

This is a repository copy of Where is the visible commitment to gender in the advertised content of UK management degree programmes?.

White Rose Research Online URL for this paper: https://eprints.whiterose.ac.uk/177436/

Version: Accepted Version

Article:

Perriton, L., Elliott, C. orcid.org/0000-0003-3838-4452 and Humbert, A.L. (2022) Where is the visible commitment to gender in the advertised content of UK management degree programmes? Gender in Management, 37 (1). pp. 58-76. ISSN 1754-2413

https://doi.org/10.1108/gm-01-2021-0015

This author accepted manuscript is deposited under a Creative Commons Attribution Non-commercial 4.0 International (http://creativecommons.org/licenses/by-nc/4.0/) licence. This means that anyone may distribute, adapt, and build upon the work for non-commercial purposes, subject to full attribution. If you wish to use this manuscript for commercial purposes, please contact permissions@emerald.com

Reuse

This article is distributed under the terms of the Creative Commons Attribution-NonCommercial (CC BY-NC) licence. This licence allows you to remix, tweak, and build upon this work non-commercially, and any new works must also acknowledge the authors and be non-commercial. You don't have to license any derivative works on the same terms. More information and the full terms of the licence here: https://creativecommons.org/licenses/

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.





Journal:	Gender in Management: an International Journal
Manuscript ID	GM-01-2021-0015.R1
Manuscript Type:	Original Article
Keywords:	Higher education, Business Education, Gender

SCHOLARONE™ Manuscripts

Abstract

Purpose

The purpose of this paper is to establish the extent to which prospective students can see a visible commitment to study gender in the UK business/management school curriculum prior to enrolment.

Design/methodology/approach

A content analysis of the descriptions of modules offered as part of business and management degrees offered by 112 UK universities was conducted. The analysis was restricted to the publicly available information on the websites visible to prospective students. Descriptive statistics re the distribution of gender topics across programmes and HEIs are presented in addition to university group affiliation (e.g. Russell Group), and accreditation in respect of variables.

Findings

The analysis reveals significant gaps in the undergraduate and taught postgraduate offerings of UK business schools that we suggest are reflective of subject silos, and institutional risk reduction strategies.

Research limitations/implications

We conclude by arguing that accreditation bodies can use their influence to leverage change and to ensure gender content becomes core to curriculum design and its visibility as part of the practice of management to prospective students. **Originality/value**

provids
.iness/managen This study provides a benchmark for the visibility of gender as an issue and perspective within

Section/page	Comment	Response	Check
Title	"Where is the visible commitment to gender in UK management education" appears first as promising somewhat too much, given its restricted approach. The title should be rephrased.	Thank you. We have changed the title to, "Where is the visible commitment to gender in the advertised content of UK management degree programmes?"	Y
Methodology	The authors should add a section where they discuss and reflect the limitations of their approach focusing on website content. The reader is also curious about how they are going to continue their research beyond this exploratory phase.	A section has been added on p17.	Y
	I wonder if a footnote on the ongoing situation at the Leicester University Critical Management School would be in place here	A footnote has been added to p. 8	Y
Results	It might be useful to include a comparison of data between the Russell Group and Million Plus?	We did comparisons all the ways to see if there was a significant difference between the different universities. There isn't anything in the Million Plus data that suggests it is worth presenting separately, as the only meaningful comparison in the data is (perhaps irritatingly) Russell Group v the rest.	Y
Conclusions	Universities may benefit from further alignment of diversity and inclusivity institutional statements and course offering marketing on their websites. It appears that this research is suggesting a current disparity, and this point might be further highlighted in the conclusions.	We have added this point to p.20 onwards along with other contextual information requested.	Y
	Further detail regarding the alignment to accreditations might be provided so that the reader is able to follow the argument in relation to	We have added additional explanation. Accreditation bodies do issue broad guidelines around social responsibility issues, of which gender and other forms of diversity are key,	Y

	the external influence of these bodies on gender and course design.	however it is not clear to what extent these are interpreted as issues of faculty and institutional commitment to their own staffing as opposed to curricular content.	
Presentation	Some grammatical errors are present but these are easily rectified with a final proof read.	Have checked again. Our apologies.	Y
70	p.5, line 22-31 para starting "We can then use the measurement" remains unclear to the reader and needs editing.	Now reworded. Apologies for the failure to spot the repetition.	Y

Introduction

Management is not a gender-neutral activity. Gender should be central to any management education curriculum that claims to address current issues in the workplace (Mavin and Bryans, 1999), and that aims to equip managers with the understanding to shape the future social and economic impact of work in positive ways. Tackling gender inequality is a critical organizational challenge (Beirne & Wilson, 2016; Olsen *et al*, 2016; Author B *et al*, 2019). Women remain conspicuously absent in organizational leadership and progress towards advancing women at the board level is slow (Catalyst, 2014; Vinnicombe *et al*, 2019; Author B *et al*, 2019). However, the regularity of calls for gender issues to have a higher profile in the curriculum suggests that the visible commitment to gender when presenting degree content to prospective students of management is still low.

The brand identity of the institution has become the main purpose of the public-facing pages of university websites (Tobolowsky & Lowery, 2014). Even so, institutions add summaries of module content on their websites to aid prospective students in the choice of their degree programmes. Each university takes a design decision on how much detail regarding module

content to reveal to prospective students. The format of descriptive summaries varies as a result, but it is important to stress that they are not performing the same function as the module documentation that includes learning outcomes, reading lists, and topic summaries that students typically have access to once enrolled. The web summaries exist as a shop window for the degree, and to fulfil institutional responsibilities to provide information that enables students to make 'informed choices' before selecting a programme of study. Our argument in this paper is that – whatever corporate claims are made regarding 'cutting edge' programmes, or the importance of current issues in management in the curriculum – gender issues and perspectives are largely absent from this shop window.

This paper reports on a content review of gender content, undertaken between 2017 and 2018, within publicly available summaries of modules that are offered on business and management degrees in the UK. We use only those descriptions that are available to prospective students, not enrolled students, as an indicator of the extent to which student expectations are being shaped regarding management as a gender-neutral practice.

University websites are the focus of the study because of the role digital technologies now have in providing information to prospective students. Published surveys of business schools using full module documentation including learning outcomes are uncommon. For example, Webb *et al* (1999) studied US business school curricula in respect of internationalization in the late 1990s but their data was based on interview data. Sub-disciplinary studies are equally rare - Burchell *et al's* (2015) research focused on ethics and social responsibility teaching, and the practice orientation of UK marketing programmes is a more recent study by Finch *et al* (2018). Content analysis of full module documentation is rare because of the difficulties of accessing and auditing content. The need for longitudinal and/or follow-up studies to understand curriculum change fully is noted. However, our position is that reviews – such as the one we

have undertaken – of publicly accessible information are useful in establishing a time-stamped baseline measurement. By repeating the exercise at regular intervals, we will be able to track shifts in the visibility of gender in the curriculum at the point that students choose their degree programme and expectations are shaped as to what the study of management entails.

The findings of our review confirm the low visibility of gender as a core aspect of the study of management in module summaries visible to prospective students at undergraduate and postgraduate levels. Our research contributes to the ongoing debate about management education's ability to speak adequately to management practices and key challenges, including equity and social justice issues (Williams *et al*, 2017) that are core to the Critical Management Education (CME) project. The paper concludes that given institutional consciousness is raised – although not always actioned – by accreditation activity, including a curricular commitment to gender in addition to management practice of the institution as part of accreditation by bodies such as EQUIS, AMBA, and AACSB¹, would provide useful leverage to increase the visibility of these important social issues within business and management degrees.

Theoretical field

The theoretical context of this paper is situated at the crossroads of several literatures and concerns. One could reasonably frame the research in terms of higher education branding, or wider neo-liberal influences on the university, or even gender and education. However, the wider field of Critical Management Studies and its more specialist sub-category of critical

¹ EQUIS = European Foundation for Management Development Quality Improvement System. AMBA = Association of Masters of Business Administration. AACSB = Association to Advance Collegiate Schools of Business. All three are internationally active accreditation and quality standard bodies relevant to the field of business and management education.

management education is the best lens through which to consider the issue. This is not to say that branding, the neoliberal university, and gender and education perspectives are not salient in and of themselves, but that CME already works with these concepts as part of the landscape of its critical warrant (Author A, 2016).

CME exists, in part, because of the concern in the 1980s that the marketization of higher education was directing management education towards a predominantly technicist form of management education. Critical Management Studies, (Alvesson and Willmott, 1992) was amongst the first publications to question the function of business schools as the home of mainstream, normative teaching approaches to the job of being a manager. Their work drew on critical theory, and this choice undoubtedly influenced other key figures who agreed with the premise that 'management [was] too potent in its effects upon the lives of employees, consumers and citizens to be guided by a narrow, instrumental form of rationality' (Alvesson and Willmott, 1992:1). Critical theory dominated the critical content that was used in management education in the first wave of the movement, only later did feminist challenges ensure that gender and other forms of diversity were included in the stable of critical approaches and pedagogies (Author A, 2004; 2018). CME – albeit in a minority of UK HE institutions – ensured that difference based on gender, ethnicity, sexual orientation, sexual orientation, disability (and latterly, neurodiversity) was embedded in the curriculum. However, the accelerated commercialization of HE in the UK narrowed the space available for critical management process radicalism in delivery (Author A, 2018).

The introduction of student tuition fees, supported by student loans, at undergraduate level in England (other UK nations opted for subsidized models) in 2012 is seen as the point at which HE was commodified. However, tuition fees for postgraduate courses have been the norm since the early 1960s (Starkey and Tiratsoo, 2007) so the commodification thesis is based on the

changes to undergraduate educational norms. The combined effect of human capital theory normalizing the idea that higher education is a private good rather than a public one (see Baptiste, 2001; Nafukho, Hairston, and Brooks, 2004; Ployhart and Moliterno, 2011; Author A, 2018) and the internationalization of education that has enabled universities to develop large cohorts of international students at UG and PG level to 'fund the gap' between income from domestic students and the cost of running their institutions. The ability to charge premium, unregulated fees to international students has added impetus to inter-institutional competition (Starkey and Tiratsoo, 2007; Mazzarol and Souter, 2012). There is a paucity of research in respect of internationalization and critical pedagogy, but Choo's (2007) study suggested that international students were dissatisfied with non-technical content that they saw as detrimental to their employability and were especially uncomfortable with raising issues related to difference and diversity.

The emphasis on employability as a justification for the acquisition of tuition fee debt, the shifting of balance to premium international cohorts, and the narrowing of space in which critical pedagogy can practice, explains the growing conservatism of HE (Naidoo and Jamieson, 2005). However, up until this point, critical management educators have been more concerned about the reduction in the opportunities for programmes that appeal to social solidarity or social justice issues (Gross and Hogler, Sinclair, 2007; Bridgman, 2007), especially those that recruited smaller cohorts. The 'disciplining' (Sinclair, 2007) of pedagogical practice within programmes has been a more pressing issue than examining how management programmes position themselves to prospective students. Author A (2018) has suggested that criticality in management education has always lacked reflexivity because it has always operated out of the Western white male academic tradition that finds it difficult to confront its power, even as it positions itself against the dominant (male) technicist tradition in the field. More recently, it has also been forced to acknowledge its privilege in believing that

it was uniquely placed – as a predominantly white, Western field – to define difference and to offer the opportunity to 'learn about' difference in a classroom, rather than acknowledge students' own lived experience of discrimination and oppression in their lives to date.

Distracted by the effects of internationalization and marketization at programme level, and cognisant of the need to be reflexive of how critical content is positioned, critical management education has not been attentive to the wider trends in technicist education. Content with their assessment of the disadvantages of a wholly technical approach to management in the 1980s, there has been scant attention paid to how the curriculum and the way it is 'sold' to students has changed in the period since Alvesson and Willmott's (1992) Critical Management Studies was published. Had CME kept pace with the mainstream curriculum and how it was changing alongside the critical one, it may have been able to gauge the extent to which accreditation, mission group differentiation, premium fees, internationalization, and inter-institution competition appeared to result in the sector becoming even more conservative in terms of drawing attention to any socio-political content – critical or otherwise - to prospective students despite higher-level appeals to current management issues as being core to management education².

Our concern here is therefore not with the content of modules as they reveal themselves to students who have already enrolled in degree programmes – as mentioned above, the research

² This issue has come to prominence in the decision, by Leicester University, to make 16 academic staff redundant in their Business School on the alleged justification that to successfully compete with other Russell Group institutions the School must follow a certain set of mainstream research priorities and disavow others, namely Critical Management Studies and/or Political Economy (https://uculeicester.org.uk/ulsb16/perspective-page/). In response, the staff representative body, the University and College Union, is officially in dispute with the University and instigated a global academic boycott of the institution on May 4th 2021. At time of writing the dispute is still active.

is not a curriculum survey. Rather, we were looking to benchmark the efforts that business and management schools made in respect of signalling gender content to students they were competing for with other institutions. Had we but known it, the timestamp of our data collection may well prove to be the high- (or low-, depending on your perspective) water level of marketized marketing of business and management degrees to prospective home and international students before the impact of Brexit and the COVID-19 pandemic on UK university finances, and any knock-on effects on the positioning of degrees and the conscious highlighting of gender and other persistent issues in the workplace. It was always our intention that this visibility survey is the start of a series of snapshots of the shifting presentation of gender within management education. Continuing the data collection series is more important than ever as we enter a period of revision and retrenchment in the management education project, and that of UK HE.

The UK Business School context

A generic claim of business schools across the UK higher education sector is that students will be exposed to content that is relevant to the 21st-century workplace e.g. students will 'develop the breadth and depth of knowledge required for managers in the 21st century' (Aston University, 2018) or 'new global perspectives that contribute to and shape a responsible future for both business and society' (Newcastle University, 2018), and '[an] educational experience that connects people and organizations to deliver ground-breaking social and economic impact' (Southampton, 2018). Given the accepted importance of addressing gender inequality in the workplace (Beirne and Wilson, 2016; Olsen *et al*, 2016), gender should therefore be a central concern of degrees that purport to focus on essential knowledge for managers, shape a responsible future, and deliver social and economic impact (Mavin and Bryans, 1999; Author

B, 2018) as advertised. An initial random sample of ten management and business school websites, however, suggested that gender was not advertised in most of the institutions in the sample. This was the 2015 pilot of the study to determine the extent of the visibility of gender content in UK business schools.

A point of differentiation between institutions – and one which they visibly deploy in support of brand identity in respect of quality in the 21st century – is that of accreditation. Higher education is increasingly influenced by standard-setting agencies (Durand and McGuire, 2005; Lowrie and Willmott, 2009; Wedlin, 2010; Masrani *et al*, 2011; Thomas *et al*, 2014) therefore we were keen to look at the possible impact of accreditation on the visibility of gender in the curriculum. The European Foundation for Management Development's (EFMD's) European Quality Improvement Standard (EQUIS) and the Association to Advance Collegiate Schools of Business (AACSB) are the two main accreditation bodies (Thomas *et al*, 2014). Both EQUIS and AACSB have, despite differences in methodology, the common goal of assessing the quality of education offered (Dudin and Shashalova, 2019). However, the driver for institutions to pursue accreditation is the need for universities to be able to signal that they are 'international' in a global education market. International accreditation is the recognized marker of that status (Dudin and Shashalova, 2019).

Accreditation contributes to the creation - and perpetuation - of the idea of 'elite' business schools, which in turn creates expectations from stakeholders and norms of behaviour across the sector (Wilson and McKiernan, 2011). Norms that are created in respect of content have been suggested as an explanation for the curricular isomorphism in business schools (Baruch *et al*, 2019). But although accreditation is assumed to drive the curricular offering commentators are divided about the extent to which this is the case. Wedlin (2010), for example, views accreditation as a way of distributing symbolic capital around the HE system

and as a soft regulatory mechanism of internal sense- and decision-making around curriculum (Paradeise and Thoenig, 2013; Burchell *et al*, 2015) rather than dictating content.

However, whilst there might not be a prescribed curriculum issued by the accrediting bodies, there are attempts to steer the content towards socially progressive content. The Principles for Responsible Management Education (PRME), for example, are intended to encourage more responsible business practice (Burchell *et al*, 2015) including gender equity. The AACSB has recently updated its criteria to state that participating business schools need to pay attention to 'emerging corporate social responsibility issues' (AACSB, 2018) including diversity (gender), sustainable development, and environmental sustainability. EQUIS (2018) states that ethics, responsibility, and sustainability should be integrated into programme design. Given that the accrediting bodies have signalled that they wish to see evidence of socially responsible curricula it was reasonable to check to see if accreditation did bring with it a more visible commitment to gender issues. We, therefore, started with the following proposition around accreditation:

Proposition 1. Universities with accreditation show higher levels of visible gender content in UG and PGT programmes than those without

We have used university affiliation i.e., membership of 'mission groups' rather than rankings in our study. Rankings are an unstable measure of similarity of quality or approach because of the large amount of movement on a year-by-year basis of institutions below the top quartile (Wilson and McKiernan, 2011). Mission groups are groupings of universities who identify as peers, e.g. the Russell Group who characterize their institutional membership as '24 leading UK universities which are committed to maintaining the very best research, an outstanding teaching and learning experience, and unrivalled links with business and the public sector' (russellgroup.ac.uk), or the MillionPlus Group who claim to represent 'Modern Universities in

the UK, and the voice of 21st century education (millionplus.ac.uk). We propose that institutions in the Russell Group are more likely to reflect research expertise in gender issues in module content.

Proposition 2. Russell Group universities show higher levels of visible gender content in programmes than universities with no or other mission group affiliations

Methodology

To assess the visibility of gender content in business and management school programmes we conducted a content review and analysis of the websites of 112 UK HEIs. The review was undertaken at two census points. The summaries of modules on full-time undergraduate programmes were harvested between November 2016 and January 2017, and the postgraduate programme information was collected between November 2017 and January 2018. The 2015 National Student Survey return for Business and Management degrees covering an initial 130 institutions was used to identify institutions that offered degree programmes in the subject area. We removed specialist institutions such as Harper Adams University (e.g., agriculture) and further education colleges (e.g., Blackburn) from the list, leaving 112 higher education institutions offering named degrees in business and management. The key variable information was recorded for each institution i.e., country of location, institutional affiliation to groups such as Russell Group or MillionPlus, and the accreditations held both in terms of bodies such as AACSB, Equis, and AMBA.

The first two authors worked together to record the data. Institutions were worked through in alphabetical order, with one researcher accessing the website, noting the number of programmes aloud, and then clicking through to the page containing information on each degree and its module summaries. Those summaries were then checked for pre-determined search terms relating to gender. Where gender content was identified, the title of the module

was recorded, in addition to its status as core or elective, level, credit value, and programme title was read out and recorded by the second researcher on a different computer. Researchers swapped roles throughout the data harvest to ensure consistency of approach and data recording. Information was only collected from those areas of the website that would be visible and accessible to prospective students.

The extent to which prospective students can access detailed information about the content of their degree courses is problematic. Successive UK governments have sought to influence the type of information given to students, but the emphasis has been on contact hours and employability metrics (e.g. Department of Business, Innovation, and Skills, 2016) to comply with Competitions and Markets Authority regulations for higher education providers. In the same period, web content management processes – and the marketing functions of universities - have become more influential, which has resulted in module descriptors becoming 'an elevator pitch' that are brief and easy to understand. The full, detailed, and comprehensive content descriptors that include assessment approaches and teaching outlines are now behind institutional information firewalls and only available to students once they are fully enrolled in the programme. Any study that seeks to make a definitive judgment of whether gender is supposed to be taught on any given module in a degree must, of course, have access to the full course documentation. A full curriculum survey of all UK business and management schools in the UK would require a large grant, and the services of a dedicated research assistant to gather the material. As mentioned previously, our survey is not, and was not, designed to determine to what extent gender is included in module content and visible to existing students. Our survey is a measure of the extent to which universities, who market management degrees based on their relevance to the 'real world' of work and its challenges, mention gender as an integral part of a module's offer. The advantage of this approach is that it gathers data from publicly accessible areas of university websites, removing the necessity of requesting module

documentation from over 100 institutions and that it focuses on the information that is available to prospective students.

Gender content was recorded as present or not present in individual programmes, rather than simply counting the number of modules with gender content advertised at each business and management school. This was to establish a percentage of programmes with (core or elective) gender content of the total number of programmes offered to students. A percentage figure was considered useful as a comparator if, as planned, future surveys are undertaken. Consequently, this paper reports the findings of our review of 1,222 business and management programmes at UG level and 1,562 programmes at PG level.

The Access database, in which the data were initially inputted, was exported into IBM SPSS Statistics 25 for further analysis. The correlation structure was examined (see Table 1) and shows no initial concerns with multicollinearity as no coefficients are stronger than 0.8. For example, accreditation by one body is positively related to being accredited by others but the strongest such relationship has a correlation coefficient of 0.718 (EQUIS and AACSB). The Variance Inflation Factors (VIFs) were checked for all models and confirmed that multicollinearity was unlikely to be an issue as most values were well below two, and all below three.

[INSERT TABLE 1 HERE]

As the dependent variables correspond to count variables (i.e., number of programmes with a gender component), and because for some of the variables the standard deviation exceeds the mean, a Poisson link might result in an underestimation of the standard errors in the models. Instead, a Negative Binomial link in a Generalized Linear Model was used (McCullagh and Nelder, 1989). The Negative Binomial parameter used in each model was estimated through maximum likelihood estimation (MLE). The number of corresponding programmes (i.e., UG or PGT) is controlled for in the model to account for possible size-dependent effects.

Findings

Of the 1,222 undergraduate degree programmes reviewed, 236 highlighted gender in the module summaries (19%), with 104 programmes offering gender in core modules (8%) and 132 programmes offering students option modules with gender (11%). Sixty-two institutions of the 112 reviewed did not mention gender as a management issue to potential students in respect of their undergraduate business and management degrees. We were also surprised by the gaps that our review revealed in terms of subject areas that were least likely to show visible gender content. Whilst it might have been anticipated that economics and finance would not feature this topic prominently, its absence from marketing is less explicable. The results also challenge assumptions that the natural route for gender content to enter the management curriculum is either via human resource management as a subject area (Greene *et al.*, 2005; Hutchings & Thomas, 2005), and supports the findings of Haynes and Murray (2015) that it is not covered in sustainability and corporate social responsibility modules either.

[INSERT TABLE 2 HERE]

We also looked at core and module distribution per institution to see if gender content was offered via optional, as opposed to compulsory, modules. If perceived 'challenging' subject

matter is placed in option modules, it allows students to avoid issues that will be central to their experience of workplaces. By this logic, a university that placed gender as core topics across its business and management degrees would be one that saw these topics as essential to understanding work and employment, and (perhaps) also as reflecting their values as an institution. Only 13 UK universities out of the 112 in the data communicated to potential students that gender is considered core knowledge on their UG programmes.

At postgraduate level, we recorded 1,562 degrees of which 177 had visible gender content (11%), of which 106 (7%) offered this content in core modules. A higher number of institutions (60) advertised gender content at PG level than at UG level. However, this provision was heavily skewed towards the MBA, and Business and Management generalist degrees, with only 12% of degrees outside of the general management category having core content in gender. MBA degrees represented 11% of the total number of PGT degrees offered by the 112 institutions. The largest category of degrees was business and management (or core subject specialisms within that category such as marketing, HRM, and international business) at 42%. Accounting and finance (including variants) degrees represented 24% of the degrees offered. Only 3% of accounting, finance, and economics degrees had core content that advertised gender content. The remaining 24% were named degrees in areas such as logistics, data analysis, heritage management, and hospitality and events.

Although approximately 50% of the business and management schools included references to gender content in the summaries of at least one module of their overall provision, only 33% were consistent in doing this at both UG and PG level. The five institutions that had the highest proportion of visible gender content in core module summaries at UG level were not the same institutions that showed the highest proportion at PG level.

[INSERT TABLE 3 HERE]

Accreditation shows no association with the number or gender content of UG programmes. Belonging to the Russell Group has a negative association with the number of UG programmes (exp $\beta = 0.59$, p < 0.01), but appears unrelated to their gender content. This suggests that Russell Group universities compete for students based on reputational capital rather than the number and variety of their degree provision. The number of UG programmes on offer, however, is positively associated with gender content (exp $\beta = 1.07$, p = 0.03). Breaking this down between core and optional modules, this positive association holds for core modules (exp $\beta = 1.10$, p = 0.04) but not optional ones. As the offering increases, there is more scope to move beyond the mainstream subject areas, but this appears to be to the detriment of gender being signaled to prospective students as core to business and management education.

[INSERT TABLE 4 HERE]

Accreditation by PRME has a positive association with the number of PGT programmes (exp $\beta = 1.22$, p = 0.05), which suggests that institutions who compete on degree coverage hold this accreditation, which has less onerous membership terms at the signatory level than other accreditations in the sector. PRME principles, to which universities are invited to become signatories, are based upon UN Global Compact concerns including the need to support human and labour rights (Williams *et al*, 2017) to encourage students' global social responsibility including gender equity. As such we would expect PRME principles around gender to be a prominent feature of module summaries. Yet, they are not. AMBA accreditation, however, does show a strong association with having gender content highlighted in PGT programmes

(exp β = 2.06, p = 0.04). However, this is a result of including gender content in optional module summaries (exp β = 3.21, p = 0.04) rather than within core modules. No other accreditation types show an association with gender in PGT programmes content.

Russell Group membership does not indicate differentiation in respect of the number of PGT programmes i.e., they are just as likely to offer a high number of programmes as other university mission groups. But Russell Group universities do return a higher number of PGT programmes with gender mentioned in module summaries (exp β = 2.27, p = 0.02). Again, this is a result of including gender in optional module summaries (exp β = 2.92, p = 0.04). Their position in respect of gender in core module summaries at PG level is only marginally statistically significant (exp β = 2.09, p = 0.10) to other mission group members.

To conclude the data section, we found no evidence that accreditation plays a role in the inclusion of visible gender content in the curriculum summaries at UG level. Russell Group membership is also not associated with gender content in the UG module summaries, but membership does show a negative relationship with the number of UG programmes i.e., Russell Group universities tend to offer the choice of fewer degree programmes to prospective students. In contrast, at postgraduate level, certain types of accreditations (i.e., PRME) are related to a higher number of PGT programmes offered. Whereas in terms of content, AMBA accreditation is associated with a higher number of PGT programmes with gender in the curriculum, but we find that content in option module summaries, and not core modules. Belonging to the Russell Group is unrelated to the number of PGT programmes offered. At PG

level, Russell Group institutions are more likely to have gender in their programmes than the other mission groups. Again, the effect is strongest for optional content.

Conclusions

Over 20 years ago, Mavin & Bryans (1999) argued that gender should be central to management education to challenge traditional conceptions of "manager equals male" (p. 99). This call echoed the concerns of Critical Management Educators (CME) more broadly, who were also dissatisfied with the technicist direction of mainstream management education and who were championing the need for critical content covering a range of social and political issues. Feminist CME scholars were also drawing on feminist radical educators (e.g., Ellsworth, 1989) to focus on gender and warned that management theory risked being labelled "malestream" (Mavin *et al*, 2004, p. 293) if it failed to acknowledge that management is not a gender-neutral activity.

Over the course of those 20 years, the concern within critical management has primarily been with the decline in the number of specialist programmes that focused on social justice issues as a central focus. We suggested above that the concern should also have been with how the shifting business model of universities was also eroding the warrant for criticality at the module level. Our research has shown that gender content – vital to the effort to alert the next generation of managers to the issues connected with gender in the workplace – is now largely absent from the view of prospective students. The visible curriculum of management to prospective students does nothing to challenge the expectation that management is male, white, and neurotypical.

This is despite calls from relatively conservative organizations such as the Chartered Institute of Personnel and Development (CIPD) calling for employer and government action on gender equality in the workplace. The CIPD's action plan for employers highlights the fact that gender

discrimination has been unlawful in the UK for more than four decades, but it continues to be an issue alongside sexual harassment, maternity discrimination, the gender pay gap, and representation at the senior level (CIPD, undated). Appropriate training is put forward as a possible solution but the opportunity to use accreditation as leverage for change in higher education has been ignored. The CIPD had, until recently mainstreamed equality, diversity, and inclusion (EDI) in their accredited modular curricula. A specialist gender and diversity module has now been created – but it has been launched at a time when it has released universities with CIPD accreditation from following their curricular structure. We see this disconnect as indicative of the failure of accrediting bodies of all types to not recognize the role they can play in focusing on EDI issues in training future managers, and a tacit lack of confidence in the management education curriculum to develop good management practice and awareness. This strikes us as a lost opportunity for both universities and accreditation bodies to benefit from a closer alignment of EDI ambitions and course offerings, rather than 'just' seeing EDI through the lens of staff diversity.

The audit of module summaries confirms a homogenous approach to programme design and curriculum content and the trend towards isomorphism. Business school websites are now dominated by the institutional brand and are optimized for mobile devices. New website designs have led to a reduction in content and detail at the pedagogic level. Our findings confirm the move away from previous website templates that provided hyperlinks to full module information that attempted to stress distinctiveness in content (Author B, 2012), to content lite designs.

The greater likelihood of gender content being highlighted in option module summaries suggests that there is a persistent issue across institutions about mainstreaming gender perspectives in foundational modules in business and management. The focus on gender in

core modules and setting expectations with students that gender is considered core knowledge in the field is crucial if business schools are to demonstrate that they are serious about their role as developers of the next generation of managers who may wish to work in, and develop, organizations where gender dynamics do not largely benefit men (Simpson, 1995).

Our data suggest that at UG level accreditation does not influence the visible emphasis on gender in the curriculum to prospective students. But it does appear to do so at PG level. Previous curriculum studies (e.g., Burchell *et al*, 2015; Finch *et al*, 2018) have noted the lack of an accreditation effect on topics covered in programmes. However, our results suggest that AMBA, alone out of the accreditation types, does have a role in influencing the visibility of gender content at PG level, albeit at a modest level. This is perhaps a reflection of the MBA degrees' greater emphasis on current workplace issues, although a qualitative follow-up study would be needed to explore this finding further. With regards to accreditation, it is, however, important to recognize that the low level of variation shown in the visible curriculum across institutions is probably the outcome of marketing decisions made by similarly educated people who lack diversity themselves (Wilson and McKiernan, 2011).

The institution's sense of what it means to be an accredited business school is regulating the curriculum. There is, for example, no required AACSB body of knowledge because applicant institutions are measured against their mission statements (Lowrie and Willmott, 2009). Yet, because institutions view accreditation as the goal and the key to international status enhancement, the urge to mimic the curricula of already successful institutions locks those seeking accreditation into the same or similar topics, approaches, texts, and unconscious biases (Darley and Luethge, 2019) as the global accreditation movement increases. Whether it is the issue of gender in the UK, or the acknowledgment of local knowledge in Africa, the power of accreditation is its ability to colonize by assumption.

We are not calling for a mandated curriculum in response – that would be counter to our position as critical educators and as gender scholars. Rather, we see an opportunity for the equality and inclusivity statements already included in each of the accreditation bodies' mission statements to leverage curricular change. If there must be accreditation, then we see no reason why it should not work pro-actively in support of a visible commitment to workplace gender issues in the curriculum as well as business school administration. We also see an opportunity to change the emphasis in the curriculum visible to prospective students to one that is more socially aware and critical at the time when their expectations of what management education means is being formed.

Relatively small changes of emphasis in the self-assessment templates for institutions putting themselves forward for accreditation (and re-accreditation) that show how equality and inclusivity are reflected in the curriculum would, we suggest, result in a greater visible signal to prospective students of management of the centrality of gender in management practice. Institutional and individual practices can be influenced by external actors, as has been obvious with regards to journal ranking lists (Anderson *et al*, 2020). Although these lists are contested their acknowledged influence on academic practice nevertheless points to the potential that accreditation bodies such as AACSB, EQUIS, and AMBA to perform a form of soft governance (Burchell *et al*, 2015) to the curricular highlighting of gender issues.

Rutter *et al* (2017) may be correct in claiming that the priority for business schools is to appear credible and low-risk and that this is achieved through homogeneity of the offer. It follows that the detail around individual modules e.g., their specific aims, learning outcomes, and specific content is removed so that only the bare minimum of material needed to establish credibility remains in the module summaries included on web pages. Module descriptors on an HEI website may – in this view – simply function as a risk reduction mechanism not connected

with rational decision-making (Johnson, 2001), and reflect a wish not to send out curricular signals that differentiate it from other educational institutions (Rutter et al, 2017). This is a new barrier in the way of criticality and a socially responsible curriculum. Our challenge to our institutions is to see gender, and other forms of diversity acknowledged in the curriculum as central to their credibility.

Sending strong signals to prospective (and current) students about the ubiquitous nature of gender issues in the workplace is important. Workplaces are sites where contemporary social challenges are played out. Although these challenges are not limited to those connected with gender there is a need to normalize gender issues in the curriculum. The potential held by external practices of academic governance already adopted by business schools suggests that accreditation bodies have the potential (Burchell et al, 2015) measures to nudge universities to a position where there is congruence between statements regarding the centrality of gender to the management of business schools and the curriculum that they make visible to prospective students.

References

Alvesson, M and Willmott, H. (Eds.) (1992) Critical Management Studies, London: Sage.

Association to Advance Collegiate Schools of Business. 2018. https://www.aacsb.edu/about/advocacy-and-awareness/diversity. Accessed 5 March 2018

Anderson, V., Elliott, C. and Callahan, J.L. (2020), "Power, powerlessness and journal ranking lists: The marginalization of fields of practice". *Academy of Management Learning and Education*. doi.org/10.5465/amle.2019.0037

Baptiste, I. (2001). "Educating lone wolves: Pedagogical implications of human capital theory". *Adult Education Quarterly*, Vol. 51, No. 3, pp.184–201.

Beirne, M. and Wilson, F. (2016), "Running with 'wolves' or waiting for a happy release? Evaluating routes to gender equality". *Work, Employment and Society*, Vol. 30, No. 2, pp. 220-236.

Bridgman, T. (2007) "Reconstituting relevance: Exploring possibilities for management educators' critical engagement with the public". *Management Learning*, Vol. 38, No. 4, pp. 425-439.

Burchell, J., Kennedy, S. and Murray, A. (2015), "Responsible management education in UK business schools: Critically examining the role of the United Nations Principles for

Responsible Management Education as a driver for change". *Management Learning*, Vol. 46, No 4., pp. 479-497.

Business, Innovation and Skills, Department of. 2016. Success as a Knowledge Economy:

Teaching Excellence, Social Mobility and Student Choice. Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data

/file/523396/bis-16-265-success-as-a-knowledge-economy.pdf [Last accessed 22.9.19]

Catalyst. (2014), "Women on Corporate Boards: Quick Take", Available at :https://www.catalyst.org/research/women-on-corporate-boards/ [Last accessed 22.9.19]

Chartered Institute of Personnel and Development (undated) Gender Equality at Work,

Available at: https://www.cipd.co.uk/news-views/viewpoint/gender-equality-work#66502
[Last accessed 22.6.21]

Choo, K. L. (2007). "The implications of introducing critical management education to Chinese students studying in UK business schools: Some empirical evidence." *Journal of Further and Higher Education*, Vol. 31, No. 2, pp. 145–158.

Darley, W and Luethge, D (2019) "Management and Business Education in Africa: A Post-Colonial Perspective of International Accreditation". *Academy of Management Learning and Education, Vol.* 18, No. 1, pp.99–111.

Dudin, M.N. and Shishalova, Y.S. (2019) "Development of Effective Education and Training System in the Context of the Transition to International Accreditation". *European Journal of Contemporary Education*, Vol. 8, No. 1, pp.118-127.

Durand, R. and McGuire, J. (2005), "Legitimating agencies in the face of selection: The case of AACSB". *Organization Studies*, Vol. 26, No. 2., pp. 165-196.

EFMD (2017) *EQUIS Standards and Criteria*. http://www.efmd.org/EQUIS. [Accessed 5 March 2018]

Ellsworth, E., (1989). "Why doesn't this feel empowering? Working through the repressive myths of critical pedagogy". *Harvard Educational Review*, Vol. 59, No. 3, pp.297-325.

Finch, D., Nadeau, J. and O'Reilly, N. (2018), "A survey of undergraduate marketing programs: An empirical analysis of knowledge areas and metaskills". *Journal of Education for Business*, Vol. 93, No. 2., pp. 23-32.

Greene, A-M., Kirton, G. and Wrench, J. (2005), "Trade union perspectives on diversity management: a comparison of the UK and Denmark". *European Journal of Industrial Relations*, Vol. 11, No. 2, pp. 179-186

Gross, M. A., and R. Hogler. (2005). "What the shadow knows: Exploring the hidden dimensions of the consumer metaphor in management education". *Journal of Management Education*, Vol. 29, No. 1, pp. 3–16.

Haynes, K. and Murray, A. (2015), "Sustainability as a lens to explore gender equality: A missed opportunity for responsible management", In *Integrating gender equality into business and management education: lessons learned and challenges*, P. M. Flynn, K. Haynes and M. A. Kilgour (Ed.), Greenleaf Publishing Limited, Sheffield.

Hutchings, E. and Thomas, H. (2005), "The business case for equality: A UK case study of private consultancy and race equality". *Planning Practice & Research*, Vol. 20, No. 3., pp. 263-278.

Johnson, H. (2001), "Neutral, colluding or subversive? Recognizing the political implications of the marketing subdiscourses in English higher education". *Educational Management & Administration*, Vol. 29, No. 3., pp. 261-274.

Lowrie, A. and Willmott, H. (2009), "Accreditation sickness in the consumption of business education: The vacuum in AACSB standard setting". *Management Learning*, Vol. 40, No. 4., pp. 411-420.

Masrani, S., Williams, A.P. and McKiernan, P. (2011), "Management education in the UK: The roles of the British Academy of Management and the Association of Business Schools". *British Journal of Management*, Vol. 22, No. 3, pp. 382-400.

Mavin, S. and Bryans, P. (1999), "Gender on the agenda in management education?" *Women in Management Review*, Vol. 14, No. 3, pp. 99-104.

Mavin, S., Bryans, P. and Waring, T. (2004), "Unlearning gender blindness: new directions in management education". *Management Decision*, Vol. 42, No. 3/4., pp. 565-578.

Mazzarol, T. and Soutar, G. N. (2012), Revisiting the global market for higher education, *Asia Pacific Journal of Marketing and Logistics*, Vol. 24, No. 5, pp. 717 – 737.

Naidoo, R., and Jamieson, I. (2005). Empowering participants or corroding learning? Towards a research agenda on the impact of student consumerism in higher education. *Journal of Education Policy*, Vol.20, No. 3, pp. 267–281.

McCullagh, P. and Nelder, J. (1989), "Binary data". In *Generalized linear models*. Springer, US, pp. 98-148.

Nafukho, F. M., Hairston, N. and Brooks, K. (2004). "Human capital theory: Implications for human resource development". *Human Resource Development International*, Vol. 7, No. 4, pp. 545–551.

Olsen, J.E., Parsons, C.K., Martins, L.L. and Ivanaj, V. (2016), "Gender diversity programs, perceived potential for advancement, and organizational attractiveness: An empirical examination of women in the United States and France". *Group & Organization Management*, Vol. 41, No. 3., pp. 271-309.

Paradeise, C. and Thoenig, J. (2013), "Academic institutions in search of quality: Local orders and global standards". *Organization Studies*, Vol. 34, No. 2, pp.189-218.

Ployhart, R. E. and Moliterno, T. P. (2011). "Emergence of the human capital resource: A multilevel model". *Academy of Management Review*, Vol. 36, No. 1, pp. 127–150.

Rutter, R., Lettice, F. and Nadeau, J. (2017), "Brand personality in higher education: anthropomorphized university marketing communications". *Journal of Marketing for Higher Education*, Vol. 27, No. 1, pp. 19-39.

Saunders, M. and Townsend, K. (2016), "Reporting and justifying the number of interview participants in organization and workplace research". *British Journal of Management*, Vol. 27, No. 4, pp. 836-852.

Simpson, R., (1995), "Is management education on the right track for women?". *Women in Management Review*, Vol. 10, No. 6, pp. 3-8.

Sinclair, A. (2007) "Teaching leadership critically to MBAs: Experiences from heaven and hell". *Management Learning*, Vo. 38, No. 4, pp. 458-472.

Starkey, K., and N. Tiratsoo. (2007). *The Business School and the Bottom Line*. Cambridge: Cambridge University Press.

Thomas, L., Billsberry, J., Ambrosini, V. and Barton, H. (2014), "Convergence and Divergence Dynamics in British and French Business Schools: How Will the Pressure for Accreditation Influence these Dynamics?". *British Journal of Management*, Vol. 25, No. 2, pp. 305-319.

Tobolowsky, B. and Lowery, J. (2014), "Selling college: A longitudinal study of American college football bowl game public service announcements". *Journal of Marketing for Higher Education*, Vol. 24, No. 1, pp. 75-98.

Vinnicombe, S., Atewologun, D. and Battista, V. (2019), *The Female FTSE Board Report* 2019. *Moving Beyond the Numbers*. Available at https://www.cranfield.ac.uk/~/media/files/the-female-ftse-board-report-2019.ashx?la=en [Last Accessed 28.10.19]

Webb, M., Mayer, K., Pioche, V. and Allen, L. (1999). "Internationalization of American Business Education". *MIR: Management International Review*, Vol. 39, No. 4, pp. 379–397.

Wedlin, L. (2011), "Going global: Rankings as rhetorical devices to construct an international field of management education". *Management Learning*, Vol. 42, No. 2, pp. 199-218.

Williams, J. and S. Mavin. 2012. "Disability as constructed difference: A literature review and research agenda for management and organization studies". *International Journal of Management Reviews*, Vol. 14, No. 2, pp. 159-179.

Williams, J., Meliou, E. and Arevalo, J. (2017), "13. Gender and sustainable management education: Exploring the missing link". *Handbook of Sustainability in Management Education*: In Search of a Multidisciplinary, Innovative and Integrated Approach: 307.

a, P. (2011).

British Journal o, Wilson, D. and McKiernan, P. (2011), "Global mimicry: Putting strategic choice back on the business school agenda". British Journal of Management, Vol. 22, No. 3, pp. 457-469.

Table 1 Correlation matrix

			1	ı					ı	ı	ı							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Total undergraduate programmes	1																
2	Undergraduate programmes with gender content signalled	.287**		79														
3	Undergraduate programmes gender is core	.297**	.704**	1														
4	Undergraduate programmes where gender is an option	0.118	.729**	0.029	1)×.										
5	Total postgraduate programmes	0.151	.220*	0.14	0.17	1			9/									
6	Postgraduate programmes with gender content signalled	-0.04	0.021	0.066	-0.039	.283**	1			1	76)r.						
7	Postgraduate programmes where gender is core	0.069	0.059	0.115	-0.026	.234*	.749**	1					9/4					
8	Postgraduate programmes where gender is an option	-0.139	-0.036	-0.033	-0.03	0.157	.648**	-0.02	1					0/	29,			
9	England	0.152	0.093	0.063	0.069	0.014	0.015	-0.018	0.043	1								
10	Wales	-0.038	-0.104	-0.062	-0.086	0.036	0.006	0.094	-0.1	.517**	1)/,	

Scotland		0 0 40	0 0 40	0.00	0.010	0.016	0.010	0.046		0.100		1					I .
	-0.177	-0.048	-0.042	-0.026	-0.019	0.016	-0.019	0.046	.734**	-0.109	1						
Northern	0.053	0.033	0.031	0.017	-0.065	-0.1	-0.079	-0.06	./34	-0.037	-0.053	1					
Ireland	0.055	0.055	0.031	0.017	-0.003	-0.1	-0.077	-0.00	.252**	-0.037	-0.033	1					
AMBA	-0.062	-0.013	0.007	-0.022	.273**	.204*	0.105	.187*	0.105	-0.072	-0.034	-0.104	1				
4 EQUIS	0.006	0.089	0.061	0.069	.293**	0.103	0.001	0.154	0.082	-0.129	0.022	-0.063	.602**	1			
5 AACSB	0.023	0.099	0.135	0.012	.350**	0.082	0.057	0.057	0.102	-0.075	-0.038	-0.076	.555**	.718**	1		
6 PRME	0.116	0.154	0.101	0.116	.254**	0.101	0.087	0.052	0.098	0.005	-0.072	-0.132	.309**	.195*	.198*	1	
Russell Group	218*	0.029	0.005	0.037	0.044	.203*	0.085	.207*	0.049	-0.05	-0.062	0.103	0.174	.415**	.299**	0.009	1

^{**.} Correlation is significant at the 0.01 level (2-tailed).

^{*.} Correlation is significant at the 0.05 level (2-tailed).

Table 2 Gender signalled on undergraduate and postgraduate taught programmes (n = 112 HEIs)

	n	Mean per	Std. Deviation
		HEI	
	Undergraduate		
Programmes total	1,222	10.91	6.637
Programmes with gender content	236	2.11	3.628
Programmes where gender is core	104	.93	2.481
Programmes where gender is an	131	1.17	2.578
option			
	Postgraduate		
Programmes total	1,562	13.95	7.206
Programmes with a gender content	177	1.58	2.142
Programmes where gender is core	106	.95	1.632
Programmes where gender is an	71	.63	1.421
option			

Table 3 Undergraduate programmes

	Total U	G Progra	ammes		UG PRO GENDE		ITH		UG GE1	NDER	CORE		UG GE	NDER	OPTIO	N
	Beta	Exp B	SE	Sig	Beta	Exp B	SE	Sig	Beta	Exp B	SE	Sig	Beta	Exp B	SE	Sig
Intercept	2.43	11.34	0.08	**	-0.44	0.64	0.53		-2.10	0.12	0.74	**	-0.55		0.70	
Wales	-0.07	0.93	0.20	7 (-0.79	0.45	0.77		-0.25	0.78	1.06		-0.98	0.37	1.01	
Scotland	-0.36	0.70	0.16	*	0.08	1.09	0.56		0.34	1.41	0.84		-0.06		0.69	
Northern Ireland	0.39	1.47	0.39		0.50	1.65	1.32		1.09	2.97	1.74		0.26	1.29	1.70	
AMBA	-0.24	0.79	0.14		-0.39	0.68	0.50		0.16	1.17	0.69		-0.58	0.56	0.66	
EQUIS	0.34	1.40	0.23		0.31	1.37	0.83		0.10	1.11	1.20		1.54	4.68	1.30	
AACSB	0.11	1.11	0.18		0.13	1.14	0.56		0.57	1.76	0.59		-1.16	0.31	1.11	
PRME	0.18	1.19	0.11		0.58	1.79	0.39		0.68	1.98	0.53		0.57	1.77	0.52	
Russell group	-0.53	0.59	0.16	**	0.21	1.23	0.61		0.09	1.09	1.03		0.18	1.20	0.72	
Total UG Programmes					0.07	1.07	0.03	*	0.10	1.10	0.04	**	0.05	1.05	0.05	
AIC	714.61				410.76				259.86				306.78			
BIC	741.79				440.67				289.76			//	336.69			
Likelihood Ratio Chi- Square	19.25	8.00	0.01		11.50	9.00	0.24		11.70	9.00	0.23		6.03	9.00	0.74	
N	112				112				112				112			
Negative binomial	0.20	0.04			2.78	0.60			4.57	1.30			4.47	1.11	77	/
** p < (10/0g

^{**} p < 0.01

^{*} p < 0.05

Table 4 Postgraduate taught programmes

DV	Total Po	GT Progra	ammes		PGT Pro Gender	_	nes with	1	Gender Core	PGT Pr	ogramı	nes	PGT Ge	ender O	PTION		
	Beta	Ехр В	SE	Sig	Beta	Exp B	SE	Sig	Beta	Exp B	SE	Sig	Beta	Exp B	SE	Sig	
Intercept	2.42	11.2 1	0.0	**	-0.90	0.4	0.3	**	-1.36	0.2 6	0.4	**	-2.01	0.1	0.6 0	**	
Wales	0.17	1.18	0.1 8		-0.14	0.8 7	0.5		0.27	1.3	0.6 0		-1.31	0.2 7	1.2		
Scotland	0.00	1.00	0.1 4		0.06	1.0 7	0.3		-0.05	0.9 5	0.4 8		0.24	1.2 7	0.5 6		
Northern Ireland	-0.03	0.98	0.3		:	:	:		: (<u>a</u>	:		:	:	:		
AMBA	0.05	1.05	0.1		0.72	2.0	0.3 4	*	0.40	1.4 9	0.4		1.17	3.2	0.5 6	*	
EQUIS	0.10	1.11	0.2		-0.51	0.6	0.5		-0.86	0.4	0.6		0.24	1.2	0.8		
AACSB	0.29	1.34	0.1 6		-0.29	0.7 5	0.4		-0.07	0.9	0.4 7		-1.01	0.3	0.8		
PRME	0.20	1.22	0.1	*	-0.02	0.9	0.2 8		0.04	1.0	0.3		-0.21	0.8	0.4	4	
Russell group	-0.09	0.91	0.1		0.82	2.2	0.3	*	0.74	2.0	0.4		1.07	2.9	0.5	*	
Total PG Programmes					0.07	1.0	0.0	**	0.07	1.0	0.0	**	0.07	1.0	0.0	*	
AIC	754.5 9				380.5				302.4 8				232.5			7/	
BIC	781.7 8				407.5 2				329.4 8				259.5 7				

		1	1 1	1	l		1	1	1	1	T	T	1 1	
Likelihood	18.33	8.00	0.0	18.56	8.0	0.0	11.68	8.0	0.1		15.48	8.0	0.0	
Ratio Chi-			2		0	2		0	7			0	5	
Square	112			110			110				110			-
Negative	0.17	0.03		1 08	0.2		1 50	0.4			2 28	0.7		\dashv
binomial	0.17	0.03		1.00	9		1.50	5			2.20	5		
** p < 0	0.01													
* p < 0.	05													
$\rho < 0$.	03													