Data with a (feminist) purpose: quantitative methods in the context of gender, diversity and management

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ABSTRACT

In this chapter, we explore how quantitative methods can be used to advance the understanding of gender and diversity in the field of business and management. To this end, we address three interrelated layers: feminist ontology and epistemology in relation to data and quantitative methods; how gender scholars give and make sense of a feminist purpose in using data and conducting statistical analysis by relating it to linguistic theory; and applications to established and newly developed forms of quantitative methods. Overall, we call for a greater critical engagement of gender scholars with quantitative methods to use data with a feminist purpose.

INTRODUCTION

Quantitative methods are central to contemporary research, and ostensibly more likely to succeed in ('mainstream') journals because of the insights and the status associated with 'hard' data. With rising computer-power, increased availability of data and ever-more sophisticated methods for analysis, quantitative methods have a growing field of applications, business and management being no exception. Even though many gender scholars criticise the constrictions quantitative approaches enforce upon complex social constructions like gender, they are still crucial for management scholars. Quantitative methods can be used to unveil inequality structures and dynamics within organisations. Some examples are research on the pay gap (Clayton-Hathway et al. 2020; Leslie et al. 2017; Woodhams et al. 2015) or barriers for women leaders (Eagly and Karau 2002; Humbert et al. 2019; Ryan and Haslam

2007). This chapter argues that using data with a (feminist) purpose relies on gender expertise, so that research does not overlook nor reproduce inequalities.

First, we want to clarify our terminology. In this chapter, we refer to gender, making specific reference to diversity (or the intersectional issues this entails) where possible. Gender refers to a social construction on the basis of sex that operates along lines of power (Guenther et al. 2018), and which are entangled with other forms of power (Crenshaw 1989; The Combahee River Collective 1979). Furthermore, we need to question the role of researchers. The intent is to distinguish between scholars who engage superficially with gender (e.g. naively considering sex as an additional variable) from those who adopt a more critical approach and aim at transforming power relations. We refer to the latter as gender scholars. We argue it is crucial to include gender expertise when making use of data with a purpose. Gender expertise refers to an in-depth knowledge, understanding of, and engagement with feminist research, including gendered, racialised and classed structures, institutions and processes.

This chapter makes the epistemological case for combining gender expertise and quantitative methods. To do so, the relationship between gender scholarship and quantitative methods is discussed. Next, we use linguistic theory to demonstrate the importance of in-depth gender expertise for quantitative analysis, especially through the processes of *denotation* and *connotation*. We then illustrate this by bringing in examples of our own research using quantitative methods in the field of gender, diversity and management.

QUANTITATIVE METHODS AS A POSITIVIST EXPRESSION OF POWER

The relationship between gender scholarship and quantitative methods is historically complex and nuanced (Stauffer and O'Brien 2019). Gender scholars have been vocal in rejecting positivism as an expression of patriarchal power over the research process (Harding 1987; Maynard 1994; Millen 1997; Oakley 1981). Quantitative methods have been perceived as an expression of positivism, and as such are rejected en bloc by some. To reject quantitative methods was seen as rejecting the dominant system, as well as leaving space for alternative, critical scholarship, giving space and voice to other standpoints. Vickers (2015) speaks of the rejection of positivism, and the quantitative methods that underpin it, as a form of 'methodological rebellion' (Stauffer and O'Brien 2019). Gender scholars have long pointed out the link between knowledge and power, as well as the danger of reifying social

inequalities through research (Butler 1990). How researchers frame questions and address social phenomena constructs and influences lived realities. Consequently, a positivist approach, assumed to objectively capture social processes, can be problematic if it leaves inequality structures unquestioned and/or unaddressed. Moreover, the idea of placing people in categories – and thereby putting them into boxes – can be seen as running contrary to feminist theories that emphasise fluidity or performativity of social categories (Butler 1990, 2004; West and Zimmerman 1987).

Leveraging quantitative methods to understand gendered work, organisations or institutions

Despite these limitations, there is great scope for gender scholars to leverage quantitative methods to analyse and tackle gender inequalities. The challenge is to both build upon the (rightful) challenges to positivism and quantitative methods while also using these methods to understand – and ultimately work towards transforming – gendered work, organisations and institutions. For instance, income inequality is often demonstrated by a quantified gender pay gap, while further understanding of its persistence might be achieved through qualitative methods (Clayton-Hathway et al. 2020). Others have adopted a feminist quantitative approach such as in the field of Feminist Economics to provide insights on inequalities related to gender and the economy (e.g. Benería et al. 2015; Himmelweit 1995; Sigle-Rushton 2010). These bodies of work demonstrate the need not only for data, but also for a recognition that data can hardly be separated from the political constructions they are the result of.

Data production and their analysis call for gender expertise: the way categories are defined and how people are assigned to specific categories instead of others are as crucial as what categories to include in the analysis and how the results are interpreted (for an in-depth discussion see D'Ignazio and Klein, 2020). By pigeonholing complex processes in quantifiable categories, researchers risk reproducing their own stereotypical perception including not questioning the implied masculine norm in business and management. To overcome this risk, many gender scholars have called for standpoint epistemological positions that involve qualitative inductive approaches (Acker et al. 1983; Gorelick 1991). Other gender researchers aim for a reconciliation of quantitative and qualitative approaches by flagging up the benefits of a mixed methods approach. Maynard (1994: 14), for example, emphasises that the "polarization of quantitative versus qualitative impoverishes research,

and there have been calls for the use of multiple methods to be used in a complementary rather than a competitive way".

Gender research – quantitative or otherwise – challenges mainstream theories developed 'on men, for men, by men' (Stevenson 1990). This involves paying attention to topics that areignored. Domestic work (Oakley 1974), motherhood (Miller 2005), or violence against women (Walby 2013) are crucial topics to many women but do not conform to the lived reality of the hegemonic man in management, and are therefore ignored by major organisational theories (Acker 1973, 1992; Bendl 2008). Feminist research ought to acknowledge the different power relations between both gender and hierarchic positions (May 2001; Maynard 1994). This might mean aiming for an equal relationship between researcher and respondents to produce more meaningful information (Maynard 1994; Oakley 1981) possibly difficult to achieve, because of knowledge gaps between the researcher and respondents (Maynard 1994, Millen 1997).

Finally, for feminist research to capture the complexity of social lives, it needs to recognise heterogeneity and the intersectional nature of social practices and subjectivities (Acker 2006; Crenshaw 1989; Rodriguez et al. 2016). This is challenging within quantitative methods since the approach enforces categorisation. However, sufficient disaggregation in the data can go some way towards inclusive measurement and analysis. For instance, in 2019, Kenya decided to recognise the intersex population by including them in the census. One aim was to learn more about the needs of intersex people and destigmatise the topic (Bhalla 2019). This shows that an inclusive data production can enable policy-making that benefits marginalised or neglected communities. Moreover, large enough datasets such as those obtained through a census or used in data analytics, can allow for more nuanced analyses and enable research on inter-categorical intersectionality (McCall 2005).

Quantitative gender research in business and management needs to challenge androcentricity, tackle the exclusion of women and minoritised groups, promote reflexivity among its researchers, and work towards social change and transformation. Researchers should consider the relationship between themselves and their participants, not simply seeing survey respondents, for example, as passive data providers. Consequently, doing gender research goes beyond adding sex as variable. Rather, gender scholars apply feminist knowledge to challenge inequality regimes. It is a mind-set, undergirded by feminist theories, which i translated into research practice.

Gender expertise as a precondition: gender, language and statistics

A basic condition for using data with a feminist purpose, we argue, is gender expertise and a feminist mindset. One of the first questions is how are variables and categories constructed and defined? To make it quantifiable, a social phenomenon has to be split into different, distinguishable units (Espeland and Stevens 2008). Quantitative measures therefore function as 'words' in a wider 'language', in that what they capture has to be understood and be perceived as legitimate by others. Quantitative measures are part of a wider system of sense-making, and thus words and numbers are similar in this regard. Both aim to categorise, label and describe social phenomena (Foucault 1966). To illustrate the importance of how specific units – be it words or numerical categories – are constructed, we briefly elaborate on some fundamental linguistic concepts: *denotation* and *connotation*, as crucial elements in the sense-making process.

Saussure (1916) explains the process of 'signification' in linguistic theory. Saussure differentiates two sides of a sign: the 'signified', which is the concept represented and the 'signifier', which is the form it adopts. The process of 'signification' is one of sense-giving, and thus not necessarily the same for everyone. Different people, based on their background and context, can easily have different interpretations of the same signifier. For example, different meanings and concepts are conflated within the term 'gender' (Guenther et al. 2018; Ridgeway and Smith-Lovin 1999), including at the most basic level, the distinction between sex and gender. Sex refers to a biological classification, rooted in a binary understanding of bodies as either female or male. Gender is socially constructed, and builds upon this original binary categorisation. However, it corresponds less to a biological reality than to an identity when understood at the individual level. At societal level, gender operates as one of the predominant organizing principle. Individuals express and perform their gender in relation (even if that means opposition) to their sex. This extends to sexual orientation, in so far as society expects that individuals will conform to the norms of heterosexuality (Butler 1990, 2004; Rumens et al. 2018). When people talk about women, they might either be referring to the social, biological, or both aspects of gender/sex, which influences their interpretation.

Differences within the 'signification' process happen through *denotation* (e.g. representing gender through a woman/man in pictograms, choosing sex/gender categories for a questionnaire) and *connotation* (e.g. different understandings and interpretations of gender as equality, equity or transformation). Signification is also influenced by context. In Image 1, the concept of 'woman' is *denoted* through a white drawing against a black background. It

represents a person wearing a dress, which implies the sex of the person, using a stereotypical code of femininity. It is interesting to note that 'man' is *denoted* by a contrasting absent dress. *Connotation* relates to the meaning attributed to the sign itself. It can be understood in a variety of ways, such as when placed on a door to indicate the entry points to the women's toilets. *Connotation* is so strong that there is no need for the sign to make any mention of toilets for the association to exist in most people's mind. But *connotation* varies across contexts. In Lithuania, for example, you would easily recognise Image 2 as signs on toilet doors. For many other people, these signs can be rather obscure, showing the importance of a shared 'expertise' to make sense of a sign.

Image 1 here

Image 2 here

Connotation can take many other different interpretations, such as the one below (Image 3), in which stereotypical perceptions are problematized and turned on their head, saying the supposedly dress is actually a super heroine cape (but with femininity nonetheless marked by a narrow waistline). Feminist knowledge, here combined with emotions (laughter), contribute to the process of sense-making.

Image 3 here

To understand the process of *signification*, Jakobson's (1960) model can be useful. This states that the process of signification needs to be put in relation to the context, the code and the channel. To share a similar interpretation of a signifier, people should be familiar with the same context. Although management and organisations scholars use the same terminology,their interpretations vary. Talking about performativity might evoke different associations for someone familiar with Butler's work than for someone focusing on performance evaluation. Also, the form of contact, the channel, can have an influence in the signification: people might be more willingly to acknowledge the need for implementing gender change policies, if they recognise the gender scholar as an expert and their results as legitimate. They might listen more carefully if the person who talks about gender issue is a public figure, a professor, or a well-established scholar. A message might be heard differently

if one perceives the counterpart as authentic and sympathetic or as questionable and ill-informed. When writing or lecturing, academics often consider the audience to convey their message. It appears to be sensible to adapt the use of signifiers, and this is as true for words as for numbers. Yet we do not often stop to ponder how we might move from discourses based on words to discourses based on numbers. It is this bridge that we see gender scholars making in engaging with quantitative methods in business and management.

Denotation and *connotation* are important for data production and analysis. While feminist research has shown that there is a continuum of sex (Fausto-Sterling 2000), the labels women, men, transgender or intersex still group people, and therefore distinguishes them. This *denotation* takes place when questions are developed. Here, gender scholars have to decide on whether to use binary categories (such as woman and man) and how items aredefined. *Denotation* continues when data are collected (which social reality is captured, and in what ways), and further in the analysis of the data, for instance when it is disaggregated by (binary) sex. When interpreting the data – as part of the sense-making process – further knowledge on the underlying social constructs is needed. Quantitative analysis cannot take place without the ability to provide a gender-aware *connotation*. This means that to understand and capture the lived realities of gender constructs, one needs to base the analysis and interpretation on existing (feminist) theories and research. For instance, when gendered processes within teams are analysed, it is necessary to understand that the overall division of labour, the image of 'ideal' workers, and an unequal distribution of power are at play (Acker 1992, 2006). Not doing so results in missing out crucial aspects of gender connotations. This is why the approach to just 'add sex and stir' does not work, and why gender scholars need to be involved in feminist quantitative research.

OLD AND NEW QUANTITATIVE METHODS

Gender expertise that is informed by feminist ideas is thus crucial in the use of quantitative methods for business and management, through the *denotation* and *connotation* of data. Using examples from our own research, we illustrate why gender expertise is important when engaging with quantitative methods. Our examples show how quantitative data can be harnessed to bring about social and political change, through being used within a wider feminist epistemological framework. To do so, we look at how old and new quantitative methods help us gain insights on gender in business and management. After a brief outline of

ethical considerations, we bring three examples: the use of surveys and own data production, the use of large-scale secondary data, and big data analysis.

Research ethics in quantitative studies of gender in business and management

While there is much to be said about research ethics, we only briefly mention key principles. We consider the following four principles as key for research, which empowers marginalised groups and generates insights that matter: respect for persons, beneficence, justice, and respect for law and public interest (Salganik 2018). Respect for persons shows in the way individuals are treated as autonomous and how their wishes are honoured. Participants should be presented with all relevant information and researchers should seek informed consent. As for beneficence, researchers need to ensure a study does not harm people. This involves assessing the risk and benefits of the research. This can be especially relevant when it comes to releasing data. Research, furthermore, should distribute risks and benefits fairly, so it becomes just. This means that no group – especially not a vulnerable or marginalized one – should bear the costs of research while another benefits from the results. Researchers should also consider laws and the public interests. This goes beyond regulations about privacy and data protection, and asks for compliance with terms of services, for instance when it comes to analysing data which was actually collected for other purposes. Finally, from a feminist perspective, researchers should ask whether the research has potential to empower marginalized groups and challenge existing inequality regimes.

Questionnaires and surveys

Traditionally, a common approach in quantitative studies has been to collect data through questionnaires. Surveys can help to capture empirical evidence on a broad scale, and thus provide a wealth of information and be a catalyst for change. How a survey is designed – who it targets, what questions are asked – can reproduce (gender) inequalities and stereotypes. To illustrate the challenges of using surveys for gender research in business and management, we turn to our experiences with a large-scale cross-country survey of gender and diversity in relation to team performance (Müller et al. 2019a).

One of the first challenges was to distil our understanding of gender and diversity and how to capture this quantitatively. This meant deciding what we were considering, such as either looking at gender diversity in the sense of different gender identities (woman, man, intersex, transgender, queer, etc.) or on differences within gender groups (a woman without care responsibilities, a man with a chronic illness, a black woman, etc.). It also meant deciding on

whether to focus on both women and men, or on women only. We also considered the questions, how to phrase them, and how to denote what we wanted to measure. We needed the data to reflect our understanding, feminist objectives and ethics. Nonetheless, we were aware that the interpretation of our question would be influenced by the gender *connotation* of our respondents. For example, should the question ask a respondent to reveal their sex or their gender? Should the question impose a binary system to the respondent? Could the question generate harm, especially within marginalized groups? Would we neglect lived realities by not explicitly providing space outside of the gender binary?

In designing the questionnaire, extensive discussions within the project team and with the advisory board took place on what kind of gendered processes to capture and how we could operationalize them. The discussions revolved around whether the question should ask about sex or gender, whether it should impose a binary response, or whether respondents ought to self-identify outside of any prescribed categories. In the end, it was decided that the question would not make explicit reference to either sex or gender, and simply be phrased as 'Are you…' with three response items 'A woman', 'A man', 'Other'. Using this self-defined question about identity was justified as not imposing a conceptualization of sex and/or gender onto the survey respondents. However, from an empirical viewpoint, the inclusion of three categories was problematic for the analysis. In fact, much of quantitative gender research is limited at the empirical level to a binary analysis. It is assumed that there is a large degree of correspondence in the population between one's sex and one's gender (although we recognize that this varies and that it is far from a perfect correspondence) and that sub-sample sizes for 'Other' categories are often too small for meaningful analysis. This is to be contrasted to the greater freedom available at conceptual and/or theoretical levels, but also within the repertoire of qualitative methods

To solve this dissonance, we decided to add a follow-up question where respondents had opted for 'Other'. In that case, the respondent was provided with an explanation of our gender-based analysis and the need to rely on binary categories for some parts of the analysis. The respondent was then asked which category they would prefer to be recorded as in the analysis. Respondents were also given the option to still select 'Other', although it was explained to them this meant that they could not be included in this part of the analysis. Out of 1,472 respondents, eleven selected 'Other' at the first step, and subsequently five opted for 'Other' in the second question and were therefore excluded from the analysis. While we recognise the limitations of this approach, we feel that it offers a good compromise in

allowing respondents to self-define. It is also transparent in its adoption (and inevitably reification) of a binary system, which is a crucial element for informed consent. We nevertheless recognize that rendering some people invisible and excluding them from the analysis is problematic. Another approach discussed was to merge 'Other' with 'Women' on the basis of contrasting the hegemonic vs. the minoritized group. A benefit of this approach would be to define binary gender groups in a new form and avoid exclusions. However, concerns were raised about subsuming 'Other' to 'Women' and thereby imposing specific realities on the 'Other' category, which why this approach was dismissed.

This issue is not restricted to our experience alone, and has been the subject of reflection from other researchers and organisations. A noteworthy development has been the work of the ONS (Office for National Statistics) in the context of the UK census (Randall 2019). Noting the conflation between sex and gender within surveys, and the lack of space for other categories such as intersex or transgender, the ONS put together a working group to discuss potential approaches. The approaches discussed included adding 'other', asking both a binary and a non-binary question, asking a binary question followed by a trans-status question. While the issue has yet to be fully resolved, and importantly for consensus to be reached within the community of scholars, it appears that the next UK census will rely on a binary sex question, with an explanation that a gender question follows and which includes an open-ended trans-status question to capture gender identity.

In summary, the use of a survey instrument for gender research is invariably problematic because of the way in which sex and/or gender are captured through the data collection. We recognise the limits of the binary system and would urge other scholars to take these adequately into consideration and embed them within a wider feminist framework. At the same time, we want to emphasize the need to be able to capture the effects of gendered processes on a larger level. We therefore encourage researchers to focus their data collection on not just adding a disaggregation by sex in their analysis, the so-called 'add sex and stir' approach, but instead to embed feminist theories and literature in their methodological and analytical strategies throughout.

Large-scale secondary data sources

Quantitative research is not limited to surveys. Gender scholars can use large-scale secondary data sources to generate insights on gender within business and management. Using Humbert

and colleagues' (2019) work on gender beliefs and attitudes towards legislated board quotas in Europe, we show how secondary data sources can be used to provide a deeper understanding of gendered processes and their social embeddedness.

This research (Humbert et al. 2019) sought to further our understanding of resistance to legislated board quotas, by examining how it relates to essentialist and discriminatory beliefs about gender. Its aim was to examine these relationships in the context of the taken-for granted assumption that organisations are meritocratic. In a second step, the research examined these dynamics specifically among men leaders – as opposed to views from the overall adult population – since they are the group often hailed as potential change enablers (de Vries 2015; Kelan and Wratil 2018). Conducting a secondary analysis of Eurobarometer 76.1, a large-scale (n = 26,856) survey conducted in the EU in 2011 (European Commission and European Parliament 2014), the research demonstrates a positive link between essentialist gender beliefs (believing women and men are *essentially* different) and failing to support legislated board quotas. It shows that essentialist gender beliefs are positively linked to discriminatory gender beliefs, which in turn are associated with lower support for legislated board quotas. Furthermore, the negative relationship between essentialist gender beliefs and support for quotas or other legislated measures is stronger among men leaders (n = 275 leaders, 183 of which are men). Resistance, particularly within organisational leadership is thus apparent, prompting the urgent need to tackle essentialist gender beliefs at that level before any real change in practice can be achieved.

There are several layers of gender analysis present in this study. First, the study makes explicit use of binary sex categories (women and men). However, it goes beyond the 'add sex and stir' approach by actively modelling gendered processes using variables linked to gender beliefs. In doing so it responds to the call to use quantitative methods that go beyond solely disaggregating by sex (Kelan and Humbert 2016). At the heart of the conceptual framework is a strong engagement with literature on how organizations are gendered (Acker 1992) and the assumption of meritocracy (Castilla and Benard 2010; Scully 2002). Analytically, the research problematizes gender beliefs, differentiating between essentialist and discriminatory gender beliefs. Thus, the aim is to demonstrate how essentialist beliefs about gender differences can fuel discriminatory beliefs and ultimately hinder any real change for gender equality in organizations. Finally, we find it noteworthy that the article focuses on men, but within the view that the transformation needed is to tackle the imbalance of power for

women. This showcases that feminist gender research does not necessarily need to focus on women.

Altogether, we believe that there is great potential for gender scholars to better engage with secondary data sources. They are easily available to researchers (e.g. via the UK Data Service or GESIS) and cover a wealth of different topics of relevance to the gender transformation of the economy and society. It provides a valuable opportunity to conduct gender analysis of datasets where the issue has not been considered. The availability of such datasets has vastly increased as technological advances have been made, and repositories become more systematic. While open data benefits research, scientists need to be aware of ethical issues – especially aspects on how to protect privacy – before data is released.

Potential from data analytics, machine learning and algorithms

As our last example, we want to discuss the potential use of big data and data analytics for conducting gender research in business and management. Looking at current developments, we expect that data analytics, machine learning and algorithms will pose new challenges as well as opportunities for gender scholars. Despite the claim that data analytics are a neutral and objective way to deliver better answers and enable new questions (George et al. 2016; Mcafee and Brynjolfsson 2012), several studies have pointed out that machines learn and thereby reify biases (Caliskan et al. 2017; Zou and Schiebinger 2018). Zou and Schiebinger (2018) emphasize that it is crucial to evaluate the data which is used to train machines for potential biases. This means, however, that data analysts need to realise what kind of biases they might have themselves as well as which biases might be in the data. Here, critical gender scholars could contribute to ensure a more comprehensive and inclusive analysis. This could be achieved by bringing in their gender expertise into the *denotation* and *connotation* of the data. We illustrate this through our work using new data sources.

New technological developments allow (gender) researchers to capture social phenomena with innovative tools, sensors being one of them. Several scholars point out that subtle practices (re)produce gender inequality in academia (Morley 1999; van den Brink and Benschop 2012). So far, mainly qualitative data has been used to examine these kinds of subtle practices. However, ethnographic studies need many resources, and observers cannot always catch small gestures. Some believe that sensors might be able to collect more 'honest signals' (Pentland 2008), as it would be too difficult for humans to trick a sensor even if

validation studies have shown that so far sensors might not be as reliable as their producers claim (Kayhan et al. 2018; Müller 2018). While it is possible that technical issues can be solved, a more crucial problem needs to be tackled in conducting research with sensor data. One has to be clear what kind of social construct can be captured by a sensor (Müller et al. 2019b). For instance, Bluetooth signal can provide a measure of proximity. Can proximity provide information on collaboration, friendship or advice-seeking behaviour within working teams (Müller et al. 2019c)? Often, it can be useful to combine sensor data with other data; however, this reintroduces the bottleneck of less-automated data generation as well as challenges, such as to combine different temporalities and levels of data (Müller et al. 2019b). Moreover, issues of privacy, consent and benefice need to be taken into account. Which kind of data is used? Could the results potentially harm marginalized groups or expose stigmatized people to persecution?

Despite the issues machine learning, algorithmic data processes and sensor data have, we suggest feminist scholars should step up their engagement with data analytics. For one, data analytics is likely to stay, and it already proves to be a powerful tool. Some of the technologies can be used to undo gender inequality, by tracking subtle practices, or providing systematic overviews of existing inequalities. Our own work engages with the potential that sensors could have to provide data on gendered micro-interactions within teams. Applications of this would for example allow us to quantify who speaks and/or interacts with whom, and to analyse this in relation to categories such as sex and professional status. Questions that may be answered are the extent to which power and gender can influence deference to others within groups. Such data could provide useful insights into the context in which so-called 'manterruptions' can occur in communication patterns. While the technology is still in development, and not yet a sufficiently valid instrument to answer these questions (Müller 2018), we see great promise from these new development for gender scholars.

For this potential to be tapped into, gender scholars need to make use of these tools, while remaining critical regarding tacit biases. Artificial intelligence can be used to promote diversity if it is designed that way, if the data are chosen carefully, and if different voices are allowed (Daugherty et al. 2019). To do so, gender scholars need to provide important context. For instance, an algorithm implemented to objectivize promotion decisions on the basis of data of past promotions might replicate past discriminatory behaviour. Moreover, if the criteria (signifiers) used to select someone for specific positions are implicitly biased (Acker

1992), then the result appears objective but actually is discriminatory. Here, gender expertise can prove to be crucial for more objective and unbiased data analytics.

CONCLUSION

In this chapter, we illustrated the need and benefits of gender scholars engaging with quantitative methods. While we acknowledge – and to some extent agree – with gender scholars' critics of simplistic, positivistic approaches and their limitations, we also call for gender scholars to inspect and use the quantitative tools available. Gender scholars, by which we mean researchers who critically assess power relations associated with gender and other social markers, can contribute their expertise in the use of numerical data. Quantitative data can be used to reproduce or challenge power dynamics. We see the role of gender scholars to use quantitative data for the latter.

To this end, gender scholars can use existing datasets, ask new, critical questions, and thereby generate answers to formerly neglected phenomena. They can contribute to research design, in a way that it is not discriminatory but contribute to a more just society. To do this, it can be useful to consider data and statistics as another type of language. Gender scholars can play a key role in *denotation* and *connotation* in quantitative methods, for example, through designing gender-aware questionnaires and conducting analyses that go beyond the 'add sex and stir' approach.

We consider the involvement of gender scholars key to challenging inequalities and biases in (quantitative) management research. They can take on a key role in broadening the management field beyond sex and gender, in order to address existing diversity and include intersectional perspectives. We therefore encourage other gender scholars to engage with data, statistics and quantitative methods more generally, to provide a field of research that is more inclusive and to use data with a (feminist) purpose.

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