainability and technology that was described as challenging and interesting, contradictory to Morello (2018) finding people get bored of the work. Also,

volunteering, wellbeing days and team building were found to retain employees due to detracting from the stress

4.5 Negative Experience

The aspects of the industry were broken down into negative factors for retention.

4.5.1 Junior role work

Some negative experiences cited the work as not being as exciting, but this was something that was expected from starting a new job at a junior level. As interviewee 3 stated “when you’re new you get put with the mundane jobs which reduced my motivation a bit due to boring tasks” in accordance with Interviewee 4, “everyone gets admin work but then things will change and improve”. This was a demotivating factor at the beginning but having a good team that allowed for growth overcame this barrier. Interviewee 28 found “it’s specifically people that are a bit older and have been in the industry a little longer so they haven’t quite caught up with the culture shift. Sometimes without thinking they’ll say or do something without thinking, it’s a combination of being female and junior. Interviewee 42 suggested a male graduate perhaps would not be given menial admin jobs. Interviewee 32 stated a male that was at the same stage as her excelled further due to their bravado and relationships.

4.5.2 Culture

Some interviewees found positive discrimination of being a woman meant easier opportunities that helped with career growth and people are really willing to help. On the other hand, more often negative discrimination can occur from being a female as Interviewee 13 suggested but generally discrimination is felt rather than being explicit as “you feel like you have to prove yourself a little bit more than your male counterparts”, supporting Yousaf and Rasheed (2014); CIPD (2006). However, it was found teams were protective towards abstaining from discriminatory behaviour. Interviewee 6 found it was about the individuals response since “there’s a level of banter in the company which I don’t care about but some people don’t like it”, supporting findings of Oo et al (2019) that women had become resilient to comments but the attributes of young females in construction would have to be looked at more closely to determine if having assertive traits allows females to strive. Interviewee 9 stated “going out and trying to retain women isn’t the right way of doing it”, since hearing that women are underrepresented would be demotivating so less of a big deal needs to be made. The interviewee supported it comes down to being able to have personality traits to fit the environment to fit in. Despite the barriers to retention depicted by the participants, support of English and Jeune (2012) was found due to a positive outlook on being motivated by the want to be a part of the culture change and being motivated to prove people wrong. There is a drive for young people to stay in the industry through setting gender parity targets which motivates

people to want to encourage and be a part of that change, consistent with the findings of Deloitte (2018). For example, Interviewee 32 had an interview elsewhere recently where the company were focusing on diversity as their core values which was a motivator to remain in the industry.

High workload was common as a potential reason for leaving, as interviewees found there was a lot of work involved in and out of the job, particularly on a graduate scheme. Supporting findings of X as stress, long hours and work were commonly found as negative aspects of the industry but it seemed this was majority of the time accepted as the way it is. However, the positives of being a part of a graduate scheme seemed to outweigh the negatives as interviewees felt they were nurtured, facilitated and supported. In support of Yousaf and Rasheed (2014) was found from good support from encouragement for promotion and trust in employees as they were listened to from not being micromanaged. Interviewees were respected in terms of wanting to learn and were rewarded for hard work. Interviewee 3 found reviews with positive feedback motivating supporting Galea (2015) and Kamardeen and Sunindijo (2017) but found appraisals could be more structured.

4.5.3 Sexual Discrimination

It appeared some sexual discrimination still occurred in the industry supporting findings of French and Strachan, (2015); Barreto et al, (2017); Worrall, (2012); Francis, (2017), perhaps more predominantly with contracting firms in agreement with Elena Navarro-Astor (2017) but it seemed to be more covert. The ingrained sexism was described as a reason for wanting to leave the industry as it “gets you down and you just can’t be bothered with it anymore...The culture change would involve everybody and would take a lot of time and need people right at the top of all the companies to be setting a standard by being role models for the culture they want to achieve and trickle that down to the whole company”, which was supportive of the findings of the masculine culture being a barrier by Oo et al (2019) and Barreto (2017). Surprisingly Interviewee 21 from a consultancy thought, “I think they don’t address the biggest problem which is the culture of the team as the culture of the team is very laddy, they go out a lot. It can be really sexist, I’ve had lot of awful sexist comments said to me and other women in the team and they haven’t been properly dealt with...The sexism in my last role, I talked to lots of people about it but they didn’t do an exit interview with me because they didn’t want too much of it on record”. Interviewee 15 stated “a man refused to work with me because he felt unsafe because I was a woman” suggests that discrimination is still prevalent for some employees causing women to consider leaving to an office-based role. It was suggested there was a fear of women going on maternity leave which leads to women in architecture to change career path. However, many people praised the culture due to enjoying the involvement in

social events, having a team that champion you and those that were particularly positive had a female connection in the business. Therefore, there was, moderate support for Kamardeen and Sunindijo (2017) and Oo et al (2019), as sexual harassment was a low barrier but it would be necessary to put measure in place for retention of female professionals.

4.5.4 Stereotyping

Interviewees reported stereotyping still occurs as people often have mistaken them as being in a lower skilled role which this was not a hugely detracting factor from staying in the construction industry but it was found being considered incompetent, ignored deliberately or judged before even speaking was demotivating, supporting Worrall (2012). Interviewee 7 found men were treated differently to women as “people are overly gentle with women or people that are younger which makes you feel inferior in a way, so on site someone will ask who you’re here with and do you know where you’re going”, therefore many found you have to work harder to be taken seriously and have your voice heard as a woman. Interviewee 27 suggested this can depend on the generation of the person since “it tends to be the older generation that acts like that”.

4.5.5 Senior Management

Many negative experiences were suggested to “stem from line management” as Interviewee 12 referred to the males in the older generation that have been in the industry for a while as “dinosaurs” and Interviewee 23 called them “grumpy old men”. Interviewees suggested this generation meant a lack of modernity and progression due to having to fit in with a laddish culture. Therefore, it has been claimed that issues cannot be solved by initiatives but something bigger needs to be done to create an equal culture valuing everyone, in particular by creating awareness. Interviewee 26 found it is difficult to change deep rooted attitudes of people in the industry with a generational change allowing the values to become the norm, but training could potentially help. It was suggested by Interviewee 22 it would be good if senior management turned up to events that are important to women in the team.

4.5.6 Jobs in Consulting

A fair amount of interviewees had decided to take up an entirely office based role due to negative experience at an early stage of career: sexist comments, long hours, proving themselves on ability instead of gender, wanting to be surrounded by more women, low job satisfaction after the graduate scheme. Low job satisfaction was particularly found at contracting firms where the negative experiences were predominant, with Interviewee 39 reporting issues such as “working culture, long hours, typology of people”. Consistent with the findings of Oo et al (2019), Interviewee 20 found the long hours the job “isn’t very motivating at all. I’m thinking this job isn’t really a life-long thing for me”. Particularly once completing the

graduate scheme it was found women felt they were left to fend for themselves or were worried about the decrease in support they would receive. Interviewee 12 found the scenario frustrating which lead to looking for jobs elsewhere. However, Interviewee 39 found it could be too late to move to change profession and thought “working for a consulting company would be the only way I could see myself remaining in construction”, noting particularly due to the likelihood of becoming a mother. These findings suggest that recommendations for improving the retention of early stage women should be focused around overcoming the poorly experienced culture, in agreement with English and Jeune (2012). As expressed by interviewees, overcoming this factor could encourage a longer stay within construction and in particular with the company they are with.

4.5.7 Summary of Chapter

To conclude, the interviews were used to address objectives four and five set at the beginning of the study. Coding and thematic analysis were used to collate the opinions and beliefs of early stage women. Therefore, comparisons could be made between the analysis and literature to enable a complete addressing of objective five, to provide recommendations in Section 5.0 and limitations in Section 5.4.

5.0 Recommendations and Conclusions

5.1 Introduction

This chapter focuses on collating the findings of the research addressing the aim and objectives through conclusions, then recommendations were formulated.

Objective 1: To identify the current retention levels of early stage women in construction, required research on the barriers women face in the construction industry at an early stage to determine what causes the stagnant representation. Literature showed the patterns of those in the early stage of their career consisting of changing attitudes towards care for diversity, work life balance and support. Barriers were identified that were limiting retention such as inflexible hours, lack of support and the culture.

Objective 2: To examine the retention policies for women in construction used academic research and data collection to find a clear generalisation of policies implemented by construction, however the findings of the interviews were coherent with the informality of policy as identified in the literature review.

Objective 3: To identify current initiatives for retaining early stage women in construction, found a clear overlapping on initiatives presented for women in construction and 'early stage women' but the data collection allowed for a better insight in to the 'early stage woman'. The initiatives reviewed that were found for retention included mentoring, training, affinity groups, networking events, flexible working which were preferred over monetary gain. The initiatives play a role in allowing early stage women to advance their careers by making the construction industry supportive and inclusive from focused initiatives.

Objective 4: To review initiatives for retaining early stage women from other sectors, involved finding initiatives for early stage women in other sectors, which were found to be informed by formal rules and used data to monitor progress, perhaps being more policy focused. The initiatives appeared to be implemented through a structured process with accessibility company-wide which was clearly advertised and accessible. It would be essential for the construction industry to adopt formal processes which reflect on monitoring progress so there can be acceptance of a culture shift particularly in the older generation whereas other sectors seem to have acted on the benefits of a diverse workforce faster and more effectively. The threat of other sectors performing better and accessing the highly needed talent in the construction workforce should ensure focused initiatives are in place which are informed by policy or formal rules which are not affected by the informal rules.

Objective 5: To provide recommendations for retaining early stage women in construction, meant participants were questioned to find the initiatives most effective for retention, resulting in flexible working for a work life balance, mentoring and training for support being the most common motivator. From reviewing literature and the data collection, the recommendations below set out ways that early stage women can be better retained in the construction workforce.

5.2 Recommendations of Research

Literature outlined that other sectors better implement flexible working initiatives which are backed by policy and accepted as a benefit for all level of employees. Despite some companies already implementing flexible practices, majority remain discretionary and deemed appropriate for mothers. However, other sectors benefit from implementing flexible working effectively, therefore availability company-wide regardless of gender should be adopted to enhance a better work life balance which other sectors have managed to progress with.

Mentoring was acknowledged in literature and data collection as one of the most effective retention strategies due to the requirement of support for early stage women. More women in senior roles that act as role models would aid seeing longevity in a career in construction, so women are enabled confidence of a career path they can follow. However, both genders are necessary to participate in mentoring, since involvement of males would help in climbing the career ladder whilst allowing for open conversations of gender balance. It would be recommended for companies to review their mentoring schemes through monitoring, to ensure effectiveness from regular meetings, adequate involvement and to ensure employees are satisfied from support.

Literature and data collection found training as being one of the most effective ways to retain early stage women due to the desire for continuous learning and progression. Since the younger generation were found to have prioritised support for growth over remuneration. Therefore, companies should ensure progression is pushed for by availability and accessibility of training which is technical and for soft skills.

One of the most significant contributors in deterring retention of early stage females was the culture of construction which consisted of male dominance and sexual discrimination. Despite the issues not being as common as found in literature, there was still a need for measures to be put in place for awareness of a need, in particular for the older generation, to shift the culture so initiatives could be as effective as possible. Therefore, unconscious bias training could be undertaken to open minds to inclusivity, then the culture could move towards becoming desirable through best practice.

Literature confirmed that gender policy needs to be aligned to company values, robust and revisable to be successful which appeared more apparent in use in other sectors in comparison to the construction industry. Initiatives are ad hoc and easily affected by informal rules despite policy in place therefore it is recommended for companies to review and modify the formality of initiatives through measures such as informing initiatives through policy. This would allow fairness and accessibility company-wide for retention opportunities to feel supported in the industry, since were numerous benefits mentioned for remaining apart of the construction industry by participants.

5.3 Conclusion

Overall, it was found construction is steadily implementing initiatives to retain women through a variety of methods, despite mentoring, flexible working and training being suggested as the most effective retention initiatives. However, more emphasis needs to be placed on the formality, monitoring and alignment of initiatives to ensure full effectiveness for the entire workforce.

5.4 Limitations

The sources of literature were limited by accessibility therefore as many sources as possible were utilised. However, this meant that information which was based on women in construction and other sectors had to be generalised in places to find overall initiatives and trends which were researched worldwide. Whilst, the interview limitations were discussed in Section 3.5.3, with the main concerns being the inference of the interviewer when picking apart the transcripts. Additionally, some of the interviewees were from the same company, predominantly based in London, due to known contracts in the industry which results in bias of the results. However, since the experiences and opinions of interviewees were required, the results provided differences to what retains each employee despite common factors being found overall.

5.5 Future Research Recommendations

Since this research focused on initiatives and retention from a female's perspective it would be recommended to incorporate males, human resources and senior managers in data collection to find out if measures are effectively in place in their opinion. Additionally, since other sectors were looked at it would be advisable to research people outside of the construction industry to allow for comparisons.

Since the research focused on a select few initiatives it would be vital to investigate other ways to retain early stage women in construction, since further retention strategies could be available. Particularly due to barriers to retention identified outside of the scope of which

initiatives identified could solve, which seem need other solutions for improvement that can be uncovered through further research.

Additional research should be carried out to determine success of initiatives from the recommendations identified from objective five, so it can be realised if further implementations are necessary to improve the retention of early stage women.

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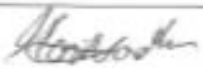

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Appendix A - Project Definition Document

Name of Student	Monisha Sandhu		
Name of Supervisor	Karen Blay		
Project Title	The Retention of Women in the UK Construction Industry		
Aim	To improve the retention of early career women in UK construction industry by providing recommendations		
Objectives	1.To examine the retention policies for women in construction 2.To identify current initiatives for retaining early career women in construction 3.To review initiatives for retaining early career women from other sectors 4.To assess the adaptability of initiatives within the construction industry 5.To provide recommendations for retaining early career women in construction		
Methodology	A comprehensive literature review Interviews with women in construction Questionnaire to collect quantitative data		
Resources	Women in construction Journals, papers, websites		
Anticipated Outcomes	1. Reviews the retention of women in construction 2. Identifies effective initiatives 3. Recommends improvements for effective initiatives		
Programme of Work	Include a Gantt Chart to show the various research tasks and deadlines. (Refer to <u>Section 2 Dissertation Process and Key Dates</u> for the deadlines.)		
Health & Safety Risk Assessment Form If a Risk Assessment Form is required, see <u>Section 3. Health & Safety</u> for the process for completion and approval. Download the latest version of the Risk Assessment Form from the School's Health and Safety webpage http://learn.lboro.ac.uk/mod/folder/view.php?id=274337			
Health & Safety Risk Assessment Form <u>IS Required</u> for this Project		YES	Risk Assessment Form <u>NOT Required</u> for this Project
Risk Assessment Form Completed		Tick	
<div style="display: flex; justify-content: space-between;"> <div> Signature of Student  </div> <div> Date 17/10/19 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> Signature of Supervisor  </div> <div> Date 17/10/19 </div> </div>			

Appendix A2 – Reflection on Plan

The outbreak of COVID-19 had disrupted the revised programme due to completing the data collection at a later date since more participants had to be found as people had overwhelming workloads. This endured further time for data collection which meant there was less time available for refinement of the literature review, discussion and conclusion. Additionally, due to the experience of having to self-isolate for a period of feeling unwell, then relocating in accordance with government guidelines, to where there was an incredibly poor internet connection and inability to study sufficiently the quality of the work was impacted due to pushing back dates from the programme.



Appendix B - Gantt Chart



Appendix C – Ethical Clearance


19CVC032 - Ethical Approval



Wayne Lord

To  (s) Monisha Sandhu

Cc  Karen Blay

 Flag for follow up.



17/02/2020

Dear Monisha,

This email confirms that your project entitled "To improve the retention of early stage women in UK construction industry by providing recommendations." has received ethical approval at the School level.

Its Risk Assessment Number is WL_8652.

Regards,

Wayne Lord

(cc'd k.b.blay@lboro.ac.uk)



Appendix D – Risk Assessment

Loughborough University, School of Civil and Building Engineering

School-level Ethical Risk Assessment

Complete the risk assessment below so that you can answer 'yes' to the question concerning risk assessment on the University's Ethical Clearance Checklist. Print out this form and submit it with your Ethical Clearance Checklist for approval. Remember that both this form and the Checklist need to be signed.

Important note: Do not use this form to evaluate health and safety risks (e.g. if working on site or in the labs). Speak to the School's Health and Safety Office (Wayne Lord) about those risks.

Step 1: Complete the following risk assessment, adding any further types of ethical risk (i.e. reputational, psychological, social and/or emotional harm) that may not be present in the suggested Column 1 content. Enter each further type of risk in a new row and add more rows as necessary. Note that both participants and researchers can be exposed to these risks.

Column 1: Risks present <i>Ethical risks (i.e. a risk of reputational, psychological, social and/or emotional harm) present in the planned research:</i>	Column 2 <i>Is the risk in Column 1 present in your study design?</i>	Column 3: Mitigation measures in study design <i>If 'Yes' to Column 2, describe the provisions made in your study design to minimise the risk:</i>	Column 4 <i>Is the residual risk remaining after the mitigation measures of Column 3 appropriate to the research need?</i>
Principle 1: Sound application and conduct of social research methods, and interpretation of the findings <i>The research methods may place an undue burden on respondents or the researcher may use them incorrectly due to lack of experience or training.</i>	Yes / <input checked="" type="radio"/> No		Yes / No
Principle 2: Participation based on informed consent <i>Potential participants may feel obliged to take part (e.g. due to a pre-existing relationship with the researcher), they may lack full information about the nature of the study, the risks to which they will be exposed, and/or the way in which the results will be disseminated. Potential participants may be provided with an inappropriate amount of information when deciding to participate: either too much or too little.</i>	<input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No	Informed consent form which provides information on background information of study and allows for confidentiality to be confirmed	<input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No
Principle 3: Enabling participation <i>The recruitment and/or sampling strategy may make it impossible for certain categories of potential participant to contribute to the study when they would otherwise be suitable. The data gathering methods may disadvantage some or all of the participants by limiting their contributions.</i>	<input checked="" type="radio"/> Yes / No	Snowball sampling will follow purposive sampling so as many people in the sample category can be reached	<input checked="" type="radio"/> Yes / <input checked="" type="radio"/> No
Principle 4: Avoidance of personal and social harm <i>The research may cause participants to feel they have been wronged. They may feel taken advantage of by inappropriate questions, excessive time obligations, raising false hope, creating anxiety, or by damaging their reputation.</i>	Yes / <input checked="" type="radio"/> No		Yes / No
Principle 5: Non-disclosure of identity <i>The identity of participants, and all the data they generate or contribute, may not be sufficiently anonymised and protected. Data may be used for purposes other than those to which participants consented.</i>	Yes / <input checked="" type="radio"/> No		Yes / No

Reference: Government Social Research Unit (2009). *GSR Professional Guidance: Ethical Assurance for Social Research in Government*. London: Government Social Research Unit, HM Treasury.

Risk assessment number: _____ (to be completed by School)
v. 7, February 2019



Loughborough University, School of Civil and Building Engineering

School-level Ethical Risk Assessment

Column 1: Risks present <i>Ethical risks (i.e. a risk of reputational, psychological, social and/or emotional harm) present in the planned research:</i>	Column 2 <i>Is the risk in Column 1 present in your study design?</i>	Column 3: Mitigation measures in study design <i>If 'Yes' to Column 2, describe the provisions made in your study design to minimise the risk:</i>	Column 4 <i>Is the residual risk remaining after the mitigation measures of Column 3 appropriate to the research need?</i>
Study-specific risk (please describe):	Yes / <u>No</u>		Yes / No
Study-specific risk (please describe):	Yes / <u>No</u>		Yes / No
Study-specific risk (please describe):	Yes / <u>No</u>		Yes / No
Study-specific risk (please describe):	Yes / <u>No</u>		Yes / No

Examples of study-specific risks might include: questionnaire questions that may be culturally or commercially sensitive; the possibility that the results could reveal an anonymous participant's identity; placing undue time obligations on participants; the existence of prior relationships that may induce individuals to participate or bias or filter their views; and so forth.

Step 2: Review your answers to Column 4, considering each risk in turn. If any 'no' answers are present in Column 4, reconsider how you are going to reduce the possible effect of each risk by revising the design of your study (which includes the training of your researchers) and update Column 3. Keep improving your mitigation measures (Column 3) until you can truthfully answer 'yes' to every entry in Column 4. If you cannot or are unsure how to do this, contact Derek Thomson.

Step 3: Sign and date the following declaration, print out this risk assessment and return it with your completed University Ethical Clearance Checklist.

I confirm that the above assessment accurately evaluates the residual risk of reputational, psychological, social and/or emotional harm to participants or researchers in my/our study and that the design of that study appropriately balances those risks with the research need.

Responsible Investigator: Print name: Karen Bly Sign: [Signature] Date: 11/02/2020

Student: Print name: MONISHA RANDHU Sign: [Signature] Date: 10/02/20

MODULE CODE TO WHICH THIS APPLICATION RELATES (if present): 19CVC032

Reference: Government Social Research Unit (2009). *GSR Professional Guidance: Ethical Assurance for Social Research in Government*. London: Government Social Research Unit, HM Treasury.

Risk assessment number: _____ (to be completed by School)
v. 7, February 2019

Appendix E – Pilot Study Comments

Part A:

1. What is your job role?
2. What is your age?
3. When did you graduate from university?
4. How many years have you been in the construction industry?
5. What discipline do you work in?

Part B:

6. Are you aware of any initiatives for retaining women in the construction industry?
Break down question to specific initiatives so it is clear what is meant by an initiative.
7. What initiatives for retaining women in construction do your company employ?
Same as above, using t another word for initiative like 'what motivates you to remain' would be better for understanding.
8. What are the initiatives for retaining women in construction informed by?
Difficult to know without being the one who implements them.
9. Are there any construction specific policies for retaining women your company employ?
Difficult to answer with little experience.
10. How effective do you think initiatives for retaining women in construction are?
Would be easier to answer if it was clear what the initiatives were.

Personal experience

11. Do you have any personal experience with the practice of initiatives for retaining women in construction? Please elaborate
12. Have you had any positive experience with initiatives retaining women? Please elaborate
13. Have you had any negative experience with initiatives retaining women? Please elaborate
14. What recommendations would you give towards improving initiatives for retaining women in construction?
Questions are similar and sound repeated so it would be helpful if they were succinct and focused.

Generalised

15. What other ways do you think the retention of women in construction can be improved?
16. What motivates you to remain in the industry?

Appendix F – Key Interview Questions

1. Q: What is your current job role?
2. Q: What is your age?
3. Q: When did you graduate from university?
4. Q: What was the name of the degree you graduated with?
5. Q: How many years have you been in the construction industry?
6. Q: What discipline do you work in? (consulting, contracting, etc)
7. Q: Which professional body do you belong to or intend to gain a qualification with?
(RIBA, RICS, ICE, CIOB, etc)
8. Q: Has the professional body been a factor in motivating you to remain in the construction industry? Please Elaborate

9. Q: So I will go through a few initiatives to understand your personal experience with them... Has your company implemented a mentoring scheme?
10. Q: Are you involved in that scheme/programme?
11. Q: What has your experience been like?
12. Q: Would/is the mentoring scheme motivating you to stay in construction?
13. Q: Is the initiative being monitored?

14. Q: The next initiative would be role models, has your company implemented any kind of emphasis on role modelling?
15. Q: Have you had experience with having a role model?
16. Q: Would/is role modelling motivating you to stay in construction?
17. Q: Is the initiative being monitored?

18. Q: The next initiative would be networking, has your company implemented any kind of networking events?
19. Q: What has your experience been like?
20. Q: Is the initiative being monitored?

21. Q: The next initiative would be affinity groups, has your company implemented any kind of affinity grouping?
22. Q: Are you involved in that scheme/programme?
23. Q: What has your experience been like?
24. Q: Would/are affinity groups motivating you to stay in construction?
25. Q: Is the initiative being monitored?

26. Q: The next initiative would be training/personal development, has your company implemented any kind of training/personal development?
27. Q: Are you involved in that scheme/programme?
28. Q: What has your experience been like?
29. Q: Would/is training/personal development motivating you to stay in construction?
30. Q: Is the initiative being monitored?
31. Q: The next initiative would be flexible working, has your company implemented any kind of flexible working?
32. Q: Are you involved in that scheme/programme?
33. Q: What has your experience been like?
34. Q: Would/is flexible working motivating you to stay in construction?
35. Q: Is the initiative being monitored?
36. Q: The next initiative would be sponsorship, has your company implemented any kind of?
37. Q: Are you involved in that scheme/programme?
38. Q: What has your experience been like?
39. Q: Would/is sponsorship motivating you to stay in construction?
40. Q: Is the initiative being monitored?
41. Q: The next initiative would be awards, has your company implemented any kind of awards or have you taken part in any?
42. Q: Are you involved in that scheme/programme?
43. Q: What has your experience been like?
44. Q: Would/is awards ceremonies motivating you to stay in construction?
45. Q: Is the initiative being monitored?
46. Q: How effective do you think initiatives for retaining 'early stage' women in construction are? Please Elaborate
47. Q: Do you know what the initiatives for retaining 'early stage' women in construction informed by?
48. Q: Is there anything else the company does or something else personal to you that motivates you to stay in construction?
49. Q: Are there any construction specific policies for retaining 'early stage' women your company employ? Please Elaborate
50. Q: Have you had any positive experience with being motivated to be retained? Please elaborate
51. Q: Have you had any negative experience with being motivated to be retained? Please elaborate (admin-based work, discrimination)

Appendix G – Participant Information Sheet



Retention of Women in the UK Construction Industry Adult Participant Information Sheet

Investigators Details:

Monisha Sandhu, m.sandhu-16@student.lboro.ac.uk

Karen Blay, k.b.blay@lboro.ac.uk

We would like to invite you to take part in our study. Before you decide we would like you to understand why the research is being done and what it would involve for you.

What is the purpose of the study?

The study focuses on understanding the initiatives and policies employed by construction companies to retain 'early stage women' in construction. It has been found a high number of women leave in their first four years in the construction industry, so it is hoped recommendations can be found to improve the retention levels of women at early stages of their career by looking in to initiatives and policies for construction.

Who is doing this research and why?

This study is part of a Student research project supported by Loughborough University undertaken by Monisha Sandhu who is the researcher and Karen Blay who will be assisting as supervisor.

Are there any exclusion criteria?

Not having undertaken a degree, such as people who have undertaken apprenticeships
Women not in professional office-based roles, such as tradeswomen, admin roles
Working outside of the UK
Anyone not identifying as female

What will I be asked to do?

You will be asked a number of questions on initiatives and policies employed by the construction industry and the company you work for.

Once I take part, can I change my mind?

After you have read this information and asked any questions you may have if you are happy to participate we will ask you to complete an Informed Consent Form. However, if at any time, before, during or after the sessions you wish to withdraw from the study please just contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

However, once the results of the study are submitted on 29/04/20, it may not be possible to withdraw your individual data from the research.

How long will it take?

The total time required is expected to be approximately 25 minutes for completion of the interview.



Data Protection Privacy Notice

Loughborough University will be using information/data from you in order to undertake this study and will act as the data controller for this study. This means that the University is responsible for looking after your information and using it properly. Personal information will be collected for arranging interviews and recording consent.

What is the legal basis for processing my personal information?

Personal data will be processed on the public task basis. Individuals' rights to erasure and data portability do not apply if you are processing on the basis of public task. However, individuals do have a right to object.

Under the General Data Protection Regulation (GDPR), some of the personal data which will be collected from you is categorised as "sensitive data". The processing of this data is necessary for scientific research in accordance with safeguards. This means that study has gone through an ethical committee to ensure that the appropriate safeguards are put in place with respect to the use of your personal data.

Will my personal information be shared with others?

Data will be shared with the supervisor involved with the study.

Will my taking part in this study be kept confidential?

Confidentiality of personal information and anonymity of results will be ensured by anonymising personal information which will only be visible to the researcher and supervisor then deleted upon dissertation submission.

How will the anonymised data/results collected from me be used?

The results will be used for the purposes of dissertation research.

How long will the anonymised data/results be retained?

Anonymised data/results will be retained until 29/04/20.

I have some more questions; who should I contact?

Monisha Sandhu, m.sandhu-16@student.lboro.ac.uk

What if I am not happy with how the research was conducted?

If you are not happy with how the research was conducted, please contact the Secretary of the Ethics Approvals (Human Participants) Sub-Committee, Research Office, Hazlerigg Building, Loughborough University, Epinal Way, Loughborough, LE11 3TU. Tel: 01509 222423. Email: researchpolicy@lboro.ac.uk

The University also has policies relating to Research Misconduct and Whistle Blowing which are available online at <http://www.lboro.ac.uk/committees/ethics-approvals-human-participants/additionalinformation/codesofpractice/>.

If you require any further information regarding the General Data Protection Regulations, please see: <https://www.lboro.ac.uk/privacy/research-privacy/>.

Appendix H – Informed Consent Sheet



To Improve the Retention of Women in the UK Construction Industry

INFORMED CONSENT FORM

(to be completed after Participant Information Sheet has been read)

Taking Part

Please initial
to confirm
agreement

The purpose and details of this study have been explained to me. I understand that this study is designed to further scientific knowledge and that all procedures have been approved by the Loughborough University Ethics Approvals (Human Participants) Sub-Committee.

-

I have had an opportunity to ask questions about my participation.

-

I understand that sensitive personal information, based on personal experience acquired in the industry, will be collected during this study.

-

I understand that I am under no obligation to take part in the study, have the right to withdraw from this study at any stage for any reason, and will not be required to explain my reasons for withdrawing.

-

Use of information

I understand that all the personal information I provide will be processed in accordance with data protection legislation on the public task basis and will be treated in strict confidence unless (under the statutory obligations of the agencies which the researchers are working with), it is judged that confidentiality will have to be breached for the safety of the participant or others or for audit by regulatory authorities.

-

I understand that information I provide will be used for research outputs.

-

I give permission for the anonymised data I provide to be deposited in the Loughborough dissertation data archive so that it can be made publicly available for future research at the end of the project.

-

Consent to Participate

I voluntarily agree to take part in this study.

-

Name of participant [printed]

Signature

Date

Researcher [printed]

Signature

Date

Appendix I – Interview Transcript Sample

Interviewee 9

Q: Question from Monisha Sandhu

A: Answer from interviewee

Q: What is your current job role?

A: Graduate quantity Surveyor

Q: What is your age?

A: Twenty-four

Q: When did you graduate from university?

A: 2017

Q: And what was the name of the degree that you graduated with?

A: CMQS

Q: And how many years have you been in the construction industry?

A: Three years.

Q: What discipline do you work?

A: Contracting

Q: Do you belong to a professional body?

A: RICS but I'm not chartered yet.

Q: Is that something that motivates you to stay in construction?

A: Not for me, I've come from a site where no one is RICS qualified, I know I need to be more proactive about it but when you're on a site where no one has it it's makes you think what's the point, especially when it takes your weekends. On the next project I get on I want to make sure there's a RICS person

there so I can get support because the support isn't really there at the minute because they've not gone through it so it hasn't affected me having it or not having it.

Q: OK, so I'll go through a few initiatives to understand your personal experience with them. Has your company implemented a mentoring scheme?

A: No, it's not an official one but I have a mentor at work and I'll sit next to him and chat if I need any help but it's not formal.

Q: Is that something that would motivate you to stay in construction?

A: We've got a new director which I've reached out to as she's the first woman I've come across that's a commercial head so I thought it'll be good to meet her once a month to have someone else to chat to. It's because she's a woman as well so that's probably a good place to start.

Q: So another initiative would be like a role model, is that something your company places emphasis on having or have you had any experience with having a role model in the industry.

A: Not an obvious one but the director's just joint last month so I suppose I see her as a bit of a role model because she's a woman in her 40's so he's young for director long and it's something to aspire to, so she's definitely stood out to me compared to if a guy got it.

Q: Another kind of initiative would be networking. Is that something that your company has implemented any kind of?

A: I do my own networking, Pinsent Masons are a law firm in construction who hold breakfast sessions such as contract changes and there's an opportunity to network. I've been to a few women in construction events but I found them a bit cringe, it was a bit like 'go women'. When I come to work I don't want to feel different to the guys, it's a bit forced at the events and not organic so there's better ways. I get what it's about bringing women together in construction and discussing things but I think it causes more of a divide than making it more inclusive.

Q: So another initiative would be an affinity group, which is just this is a similar group of people networking together. Is that something the company has implemented?

A: The closest thing I can imagine is our grad events where we meet every quarter and have two days of Seminars and briefing about the company but we wouldn't meet in any other situation. The girls tend to stick together in that.

Q: Would having something like an affinity group motivate you to stay in construction?

A: Yeah they're really good but it's not that important

Q: Another initiative would be training and personal development is that something that your company have implemented any kind of?

A: Yeah we've got loads of that, it's what we do at our grad meet ups and internally at our sites. We've got a human performance module to do with psychology and diversity so information is given like that to us often which is good at raising awareness.

Q: Is that something that's being monitored?

A: Probably from feedback on site to the top. We've just won the platinum people award which is difficult to get but I think it is based on listening to the people that work for you and having stuff in place to support the people that work for you.

Q: Another initiative would be flexible working. Is that something that your company has implemented any kind of?

A: It's at the discretion of your manager so it's not something that's been rolled out on our site. It's hard to implement that for construction projects because you can't manage every site so it would be at the site's discretion. I've been able to work flexibly if I need to go home so it's flexible within reason as long as you do your work.

Q: So would you say that is a motivating factor for you to stay in construction?

A: Yeah that's why I like this industry because you're here to do your job, there's no faffing about so you get as much out of it as you put in to it and you can't hide away from it because everyone's got their key role. With that comes a sense of achievement as you're delivering something everyday that you're seeing get built.

Q: Another initiative would be sponsorship. Is that something your company have implemented any kind of?

A: I have been sponsored at university, it was really good but I was sponsored from the first year so I got work from it but I felt trapped as well because they rushed us in to it as well as we were told to just take what we're given. Whenever we were given bad coursework or exams it made me think I don't really want to do this.

Q: So another initiative would be awards. Is that something your company have implemented or have taken part in any external events?

A: We have all star awards which is internal then there's women in construction awards but I don't really like to put myself forward for those things as it's not big on our site.

Q: Do you think that would motivate you to stay in construction?

A: No.

Q: So overall, having gone through all of them initiatives how effective do you think initiatives for retaining early stage women in construction are?

A: I think at the minute going out and trying to retain women isn't the right way of doing it because I don't think people see it as much of an issue. Hearing all the time there's shortages in the industry and we need more women in the industry would demotivate me since I wouldn't really get into something that people aren't doing for a reason. I think there might be better ways to incentivise young people. I think it would be better to make it less of a big deal that it's a woman in construction but rather you just get used to seeing women in them roles so you subconsciously associate it with not just being a male

industry. It's a difficult one because there's not many women in the first place and not many people wouldn't want to come into the industry because it's so male dominated in the first place but I think nothing particularly incentivises me everyday so the banter and if you can hold yourself and hold your own in the industry as I know there's guys that couldn't do this job as it's boisterous, so if you can do that then you just fit in and they don't think of you as a woman, which is the same for a guy. So as long as you can do the work, take the mick out of people and not get offended by everything someone says then you'll fit in and not feel like an outsider.

Q: Would you know what the initiatives for retaining early stage women in construction are informed by?

A: No, sorry.

Q: Okay. Is there anything else the company does to motivate you to stay in construction?

A: It always changes, there's always challenges and things can go wrong so no week is the same, this week the weather's been awful so there's been problems with the piling rig and the tower cranes working, everyone's saying we're not going to get the programme done, so they panic then it's the weekend and everyone's fine because it's forgotten about. It keeps your brain going because it's hard work.

Q: Would you know if there's any construction specific policies for retaining early stage women that your company employ?

A: I know there's targets but I think there's 18% women and they want to get to 35%, so I know there's initiatives like that and I don't know the particular ways they're going to achieve that.

Q: Have you had any positive experience with being motivated to be retained?

A: You could have a rubbish day then something comes together so you forget about it being a bad day because you're in a big team and everything collects.

Q: Okay. Could you say if you've had any negative experience of being motivated to be retained?

A: I've come across some horrible people, guys, but you just put them in their place and if they're horrible back then everyone has your back because they're being sexist for no reason. It's good that people protect you but I've had no negative experience with being treated differently because I'm a girl that's changed my mind about being in the industry.