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Exclusion and Inclusion in the Australian AEC Industry and Its Significance for Women and Their Organizations

Valerie Francis¹ and Elisabeth Michielsens²

Abstract: Based on valuing individual differences and embracing all employees, diversity management is relatively widespread and evident in many organizations. However, discriminatory work practices and lack of support persist in the architecture, engineering, and construction (AEC) industry, with higher turnover for women and lower participation rates still evident. While well-meaning, these diversity strategies and practices are costly. Therefore, it is essential to understand the benefits women and their organizations gain, as well as attributes associated with more diverse and inclusionary workplaces. A theoretical framework based on social exchange theory was used to develop a questionnaire administered to professional women in the AEC industry. The sample was divided into two groups, women who experienced inclusion or exclusion, and comparisons made using a range of statistical tests. While inclusion did not affect women’s career advancement, it was associated with increased satisfaction and decreased turnover intent. Inclusive companies had more female employees and leaders and also featured significantly higher mentoring and organizational training levels. The findings demonstrate inclusion to be essential for women’s retention and an important management objective for the AEC industry. DOI: 10.1061/(ASCE)ME.1943-5479.0000929. © 2021 American Society of Civil Engineers.

Author keywords: Women; Work practices; Diversity; Architecture, Engineering, and Construction (AEC) industry; Construction; Engineering; Career; Organizational culture; Inclusion.

17 Introduction

The Architecture, Engineering, and Construction (AEC) industry contributes significantly to most economies and is highly reliant on its people. Attracting and retaining the best workers and staff is essential to having an efficient, profitable sector, but meeting past current vacancies has proven difficult (CIOB 2019; Kim et al. 2020). Attracting more women into the industry to address these skills shortages has been the impetus for various government and industry initiatives over the past several decades. It has also been the focus of many AEC companies’ diversity management plans. However, women’s representation in professional and managerial roles in the AEC industry remains low (Hickey and Cui 2020; US Bureau of Labor Statistics 2016).

Traditional work practices in AEC and gendered stereotypes about abilities and homosocial behavior all mitigate against women’s inclusion and detract from women’s work satisfaction and success (e.g., Dainty et al. 2000; Menches and Abrahams 2007; Ness 2012; Watts 2007). Women’s higher turnover has been associated with long hours and family responsibilities (e.g., Menches and Abraham 2007; Ness 2012; Watts 2009). However, Shore et al. (2018) note that while family demands are often used as explanations for women not advancing, it does not account for ongoing gender disparity.

Concerns continue regarding women’s lack of career advancement, and the scarcity of supportive work practices, have been the subject of much research (Clarke et al. 2015; Vinnicombe et al. 2018; Francis 2017; Hickey and Cui 2020). Extended and irregular hours are typical, and the sector has not significantly altered its work practices to meet its employees’ changing needs. Compared to their male counterparts, women’s higher turnover rates are often associated with these issues as well as concerns regarding work inflexibility, lack of support, and reduced promotion (Lingard and Francis 2009; Glass et al. 2013; Hickey and Cui 2020). The literature in this area repeatedly identifies the need for women to fit in and postis that this and mentors can assist with women’s advancement (Greed 2000; Dainty et al. 2007; Rosa et al. 2017).

So despite the adoption of diversity management practices within many AEC organizations, gender diversity within the workforce and lack of inclusion continue to be a problem. Mor Barak (2000) proposes that an organization’s culture contributes to feelings of inclusion, which in turn lead to positive individual and organizational outcomes, and Acquavita et al. (2009) confirmed that exclusion was related to lower job satisfaction. Inclusive work cultures respect differences and successfully integrate a diverse range of workers and should provide an ideal environment for women, such as those in the AEC industry, to achieve both work and life success.

The purpose of this research was to understand more about the role of inclusion, the impact of diversity management practices, and how they relate to the work and life experiences of professional women. This issue has not previously been explored within the AEC industry.

Drivers for Managing Gender Diversity and Gender Diversity Effectiveness

Social change and increases in women’s labor force participation have accompanied legislative and organizational actions, which have helped workplaces become more diverse and inclusive. Equality and antidiscrimination law is commonplace globally, and emanating from this has been further legislation regarding workplace flexibility and parental leave, which further supports women, especially those with care responsibilities (Davidson and Burke 2016).
Diversity management is the “management philosophy of recognizing and valuing heterogeneity in organisations with a view to improving organisational performance” (Tatli and Özbilgin 2009, p. 244). It relates diversity policy and program development, which is then typically operationalized through human resource (HR) measures such as recruitment, training, and mentoring. Studies have shown that diversity enhances organizational flexibility, recruitment, retention, and engagement, and can provide competitive advantage (Armstrong et al. 2010; Zanoni et al. 2010; Kochan et al. 2003; Østergaard et al. 2011).

Nevertheless, while diversity management has been embraced within many organizations, there are still discrepancies in women’s employment. They continue not to have equal access to jobs, career development opportunities, remuneration, and the “glass ceiling” persists, symbolizing obstacles to career advancement (e.g., Vinnicombe et al. 2018; Hickey and Cui 2020). These impediments have been especially visible in the AEC industry: while female participation has improved, it is still male-dominated, with women lagging in terms of representation and career development (Powell and Sang 2013; WISE 2019; Francis 2017). While there are national differences, female representation in AEC professions is typically low; for instance, the US Bureau of Labor Statistics (2016) identified 7.4% of all architectural and engineering managers as women, with 6.7% being construction managers.

When considering gender diversity in the AEC industry, it is the business case for diversity that typically underlies policies and practices (Ness 2012). Urwin et al. (2013) identified the benefits of these as either external or internal. The internal business benefits include improved company performance, integration of diverse perspectives, lower turnover, enhanced creativity, and better problem-solving. External business benefits include improved talent recruitment, enhanced business insights, more significant market share, and cost-savings related to equality legislation compliance (Urwin et al. 2013). For the AEC industry, the business case for gender diversity has mostly focused on external benefits. These external benefits have been expressed in several ways, such as using the case for the greater recruitment of women to assist businesses in tackling industry skill shortages, or as a way of providing better and more motivated staff, or to improve customer satisfaction (Clarke et al. 2015; UKRC 2005; Dainty et al. 2004; Barnard et al. 2010).

The effectiveness of diversity management practices is still heavily debated (i.e., Noon 2018; Vassilopoulou 2017), with persisting challenges ranging from stagnant gender ratios, recruitment discrimination, pay gaps to progression barriers, harassment, and social network exclusion (Gifford et al. 2019). Even with companies’ promotion of their diversity management strategies, lack of diversity and inclusion continues to be a systemic issue for the sector.

The main explanation postulated for the lack of more tangible outcomes from diversity management strategies is considered to emanate from the underlying business case approach to diversity management in organizations (Noon 2007; Kirton and Greene 2010; Michaelsen et al. 2008). This approach, which focuses on generic short-term actions, usually does little to change organizational values and can be perceived as insincere by employees (Nishii et al. 2018).

**Inclusive Organizations**

Inclusion can be defined as “… the degree to which an employee is accepted and treated as an insider by others in a work system” (Pelled et al. 1999, p. 1014). Inclusion is related to how well-integrated marginalized groups, such as women in the AEC industry, are within their organizational setting and therefore can participate, contribute, and utilize their skills more effectively (Bilimoria et al. 2007; Shore et al. 2018). Li et al. (2019) further identify an inclusive climate as one in which all employees experience respect and belongingness.

Managing diversity and inclusion are linked, but while managing diversity focuses on the representation of variety in the workforce, inclusion is about creating a culture where all involved can participate and influence (Burnett and Kettleborough 2007; Roberson 2006). So while diversity management practices can be present within an organization, inclusion does not always result from these actions. Overall, the main themes appearing in various definitions of inclusion are the notions of acceptance and being a group insider, valuing individualism, and the contributions and talents of all employees (Shore et al. 2011).

Roberson (2006, p. 220), who regards the organization as a social entity, considers inclusion to involve all employees, with a precise aim of “leveraging the positive impact of diversity for organisational competitive business advantage.” The inclusive workplace is “based on a pluralistic value framework that respects all cultural perspectives represented among its employees” (Mor Barak and Daya 2014, p. 394). Different groups support each other to be fully engaged at all levels in the organization (Shore et al. 2018; Roberson 2017).

Inclusion is related to reducing turnover and absenteeism, with individuals more likely to endorse the organization to others as an employer (Dwertmann et al. 2016; Jauhari and Singh 2013). Dwertmann et al. (2016) consider that this is a form of reciprocal action, with positive work attitudes occurring. Women, particularly those underrepresented, receive less supervisor support on a day-to-day basis, demonstrating the level of support does vary (Brown et al. 2018).

**Organizational Support and Social Exchange Theory**

Organizational support theory, developed by Eisenberger et al. (1986, p. 501), holds that “… in order to determine the personified organization’s readiness to reward increased work effort and to meet needs for praise and approval, employees develop global beliefs concerning the extent to which the organization values their contributions and cares about their well-being.” Organizational support will be affected by the organization’s actions that may be beneficial to an individual, such as rewards, promotion, training, and job security. Organizational support is often delivered through HR practices such as participation in decision making, the fairness of rewards, and growth opportunities (Allen et al. 2003; Robertson et al. 2017). Voluntary actions have been found to increase perceived organizational support more than compliance. (Djurkovic et al. 2008). A meta-analysis by Rhoades and Eisenberger (2002) revealed that perceived organizational support was related to improved job satisfaction, positive moods, and a lessening of withdrawal from the organization.

Social exchange theory, one of the most dominant theoretical lenses in the social sciences and management, underpins organizational support theory and explain these reciprocal relationships. It posits that as people interact, they feel the need to reciprocate any assistance provided, and if this occurs, a loyal relationship can develop (Cropanzano and Mitchell 2005). Social exchange theory and organizational support theory have been used in exploring both employer and employee workplace exchanges and the positive effects on employee behavior in the AEC industry. For instance, social exchange theory was utilized recently as the theoretical lens to...
202 Theoretical Framework

This paper developed a theoretical framework based on social exchange theory and drew upon organizational support theory and diversity management practices. The model developed is shown in Fig. 1. It proposes that inclusion is a social exchange between the organization and individual employees and is influenced by diversity management effectiveness and perceived organizational support. For inclusion to occur, both successful diversity management and perceived organizational support must be evident. As already discussed, some diversity plans and practices are successful, but some are not, resulting in little change to the companies.

Diversity management is now relatively widespread, and Leslie (2019) identified three types of diversity practices at the core of these plans. These include: nondiscriminatory practices that focus on decreasing bias and discrimination, resource practices to increase support and opportunities, and finally, accountability practices focusing on monitoring diversity goals such as gender composition changes. This last practice has a clear focus on the diversity goal outcome, with the other two practices focusing more on the diversity goal progress (Leslie 2019). These practices are identified within the developed framework, located at the organizational level, where they are enacted.

From a corporate perspective, diversity initiatives’ intended consequences are that women would become more inclined to stay and succeed (Leslie 2019; Roberson et al. 2017). As women place a high value on both work and personal domains, women’s success has been taken to encompass both life and work (Ng et al. 2005; Enache et al. 2011). Career success has objective and subjective components, with men placing a greater value on the objective part, and women valuing both relatively equally (Ng and Feldman 2014; Ng et al. 2005; Powell 2018; Dyke and Murphy 2006). Career advancement is the extrinsic aspect and career satisfaction the intrinsic of career success, both of which are vital to women and the organizations in which they work (Powell 2018; Ng et al. 2005). Career advancement relates to the upward progressions within the hierarchical ranks of an organization. It typically includes an objective rather than subjective measurement, such as salary or promotions assessed in terms of society’s evaluation of achievement (Melamed 1996; Nabi 1999). Career satisfaction is more subjective, related to a person’s overall satisfaction with their career. It has increased in importance, particularly amongst women and older workers (Ng and Feldman 2014; Dyke and Murphy 2006). Career success is considered as both a motivator to participation as well as means of retention.

In terms of life success, two main issues have been determined by previous research, namely life satisfaction and work-family conflict. Life satisfaction has significant individual and organizational consequences, because it both a predictor of job performance and turnover, as well as burnout and morality (Erdogan et al. 2012). Work-family balance is often cited as a reason women leave the AEC sector with the inability to balance work and family responsibilities of primary concern. Higher work-family conflict levels are associated with organizational practices such as inflexible work arrangements, inadequate supervisor support, and longer working hours, negatively impacting individuals through higher emotional exhaustion, greater turnover intent, and lower satisfaction (Lingard and Francis 2009). The following sections discuss the framework further and develop specific hypotheses to be explored.

Impact of Inclusion at the Organizational Level

Diversity is championed within organizations through corporate or organizational policies and enacted by HR using strategies such as targeted recruitment, training, mentoring, and team building. (Subeliani and Tsogas 2005; Curtis and Dreachslin 2008). While formal diversity policies are now relatively standard, especially in large organizations, small to medium enterprises often adopt informal diversity policies to ensure recruitment, hiring, and performance appraisal practices acknowledge diversity (Manoharan et al. 2019). As noted, Leslie (2019) categorizes diversity initiatives in three ways: nondiscriminatory practices, resource practices, and accountability practices. Nondiscriminatory practices focus on decreasing bias, which relates to women’s recruitment into an organization and women’s future success (Leslie 2019). While the recruitment of women could be considered the ratio of new hires by gender, it is the onboarding and continuation of such women that better indicates diversity success. Thus the overall participation of women in the organization and women in leadership roles is considered in the framework.

Resource practices are considered opportunity-based and preference practices adopted to facilitate an organization’s diversity goals (Richard et al. 2007). Within this category, Leslie (2019) includes mentoring and career support for women as resource practices. The offering and uptake of diversity measures such as supportive work practices, including mentoring and training, would also be expected to feature more in inclusive work environments. In this study, mentorship and training, which feature highly within organizational diversity management practices, will be considered.

Accountability or responsibility practices by more closely monitoring outcomes and diversity goals have only more recently been added to diversity management practices (Richard et al. 2007; Leslie 2019). Examples of these could include adding diversity targets and outcomes to managers’ individual performance goals or even appointing a diversity manager to report diversity progress (Leslie 2019). Ultimately, the retention of women is at the core.
of these requirements, and for this reason, women’s turnover intentions were used to represent the accountability practices. It is well known that women leave the industry at higher rates than men, so it would expect women will be less likely to leave an inclusive environment than an exclusive one (Singh et al. 2018).

The link between diversity and inclusion is evident (Burnett and Kettleborough 2007; Roberson 2006), and the framework developed for this study conceptualizes inclusion as a social exchange, requiring effective diversity management. Based on this, hypotheses were developed, one for each of the diversity management practices (Leslie 2019), linking diversity effectiveness and inclusion. They include:

Hypothesis 1 relating to nondiscriminatory practices:

H1(a): There will be a difference in women overall in inclusive and exclusive organizations.
H1(b): There will be a difference in women in leadership positions in inclusive and exclusive organizations.

Hypothesis 2 relating to resource practices:

H2(a): There will be a difference in the level of organizational training in inclusive and exclusive organizations.
H2(b): There will be an association between being mentored and organizational inclusivity.

Hypothesis 3 relating to accountability practices:

H3: There will be a difference in the level of turnover intent in inclusive and exclusive organizations.

Impact of Inclusion at the Individual Level

Inclusion as a social exchange between the organization and the individual also impacts the employee, with success in diversity initiatives and perceived organizational support experienced by individuals (Leslie 2019; Roberson et al. 2017). As previously discussed, women value both work and home domains, so success within both work and life is valuable. Collectively, career advancement and career satisfaction are referred to as career success. Career advancement, the objective element, is an indicator of promotions and progression within the industry, with career satisfaction the subjective aspect of career success (Ng et al. 2005). Based on organizational support theory, those who perceive an environment of inclusion will experience higher career success levels, both in terms of advancement and career satisfaction. This outcome was posited by Bilimoria et al. (2007) and intimated within much of the inclusion and women in management research.

Life success was conceptualized for this study as life satisfaction and work-life balance (or the reduction of work-family conflict). Both have been identified as being valued by women and indicators of life success (Powell 2018; Watts 2009). Life satisfaction also has broader implications in terms of health and well-being, and an environment of inclusion should increase life success. This is grounded within the comprehensive work of scholars such as Ng and Feldman (2014) and the more recent work of Chew et al. (2020) on engineers’ happiness. Based on this, further hypotheses were developed and include:

Hypothesis 4 relating to career success:

H4(a): There will be a difference in the level of career advancement in inclusive and exclusive organizations.
H4(b): There will be a difference in the level of career satisfaction in inclusive and exclusive organizations.

Hypothesis 5 relating to life success:

H5(a): There will be a difference in the level of life satisfaction in inclusive and exclusive organizations.
H5(b): There will be a difference in the level of life satisfaction in inclusive and exclusive organizations.

Impact of Inclusion at the AEC Sector Level

Where possible, the study sought to identify organizational characteristics and provide further insights into inclusion within the sector. While larger companies typically have numerically more women (as well as higher female participation rates), they may also be more inclusive as they have greater transparency in recruitment and promotional processes, as well as more defined policies with regard to work practices and policies such as work-life balance (Colgan and McKearney 2011). However, according to organizational stage theory, older and larger companies become more formalized in order to deal with increased complexity and increase reliability in their operations (Aldrich 1999). Therefore, smaller companies may have less formal policies but are known to be more flexible in whom they hire and in the provision, or otherwise, of flexible/informal work practices (Sine et al. 2006). These can benefit women, especially those with family responsibilities. It would seem midsized companies may provide a balance of formal and informal policies that suit women, with formal policies providing an assurance of policy provision and informal providing the flexibility women desire.

With a long history of equity, affirmative action, and legislative requirements, public sector organizations should provide more inclusive work environments. Supportive work practices and stricter adherence to equal opportunity policies also tend to be more compatible with the remit of the public sector (Colgan and McKearney 2011). Due to civic organizations’ nature, economic standards of performance differ from that of the private sector, and shareholders who typically oversee larger companies receive more institutional scrutiny (Dolcos and Daley 2009).

Understanding the different subsectors of the AEC industry may provide evidence of how inclusion can work in different project-based built environment companies. The professions within an industry influence its ability to change a company’s gender composition, with Ashcraft (2013) identifying that certain cultural norms develop, which relate to how individuals are perceived as appropriate, or otherwise, for a role (Ashcraft 2013). As Muhr and Slok-Andersen’s (2017, p. 368) state in their research regarding women in the military, professions that “culturally read as masculine seem to struggle with including women on equal terms with men.” Improving diversity at the organizational level is also multifaceted, which is often unacknowledged. Acker (1990), discussed in Healy et al. (2018), considers that entrenched stereotypes and associated inequity are hard to change, which would also be valid in the AEC industry. Gender parity has been realized within architecture education for several decades, and while participation has increased within engineering, it is still much lower in construction management. Greater female participation is in technical and organizational inclusivity, such as architectural practices and engineering consultants, than has been achieved in construction contracting.

Based on this, further hypotheses were developed relating to company demographics:

Hypothesis 6 relating to company demographics:

H6(a): The level of inclusion will not be the same in different sized companies.
H6(b): There will be an association between the employment sector and organizational inclusivity.
H6(c): The level of inclusion will not be the same in technical consulting and construction contracting companies.

Research Aims

Research on women’s careers in the AEC industry has not yet empirically explored inclusion, diversity management practices, and
professional women’s career and life experiences. This research
aimed to understand the role of diversity management effectiveness
on women’s success, utilizing inclusion and exclusion as an exploratory lens. Based on the theoretical model developed for this study,
it was hypothesized that diversity management effectiveness
and women’s success would be more evident in inclusive organizations. In particular, six overall hypotheses, outlined earlier, were
explored.

### 434 Method

#### Methodology

Consistent with the research problem, this study used a quantita-
tive, deductive process approach (Neuman 2003). Because the
study’s purpose was to examine the extent to which variation in
inclusion was related to differences in other characteristics, a
cross-sectional correlational field study was adopted. An advantage
of utilizing this method is collecting data on several independent
variables from a large sample.

#### Participants

Managerial and professional women working within the AEC
industry in Australia were surveyed. In particular, female members
of four Australian-based AEC professional bodies (namely, the
Australian Institute of Building, Australian Institute of Quantity
Surveyors, Chartered Institute of Building, and National Association
of Women in Construction) were recruited, and female employees
of various architectural, engineering, and project management practices. Snowball recruitment was also used, where
women forwarded the survey to female colleagues. The total female
membership of all surveyed professional institutions was approx-
imately 915, and female employees of participating organizations
approached 120. A total of 463 completed surveys were submitted,
representing a response rate of around 44.9% (if snowballing is not
considered). This response rate would be regarded as high [for
instance, Baruch and Holtom’s (2008) metastudy of 49 studies,
involving 68 surveys, found a mean response of 39.6%].

#### Procedure

The survey was deployed using a password-controlled website,
which allowed easy access for the sample. Internet-based surveys
are frequently used due to their accessibility for participants and cost
and time saving for researchers (Van Mol 2017). A tailored approach
was adopted to minimize nonresponse, with initial e-mails sent by
the professional bodies/employers and followed up with e-mail
reminders at two and four weeks (Dillman 2006; Van Mol 2017).
The study also adopted snowball recruiting.

#### Measures

In addition to some demographic and organizational data, such as
age and work experience, the survey also included the following
variables.

##### Inclusion

Inclusion, not previously operationalized, was based on Pelled
et al.’s (1999) definition regarding insider status and Bilimoria
et al. (2007) description regarding acceptance. It was considered
a composite measure of four variables: person-organization fit, gen-
der equity, peer support, and supervisor support. These measures
and their items are summarised in Table 1.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>Response format</th>
<th>Source</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Person-organization fit</strong></td>
<td>1. The things that I value in life are very similar to the things that my organization values.</td>
<td>A 7-point agreement scale, where a higher mean score related to a higher possibility of a person leaving their organization.</td>
<td>Organizational fit scale (Cable and DeRue 2002)</td>
<td>0.92</td>
</tr>
<tr>
<td><strong>Gender equity</strong></td>
<td>Worded changing for each item and the scale was anchored at either end at 1 and 5, representing either male or female inequity. Gender neutrality was at the middle point (3). All professional and managerial staff are treated equally in this matter.</td>
<td>A 5-point scale. Scores were reversed, so a higher score was more indicative of female inequity.</td>
<td>Derived from the workplace Culture scale (Bergman and Hallberg 2002)</td>
<td>0.81</td>
</tr>
<tr>
<td><strong>High organizational support</strong></td>
<td>2. High organizational support.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allocated roles with lower levels of responsibility.</strong></td>
<td>3. Allocated roles with lower levels of responsibility.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fit in</strong></td>
<td>4. ‘Fit in’ well.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Successful in obtaining fair compensation.</strong></td>
<td>5. Successful in obtaining fair compensation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supervisor support</strong></td>
<td>1. How friendly and easy to approach is your supervisor?</td>
<td>5-point extent scale ranging from 1 (to a very little extent) to 5 (to a very great extent), with a higher score indicative of greater supervisor support.</td>
<td>Supervisory leadership scale (Taylor and Bowers 1972)</td>
<td>0.90</td>
</tr>
<tr>
<td><strong>How much does your supervisor encourage people to give their best effort?</strong></td>
<td>2. When you talk with your supervisor, to what extent do they pay attention to what you’re saying?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>To what extent does your supervisor encourage people to take action without waiting for detailed review and approval from them?</strong></td>
<td>3. How much does your supervisor encourage people to give their best effort?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>To what extent does your supervisor show you how to improve your performance?</strong></td>
<td>4. To what extent does your supervisor encourage people to take action without waiting for detailed review and approval from them?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>To what extent does your supervisor encourage people who work for them to exchange opinions and ideas?</strong></td>
<td>5. To what extent does your supervisor show you how to improve your performance?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>To what extent does your supervisor encourage people who work for them to exchange opinions and ideas?</strong></td>
<td>6. To what extent does your supervisor encourage people who work for them to exchange opinions and ideas?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The Cronbach Alpha for each measure was above the recommended minimum of 0.7, indicating a high level of internal consistency (Pallant 2020). In order to calculate the inclusion values, the variables were standardized by transforming them into z-scores and then summed. By altering the scores for all variables, so they each had an average of 0 and a standard deviation of 1, counteracted the different scoring schemes’ effect. The reliability of the inclusion measure was assessed, and the Cronbach Alpha was found to be 0.73. Two groups were formed, with those with inclusion scores above zero classified as “inclusive” and those below zero as “exclusive.”

**Diversity Management Practices**

Diversity management practices were considered through three elements defined by Leslie (2019): nondiscriminatory practices (in terms of recruitment and promotion), resource practices (in terms of mentoring and training), and accountability practices (in terms of retention) (Leslie 2019). These measures and their items are summarised in Table 2.

Recruitment was assessed by respondents indicating what percentage of their workforce overall were women. To represent women’s promotion, respondents were asked to identify what percentage of top decision-makers were women, and the term “women leader” was used to describe this variable. Resource practices were assessed using participation in mentoring and organizational training and development. As accountability for diversity is associated with women’s retention, turnover intent was adopted in this study.

**Women’s Success**

Career success was measured using two variables, namely career advancement and career satisfaction. Career advancement was measured using a three-item scale and as the survey was lengthy, career satisfaction was measured using a single question. These measures and their items are summarized in Table 3.

Life success was conceptualized using two variables, namely life satisfaction and work-life conflict. The highly regarded Satisfaction with Life Scale (SWLS) (Diener et al. 1985), along with...
with the Boles et al. (2001) scale were adopted. These measures and their items are also summarized in Table 3.

### Company Demographics

Company sector, type, and size were also measured, and these are summarized in Table 4. Company size categories were based on those defined by the Australian Bureau of Statistics. These are itemized in Table 4.

#### Data Analysis

Prior to analyzing the data, it was assessed for missing data and outliers. The normality, linearity, and homoscedasticity of the data were then checked. There was no missing data and a few outliers identified. As many statistical methods assume that the distribution of scores is normal, normality was assessed by consideration of skewness and kurtosis. Muthén and Kaplan (1985) consider variables with univariate skewness and kurtosis in the range of $-1$ to $+1$ as adequate. Following recommendations by Tabachnick and Fidell (2014) and Field (2017), the values of identified outliers were changed to one unit higher than the next highest score in the data set. This resulted in the univariate skewness and kurtosis of all variables to fall within Muthén and Kaplan’s (1985) recommended range of $-1$ to $+1$. In addition to skewness and kurtosis, the Kolmogorov-Smirnov test was also conducted. The Shapiro–Wilk test was not considered an appropriate method as it is typically recommended for small sample sizes ($<50$ samples), while the

### Table 3. Career and life success measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>Response format</th>
<th>Source</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career success</td>
<td>Three-item scale based on their level of responsibility, hierarchical position (to CEO), and salary</td>
<td>A 6-point response, where a higher score was indicative of a high level of career progression.</td>
<td>—</td>
<td>0.82</td>
</tr>
<tr>
<td>Career advancement</td>
<td>1. What is your overall level of satisfaction with your career?</td>
<td>A 5-point satisfaction response, with a higher score indicative of a greater level of satisfaction.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Life success</td>
<td>1. In most ways my life is close to my ideal.</td>
<td>A 7-point satisfaction response, with a higher value indicative of greater life satisfaction.</td>
<td>Satisfaction with Life Scale (SWLS) (Diener et al. 1985)</td>
<td>0.9</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>2. The conditions of my life are excellent.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3. I am satisfied with my life.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>4. So far I have gotten the important things I want in life.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>5. If I could live my life over, I would change almost nothing.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Work-life conflict</td>
<td>1. The demands of my work interfere with my home and family life.</td>
<td>A 7-point agreement response, with a higher value indicative of more work to life conflict.</td>
<td>Boles et al. (2001)</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>2. Because of my job, I can’t involve myself as much as I would like to maintain close relations with my family or spouse/partner.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3. Things I want to do at home do not get done because of the demands my job puts on me.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>4. I often have to miss important family activities because of my job.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>5. There is a conflict between my job and the commitments and responsibilities I have to my family or spouse/partner.</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

### Table 4. Company demographics

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>Response format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company size</td>
<td>Approximately how many people are directly employed by your organization (within Australia)?</td>
<td>Company type was one of five groups: micro (1), small (2), medium (3), large (4), and extra-large (5).</td>
</tr>
<tr>
<td></td>
<td>1. 1–4</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>2. 5–19</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3. 20–199</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>4. 200–999</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>5. Over 1,000</td>
<td>—</td>
</tr>
<tr>
<td>Organizational sector</td>
<td>Is your organization within the public or private sector?</td>
<td>2-point categorical response using public sector and private sector as the options.</td>
</tr>
<tr>
<td>Company type</td>
<td>How would you classify the company you work for?</td>
<td>9-point categorical response, which was then reclassified into Construction (1 and 2), Technical Consultancy (3, 4, 5, and 6), and Other (7, 8, and 9).</td>
</tr>
<tr>
<td></td>
<td>1. Construction (head contractor)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>2. Construction (subcontractor)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3. Engineering consultancy</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>4. Architectural practice</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>5. Project management consultancy</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>6. Cost management consultancy</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>7. Education and training</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>8. Legal</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>9. Other</td>
<td>—</td>
</tr>
</tbody>
</table>
Kolmogorov–Smirnov test is used for \( n \geq 50 \). The Kolmogorov-Smirnov results were significantly nonnormal for each variable, \( D(456) = 0.074–0.316, p < 0.005 \).

Before the total score of the various scales was calculated, those known to contain a single factor were checked for unidimensionality using a principal components analysis with a varimax rotation (Grayson 2004). Next, the various measures’ reliability was determined, with the coefficient Alphas for the different variables were determined (Field 2017). Nunnally (1978) recommends a minimum of 0.7, and this threshold was adopted.

As the variables which form part of inclusion were measured using different response formats, they were standardized by transforming them into \( z \)-scores before summing them. \( z \)-scores transform a variable so that its mean is 0 and standard deviation is 1. Each variable was given an equal weighting within the composite scale.

To compare groups, participants who scored above zero were considered as inclusive (sample of 258), and those below zero were classified as exclusive (sample of 198).

In order to compare the experiences of the different groups of participants, statistical tests were conducted to compare the mean scores for variables between groups of women. Analyses of variance (often abbreviated to ANOVAs) and independent \( t \)-tests were used to test for significant differences within parametric data. The independent \( t \)-tests to test for differences between two groups and the ANOVAs for differences between more than two groups. Chi-squared tests for independence and Mann-Whitney \( U \) tests were used for dichotomous and nonparametric data.

To compare differences in perceptions, experiences, and organizational attributes within the two work environments, independent \( t \)-tests were used to compare career advancement, life satisfaction, career satisfaction, turnover intent, work-family conflict, and organizational training. Mann-Whitney \( U \) tests were used to compare women overall and women in leadership. Chi-squared tests for independence were used for the organizational sector and being mentored. One-way ANOVAs were used to company type and company size (Pallant 2020).

### Results

#### Sample

The final sample consisted of 456 women. Their average age was 35, and women had worked just over 10 years on average in AEC related roles. The average weekly working hours was 47, with nearly 90% working over 40 h/week. Most respondents worked in an office situation, with 75.4% working in a head or regional office and 24.6% site-based. The sample had women who had worked in the AEC industry from 1 year to over 40 years, with the average work experience being 10.2 years (SD = 7.48). The largest percentage of participants, 51.5% worked in technical consultancies (architecture \( n = 69 \), engineering \( n = 76 \), project and cost management \( n = 90 \)), 37.5% worked for a construction contractor, and the rest of the sample (10.9%) worked in a variety of organizational settings ranging from legal firms to property consultancy. Around 81% worked in the private sector, and the majority of the sample (58.5%) worked in a large organization (200 or more employees). Each of the six overall hypotheses is considered in turn.

### Hypothesis 1 Relating to Nondiscriminatory Practices

**H1(a):** There will be a difference in women overall in inclusive and exclusive organizations.

Nonparametric tests, namely the Mann-Whitney \( U \) tests, were used as the women overall, and women leader variables, while being continuous, were not normally distributed. A statistically significant difference between the women overall in inclusive (\( M = 24.26\%, SD = 15.74\), and \( n = 198 \)) and inclusive (\( M = 31.35\%, SD = 21.69\), and \( n = 258 \); \( U = 21,080, z = -3.212, p < 0.001 \)) work environments was found. Furthermore, a significant difference in women leaders in exclusive (\( M = 5.27\%, SD = 12.02\), and \( n = 198 \)) and inclusive (\( M = 13.36\%, SD = 23.191\), \( n = 258 \); \( U = 18,647, z = -4.99, p < 0.001 \)) work environments was also established. These results support Hypothesis 1(a) and 1(b) and indicate that nondiscriminatory practices such as higher recruitment of women and more women in leadership positions are a feature of inclusive work environments.

### Hypothesis 2 Relating to Resource Practices

**H2(a):** There will be a difference in the level of organizational training in inclusive and exclusive organizations.

An independent \( t \)-test explored differences in organizational training. Participation in organizational training was also significantly lower in more exclusionary environments (\( M = 3.18, SD = 1.07 \)) than settings in which women felt included (\( M = 3.83, SD = 0.88 \); \( t(454) = -7.172, p < 0.001 \)). A chi-squared test for independence with Yates Contingency Correction due to 2-by-2 table was undertaken to see if an association between being mentored and inclusive work environments existed. A significant association was found in relation to mentoring [\( \chi^2 = (1, n = 456) = 12.12, p < 0.001 \), \( \phi = 0.16 \)]. These results support Hypothesis 2(a) and 2(b). These results indicate that higher levels of resource practices, such as training and mentoring, and a more inclusive work environment, are associated.

### Hypothesis 3 Relating to Accountability Practices

**H3:** There will be a difference in the level of turnover intent in inclusive and exclusive organizations.

Turnover intent was significantly higher in the exclusive work environment (\( M = 4.16, SD = 1.76 \)) than inclusive work environments (\( M = 2.61, SD = 1.48 \); \( t(383.2) = 10.208, p < 0.001 \)). These results support Hypothesis 3, indicating that women in work environments that are more exclusionary (than inclusive) may have lower retention rates as they indicate a higher level of turnover intent. This demonstrates inclusion and accountability practices to be related.

### Hypothesis 4 Relating to Career Success

**H4(a):** There will be a difference in the level of career advancement in inclusive and exclusive organizations.

An independent \( t \)-test was undertaken to compare the career advancement and career satisfaction for AEC female managers and professionals employed in work environments, which were perceived as more or less inclusive (Pallant 2020). No significant difference in the scores for career advancement in the inclusive work environments (\( M = 3.44, SD = 1.21 \)) and exclusive work environments (\( M = 3.33, SD = 1.13 \); \( p = 0.31 \)) was found. This result was contrary to the hypothesis. However, there were highly significant differences in the scores for career satisfaction. In the exclusive work environment, the results were highly significant different compared to the inclusive environment (\( M = 3.33, SD = 1.13 \); \( p = 0.31 \)).
work environment, career satisfaction was significantly lower
(M = 3.36, SD = 0.930) than in inclusive work environments
([M = 4.09, SD = 0.71; t(454) = −9.571, p < 0.001]. These re-
sults support Hypothesis 4(b), but not 4(a), and indicate that while
women in work environments that are more inclusive do not ad-
vance more in their careers, they do have greater career satisfaction
than women who feel excluded.

**Hypothesis 5 Relating to Life Success**

- **H5(a):** There will be a difference in the level of life satisfaction
  in inclusive and exclusive organizations.
- **H5(b):** There will be a difference in the level of life satisfaction
  in inclusive and exclusive organizations.

An independent t-test was conducted to compare work-family con-
ict and life satisfaction of AEC women in more inclusive work
environments. Life satisfaction was significantly higher in more in-
cclusive environments (M = 5.31, SD = 1.07) than settings in
which women felt excluded ([M = 4.46, SD = 1.21; t(454) =
7.879, p < 0.001]. A highly significant difference in the scores
for work-family conflict in the exclusive work environments
(M = 4.45, SD = 1.32) and inclusive work environments [M =
3.79, SD = 1.37; t(454) = 5.211, p < 0.001] was also found.
These results support Hypothesis 5(a) and 5(b) and demonstrate
the role of inclusion in women’s life success. They indicate that
women have lower life satisfaction and experience higher work-
family conflict in work environments in which women experience
exclusion compared to inclusion.

**Hypothesis 6 Relating to Company Demographics**

- **H6(a):** The level of inclusion will not be the same in different
  sized companies.
- **H6(b):** There will be an association between the employment
  sector and organizational inclusivity.

A one-way ANOVAs was used to explore differences by level of
inclusive and organizational size (Pallant 2020). In this case, the
inclusion variable was considered a continuous standardized vari-
able with five groups: micro, small, medium, large, and extra-large,
compared. The five categories were based on the Australian Bureau
of Statistics (ABS) company size classifications. The large com-
pany category (over 200 people) was further divided, so those with
greater than 1,000 employees could be considered. Most women
were employed in large companies (n = 142 for large; n = 125
for very large), with 41 people working in small organizations,
134 in medium-sized organizations, and only 14 women in
microbusinesses.

There was a statistically significant difference at the p < 0.05
level in the inclusion values for the different organizational groups
[F(4, 451) = 2.77, p = 0.027]. Post hoc comparisons using the
Tukey HSD test indicated that only the mean score of inclusion
for the microcompanies was significantly different from that of
the medium-sized company (p < 0.046). Based on the inclusion
and exclusion groups, smaller companies were represented at a
higher rate than medium and larger companies, with microcom-
panies having the highest inclusion level. These results, therefore,
support Hypothesis 6(a) that inclusion and organization size are
associated, but it is the very small work environments that provide
women with greater levels of inclusion.

- **H6(b):** There will be an association between the employment
  sector and organizational inclusivity.

Respondents were asked to indicate the sector in which their
company operated. Two options were provided, namely the private
sector and public (government-owned and operated). A more sig-
ificant number of women worked within the private sector
(n = 368 versus n = 88), which reflects employment in general
within the AEC industry. A chi-squared test for independence (with
Yates Continuity Correction due to 2 by 2 table) was employed to
investigate if an association between the sector and inclusive work
environments existed. While more women in the public sector ver-
sus the private sector perceived their organization to be inclusive
(57.1%) than exclusive (54.5%), no significant difference was
found. Hypothesis 6(b) was, therefore, not supported.

**H6(c):** The level of inclusion will not be the same in technical
consulting and construction contracting companies.

The relationship between inclusion and the organizational type
was also explored using a one-way ANOVA. Inclusion again was
considered as the continuous standardized variable with three
groups compared, based around common usage in the AEC sector,
namely technical consulting (architecture n = 69, engineering
n = 76, project and cost management n = 90), construction con-
tracting (n = 171, head and subcontractors), and other (n = 50,
law, etc.). There was a statistically significant difference at the p <
0.05 level in the inclusion scores for the three different organiza-
tional types [F(2, 453) = 4.77, p = 0.009]. Post hoc comparisons
using the Tukey HSD test indicated that the mean score of inclusion
for technical consulting was significantly higher than that of the
construction contracting (p < 0.008), supporting Hypothesis 6(c).
There were no other statistically significant differences between
different groups.

**Discussion**

In this research, a model of inclusion, based on social exchange
theory, investigated diversity management effectiveness and
women’s success using a sample of nearly 500 AEC professional
women. Six overall hypotheses were developed and explored, and
while the majority of these were supported, some were not. The
results are discussed below.

**Impact of Inclusion at the Organizational Level**

The results demonstrate that when inclusion was evident, organi-
zational diversity strategies were effective. In particular, three types
of diversity strategies, defined by Leslie (2019), were considered,
namely, nondiscriminatory, resource, and accountability practices.
When considering nondiscriminatory practices in terms of recruit-
ment and retention, not only were there significantly more women
overall but more women in leadership in inclusive work environ-
ments. Organizations with higher representation of women are
considered to have more equitable recruitment processes, so they
may also have other equitable employment practices in place (e.g.,
flexible work), which Guillaume et al. (2013) consider to a-
ffect the emergence of an inclusive organizational culture. Also,
feelings of identity and inclusion increase when individuals are part
of groups in which they are demographically similar (Tajfel and
Turner 2004; Chattopadhyay et al. 2004). So the presence of
women themselves may well positively affect the perception of in-
clusion. Finally, a strong association between the presence of senior
female managers and younger women professionals has been pre-
viously identified, underscoring the longer-term importance of
women leaders fostering and supporting younger female cohorts
(Goodman et al. 2003).

Resource practices typically provided through Human Resource
Management (HRM) were also evident in organizations that women
perceived to be more inclusive, with more mentoring and organiza-
tionally provided training evident in inclusive work environ-
ments. Both mentoring and training have been identified as nec-
essary for women’s careers, attracting considerable attention
within AEC women’s research (e.g., Worrall et al. 2010). Chan and
Dainty (2007) assert that supportive HRM practices are necessary to attract and retain AEC women.

Turnover was considered in this research to represent accountability practices, also referred to as responsibility practices. These practices aim to monitor diversity outcomes, with a focus on the overall goal of diversity rather than diversity processes (Leslie 2019). The research found that the turnover intent of women who perceived their workplaces to exclude them was statistically higher. Reducing turnover is imperative for organizations, particularly when costs associated with lower work performance, retraining, and further recruitment are considered (e.g., Hancock et al. 2013). Mor Barak (2000) also identified that perceived inclusion positively affected retention so that inclusion can act as a preventative strategy for women’s turnover in the AEC sector (Davies et al. 2019).

Impact of Inclusion at the Individual Level

In this study, success was assessed in two ways: career success by considering career satisfaction and career advancement; and life success by considering life satisfaction and work-family conflict.

Both aspects of success are known to be important to women (Erdogan et al. 2012). In this research, career satisfaction was significantly higher in the inclusive group. Career satisfaction is known to have significant organizational implications as the benefits spread beyond that of an individual employee. For instance, job satisfaction, which is closely linked with career satisfaction, is a known predictor for coworker support (LePine et al. 2002).

Interestingly, inclusion was not associated with women’s career advancement. So despite the presence of mentors, along with more active recruitment of women and the presence of women leaders in an inclusive work environment, there was no difference in women’s career advancement. The inclusion environment may hold the same underlying perceptions and subtle norms as the more exclusionary environment have about who is (and who is not) suitable for specific roles (Ashcraft 2013). Perhaps, women leaders may not have as much organizational influence to affect change, or simply they do not support other women advancing (aka Queen Bee syndrome) (Funk 2004; Baumgartner and Schneider 2010).

Life success was conceptualized as life satisfaction and work-life balance. In more inclusive workplace environments, women had statistically higher levels of life satisfaction. This result is notable as life satisfaction is closely linked to many aspects of physical and mental health, demonstrating exclusionary contexts may have a severe impact on women’s lives. Reduced life satisfaction has been found to relate to decreased mortality, heart disease, burnout, and sleeping disorders, and is also a better predictor of job performance than job satisfaction (Erdogan et al. 2012). Better life satisfaction is also related to higher career satisfaction, lower turnover, increased helpfulness to subordinates, and higher productivity (Erdogan et al. 2012). Life satisfaction and happiness, while not synonymous, are intimately linked, and Chew et al. (2020) identified happiness in engineers to be related to supervisor support. Life satisfaction is a valuable and positive attribute of employees and for any organization.

Work-family conflict was statistically higher in exclusionary environments and may explain the higher level of turnover intent. Women’s departure from the AEC sector has been linked to work-family issues, but it has been demonstrated that organizational support mechanisms reduce work-family conflict (Lingard and Francis 2009). Work-family conflict in the AEC industry has been associated with demanding roles, and it would seem that inclusive work environments do support workers with family commitments.

Impact of Inclusion at the AEC Sector Level

Finally, this research also identified some AEC sector level characteristics of inclusive workplaces. Microsized companies, rather than larger, medium, or small companies, had significantly higher levels of inclusion. Considering more formal diversity programs are often found in larger organizations, this finding does appear counterintuitive. However, it is not just the formal policies that assist employees, but also the informal accommodations, such as unscheduled time off, altered schedules, etc., which may be more forthcoming in smaller organizations (Behson 2002). While it was considered that microsized firms might provide that balance of formal and informal policies and thereby be more inclusive, this research found that very small organizations appear to facilitate inclusion more readily. It may be that informal policy and practices have a more significant effect on inclusion as they are more closely related to a microsized firm’s norms. Within these very small organizations, accommodations and support linked with inclusion may be a more natural part of the way work is conducted. Research by Adkins et al. (2013) also suggests that ownership characteristics in terms of gender and family affect the work-family culture and work flexibility within smaller organizations.

As an area with a historically lower number of women, perhaps unsurprisingly, construction contracting had significantly higher exclusion levels than technical consultancies. Interestingly, it was found that architecture, which has had gender parity within education for several decades, had a lower percentage of inclusive organizations than engineering and other professional consultancies. Stead (2016) notes that architecture’s culture is one of exceptionalism, differing from all other professions. Perhaps this and the fact that the female architect’s image is not so clear cut (Stead 2016) make them more outsiders than women who have gone into engineering, which focuses more on practical tasks and problem-solving within a strong norm of professionalism and ethics.

No differences in inclusion by organizational sector were found, which was unexpected. With their long association with diversity programs, public sector institutions did not embrace inclusion more than the private sector. Work-family conflict has been found to be higher for private sector AEC employees, but this was in a predominantly male sample (Francis et al. 2013). Perhaps the formal provisions for child care, part-time work options, etc., within the public sector improve the work-family balance of public sector employees, but not the underlying perceived organizational support needed for inclusion. However, these results can also be considered another way and may indicate that private sector companies are starting to take the lead in the diversity area. This is good news for women wanting private sector work experience but concerned about managing work and family responsibilities.

Conclusions

Significant changes have occurred within women’s employment conditions, with the most notable being the equal opportunity legislation enacted within most western economies since the 1970s. Diversity has since replaced the term equality to highlight the value of individual differences in improving organizational performance (Cox 2001; Mor Barak 2016; Özbilgin and Tati 2011; Roberton et al. 2017). More recently, the term inclusion has been embraced and is regarded as more participatory and proactive (Kossek and Pichler 2006). There is now a widespread understanding of the benefits of a diverse workforce and the role inclusion has to play, outlined within both industry and academic literature (Michielsens et al. 2008; Wright et al. 2014). However, it has been challenging to identify specific effects because of the intricacy of organizational
Based on organizational support theory, which is grounded in social reciprocity, this research postulated inclusion to be a product of diversity management effectiveness and organizational support. The study found that diversity management alone is not enough, and the critical role organizational intent has to play. The study sought to understand the effect of inclusion on AEC women and their organizations and provided much needed empirical evidence in the area. Inclusion does matter to AEC women and their organizations.

From this work, it is apparent that AEC companies are not all the same, with companies having different inclusion levels. The research has also identified organizational and personal benefits from diversity and inclusion, which may help address the ability to attract and retain women within the AEC industry. However, it also highlights that many women in the industry continue to suffer in exclusionary environments.

An inclusive work culture that values differences and successfully integrates a diverse range of workers does provide an ideal environment for AEC women to achieve both work and life success. Women in these environments experienced higher levels of career and life satisfaction and lower levels of work-family conflict. Women’s lack of career advancement has long been associated with a lack of support, mentors, and challenging work practices, with women required to fit in if they want to remain and succeed (e.g., Dainty et al. 2000; Worrall et al. 2010; Francis 2017). More inclusive environments do address some of these issues, but in this research, it was found that women’s inclusion did not impact women’s career progression despite access to mentoring and support. This is a significant finding as much of the prior research has indicated their absence be the cause of women’s lack of advancement.

The effectiveness of diversity programs in the inclusive group was also confirmed with statistically greater numbers of women overall, more women in leadership, and the presence of supportive organizational practice such as training and mentoring. The positive effect of inclusion for organizations was demonstrated through the women’s higher career and life satisfaction, reduced work-family conflict, and lower turnover intent. These factors are not only beneficial for women but are related to better work performance and reduced costs. When considering the variables used to measure inclusion, it is also apparent that it is an achievable characteristic and should be a vital business objective. However, as this research demonstrates, these efforts must be genuine. Inclusion stems from organizational support that is nonmandatory compared to diversity, which is legislated or mandated (Shore et al. 2018). Leslie (2019) identifies that an absence of an ethical climate (and associated behaviors) can result in a diversity backlash, with the representation of women actually decreasing.

When examining the inclusive environment’s attributes, it was apparent that inclusion did differ by organizational size and type, but not the organizational sector. It would appear in the inclusive group AEC women are at least accepted, demonstrating progress from earlier research. While they may still face career progression challenges, they are still in a much better position than women who experience exclusionary workplaces. Exclusion has some very concerning features that could be deemed as an OH&S issue. With their more negative features, exclusionary workplaces may be indicative of damaging and unethical workplaces that affect more than just female employees. Investigating diversity and inclusion may help illuminate sections of the AEC industry in need of urgent reform.

Future Research

These findings indicate that further research is required to understand the evolution and benefits of more inclusive work environments in the AEC industry. Qualitative longitudinal research during the implementation of a new diversity management plan could provide insights not gained through cross-sectional quantitative methods. The discovery that women’s career advancement was not affected by inclusion requires further exploration. Various researchers previously identified mentoring and support as explanations for women’s career progression issues; however, women’s advancement was unaffected even when they are present. Also, this research sheds light on AEC work environments that could improve the work and life of employees. Understanding these and their effect on male and female employees should be explored. Finally, more qualitative research involving microsize companies and engineering consultancies should be undertaken to understand why they are more inclusive than larger companies and architectural practices.

Limitations

While the cross-sectional correlational field study method is widely adopted, it has some limitations, particularly regarding causality (Field 2017). Also, the sample was mainly women in the AEC industry who were members of AEC professional bodies. While snowball sampling was encouraged, the research cannot claim that the sample was random, and some bias may exist. Being a professional association member may indicate an increased career focus and/or compliance with professional norms. However, the sample did represent women of all ages, work experiences, and family situations. The questionnaire was web-based, which can result in responses from nontargeted groups; however, a password-controlled site was used and would have mitigated against this. It was quite long, and the use of a single item for some variables (e.g., career satisfaction) was not ideal. Inherent in all studies involving people’s perceptions are a range of issues; individuals respond about how they feel at one specific time. Also, individuals can be unwilling to reveal true feelings; social desirability bias may have played a part in their responses. However, having a particular website for the study, a large sample, assuring anonymity, and not linking the study back into two. Inclusion was classified as above one and exclusion below one. It is acknowledged that inclusion is on a continuum, and the random allocation was used to identify those experiencing higher and lower inclusion rather than define where inclusion begins and ends.

Data Availability Statement

Some or all data that support the findings of this study may be available from the corresponding author upon reasonable request.

References


