Of Journal Editors and Editorial Boards: Who Are the Trailblazers in Increasing Editorial Board Gender Equality?

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Female academics continue to be under-represented on the editorial boards of many, but not all, management journals. This variability is intriguing, because it is reasonable to assume that the size of the pool of female faculty available and willing to serve on editorial boards is similar for all management journals. This paper therefore focuses on the characteristics of the journal editors to explain this variability; journal editors or editors-in-chief are the most influential people in the selection of editorial board members. The authors draw on social identity and homosocial reproduction theories, and on the gender and careers literature to examine the relationship between an editor's academic performance, professional age and gender, and editorial board gender equality. Longitudinal data are collected at five points in time, using five-year intervals, from 52 management journals. To account for the nested structure of the data, a three-level multilevel model was estimated. Overall, it is found that the prospects of board membership improve for women when editors are high-performing, professionally young or female. The authors discuss these findings and their implications for management journals with low, stagnant or declining representation of women in their boards.

Introduction

Gender equality in academic journal editorial boards (EBs) has gradually increased (Addis and Villa, 2003; Mauleón *et al.*, 2013; Metz and Harzing, 2009). This literature suggests that this increase is parallel to, but lower than, the gradual increase in female academics in various fields over time. Further, despite this upward trend in gender equality in academic journal EBs, there is still substantial variability in women's level of representation on EBs across journals in the same field of study. As the pool of female scholars from which to select EB members is similar for all journals in a given field, how can this variability be explained? To answer this question requires a shift in attention from the supply side (female academics) to the demand side (journal editors) of the EB member selection process.

Journal editors or editors-in-chief are at the top of the EB hierarchy and are the most influential people in the selection of EB members (Feldman, 2008). Although the process of selecting the editor-in-chief has become more formalized over time for some journals (Cascio, 2008), the same does not always apply to the selection of EB members (e.g. Addis and Villa, 2003; Burgess and Shaw, 2010). At best, editors-in-chief have an understanding of process 'best practice' in their selection of board members (Feldman, 2008; Zedeck, 2008). Thus, it is probable that a journal editor's characteristics can explain variability in women's representation on EBs.

This study examines the relationship between the editor's academic performance, professional age and gender, on the one hand, and a journal's EB gender equality, on the other. This association is important, given the role of top

leadership in enacting the effective use of diverse talent in organizations (e.g. McCracken, 2000; Slater, Weigand and Zwirlein, 2008). Further, in terms of EBs, the selection of journal EB members affects academic careers and knowledge by determining what is published (Bedeian, Van Fleet and Hyman, 2009; Starbuck *et al.*, 2008).

In seeking to explain this relationship, we draw on social identity (Tajfel and Turner, 1986) and homosocial reproduction (Kanter, 1977) theories. Social identity theory (SIT) suggests that men and women will be attracted to, and advocate for, same-sex colleagues. Similarly, homosocial reproduction theory explains individuals' preference to work with people like themselves (Kanter, 1977; Nielsen, 2009). Combined, these theories explain why individual characteristics such as academic standing, professional age and gender might influence the composition of EBs of academic journals. We focus on the gender composition of EBs because female and male scholars' purportedly have different research approaches and interests (Addis and Villa, 2003). For example, women scientists are more likely to follow 'a "niche approach" creating their own area of research expertise' (Sonnert and Holton, 1996, p. 68), and are 'inclined toward more comprehensive and synthetic work' (p. 69). Hence, women's under-representation on EBs potentially narrows the scope of what is published (Bedeian, 2004).

This study responds to calls for further research into the gender equality of editorial boards of management journals in light of some, albeit slow, progress (e.g. Burgess and Shaw, 2010). Such research is important for several reasons. It can assuage fears that EB homogeneity can lead to the preferential treatment of particular topics, theories and approaches (Burgess and Shaw, 2010, p. 643), to the detriment of knowledge creation (Konrad, 2008; Tung, 2006). Gender equality in the EBs is also desirable for its signalling effects (Celani and Singh, 2011). For example, if the editor's aim is to attract paper submissions from a broader constituency, a demographically diverse EB signals to potential authors that the journal is welcoming of submissions from a variety of fields and perspectives (Feldman, 2008; Zedeck, 2008). In addition, increasing the representation of women in EBs is one step in recognizing women's increasing presence in academia (AUCC, 2011; Bell and Bentley, 2005) and their scholarly

contributions as authors (Mauleón *et al.*, 2013). Such recognition might help address the 'startling levels of gender inequity in research-intensive universities across the world' (Grove, 2013), as editorial membership is favourably regarded in academic promotion processes (Bedeian, Van Fleet and Hyman, 2009; Raelin, 2008).

Literature review and hypotheses

The diversity management literature consistently advocates for top leadership's unwavering commitment to diversity to ensure sustainable organizational change that leads to the effective use of a diverse workforce (e.g. Gilbert, Stead and Ivancevich, 1999; Kreitz, 2008). This advocacy is in line with the change management literature for the importance of top-level commitment in the successful implementation of change (Kotter, 1995). To increase the gender diversity of a journal's EB is to successfully implement change in the EB's composition. The journal editor is at the top of a journal's leadership ladder. S/he has extensive discretion on how to shape the journal's content, which includes choosing who will be on the EB (Feldman, 2008; Konrad, 2008; Hodgkinson, 2008; Zedeck, 2008). Thus, we consider the journal editor (or editor-in-chief) to be the top leader who needs to be committed to diversity to ensure change in EB gender composition.

The journal editor as a leader of change and innovation

Academic journals are influenced by many factors, including societal norms and expectations (Oliver, 1991). It is known that the gender equality of EBs of management journals has increased over time (Mauleón *et al.*, 2013; Metz and Harzing, 2009, 2012). It is possible that this increase is partly due to changes in the population of academics, and partly due to social changes and expectations. Editors of academic journals have high strategic choice in how they adapt to change and innovate (Zedeck, 2008). However, we do not know which personal characteristics of the journal editor would explain his/her choices. In line with the diversity and upper echelon literatures (e.g. Bantel and Jackson, 1989; Hambrick, Cho and Chen, 1996; Nielsen, 2009), we use demographic characteristics such as educational background and age as proxies for 'underlying differences in

cognitions, values, and perceptions … because these psychological constructs are unobservable' (Carpenter, Geletkanycz and Sanders, 2004, p. 750).

Further, past research into EB diversity has shown that the existence of a female editor in a journal's history is positively related to the proportion of women on the EB (Mauleón *et al.*, 2013; Metz and Harzing, 2009). This finding lends credence to the study of the relationship between the editor's characteristics and his/her journal's EB gender equality. We thus extend this body of knowledge by examining the relationship between three individual characteristics and EB gender equality: the journal editor's academic performance, professional age and gender. We include in our study a re-examination of a journal editor's gender because of the persistent perception that successful women might not be helpful to other women in the workplace (Adonis, 2013; Drexler, 2013; Mavin, 2008; Mavin, Grandy and Williams, 2014), including some empirical evidence in academia of female misogyny (Ellemers *et al.*, 2004).

Journal editor's academic performance. What constitutes a good measure of academic performance is debatable. Nevertheless, appointments to journal editorships are partly based on one's publication record (e.g. Feldman, 2008; Zedeck, 2008). Such a criterion is widely used and accepted as a measure of performance, although increasingly recognized as imperfect (Adler and Harzing, 2009). As this study's aim is to examine how an editor's characteristics influence the gender composition of his/her EB, rather than to debate the advantages and disadvantages of performance evaluation criteria in academia, we use an editor's publication record as a proxy for academic performance.

High academic performance is a criterion in the selection of editors-in chief (Cascio, 2008) who, in turn, decide on the composition of their EBs (e.g. Feldman, 2008; Hodgkinson, 2008). Many factors weight in this selection process (Addis and Villa, 2003; Burgess and Shaw, 2010; Feldman, 2008; Mauleón *et al.*, 2013), but sex is likely to be an important one. Social identity theory (Tajfel and Turner, 1986) proposes that people use visible personal characteristics to identify with others. In identifying with a particular group, individuals ascribe more positive attributes and evaluate more

favourably the individuals in their groups than individuals outside their groups (Turner *et al.*, 1987). In addition, homosocial reproduction theory suggests that people like to be with people who are like themselves and, thus, tend to select (and advance) others similar in appearance or background (Kanter, 1977; Nielsen, 2009). This tendency to select people on the basis of 'comfort' is likely to occur in the selection process of EB members. Sex is a highly visible demographic characteristic influencing the formation of gendered groups (Byrne, 1961; Turner *et al.*, 1987). Thus, based on social identity and homosocial reproduction theories, editors are expected to identify more with, and ascribe more positive attributes to, same-gender than different-gender colleagues. In doing so, editors are naturally more inclined to select a same-gender colleague for their journal's EB.

However, this natural tendency may be less pronounced in high-performing journal editors. Performance in academia is also a very visible personal characteristic, partly reflected in the number, impact and prestige of an academic's publications (Bedeian, Van Fleet and Hyman, 2009). Based on social identity and homosocial reproduction theories, high-performing editors should identify and feel comfortable with similarly high-performing academics regardless of their gender. Further, these editors plausibly feel comfortable working with members of the opposite sex, partly because they are not threatened by 'others' (owing to their relative status in the scientific community) (Carpenter, Geletkanycz and Sanders, 2004). The term 'others' refers to members outside one's social identity group, such as members of traditionally under-represented groups in organizations (Beatty, 2007). Thus, we propose that a positive direct relationship will exist between journal editors' academic performance and the gender equality of their EBs.

> *H1*: A journal editor's academic performance will be positively associated with the level of gender equality of the journal's EB.

Journal editor's professional age. Professional age reflects the number of years that someone has been in the profession. A motivation to change the organization's gender equality depends partly on the leader's attitudes to gender-diverse others, gender stereotypes and perceptions of working men and women. Subjective selection criteria, such as level of comfort with a candidate (or

potential EB member) and perceptions of the (un)suitability of women for leadership positions, are well-documented in the gender and careers literature and known to favour men over women (e.g. Eagly and Chin, 2010; Metz and Kulik, 2014). However, research on changes in attitudes over time shows that, overall, attitudes towards women working have (slowly) become more liberal (Duehr and Bono, 2006). Similarly, the 'think manager – think male' global stereotype has weakened, although more for women than for men (Schein, 2001, 2007; Schein *et al.*, 1996). Nevertheless, there is some evidence that decision-makers' characteristics, such as age, influence their attitudes towards organizational diversity (Ng and Sears, 2012).

Further, as women comprise an increasing proportion of PhD candidates and doctorates (AUCC, 2011; Dobson, 2012), younger men and women are more likely than their older counterparts to have female colleagues in their networks. The effects of surface-level (dis)similarity (such as sex) diminish with time as individuals become familiar with one another (e.g. Harrison, Price and Bell, 1998; Lankau, Riordan and Thomas, 2005). Based on social identity and homosocial reproduction theories, individuals are then likely to identify with their PhD cohorts and feel comfortable working with cohort members (whom they perceive to be like themselves in terms of academic expertise and competence), regardless of their gender. This assumption is supported by empirical evidence of links between doctoral institution, EB membership and professional networks (e.g. Burgess and Shaw, 2010). As a result, it is reasonable to assume that young editors are more likely than their older counterparts to select and advocate for female colleagues for EB memberships.

H2: A journal editor's professional age will be negatively associated with the level of gender equality of the journal's EB.

Journal editor's gender. From the extant literature on EBs of management journals, we know that having a female editor in a journal's history is positively associated with the proportion of women on the journal's EB (Mauleón *et al.*, 2013; Metz and Harzing, 2009). In line with the EB literature, the diversity literature indicates that having women at higher levels increases the representation of women at lower organizational levels (Gould, Kulik and Sardeshmukh, 2014; Kurtulus and Tomaskovic-Devey, 2012; Matsa and Miller, 2011). Thus,

empirical evidence from the EBs and diversity literatures suggests a positive relationship between female editor and EB gender diversity. But why would this relationship exist?

One reason for proposing that a female editor should increase the gender equality of the EB is women's greater likelihood to network with other women than with men (Chow and Ng, 2007). Based on SIT (Tajfel and Turner, 1986), people use sex to identify with others and make assumptions of shared experiences, similarity and ability to work well together (Guillaume, Brodbeck and Riketta, 2012). As a result, women network more with women for social support (Chow and Ng, 2007) than with their male colleagues. Women also feel excluded from male-dominated work informal networks (Kanter, 1977; Murray and Syed, 2010). Thus, female editors are likely to have a wider network of female academics to choose from for EB positions than male editors have.

Editors are also likely to use the recommendations of past editors, current EB members and colleagues in their networks to select their EBs (Feldman, 2008; Zedeck, 2008). For female editors, such behaviour is still more likely to lead to an increase in the representation of women in the EB, because of the gender homogeneity in academic networks (Burgess and Shaw, 2010).

Nevertheless, a positive relationship between female editor and EB gender equality is not a sure thing; the popular media and some academic literature lead us to believe that women are unlikely allies of other women (Adonis, 2013; Drexler, 2013; Ellemers *et al.*, 2004; Mavin, Grandy and Williams, 2014). As the appointment of female editors 'is still a relatively rare and recent phenomenon' (Metz and Harzing, 2009, p. 552), it warrants re-examining this relationship in our study. Based on the extant empirical evidence and theoretical rationale above, we propose that having a female editor increases the number of women lower down the EB hierarchy (or the number of female EB members).

H3: Having a female editor will be positively related to the level of gender equality of the EB.

Method

Data

Data on editors and EB members were gathered for 52 journals (see Appendix S1) in five

broad areas of business and management: operations management; international business; marketing; general management & strategy; and HRM/organizational behaviour/industrial relations. For each field included, we selected approximately ten journals. In doing so, we used two main criteria. First, we focused mainly on top journals in the respective fields, as defined by citation-based metrics as journal impact factors and journal rankings such as the British ABS (Association of Business Schools) list and the Australian ABDC (Australian Business Deans Council) list, which have been shown to correlate fairly strongly (Mingers and Harzing, 2007). In using this definition we are not advocating a single-minded focus on journal rankings or suggesting that only publications in top-ranked journals 'count'. We are simply using this measure to limit our sample of journals to a manageable sub-set. Second, we ensured that we included a spread of North American and European journals. We collected longitudinal data at five points in time, using five-year intervals: 1989, 1994, 1999, 2004 and 2009. Five-year intervals were seen as the best compromise between allowing enough time for changes to occur, but also offering a sufficient number of data points.

The total number of journals used for analysis was 52 (Level-3 in our multilevel model). The total number of journal-year observations for each journal at each year was 247 (Level-2 in our multilevel model) rather than 52 (journals) × 5 (years) = 260, because some journals did not have data for 1989 and/or 1994, as they were established after those years. The total number of individual board members across all journals and all years was 15,128 (Level-1 in our multilevel model).

Measures

The gender of all individual EB members at each year was dichotomously coded 0 for males and 1 for females. As such, a positive effect of a predictor indicates that an increase in the predictor increases the probability that board members are female. Alternatively, a negative effect indicates that an increase in the predictor decreases the probability that board members are female.

Editor academic performance was measured as the number of journal articles an editor had published up to the date of observation, which was the end of the year in question, i.e. 1989, 1994,

1999, 2004 or 2009. We sourced publication data from the Web of Knowledge. Although not all journals are included in this database, the database generally includes the (currently recognized) top journals in every academic field. Hence, we believe that the number of journal articles an editor had published up to the date of observation is a reasonable operationalization of academic performance. Editor professional age was measured in years as the length of time between when the editor's first article appeared and the year of observation. The gender of editors at each year was dichotomously coded 0 for males and 1 for females. The implication is that a positive effect of editor gender means that having a female as a journal's editor increases the probability that EB members are female.

Controls

We controlled for many variables, such as EB size, year of observation and journal rotation. We control for EB size because it has been found in the EB literature to be positively associated with the proportion of women in EBs (Metz and Harzing, 2009). In addition, in the case of EBs, the larger the size of the EB, the more opportunities there are to add a new member of a different gender from the majority. Moreover, top management team scholars recommend that team size is controlled for (e.g. Carpenter, Geletkanycz and Sanders, 2004), because of empirical evidence on the positive association between team size and team heterogeneity (e.g. Nielsen, 2009). As the size of the EB varies from year to year, size is a Level-2 variable.

As gender equality has increased over the years (e.g. Burgess and Shaw, 2010; Harzing and Metz, 2009, 2012), we controlled for year-specific effects by including four dummy coded variables for years 1989, 1994, 1999 and 2004, allowing the 2009 effect to be captured by the grand intercept in our statistical model. Finally, we controlled for whether journal editors had just rotated into their position with a dichotomously coded variable, where 0 indicated no rotation, and 1 indicated that an editor had rotated. The rationale for this is that new editors generally change the EB composition, and hence every rotation provides another chance for the journal to align with changing social expectations and external institutional pressures.

Statistical model and estimation

To account for the nested structure of the data, a three-level multilevel model was estimated using Mplus version 7.1 (Muthén and Muthén, 1998–2012). A probit linking function was used to scale the dichotomous dependent variable appropriately (see Agresti, 2002). The Level-2 random effect captures variation from year to year in the average probability that EB members were female. Because our interest is in studying EB member composition in any given year, this is the level of analysis at which we included our predictors.

We included a Level-3 random intercept that was estimated like a fixed effect (similar to that in Bollen and Brand, 2010) in order to capture variation across journals in the overall probability that a journal's EB was composed of females. This random intercept automatically accounts for any journal-level characteristics that would normally act as confounds, such as the field of the journal, its location (e.g. the US, the UK, Europe, and Australia), and any other characteristics specific to a journal. Removing such 'heterogeneity' across journals is a classic method in econometrics for removing confounds and increasing the validity of causal inferences because, by removing journal effects, all effects we estimate capture changes in our dependent variable from year to year (see Woolridge, 2010).

Model estimation employed a Bayes estimator using a Markov Chain Monte Carlo technique with a Gibbs sampler (see description of the 'PX1' estimator in Asparouhov and Muthén, 2010). This procedure was used not merely because Bayes estimation leads to very intuitive inferences when testing hypotheses, but also because the complexity of our estimated model – three levels and a noncontinuous variable – made other forms of estimation intractable (see discussion in Asparouhov and Muthén, 2010). Bayes estimation generates estimates of the probability of each parameter value, called 'posterior probabilities', which allow direct probability statements for inferences about parameters of interest (for discussion, see Zyphur and Oswald, 2015). In order to estimate posteriors, the model must first be parameterized with 'prior probabilities' that index knowledge or hypotheses before data analysis. As is standard in Bayesian modelling, we used 'diffuse' or 'uninformative priors', which allow observed data to drive results (Asparouhov and Muthén, 2010).

Iterations to estimate model parameters were independently conducted across four Markov Chains with 100,000 iterations in each chain, removing the first 50,000 iterations from each chain in a 'burn-in' phase, leaving the second half of the iterations to populate posterior distributions and, therefore, resulting in 200,000 final posterior estimates for each parameter (for discussion, see Asparouhov and Muthén, 2010). The distribution of these estimates is the posterior distribution. For point values for each parameter, we report the median value of the posterior distribution, which at the limit are equivalent to the estimated value obtained via maximum likelihood (Zyphur and Oswald, 2015).

Model convergence was assessed in two ways. First, the potential scale reduction (PSR) was examined to assess the ratio of between chain variation to within and between chain variation, where values below 1.05 are generally considered acceptable (Gelman *et al.*, 2013). The PSR statistic showed excellent model convergence, with values ranging between 1.005 and 1.029 across the final 50,000th and 100,000th iterations, indicating substantial agreement in posterior estimates across the four chains (Zyphur and Oswald, 2015).

While the PSR values are helpful for determining overall model convergence, they do not offer convergence information for individual parameters. This was examined using a series of Kolmogorov–Smirnov tests to evaluate the difference in the posterior distributions across chains along all parameters (see Wilcox, 2005). These tests take a sample of posterior estimates for each parameter from each chain and compare the values across chains in a pairwise fashion, with a null hypothesis that all estimates are from the same population or distribution (larger *p*-values indicate good convergence). In all 72 tests, no *p*-values were smaller than 0.05, with average *p*-values near 0.90, indicating no rejections of the null hypothesis that all posteriors were generated from the same underlying distributions.

Results

Descriptive statistics are shown in Table 1 and model results are shown in Table 2. (Descriptive statistics were model-estimated from Level-2 of our statistical model to reflect the level

Table 1. Descriptive statistics for study variables

Variable	M	SD									
Board	0.19	0.25									
Rotation	0.62	0.34	0.24								
Size	61.31	27.12	0.49	0.12							
1989	0.17	0.38	−0.56	−0.12	−0.35						
1994	0.19	0.40	−0.21	−0.07	−0.23	−0.22					
1999	0.21	0.41	0.05	0.08	−0.07	−0.23	−0.25				
2004	0.21	0.41	0.23	−0.04	0.13	−0.23	−0.25	−0.26			
Editor Gender	0.15	0.30	0.27	0.19	0.18	−0.10	−0.13	−0.00	0.10		
Editor Prof Age	20.78	6.57	0.13	−0.32	0.23	−0.32	−0.10	0.01	0.21	0.22	
Editor Perf	24.88	13.11	0.22	−0.17	0.18	−0.24	−0.10	−0.04	0.10	0.13	0.39

Notes: Board = female editorial board membership, where 0 = male and 1 = female; Rotation = whether or not the editor was new in a given year; Size = the size if the editorial board in a given year; 1989–2004 = dummy coded year variables; Editor Gender = gender of the journal's editor, where 0 = male, 1 = female; Editor Prof Age = the professional age of the journal editor; Editor perf = the total number of journal articles published by the editor in a given year. All descriptive statistics are at the year level of analysis (Level-2 in our multilevel model) using proportions of males versus females on editorial boards.

Table 2. Effects on editorial board gender from three-level model

Parameter	Estimate	Bayesian p-value	Credibility interval	
			−2.5%	+2.5%
Level-2				
Rotation	0.065	0.175	−0.071	0.199
Size	0.001	0.258	−0.001	0.002
1989	−0.549	<0.001*	−0.722	−0.377
1994	−0.298	<0.001*	−0.449	−0.152
1999	−0.196	<0.001*	−0.323	−0.070
2004	−0.088	0.053	−0.196	0.019
Editor Gender	0.113	0.004*	0.200	0.026
Editor Prof Age	−0.005	0.137	−0.013	0.002
Editor Perf	0.006	0.021*	0.000	0.012
Variance	0.004	–	0.001	0.015
Level-3				
Intercept	−0.848	<0.001*	0.704	0.998
Variance	0.187	–	0.121	0.301

Notes: Rotation = whether or not the editor was new in a given year; Size = the size if the editorial board in a given year; 1989–2004 = dummy coded year variables; Editor Gender = gender of the journal's editor, where 0 = male, 1 = female; Editor Prof Age = the professional age of the journal editor; Editor perf = the total number of journal articles published by the editor in a given year; Variance = amount of variation in dependent variable at each level of analysis; no parameters were estimated at Level-1.

of analysis of interest in the variables.) On average, only 19% of the EB members in our sample were female. Rotation was the norm in our sample, with nearly two-thirds of our editors being new to the position. On average, EBs had just over 60 members. With regard to editor characteristics, 15% of the editors were female; on average, they had been publishing for just over two decades and, in that time, had published nearly 25 articles in ISI listed journals.

As the descriptive statistics show, journal rotation ($r = 0.24$) and size ($r = 0.49$) were positively correlated with EB members being female.

Further, the dummy coded year variables showed a powerful trend of increasing females on EBs as time progressed ($r = -0.56, -0.21, 0.05, 0.23$). Average female EB membership increased from 9.4% in 1989 to 23.1% in 2009. As predicted, it appears that editors being female has a positive relationship to females on EBs ($r = 0.27$) and it appears that better performing editors had more females on an EB ($r = 0.22$). It also appears that older editors had more females on an EB ($r = 0.13$). However, by examining the correlations among gender, age and performance, it is clear that gender's positive correlation with EB gender

composition is probably masking the true negative effect of editor age on EB gender composition and partially reducing the magnitude of performance's relationship. Accounting for such inter-correlations is the point of regression analysis, to which we now turn.

To draw inferences about our effects of interest, we used a Bayesian version of null hypothesis significance testing first described by Jeffreys as a Bayesian response to Fisher's significance testing logic (see Jeffreys, 1939/1998, Chap. 5–7). This procedure gives Bayesian *p*-values that offer direct evidence against a composite null hypothesis that a parameter is zero or more different from zero than a reported effect (Zyphur and Oswald, 2015). This is like a traditional *p*-value that marshals evidence in favour of a parameter estimate when *p*-values are small, but the Bayesian *p*-value is more intuitive because it directly gives the probability that a parameter has a value of zero or the opposite sign of the reported effect. An implication is that subtracting a Bayesian *p*-value from 1 indicates the probability that an effect is different from zero (similar in logic to, but more intuitive than, null hypothesis significance testing).

Beginning with *p*-values, results in Table 2 show that the effects of editor academic performance ($b = 0.006$, $p = 0.021$) and gender ($b = -0.113$, $p = 0.004$) are statistically significant, thus supporting Hypotheses 1 and 3. The academic performance effect only has a 2.1% chance of being zero or negative, meaning that this effect has a 97.9% chance of being positive. The *p*-value indicates that the gender effect has only a 0.4% chance of being zero or positive, meaning that this effect has a 99.6% chance of being negative. Editor age had a less clear negative effect ($b = -0.005$, $p = 0.137$), but still showed only a 13.7% chance of being zero or positive, meaning the effect has an 86.3% chance of being negative, which we interpret as a meaningfully large chance of being negative. Hence, we report partial support for Hypothesis 2.

To gain a better understanding of these effects, we computed the average probability of board members being female at different levels of the predictors. From the threshold parameter of 0.848, the regression model obtains an intercept of -0.848 (which can be thought of as a *z*-score). Because all predictors were centred, this -0.848 translates into an overall model-estimated average probability of female board membership at 19.82%. However, when journal editors were female, the average probability of female board membership increased to 22.60%, while for male editors it dropped to 19.34%. Alternatively, editors that were younger by one standard deviation increased the average probability of female board membership to 20.75%, while editors one standard deviation older decreased it to 18.92%. Finally, editors that performed better with one standard deviation increase in publications also increased the average probability of female board membership to 22.08%, while editors one standard deviation below the mean in performance decreased it to 17.71%.

In sum, these effects show that, while females are generally under-represented on EBs, certain editor characteristics have important implications for whether or not females are chosen to sit on EBs. Specifically, male editors tended to be associated with a reduced chance of female board members, as did older and lower performing editors. Indeed, from our results, we can contrast the predicted average probability of female EB membership for a female editor who is younger and higher performing, which is 26.08%, vs a male editor who is older and lower performing, which is 16.43%. This near 10% difference in the gender makeup of EBs as a function of an editor's characteristics shows the profound impact that a journal editor's characteristics can have on gender in EBs.

Discussion

We focused in this study on three individual factors that might influence an editor's selection of EB members and, thus, the gender composition of his/her journal's EB. Specifically, we examined the links between an editor's academic performance, age and gender and EB gender equality. Academic performance is operationalized as the number of journal articles an editor had published, which is usually a key selection criterion for the position of journal editor (Bedeian, Van Fleet and Hyman, 2009; Feldman, 2008). So, in trying to understand the antecedents of change in the gender composition of EBs of academic journals, it is essential to include this prominent credential. Further, professional age and gender shape individuals' life experiences, values and attitudes, including their views and behaviour towards diverse others. Overall, it makes sense to spotlight journal editors, because they play a key role in the selection of journal EB

members (Feldman, 2008; Zedeck, 2008). This selection responsibility influences academic careers and knowledge directly (through who is selected and who is not; Bedeian, Van Fleet and Hyman, 2009) and indirectly (through what is published; Starbuck *et al.*, 2008).

We found that journal editors who achieve high academic performance tend to have a higher proportion of women in the EBs of their journals, suggesting that they are 'trailblazers' in increasing EB gender equality. One reason for trailblazing such change is 'level of comfort'. As high academic performers, these editors are unlikely to feel threatened by high-performing others, regardless of their sex. Thus, their level of comfort with working with female EB members is probably higher than that of journal editors of lower academic performance, because identification based on academic performance prevails over same-gender identification.

Social identification on the basis of academic performance rather than gender, may also explain the higher gender equality on the EBs of higher-performing than lower-performing editors. Colleagues and students of both sexes probably seek the acquaintance and mentorship of high-performing editors for benefits such as information and career opportunities (Portes, 1998). In turn, high-performing editors are likely to include colleagues and students of both genders in their professional network because, for them, current or potential performance is a salient basis of identification with professional others. This shift in the basis of social identification should result in more gender-diverse professional networks for high-performing editors. Incoming editors select EB members from their professional networks or on the advice of current network members (Zedeck, 2008). Thus, having a gender-diverse professional network increases the high-performing editor's pool of gender-diverse colleagues to choose from for his/her EB.

One by-product of having higher levels of gender equality in the EB might be more submissions from a wider section of the academic community and increased readership. More submissions allow for greater choice of quality papers for publication; increased readership potentially raises citations, which is a criterion of journal quality (Hodgkinson, 2008). In both instances, the composition of the EB signals to potential authors and readers the calibre and type of manuscripts that might be accepted and published, as well as the breadth of perspectives, research interests and quality of the EB members.

We also found some evidence that professionally younger editors are more likely than their professionally older counterparts to have higher levels of gender equality in the EBs of the academic journals under their leadership. This finding is encouraging. It suggests that the 'glaring gender inequities' that persist in academia worldwide (Grove, 2013) could diminish over time as men work in an increasingly gender-mixed academic milieu from an early age (AUCC, 2011; Dobson, 2012).

Further, as with high-performing editors, professionally younger male editors probably feel more comfortable working with female colleagues than their professionally older counterparts do, albeit possibly for a different reason. This enhanced comfort level should result in higher proportions of female academics in the professional networks of younger than older male editors. Having a higher proportion of women in one's professional network provides professionally younger editors a larger pool of female candidates to choose from for their journals' EBs.

In addition, the finding that a female editor is associated with higher proportions of women in EBs supports past findings and is similarly encouraging. First, it shows that female misogyny is more a myth than a fact, at least in the realm of EBs of management journals. Second, gender is a key determinant of one's network gender composition (Portes, 1998) and networks are critical in the identification of potential EB members (Burgess and Shaw, 2010; Raelin, 2008). This finding thus shows that female editors rely partly on their own networks to appoint new EB members. As their professional networks are probably composed of more women than the professional networks of male editors, female editors' appointees have a higher chance of being female than male editors' appointees. Thus, as the instances of female journal editors increase, so should the proportion of female EB members. This increase should outlast the female editor, at least in part, as a new editor is unlikely to replace EB members on the basis of gender alone. Hence, having a female editor should increase the representation of women in EBs of management journals in the short and medium term.

Study's contributions

The theoretical contribution of this paper lies in its use of social identity (Tajfel and Turner, 1986) and homosocial reproduction (Kanter, 1977) theories to hypothesize the impact of individual level factors on EB gender equality. Identification and social reproduction are central tenets of relational demography theories that influence the supply and demand sides of the selection process. We took on a novel approach by focusing on the demand side of EB member selection to enhance our understanding of female academics' under-representation in EBs of management journals. Our study showed that editors' characteristics, which are arguably irrelevant selection criteria, influence the gender composition of their journals' EBs.

We note other strengths of our study. First, in focusing on the journal editor's demographic characteristics as predictors of women's representation in EBs of management journals, we shifted the attention from the supply-side (female academics) to the demand-side (journal editors) of the selection process. Thus far, popular explanations for women's under-representation in academic leadership have been their lower productivity levels and higher family responsibilities than their male colleagues (e.g. Bell and Bentley, 2005). These explanations tell only part of the story, and an emerging body of literature shows that they are simplistic. For example, demand-side factors such as 'gender-stereotyped perceptions and the unequal opportunities embedded in social networks appear to explain some of the [gender] gap' in scientists' rate of joining scientific advisory boards (e.g. Ding, Murray and Stuart, 2013, p. 1443). Contributing to this shift in attention to the demand-side, this study focused for the first time on the journal editor's characteristics as predictors of EB gender composition.

Second, we contribute to the conversation on the black box of editorship (e.g. Baruch *et al.*, 2008) by broadening past explanations of EB member selection to include personal characteristics that influence who we identify with and assess favourably. Specifically, we show that arguably irrelevant factors in the selection of EB members, such as editors' professional age and gender, influence the level of representation of women in the EBs of management journals.

Third, this study's findings provide empirical evidence that the EB member selection process is not as meritocratic and formal as it could be.

Specifically, the study's findings support understandings that the EB member selection process is partly influenced by editors' personal characteristics (e.g. Bedeian, Van Fleet and Hyman, 2009) and is, thus, opaque (e.g. Feldman, 2008). In doing so, this study supports past evidence of inequitable representation of women in EBs (e.g. Addis and Villa, 2003; Metz and Harzing, 2008), and assumptions of biased selection processes (e.g. Bedeian, Van Fleet and Hyman, 2009; Burgess and Shaw, 2010).

Further, in testing for associations between editor's characteristics and women's representation in EBs, we used a three-level modelling framework that allowed accounting for the nested structure of the complex data collected. Because the data were longitudinal in nature, this allowed us to control for undesirable heterogeneity associated with each journal, removing key potential confounds such as the specific focus of each journal, its location, and any other journal-specific factors. Conveniently, what remains after controlling for this heterogeneity are year-on-year changes in EB gender composition, meaning that the effects we report indicate how editors' characteristics influence changes in EB gender composition. However, this step towards making valid causal inferences about editor effects does not mean that our observed effects are directionally causal in nature. Yet, although it is difficult to determine conclusively cause and effect between two variables with correlational rather than experimental data, in the case of journal editors and EBs it is more plausible to suggest that an editor's characteristics influence the gender equality of the EB than vice versa.

Practical implications

What do these findings mean for management journals with low, stagnant or declining representation of women in their EBs? The business case for aligning the representation of women in EBs with their representation in academe and as authors is predicated on the broadening of perspectives that inform knowledge and management practice (e.g. Bedeian, 2009; Burgess and Shaw, 2010). Further, there is a moral case for removing insidious obstacles to women's advancement in academia. The absence of, or fewer, EB positions on female than male academics' promotion cases might be interpreted by university committees as weak recognition of women's scholarship, thus becoming

an obstacle to their advancement (Baruch and Hall, 2004; Diezmann and Grieshaber, 2010; Ding, Murray and Stuart, 2013). Therefore, one practical implication from this study's findings is that the traditional selection criterion of high academic performance for the position of journal editor should remain, or even be reinforced (Bedeian, Van Fleet and Hyman, 2009), for journals aiming to increase the proportion of female EB members.

Another implication for journals wishing to boost gender equality in EBs is to use less conventional selection criteria, such as professional age and gender, in conjunction with academic performance. Using other selection criteria in conjunction with academic standing is already practised by some journal editors pursuing a mixture of members' skills, knowledge and approaches that may result in the publication of high-quality innovative articles (Feldman, 2008; Zedeck, 2008). In particular, appointing a female editor can signal change in an academic journal, in the same way as the appointment of a female CEO signals to stakeholders a commitment to change in an organization (e.g. Martin, Nishikawa and Williams, 2009; Metz and Kulik, 2008; Ryan and Haslam, 2005). Appointing a professionally younger (rather than older) editor may have similar signalling effects. Holding journal editorships traditionally reflects professional seniority, as it takes time to build one's contribution to knowledge. Although we would only recommend the appointment of a professionally younger editor who is a recognized leader in his/her field, such appointment would also signal change.

However, more may need to be done. In reflecting on gender and management research in the past 25 years, Broadbridge and Simpson (2011) point to inaccurate perceptions that gender problems in management have been addressed. Metz and Kulik (2014) similarly identify employees' denial of gender discrimination as a new barrier to women's advancement (in addition to the well-documented barrier of persistent employers' denial of gender discrimination). They explain that, collectively, decision-makers and employees 'prefer to view their workplaces as gender egalitarian' (Metz and Kulik, 2014, p. 184). Members of the academic fraternity are unlikely to be immune to this deeply rooted preference. Thus, it is possible that, without institutional pressures on academia to address gender inequities, women's representation on EBs may continue to lag their proportion

as authors for quite some time. This supposition is based on persistent and stable gender gaps in EB membership over the years, despite increased women's authorship (Mauleón *et al.*, 2013; Metz and Harzing, 2012). Institutional pressure could be in the form of guidelines provided by selection committees of editors-in-chief, presidents of academic associations and publishers encouraging incoming editors to increase the gender equality in their EBs. Such guidelines need not be in place for all journals or forever; only while gaps persist between women's representation on EBs and their proportion as authors.

Nevertheless, it is possible that simply raising awareness of editors' characteristics associated with the better representation of female academics on the EBs of management journals will incentivize many editors to reflect on (and redress if necessary) the gender composition of their EBs. Management journals such as the *British Journal of Management* can raise such awareness by publishing and publicizing gender and management research (Broadbridge and Simpson, 2011). Through what they publish, journals can also start a conversation (Wood and Budhwar, 2014) in the context of the changing academic milieu (AUCC, 2011; Dobson, 2012) on the contributory role of journal editors in addressing gender inequities in academia (e.g. Grove, 2013; Karataş-Özkan and Chell, 2013; Morley, 2014) through their selection of EB members. After all, appointment to EBs and to the position of editor-in-chief reflects peer-recognition (Raelin, 2008) and is considered a step up the academic ladder (Haak, 2002). Management journals can also contribute to addressing gender inequities in academia by increasing the transparency of the EB member selection process.

Implications for future research

Implications for future research emerged from conducting this study and in the course of the literature review in preparation for it. For example, during the literature review stage, it became clear that little is known of the impact of demographic characteristics of CEOs and/or leaders on diversity outcomes (e.g. implementation of organizational diversity practices). Thus, overall, the upper echelons literature would benefit from more research in this area.

We drew on social psychology-based theories to develop the study's theoretical rationale. However,

other theories may prove useful in enhancing our understanding of gender equality in EBs of academic journals; institutional theory is one of them. Institutions such as government agencies, laws and regulatory structures are sources of standards and pressure to conform (Oliver, 1991). Academic journals are not directly affected by legislative or regulatory institutional pressures, but are likely to be indirectly affected by them (Bedeian, Van Fleet and Hyman, 2009). For example, media coverage of legislative changes is often subject to public debate that increases general awareness of social and employment issues. Thus, current social awareness, and government and regulatory focus in Western societies on the gender equality of boards of directors, heads of companies and executives (e.g. Hausmann *et al.*, 2014) probably influence journal editors in their choice of EB members.

For some academic journals, the 'direct reports' of journal editors are the associate editors. Associate editors may help editors choose EB members by making suggestions (Feldman, 2008). Thus, future research would benefit from examining the influence of associate editors' characteristics (such as gender) on the gender composition of the EB members.

Further, we used academic performance in this study as a reflection of a journal editor's cognitive ability and found a positive association between academic performance and women's representation in EBs. However, there may be other explanatory editor characteristics. For example, we know that individuals high on cognitive ability and openness to experience perform better in changing environments (Le Pine, Colquitt and Erez, 2000). In addition, the diversity literature has shown that openness is positively associated with being comfortable with diversity (Sawyerr, Strauss and Yan, 2005). Thus, future research will benefit from examining the link between personality traits, such as openness to experience, and the gender composition of the EB by surveying a sample of journal editors.

Other demographic dimensions of diversity, such as being a scholar from the US or not, are increasingly relevant in the selection of EB members (Feldman, 2008; Zedeck, 2008). Thus, future research will benefit from building on this study by examining the association between a journal editor's characteristics (e.g. academic performance) and diversity (e.g. geographic diversity) of EB members.

Conclusion

The persistent under-representation of women in EBs of academic journals (e.g. economics (Addis and Villa, 2003), science (Mauleón *et al.*, 2013) and management (Metz and Harzing, 2009)) is puzzling in light of their increased representation in doctoral degrees (AUCC, 2011) and in academia (Dobson, 2012) over the last few decades. In particular, the gradual and variable levels of success in increasing women's representation in EBs across journals suggest that this change is difficult. Thus, the profession can benefit from a greater understanding of what journal editor's characteristics influence the gender composition of his/her EB. The current study contributes to this understanding by showing that editors' higher academic performance, younger professional age and gender (being female) are associated with more gender-equal EBs. Further, the current study strengthens claims that top leadership's commitment to gender equality is essential for sustainable organizational change. Finally, this study raises awareness of editors-in-chief's individual-level factors as 'influencers' of their strategic decision-making. Specifically, this study's results show an almost 10% difference in the gender makeup of EBs as a function of an editor's characteristics. This influence is far-reaching, as it potentially expands the scope of what is published and helps address one possible obstacle to women's promotion prospects: their under-representation in EBs of academic journals.

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