

Modelling of mixed gender composition rules for Committees of the Scottish Parliament

The [Scottish Parliament Gender Sensitive Audit](#) was published in March 2023. The audit set out to review the representation, participation, and influence of women in the Parliament. Recommendations 19 and 20 pertain to rule changes to guarantee women's representation on committees of the Scottish Parliament. The recommendations state:

“Recommendation 19

The SPPA Committee to propose the introduction of a rule that there should be no single sex committees and to consider and agree, when ruling out such parliamentary committees, whether the rule should refer to: (i) a 40% minimum for women; (ii) a minimum % based on the numbers of women ‘available’ for committees (i.e., excluding Cabinet Secretaries and Ministers, party leaders and Presiding Officer and Deputy Presiding Officers or (iii) the overall number of women in the Scottish Parliament.

Recommendation 20

Following agreement of recommendation 19, the SPPA Committee to propose the introduction of a rule that where parties either elect or appoint more than one member to a committee the party's membership must be mixed.”

This paper reports the outcomes of modelling the three rules for mixed gender committees proposed in the Gender Sensitive Audit. The model uses data from Session 6 of the Scottish Parliament to allocate MSPs to theoretical committees and assess the impact of the proposed rule changes on the committee participation rates of male and female MSPs.

Executive summary

- A Parliament with a gender balance of 40% female MSPs can be accurately allocated to party-balanced committees while abiding by a gender quota and mixed gender party requirement.
- Parties with a small or moderate share of the seats in Parliament may be more affected by committee allocations if the average size of committees is relatively small.

- The implementation of gender balance rules can lead to variations in committee participation rates among MSPs. This effect is more pronounced for smaller parties and those with an uneven gender distribution.

Assumptions underpinning the modelling of mixed gender composition rules

This section explains the modelling assumptions (i.e., the criteria accommodated in the method for estimating gender sensitive committee allocations). Please note that this method was devised for the purposes of Committee discussion and is not used for the allocation of committees in practice. Moreover, the assumptions outlined in this modelling of mixed gender committees are theoretical in nature and do not represent a definitive depiction of how the proposed rule changes would manifest if agreed to.

The gender representation data for individuals who are excluded from the modelling of scenarios aligns with the current gender of the officeholder. This means the gender of the officeholders of party leaders, the First Minister, Cabinet Secretaries, Ministers, the Presiding Officer, and Deputy Presiding Officers, is represented in the model as it is at time of writing. For example, if a party leader is a male at time of writing, this will be reflected as a male data point in the model.

The model also assumes that there are 15 committees, as is the case at the time of writing, comprising of 7 mandatory committees and 8 subject committees.

In line with [Standing Order 6.3.2](#), the model operates under the assumption that each committee must have at least 5 but no more than 15 members.

Similarly, in line with [Standing Order 6.3.4](#) and [Paragraph 2.25 of the Guidance on Committees](#), the model assumes that the party balance on each committee is proportional to the balance of seats in the Parliament.

[Standing Order 6.3.4](#) sets out that the Parliamentary Bureau should take account of MSPs' preferences and qualifications when allocating committee places. This model does not make any assumptions about individual MSPs' preferences or qualifications and as such assumes that committees are all equal in size (but it should be noted this is not what happens in practice).

The [Guidance on Committees](#) indicates that in Session 6, the mandatory committees have five or seven members, and the subject committees have between 6 and 10. This paper reports the outcomes when committees have 5 members (representing the minimum permissible), 7 members (representing the average committee size in Session 6), and 10 members (representing the largest committee size in Session 6).

Approach to modelling mixed gender composition rules

SPICe devised a process using Excel and R (a statistical analysis software) to model committee allocations among MSPs with a focus on gender balance and party representation. This section provides an explanation of how the modelling works.

SPICe compiled a dataset of MSPs in the current Parliament and previous Parliaments using [information published on the Scottish Parliament website](#).

MSPs were marked as excluded if they hold one of the following offices:

- Presiding Officer
- Deputy Presiding Officer
- Party leader
- First Minister
- Cabinet Secretary
- Junior Scottish Minister.

The first part of the process is to set up the allocation of party committee seats. Party places are allocated across committees in a gender-blind fashion. This ensures that the party share across the total number of committee seats available and within the individual committees is accurate.

The process then sets up a list of MSPs to be included in the committee allocation process. MSPs are organised into sub-lists based on party and organised such that the gender of the MSP alternates down the list as far as possible.

The next part of the process is to allocate committee places according to the party allocations set out in the first step. Individual MSPs are selected from their respective party list in a round-robin. Then the process ensures the correct gender balance is applied. This is done by meeting the gender quota of the proposed rule (rounded to the nearest whole number). The rules from Recommendation 19 of the Gender Sensitive Audit were operationalised in the following way.

- Rule 1: Committees comprise of a minimum of 40% women.
- Rule 2: Committees comprise of a minimum based on the percentage of women available for committee participation.
- Rule 3: Committees comprise of a minimum based on the percentage of women elected to the Parliament.

If a committee does not meet the quota of the proposed rule, the process aims to replace a male MSP with a female MSP from the same party.

The code also replaces an MSP with another MSP of a different gender from the same party in cases where a party has only male or only female MSPs in a committee. This part of the process is designed to accommodate [Recommendation 20 of the Gender Sensitive Audit](#).

After applying these rules, the final committee allocations are confirmed. Where appropriate, the process keeps track of and reports any committees that could not achieve the desired gender mix, along with the parties that contributed to the imbalance.

Following the allocation of committees, statistics on MSPs' participation in committees can be calculated.

The impact of the proposed rule changes

The following section reports the party balance of Session 6 of the Scottish Parliament and uses this data to model the rules proposed by Recommendations 19 and 20 of the Gender Sensitive Audit.

Party balance of Session 6 of the Scottish Parliament

Tables 1 and 2 show the party balance of the Parliament and the balance of MSPs available for committee participation, respectively. The party balance figures are used to allocate committee places and calculate the rule 3 quota. The figures on MSPs available for committee are used to allocate MSPs to committee places and calculate the rule 2 quota.

Table 1. The current party balance of Session 6 of the Scottish Parliament by gender and seat share.

Party ¹	Female MSPs	Male MSPs	Total MSPs	% Female	% Seats
Scottish National Party (SNP)	33	30	63	52%	49%
Scottish Conservative & Unionist Party (CON)	9	22	31	29%	24%
Scottish Labour Party (LAB)	10	12	22	45%	17%
Scottish Green Party (GRN)	4	3	7	57%	6%
Scottish Liberal Democrats (LD)	1	3	4	25%	3%
Alba Party (ALB)	1	0	1	100%	1%
Total	58	70	128	45%	100%

¹ The Presiding Officer is not included in the party balance figures. Percentages are rounded to the nearest whole number.

Table 2. The number of MSPs available for participation in committees by party and gender alongside the percentage of female MSPs and seat share by party.

Party	Female MSPs	Male MSPs	Total MSPs	% Female	% Seats
Scottish National Party (SNP)	17	19	36	47%	49%
Scottish Conservative & Unionist Party (CON)	9	21	30	30%	24%
Scottish Labour Party (LAB)	10	11	21	48%	17%
Scottish Green Party (GRN)	3	2	5	60%	6%
Scottish Liberal Democrats (LD)	1	1	2	50%	3%
Alba Party (ALB)	1	0	1	100%	1%
Total	41	54	95	43%	74%

The gender balance of the Parliament and the members available for committee participation is similar. This is, in part, due to the largest party having a roughly equal gender balance. Therefore, the quotas set by the application of the three rules are very similar when using Session 6 data. Table 3 shows the number of women required on each committee under each of the quotas proposed by the three rules.

Table 3. The number of women required by committee size and under the quota proposed by each of the three rules. The quota of women on each committee is presented in parentheses next to the rule number. The number of women required on each committee is rounded to the nearest whole number.

Committee Size	Rule 1 (40%)	Rule 2 (43%)	Rule 3 (45%)
5 (minimum)	2	2	2
7 (typical)	3	3	3
10 (typical large)	4	4	5

Please note that the quotas result in identical committee composition for each committee size under proposed rules 1 and 2. As such, the results for rules 1 and 2 are reported as one set of results to aid clarity.

Model results for Rules 1 and 2

The model was able to allocate all committees according to party balance while ensuring the gender quota for rules 1 and 2.

The model also successfully applied the requirements of Recommendation 20 for rules 1 and 2. This means that, with the party and gender balance of Session 6, all parties with more than one committee seat in an individual committee can achieve mixed gender representation.

Table 4 presents data on the model's committee allocations by gender across the Session 6 parties.

The data suggests that parties of varying sizes and gender balances are usually able to allocate all the available members to a committee. Instances where parties are not able to allocate all the available members to a committee typically arise when the average committee size is lower.

There was also an indication that a predominantly male party with moderate seat share may not always be able to allocate a proportionate number of male MSPs to committees when the rules prioritise a gender quota and mixed gender party representation.

Parties consisting of fewer individuals and a lower seat share (e.g., 3-6% of Parliament seats) tend to be more sensitive to increases in the average committee size. This tends to result in the individuals of smaller parties having higher committee participation rates than individuals belonging to larger parties.

Table 4. The table shows the average number of committee allocations by gender for committee sizes of 5, 7, and 10 members.

Party	Committee Size	Average number of committee allocations for female MSPs	Average number of committee allocations for male MSPs
SNP	5	1.1	1.0
	7	1.5	1.4
	10	2.2	1.9
CON	5	1.0	0.4
	7	1.3	0.6
	10	1.7	1.0
LAB	5	0.8	0.5
	7	0.8	0.9
	10	1.2	1.3
GRN	5	0.7	1.0
	7	1.3	1.0
	10	1.7	1.5
LD	5	1.0	1.0
	7	2.0	1.0
	10	3.0	2.0
ALB	5	1.0	n/a
	7	1.0	n/a
	10	1.0	n/a

The next section provides some brief commentary on the impact of the rule 1 and 2 gender quota on the parties represented in the model.

Scottish National Party

MSPs in the Scottish National Party tend to have higher committee participation rates than the other parties. Available female MSPs in the Scottish National Party have a slightly higher participation rate than male MSPs. This is due to the slightly lower number of available female MSPs.

Scottish Conservative & Unionist Party

The gender balance of the Scottish Conservative and Unionist Party is relatively uneven. The higher seat share of this party (relative to the other minority parties) means that proportionately more women are required for committee participation at all assessed committee sizes. This dynamic becomes less acute as committee size increases because Recommendation 20 requires a gender mix when one party has at least 2 seats on a committee. However, the disparity in gender balance and the requirements of the model mean that individual female MSPs in the Scottish Conservative and Unionist Party are still likely to participate in more committees than individual male MSPs when committee sizes are higher.

Scottish Labour Party

The round-robin nature of allocating MSPs to committee seats and the overall party share of seats means that there is a lower likelihood for the Scottish Labour Party to be allocated more than one seat on a committee at a lower committee size.

Although this party is relatively gender balanced overall, the rule requirements and the party share of seats mean that female MSPs in the Scottish Labour Party are likely to participate in committees disproportionately more at smaller committee sizes. This balances out as committee size increases because of the Recommendation 20 requirements.

Scottish Green Party

The requirements of the model, in tandem with the slightly higher number of available female MSPs, means that committee participation is likely to be less gender balanced in this party at lower committee sizes.

Scottish Liberal Democrats

The Scottish Liberal Democrats have a higher proportion of excluded individuals. As such there are fewer individuals representing the party's share of seats in committees. This tends to impact the individuals when the average committee size is larger. The model was also more likely to allocate the female MSP to the extra committee when the party was allocated an odd number of committees. This results in the female MSP participating in more committees on average.

SPICe conducted a follow-up analysis to assess whether any other parts of the model would be affected if the male MSP was allocated the committee initially marked for the female MSP under rules 1 and 2. This analysis indicated Scottish Liberal Democrat MSPs were allocated to committees with a gender composition exceeding both rule quotas. This means that the male and female allocations in the Liberal Democrats can be exchanged without affecting the overall model.

Model results for Rule 3

The model was able to allocate all committees according to party balance while ensuring the gender quota for rule 3 (of 45%).

The model also successfully applied the requirements of Recommendation 20 for rule 3. This means that, with the party and gender balance of Session 6, all parties with more than one committee seat in an individual committee can achieve mixed gender representation while maintaining a gender quota of 45% women.

The 45% gender quota only affected the largest party's committee places at the 10-member committee size. This is because Recommendation 20 requirements were also being considered. To reach the gender quota while preserving the fulfilment of Recommendation 20 criteria by smaller parties at the larger committee size, the average committee allocation increased slightly for female MSPs in the SNP to 2.4

(versus 2.2 allocations under rules 1 and 2) and decreased slightly for male MSPs in the SNP to 1.7 committees (versus 1.9 under rules 1 and 2).

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