

# Effectiveness of institutional interventions to increase political representation among underrepresented populations in OECD countries

A systematic scoping review of studies published since 2006

## L'efficacité des interventions institutionnelles visant à accroître la représentation politique des populations sous-représentées dans les pays de l'OCDE

Une revue systématique de la portée des études publiées depuis 2006

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# **Effectiveness of institutional interventions to increase political representation among underrepresented populations in OECD countries**

## **A systematic scoping review of studies published since 2006**

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# L'efficacité des interventions institutionnelles visant à accroître la représentation politique des populations sous-représentées dans les pays de l'OCDE : une revue systématique de la portée des études publiées depuis 2006



2018

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## Contexte:

La représentation politique est une composante essentielle du caractère démocratique d'un système politique. À cet égard, on a pu constater au cours des dernières années que les institutions politiques des pays de l'OCDE ont eu des difficultés à s'adapter à la diversité des électeurs. On peut notamment observer ce phénomène par la sous-représentation de certaines populations comme les femmes, les minorités culturelles, les Autochtones ou encore les jeunes au sein des institutions politiques. Bien que plusieurs interventions aient été mises en place et étudiées, aucun examen systématique de la littérature visant à évaluer leur efficacité n'a été effectué.



## Messages clés pour les politiques et les pratiques:

Neuf études respectant les critères d'inclusion et évaluant l'impact des interventions institutionnelles sur la représentation politique des populations sous-représentées ont été incluses dans cet examen systématique.

- La littérature scientifique sur l'efficacité des interventions visant à améliorer la représentation politique des populations sous-représentées se concentre presque exclusivement sur les quotas de femmes.
- Davantage de recherches sur les autres types d'intervention (règles électorales, incitatifs financiers, etc.) seront nécessaires pour déterminer leur efficacité.
- De nouvelles études seront aussi nécessaires pour évaluer l'efficacité des interventions visant à accroître la représentation des populations sous-représentées autres que les femmes.
- La majorité des quotas semblent avoir un impact positif sur la représentation des femmes, mais peu de ces résultats ont été soumis à des tests statistiques.
- Un important facteur à prendre en considération par les décideurs souhaitant améliorer la représentation d'un groupe démographique particulier est le système électoral. Les objectifs de la réforme souhaitée doivent effectivement être cohérents avec les contraintes institutionnelles du système électoral.

### Interprétation :

- Les résultats de cette revue systématique doivent être interprétés avec prudence considérant que peu d'études ont été répertoriées et que la qualité générale de la preuve (évaluée grâce à l'outil GRADE) est plutôt faible.



Cette revue systématique de littérature tend à montrer que certaines interventions institutionnelles visant à accroître la représentation politique des femmes sont efficaces.



Aucune étude dans cette revue systématique n'évalue l'efficacité des interventions visant à améliorer la représentation politique des autres populations sous-représentées.



## Résultats:

- De manière générale, on observe que certaines interventions institutionnelles ayant pour but d'accroître la représentation politique des femmes ont des résultats positifs.
- Les quotas législatifs semblent être des mesures efficaces pour assurer une meilleure présence féminine dans les assemblées législatives. Sur les 17 quotas législatifs inclus dans cette recension, quatre ont eu un effet positif et significatif. Les autres ont dans plusieurs cas eu des résultats positifs, mais aucun test statistique ne fut effectué.
- Les quotas législatifs semblent être plus efficaces lorsqu'ils sont obligatoires que lorsqu'ils sont volontaires.
- Les deux études évaluant un quota imposé par un parti politique ont montré que cette intervention avait un effet positif et significatif sur la représentation des femmes.
- Les quotas sont plus efficaces lorsqu'ils nécessitent une alternance entre candidats sur la base du sexe (ex : quota de type zipper).
- L'article évaluant un quota exécutif et une règle électorale a trouvé des résultats positifs pour ces deux interventions, mais aucun test de significativité ne fut effectué.



## Méthodes:

Les études pertinentes furent identifiées à l'aide de cinq bases de données provenant de la science politique et d'autres sciences sociales. Les recherches documentaires dans ces bases de données ont généré 3 665 notices bibliographiques qui ont d'abord été filtrées sur leur titre et résumé par deux évaluateurs travaillant indépendamment en utilisant des critères d'inclusion prédéfinis. Les deux évaluateurs ont ensuite utilisé les mêmes critères d'inclusion pour évaluer dans leur entièreté les articles ayant survécu à la première phase de sélection. Les notices bibliographiques et les articles ont été traités et filtrés à l'aide du logiciel *EPPI Reviewer 4*.



## Risques de Biais:

- Uniquement deux des neuf études incluses ont un faible risque de biais; les sept autres ayant un risque de biais modéré ou incertain.
- Un des risques de biais les plus fréquents parmi les études est l'absence d'un groupe témoin.
- Peu d'études incluent un calcul permettant d'ajuster l'effet de l'intervention aux tendances observées avant que celle-ci ait été mise en place.
- Ces faiblesses font en sorte qu'il est difficile d'isoler et d'interpréter l'effet spécifique dû aux interventions institutionnelles mises en place. Les résultats doivent donc être interprétés avec prudence.



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# Effectiveness of institutional interventions to increase political representation among underrepresented populations in OECD countries: a systematic scoping review of studies published since 2006



2018

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## Background:

Political representation is a central dimension to evaluate the strength of a democratic regime. Over the recent years, political institutions in OECD countries have had difficulties to adapt to the diversity of their electors. This has resulted in an underrepresentation of certain groups such as women, ethnic minorities, Aboriginals, low-income people, youth, etc. While many interventions responding to this issue have been developed, no systematic review evaluating their effectiveness has been conducted.



## Key messages for policy and practice:

This systematic review has identified nine studies which respected the inclusion criteria and evaluated the impact of interventions on the political representation of marginalized populations.

- The published peer-reviewed empirical literature on the effectiveness of interventions to increase political representation of underrepresented populations focuses almost exclusively on women and on quotas.
- Further research on other types of interventions (electoral rules, financial incentives, etc.) will be needed to assess their effectiveness.
- Further research will also be needed to evaluate the effectiveness of interventions on political representation of other underrepresented populations such as ethnic minorities and youth.
- Most quotas assessed seem to have had a positive impact on the representation of women, but few of them were subjected to a statistical test.
- A main factor to be taken into consideration by decision makers who might wish to improve political representation of a specific group would be the specificity of their electoral system, as the objectives of a reform should ideally be aligned with the institutional constraints.

### Interpretation:

- The results of this systematic review should be interpreted with caution as few studies were identified and the overall quality of the evidence (assessed with the GRADE approach) is rather low.



Our results seem to suggest that some institutional interventions aiming to increase political representation of women generate positive results.



No studies found in this systematic review assess the effectiveness of institutional interventions on the political representation of other marginalized populations.



## Results:

- Overall, our findings suggest that some institutional interventions to increase the political representation of women generate positive results.
- Legislative quotas seem to be effective mechanisms to increase the representation of women. Of the 17 legislative quotas assessed, four had a positive and significant effect, but not all of these 17 interventions were subjected to a significance test.
- Legislative quotas seem to have a greater impact when they are mandatory for the political parties rather than when they are voluntary.
- The two studies evaluating a quota imposed by political parties show that this intervention has a positive and significant impact on the representation of women.
- Quotas show better outcomes when they require alternating candidates on the basis of gender (e.g. zipper system).
- The study that evaluates an executive quota and an electoral rule shows positive results for those two interventions, but no significance test was carried out.



## Methods:

Relevant studies were identified using five bibliographic databases from Political Science and other social sciences. The literature search generated 3665 bibliographic records, which were firstly screened on their title and abstract by two reviewers who were working independently using the pre-defined selection criteria. The reviewers then applied the same predetermined inclusion criteria on the full text of the studies that survived the first screening phase. Studies were managed and screened using the web-based software *EPPI reviewer 4*.



## Limitations:

- Only two of the nine included studies have a low risk of bias, the seven others have a medium or uncertain risk of bias.
- One of the most frequent risk of bias among the included studies is the absence of a control group.
- Only a small number of studies report a calculation that adjusts the intervention effect according to the observed trend of the outcome variable before the intervention.
- These weaknesses make it difficult to isolate the specific effect of the intervention on the political representation of women. The results must therefore be interpreted with caution.



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## Key messages

- The published peer-reviewed empirical literature on the effectiveness of interventions to increase political representation of underrepresented populations focuses almost exclusively on women and on quotas.
- There is a great diversity of types of quotas. The studies that were reviewed examine the effectiveness of three main categories of quotas: legislative quotas, party quotas and executive quotas.
- Of the 17 legislative quotas assessed, four had a positive and significant effect, but not all interventions were subjected to a statistical test.
- As for quotas imposed by political parties, the two studies identified show a positive and significant effect of such policy on representation of women.
- Quotas show better outcomes when they require alternating candidates on the basis of gender (e.g. the zipper system).
- The only executive quota that was evaluated showed a positive effect on political representation, but no significance test was carried out.
- The only study on electoral rules showed a positive effect on the representation of women, but no significance test was carried out.
- Studies included in the review present certain methodological weaknesses that can generate risks of bias in the interpretation of the findings. Following the quality assessment, we observe that only two of the nine studies included in the review present a low risk of bias, the other ones having a medium or uncertain level of bias. One of the most common risks of bias among the studies is the absence of a control group.
- The review findings might not be transferable to any electoral system since most of the assessed measures were implemented in an electoral system comprising a proportionality component.
- A main factor to be taken into consideration by decision makers who might wish to improve political representation of a specific group would be the specificity of their electoral system, as the objectives of a reform should ideally be aligned with the institutional constraints.
- More research is needed to assess the effectiveness of other types of institutional interventions: financial incentives, electoral rules, etc.
- More research is needed on interventions aimed at increasing political representation of other underrepresented populations beyond women, such as Aboriginal peoples, poor people, ethnic minorities, etc.
- Overall, the results stemming from this systematic review must be used with great caution as the evidence is not very strong.

# Executive summary

## Context: the issue

Political representation is a central dimension to evaluate the strength of a democratic regime. Over the recent years, political institutions in OECD countries have had difficulties to adapt to the diversity of their electors. This has resulted in an underrepresentation of certain groups such as women, ethnic minorities, Aboriginals, low-income people, youth, etc. While many interventions responding to this issue have been developed, no systematic review evaluating their effectiveness has been conducted.

## Objectives

The objective of this knowledge synthesis is to summarize research findings concerning the effectiveness of interventions aimed at improving political representation among marginalized populations. Institutional interventions such as quotas, financial incentives and electoral rules were the focus of our attention.

## Search methods

Relevant studies were identified using five bibliographic databases from Political Science and other social sciences. Bibliographic database searches were conducted on May 24th, 2017, by an information specialist trained in systematic literature reviewing. Additional sources were found after reviewing the bibliographic references of the included studies.

## Selection criteria

To be included in the review, studies had to respect the following criteria: (1) they had to evaluate the effects of an intervention; (2) they had to be published not before 2006; (3) the intervention had to take place in an OECD country; (4) the type of intervention had to be part of a predefined list that we specified in the protocol; (5) the study had to evaluate the impact of an intervention on a marginalized population; (6) the study had to be published either in French or in English; (7) the study had to present substantial empirical evidence; and (8) all study designs were included, except opinion letters, lab experiments, conceptual and theoretical studies and essays.

## Data collection and analysis

Studies were managed and screened using the web-based software *EPPI-Reviewer 4*. The literature search generated 3,665 bibliographic records, which were firstly screened on their title and abstract by two reviewers who were working independently using the pre-defined selection criteria. A total of nine studies were included at the end of the screening process. Finally, relevant information was extracted and tabulated from each included study, using pre-defined extraction codes. The GRADE approach was then used to evaluate the overall quality of evidence.

## Results

Despite the fact that the search strategy was aimed at obtaining results on several types of interventions (electoral rules, financial incentives, etc.), we almost exclusively found studies on quotas. Indeed, all studies analyze the effectiveness of quotas, whereas only one also analyzes an electoral rule. Furthermore, all studies included in the review focus on increasing the representation of women with the exception of a study that also covers the representation of ethnic minorities.

Overall, our findings suggest that institutional interventions to increase the political representation of women, regardless of their nature, generate positive results. Several studies rightly point out that the effectiveness of interventions depends in part on the electoral system in which a quota is implemented. There was a great diversity in terms of the types of quotas as well as their amplitude. This makes it difficult to compare the types of quotas in terms of their effectiveness. Therefore, we have listed three main categories of quotas: legislative quotas, party quotas and executive quotas. Regarding legislative quotas, we find in the literature that they are effective mechanisms to increase the representation of women in legislative assemblies.

More precisely, of the 17 legislative quotas assessed, four had a positive effect, but not all interventions were subjected to a statistical test. As for quotas imposed by political parties, the two studies identified show a positive and significant effect of such intervention on representation of women. Quotas show better outcomes when they require alternating candidates on the basis of gender (e.g. the zipper system). The only executive quota that was evaluated was found to have a positive effect on political representation, but no significance test was carried out. The only study on electoral rules shows a positive effect on the representation of women.

Studies included in the review present certain methodological weaknesses that can generate risks of bias in the interpretation of the results. Following the quality assessment, we observe that only two of the nine studies included in the review present low risks of bias, the other ones having a medium or uncertain level of bias. One of the most common risks of bias among the studies is the absence of a control group. Moreover, a small number of studies report a calculation that adjusts the intervention effect according to the observed trend of the outcome variable before the intervention. These weaknesses make it difficult to isolate the specific effects of gender quotas on women's representation in political institutions. Another risk of bias frequently observed in the included studies refers to the lack of statistical interpretation of effect size. Indeed, few studies present statistics such as odds ratios or even confidence intervals and rather simply present descriptive statistics. The overall quality of the evidence was assessed using the GRADE approach and has shown to be very weak due to risk of bias, the imprecision of the results and the indirectness of the evidence. Results of this systematic review should therefore be interpreted with caution.

## Conclusions

### Implications for practice and policy

The research findings retrieved and summarized in the knowledge synthesis suggest that institutional interventions are effective tools for increasing the political representation of women, especially when these provisions are binding. A systematic alternation between men and women imposed on the political parties through legislation seems to give better results. However, the review findings might not be transferable to any electoral system since most of the assessed measures were implemented in an electoral system comprising a proportionality component. A main factor to be taken into consideration by decision makers who might wish to improve political representation of a specific group would be the specificity of their electoral system, as the objectives of a reform should ideally be aligned with the institutional constraints

### Implications for research

We were able to point to a positive link between the use of quotas and the increase in the representation of women. In order to deepen knowledge about political representation, more research should be conducted to assess the effectiveness of other types of institutional interventions: financial incentives, electoral rules, etc. Researchers and evaluators might also wish to look at other marginalized populations beyond women, such as Aboriginal peoples, poor people, ethnic minorities, etc. The majority of the interventions analyzed took place in proportional systems, which prevent us from generalizing the results to countries using another method of voting. In this regard, measures exist to favour the representation of marginalized populations in countries using a majority system, such as the All-women shortlist in the United Kingdom. Rigorous evaluations of such measures are needed.

## Context: the issue

### Description of the problem

Democracy is a concept that does not have a unique definition. Indeed it may refer to multiple characteristics such as sovereignty of the people, defense of rights and freedoms or capacity of electors to designate their leaders. Nonetheless, a central dimension in every democratic regime is effective representation of the ideas and interests of the citizens.

In this knowledge synthesis, descriptive representation is understood as the ability of political institutions to reflect the diversity of a population in democratic regimes. Despite the presence of free and fair elections, many OECD countries are faced with problems of underrepresentation and misrepresentation among certain segments of their population such as women, youth, ethnic minorities, etc. For example, the average female share of seats in national parliaments of OECD countries was 29% in 2016 (OECD, 2017). Despite the fact that the average share has increased from 17% to 29% over the last 20 years, there is still a significant gap between the representation of women in legislative assemblies and their actual weight in the population. This raises questions about the fairness of the political representation and ultimately on women's ability to take part in the decision-making process.

We can also observe a systematically lower share of seats in national parliaments for young people. Indeed, the proportion of seats held by members of parliament under 30 years of age is 4.7% in Canada, 3.1% in the United Kingdom and 0.4% in Australia (IPU, 2016). A similar pattern can be found among countries using a proportional electoral system, such as Belgium (2.0%), Israel (1.7%) and the Netherlands (2.7%) confirming a spread tendency in various countries.

Over the recent years, some countries have attempted to develop policies in order to increase institutional representation of marginalized populations. This study provides the first systematic literature review of studies that assessed the effects of specific interventions on these two democratic outcomes.

### The interventions considered in the review

The review analyzes studies that examine the effectiveness of institutional interventions affecting political representation. We define institutional interventions as measures aiming to improve representation of marginalized populations in legislative assemblies (lower and/or upper house), executive cabinets, parliamentary committees or political parties, at any level of government. More specifically, the review focuses on quotas, financial (monetary) incentives, electoral rules, parliamentary rules and internal party rules.

### Why it is important to conduct the review

Political representation of marginalized populations is an essential pillar to ensure legitimacy of democratic institutions and the consideration of citizens' interests. Nowadays, many OECD countries are faced with misrepresentation of certain discriminated groups. Policy-makers are looking for evidence-informed solutions to fix this democratic deficit.

Despite the fact that there are many individual studies on the types of interventions we concentrated on, no study has yet systematically synthesized and compared the effects of the targeted interventions on political representation. The relevance of this systematic scoping review lies in its ability to determine which interventions were proven effective and to identify knowledge gaps to be filled in future research.

## Objectives

The knowledge synthesis aims to summarize findings of studies that empirically assessed the effect of institutional interventions on political representation of marginalized populations. Our overarching goal is to provide global and reliable evidence informing the adoption of measures to overcome democratic deficits in Canada. Therefore, this review fills the need for evidence-informed decision-making in organizations promoting democratic strength.

# Methods

## Search methods for identification of studies

### Electronic searches

The literature searches were made using five online databases from different disciplines (see Table 1). For each database, we applied the same search strategy. The search terms for the two French databases *Érudit* and *Persée* were translated while a bilingual search strategy was used for *Pascal et Francis*. The search strategy contained five categories of concepts, which captured targeted interventions, marginalized populations, representation and evaluation (see Appendix 1). For each category, we developed a corpus of different search terms using controlled vocabulary and database's thesaurus. Quotation marks and asterisks were used to refine the searches. The search strategy was developed and applied by an information specialist with extensive experience in systematic literature reviewing.

**TABLE 1**  
**Online databases searched**

Discipline	Resource
Political science	<ul style="list-style-type: none"> <li>• International Bibliography of the Social Sciences (IBSS)</li> <li>• Worldwide Political Science Abstracts</li> </ul>
Interdisciplinary	<ul style="list-style-type: none"> <li>• <i>Érudit</i></li> <li>• <i>Pascal et Francis</i></li> <li>• <i>Persée</i></li> </ul>

### Other searches

In order to make sure that the search strategy did not miss any relevant academic publications, additional searches were performed in the web-based engine *Google Scholar*. The reference list of all included studies were also screened, a practice called "branching". The relevant publications found through these methods were screened with the same inclusion and exclusion criteria as the initial studies.

## Criteria for including studies in the review

### Subject/outcomes

Studies had to report findings on the effectiveness of an intervention promoting better representation of the population.

### Interventions

In order to be included in the review, studies had to report findings on the effectiveness of the following types of interventions: institutional interventions, more precisely quotas, financial (monetary) incentives, electoral rules, parliamentary rules and/or internal party rules.

### Target groups

The studies were included only if they report findings regarding marginalized populations. In the reviews, marginalized populations include women, youth, ethnic minorities, low-income people and Aboriginals (or First Nations). Studies that solely report the effects of interventions on the general population as a whole were excluded.

## Countries

The review focuses on interventions taking place in at least one of the OECD countries, namely Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States.

Findings for the national, subnational, regional and local levels were considered in the review.

## Date of publication

In compliance with the funder rule (i.e. SSHRC), only studies that were published since 2006 were included.

## Evidence

The studies were included only when two of the co-authors (FB and SV) considered that the reported evidence was sufficiently strong and when there was enough information in the publication to apply the extraction codes.

## Study design

The following study designs were considered in the review: randomized controlled field experiments, non-randomized controlled field experiments, controlled before-and-after studies, uncontrolled before-and-after studies, interrupted time series, longitudinal studies, cross-sectional studies, qualitative studies, and mixed-method studies.

## Data collection and analysis

### Selection of studies

After receiving the search results from the information specialist, bibliographic records were imported in the web-based systematic review software *EPPI-Reviewer 4*, which allows managing all the steps of a systematic review. Two reviewers (FB and SV) who achieved a A grade in a master's level course in systematic literature reviewing (Ouimet, Lapointe and Léon, 2015) first screened each title and abstract working independently. Studies incompatible with the predetermined inclusion criteria were excluded, but records that were considered irrelevant by only one of the reviewers were not automatically excluded; they were rather discussed in a meeting to meet an agreement. The reviewers then applied the same predetermined inclusion criteria on the full text of the studies that survived the first screening phase. Disagreements were resolved using the same procedure as for the screening on title and abstract.

### Coding and numeric data extraction

A coding sheet was elaborated in order to extract relevant information. Coding disagreements were resolved by discussion during a meeting. Studies were coded independently by two reviewers (FB and SV) using the software *EPPI-Reviewer 4*. Data extraction fields for both reviews are presented in Table 2.

**TABLE 2**  
**Data extraction fields**

- 
- Country
  - Unit of analysis
  - Sample
  - Intervention (type, size, duration, etc.)
  - Outcome variable
  - Measurement frequency
  - Data source
  - Study design
  - Key findings
  - Results: statistical significance and effect size
  - Jurisdiction affected by the intervention
  - Institution affected by the intervention
  - Level of decision
  - Institutional level of decision
- 

### Quality assessment

A risk of bias analysis was conducted after data extraction to evaluate the reliability of included studies. Each study included was evaluated using a list of questions related to the study protocol. These questions were used to assess criteria such as sampling methods, objectivity of the measures, accounting of confounding variables and the reporting of the confidence interval. The nature of the questions and their number vary according to the type of study (e.g. randomized controlled field experiment, before-and-after study, etc.). These reporting guidelines were inspired and adapted from existing tools (AMSTAR, CONSORT, Cochrane, etc.). The quality assessment was conducted by two co-authors (FB and SV), each being assigned half of the included studies. Each reviewer then verified the assessment made by his colleague. Disagreements about ratings were resolved through discussions between the two reviewers.

Each question (criterion) included in a critical appraisal checklist is answerable using a three-point scale, one meaning a low-risk of bias and three a high risk of bias. Two points were allocated if the information provided in the publication regarding a criterion was uncertain or not applicable. The total amount of points and an average score were then calculated for every study for comparison purposes.

In addition to the risk of bias analysis, the quality of evidence was assessed using the GRADE approach (Dijkers, 2013). To do so, the interventions and outcome variables were grouped in order to evaluate the overall quality of the results on a four-level scale: very low, low, moderate and high. Risk of bias, inconsistency of results, indirectness of evidence and imprecision are the four criteria used to downgrade the quality of the evidence. For each of those criteria, the overall quality was downgraded by one level for serious concerns and by two levels for very serious concerns.

# Results

## Bibliographic search

The database searches were conducted on May 24th, 2017. For budgetary reasons, no additional searches were performed through the grey literature. A total of 5,491 records were generated from the five databases (WPSA, IBSS, *Érudit*, *Persée* and *Pascal et Francis*). We then removed the duplicates, which left us with 3,665 records that were screened on title and abstract. From these records, 398 passed the first screening test and were then screened on their full-report. From these studies, 356 were excluded based on full-text eligibility assessment. This left us with a total of nine studies that met all inclusion criteria.

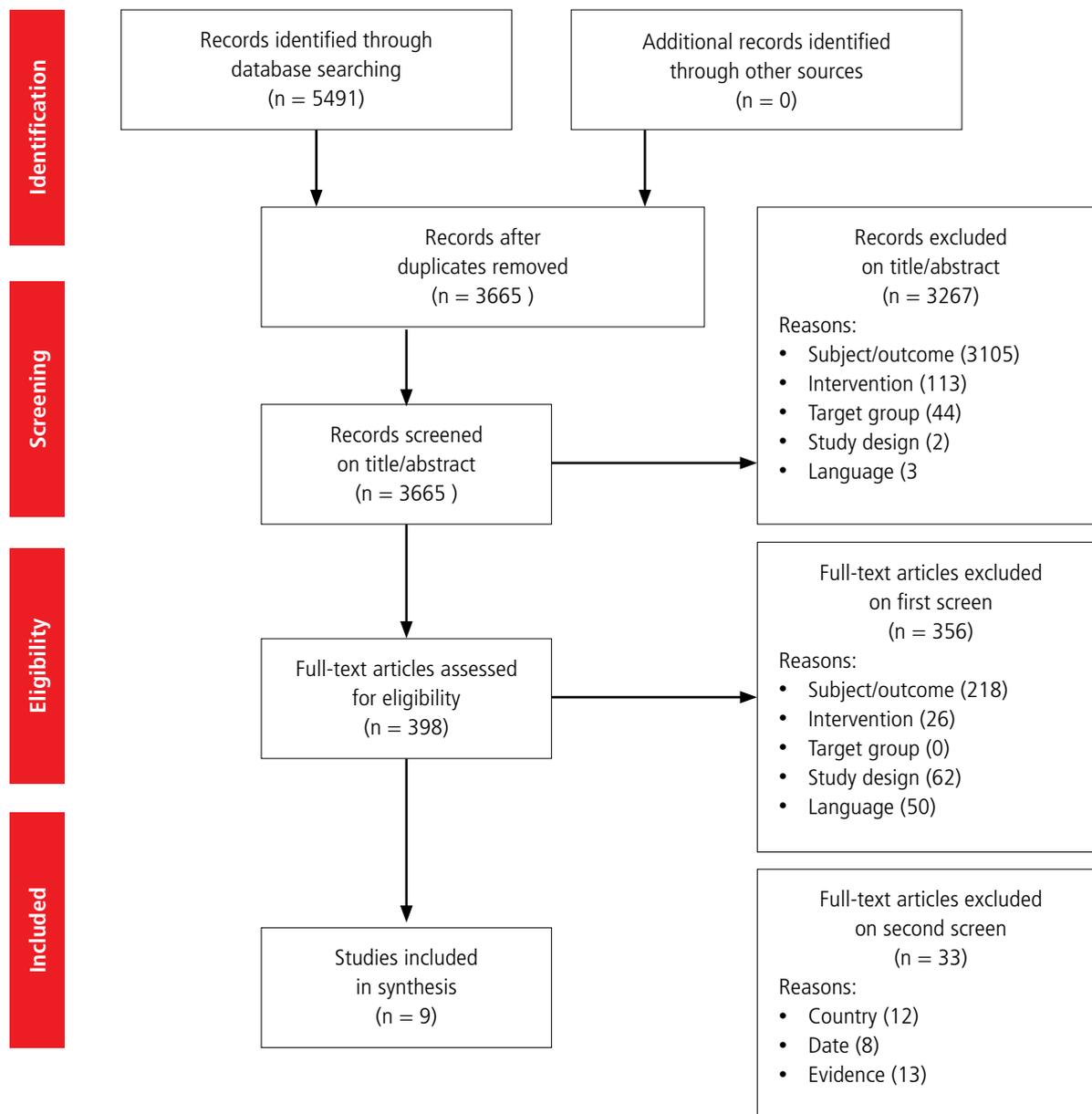
## Description of the studies

### General overview

The nine studies that were included in the review focus on interventions aimed at increasing the number of women in democratic institutions. No study assessed the effects of an institutional intervention on another category of underrepresented populations such as youth, ethnic minorities, etc. Out of the nine studies included in this review, two evaluate interventions implemented in Sweden, two in South Korea, one in France, one in Poland, one in Spain, and one in Italy. Also, one study evaluates interventions in both France and Spain. In total, 20 interventions with various modalities are analyzed within the nine publications retained. Of those 20 interventions, only one could be counted as an "electoral rule", the other 19 being registered as quotas with various modalities. The 20 interventions affected diverse levels of government: six interventions had an effect at the national level, three at the subnational level (federated states), three at the regional level, six at the local level, and one at the European level.

There is a large methodological heterogeneity among included studies. In fact, the included studies used different research designs to examine intervention effects. Four studies are interrupted-time series, three are uncontrolled before-and-after studies, one study is a controlled before-and-after study and one uses a mixed-method design. We also observed a large difference in term of the outcome variables that were measured in the included studies. Seven studies examine the variations in the proportion of women as members of legislative assemblies, two studies measure the proportion of female senators, one study calculates the proportion of female candidates on electoral lists, one study looks at the number of female members in the cabinet, and one study captures the proportion of women occupying a top position on the party lists. Finally, it should be noted that only four studies report a statistical analysis of effect size, the other five presenting only percentages and variations. Overall characteristics of included studies are presented in Table 3.

**FIGURE 1**  
Flow diagram



**TABLE 3**  
Overall study characteristics

Study	Country	Population	Study design	Sample	Intervention	Outcome variable
Folke, Freidenvall and Rickne (2015)	Sweden	Women and ethnic minorities	Mixed-method study	285 municipalities	Party quota: Zipper system (50%)	Proportion of members in municipal councils
Górecki and Kukoowicz (2014)	Poland	Women	Uncontrolled before and after study	1 (Lower house of Poland)	Legislative quota: Minimum 35% of either sex on electoral party lists	Proportion of lower house member and proportion of candidates
Lee (2015)	South Korea	Women	Interrupted time series	1 (National Assembly of Korea)	Legislative quota: 2000 legislation: 30% quota of women candidates (voluntary) in PR seats 2004 legislation: 30% quota of women recommended for SMD seats and 50% quota of women candidates for PR seats (zipper system)	Proportion of lower house members
O'Brien and Rickne (2016)	Sweden	Women	Interrupted time series	290 municipalities	Party quota: Zipper system (50%)	Proportion of women candidates occupying the top position on the party list
Oñate (2014)	Spain	Women	Uncontrolled before and after study	18 legislatures (national lower house and 17 regional legislatures)	Legislative quota: At least 40% of either sex in every five positions	Proportion of lower house members
Paola, Scoppa and Lombardo (2010)	Italy	Women	Controlled before and after study	Treatment group: 7 716 municipalities Control group: 389 municipalities	Legislative quota: Municipalities under 15 000: Maximum two thirds of either sex on the party list Municipalities over 15 000: Maximum 75% of either sex on the party list	Proportion of lower house members

Study	Country	Population	Study design	Sample	Intervention	Outcome variable
Shin (2014)	South Korea	Women	Interrupted time series	1 (Korean National Parliament)	Legislative quota: 2000 legislation: 30% quota of women candidates (voluntary) in PR seats 2004 legislation: 30% quota of women recommended for SMD seats and 50% quota of women candidates for PR seats (zipper system)	Proportion of lower house members
Sineau (2008)	France	Women	Uncontrolled before and after study	7 institutions: National Assembly, Senate, regional assemblies, cantons, municipalities over 3 500, municipalities under 3 500 and European Parliament	Legislative quota: – National Assembly: 50% of each sex plus or minus 2% (financial penalty if not respected) – Senate: Big departments 50% (zipper), small department (no quota) – Regional: 50% of each sex (zipper) – European: 50% of each sex (zipper) – Municipalities over 3500: 50% of each sex (2001: 3 candidates of each sex on every 6 names on the list) – 2008: Zipper  Municipalities under 3 500: no quota – Cantonal: no quota	Proportion of lower and upper house members

Study	Country	Population	Study design	Sample	Intervention	Outcome variable
Verge and Troupel (2011)	France and Spain	Women	Interrupted time series	11 institutions affected by interventions in France (Local, Regional, Cantonal, National Assembly, Senate, European) and in Spain (Local, Regional, Congress of deputies, Senate, European)	<p>France:</p> <p><b>Legislative quota:</b></p> <ul style="list-style-type: none"> <li>– Local: 2000: At least 3 candidates of either sex in every 6 positions on the list (for municipalities of over 3 500 inhabitants)</li> <li>2007: Zipper</li> <li>– Regional: 2007: Zipper</li> <li>– National Assembly: 50% of candidates of each sex</li> <li>– Senate: Every party presents three-candidates lists which must include at least one woman</li> <li>– European: Zipper</li> </ul> <p><b>Executive quota:</b></p> <p>Parity</p> <p><b>Electoral rule:</b></p> <p>Cantonal: The substitute must be of opposite sex</p> <p>Spain:</p> <p><b>Legislative quota:</b></p> <ul style="list-style-type: none"> <li>– Local: 40% to 60% for either sex in each stretch of five candidates Towns with over 5 000 inhabitants (2007) and over 3000 (from 2011 onwards)</li> <li>– Regional: 40% to 60% for either sex in each stretch of five candidates. Some regions use zip lists or 50% for either sex</li> <li>– Congress of deputies: 40% to 60% for either sex in each stretch of five candidates</li> <li>– Senate: Two men and one woman, or two women and one man</li> <li>– European: 40% to 60% for either sex in each stretch of five candidates</li> </ul>	Proportion of lower and upper house member (as well as executive member in France)

## Detailed description of the interventions

A detailed description of the interventions assessed in the studies included in the review is presented in Table 4. Folke, Freindenwall and Rickne (2015) and O'Brien and Rickne (2016) evaluate the effectiveness of the same intervention, which is a party lists quota imposed in 1993 by the National Congress of the Swedish Social Democratic Party on its local associations. More precisely, the quota imposes a system of alternations for women and men on the party electoral lists (known as a «zipper system»). The effects of this party quota are only reported for elections at the municipal level.

In Gorecki and Kukoowicz (2014), the intervention is a *legislative quota* that applies to all political parties in Poland. Each party is obliged to present a minimum of 35% of either sex candidates on their lists for the national election. The Poland's legislative quota was voted by the *Sejm* in 2011.

Lee (2015) and Shin (2014) analyze the effects of the same two legislative gender quotas imposed by the national lower house of South Korea in 2000 and 2004. The first intervention is a voluntary 30% quota of women candidates for PR (proportional representation) seats. The second one (2004) is a more severe measure, forcing political parties to present 50% of women candidates on their list (zipper system) for PR seats, besides a recommended 30% of women candidates for the SMD (single-member district) seats.

In Oñate (2014), the intervention analyzed is a legislative quota voted by the lower house of Spain (*Congreso de los Diputados*) in 2007 that applies at the subnational and national levels. Since this reform was implemented, Spanish political parties have the obligation to present at least 40% candidates of each sex for every five names on the lists (2/5). Furthermore, parties must have a minimum of 40% candidates of each sex on the list as a whole.

In their study, Paola, Scoppa and Lombardo (2010) look at the effects of a legislative gender quota on the proportion of women elected in Italian municipalities. Implemented in 1993 and then abolished in 1995, this quota required political parties in municipalities with fewer than 15,000 inhabitants to present a maximum of two thirds of either sex on the electoral lists. The quota for municipalities over 15,000 inhabitants was up to maximum 75% of either sex.

Sineau (2008) focuses on a series of legislative quotas implemented in France at the turn of the century. The first quota applies at the national level and forces political parties to present 50% of candidates of each sex, plus or minus 2% (financial penalties if not respected). A zipper system quota, which implies to alternate male and female candidates on a party list, was also implemented for senatorial elections in large departments, for regional elections and for elections held in municipalities of over 3,500 inhabitants. At the European level, a legislative zipper system was also implemented.

**TABLE 4**  
**Intervention description**

Study	Intervention	Measurement frequency	Level/ Institution affected	Institution/ Level of decision
Folke, Freidenvall and Rickne (2015)	Party quota: Zipper system (50%)	Before intervention: 1 election After intervention: 5 elections	Swedish Social Democratic party local associations	National level of the Social Democratic party (1993)
Górecki and Kukooowicz (2014)	Legislative quota: Minimum 35% of either sex on electoral party lists	Before intervention: 1 election After intervention: 1 election	National political parties	Lower house of Poland (Sejm) (2011)
Lee (2015)	Legislative quota: 2000 legislation: 30% quota of women candidates (voluntary) in PR seats 2004 legislation: 30% quota of women recommended for SMD seats and 50% quota of women candidates for PR seats (zipper system)	Before intervention: 15 elections After intervention: 3 elections	National political parties	National lower house of South Korea (2000 and 2004)
O'Brien and Rickne (2016)	Party quota: Zipper system (50%)	Before intervention: 2 elections After intervention: 5 elections	Swedish Social Democratic party local associations	National level of the Social Democratic party (1993)
Oñate (2014)	Legislative quota: At least 40% of either sex in every five positions	Before intervention: – National: 1 election – Subnational: 1 election After intervention: – National: 1 election – Subnational: 1 election	Political parties at the subnational and national levels	Lower house of Spain (Congreso de los Diputados) (2007)
Paola, Scoppa and Lombardo (2010)	Legislative quota: Municipalities under 15 000: Maximum two thirds of either sex on the party list Municipalities over 15 000: Maximum 75% of either sex on the party list	Before intervention: – Gender quota municipalities: 1 election – Non-gender quota municipalities: 1 election After intervention: – Gender quota municipalities: 2 elections (1 election under the quota law and 1 election after the law was abolished) – Non-gender quota municipalities: 1 election	Local political parties	National lower house of Italy (1993)
Shin (2014)	Legislative quota: 2000 legislation: 30% quota of women candidates (voluntary) in PR seats 2004 legislation: 30% quota of women recommended for SMD seats and 50% quota of women candidates for PR seats (zipper system)	Before intervention: 15 elections (1948 to 1996) + 1 election (2000) before the 2nd reform After intervention: 4 elections after the 2000 reform (2000 to 2012) 3 elections after the 2004 reform (2004 to 2012)	Political parties at the national, regional and local levels	National lower house of South Korea (2000 and 2004)

Study	Intervention	Measurement frequency	Level/ Institution affected	Institution/ Level of decision
Sineau (2008)	Legislative quota: – National Assembly: 50% of each sex plus or minus 2% (financial penalty if not respected) – Senate: Big departments 50% (zipper), small department (no quota) – Regional: 50% of each sex (zipper) – European: 50% of each sex (zipper) – Municipalities over 3500: 50% of each sex (2001:3 candidates of each sex on every 6 names on the list) – 2008: Zipper – Municipalities under 3500: no quota – Cantonal: no quota	Before intervention: National Assembly: 1 Senate: 1 Regional: 1 European: 1 Cantonal: 1 All municipalities: 1 After intervention: National Assembly: 2 Senate: 2 Regional: 1 European: 1 Cantonal: 3 All municipalities: 2	Political parties at the local, regional, subnational, national and European levels	National lower house of France (Assemblée nationale) (2000)
Verge and Troupel (2011)	France: <b>Legislative quota:</b> – Local: 2000: At least 3 candidates of either sex in every 6 positions on the list (for municipalities of over 3 500 inhabitants) 2007: Zipper – Regional: 2007: Zipper – National Assembly: 50% of candidates of each sex – Senate: Every party presents three-candidates lists which must include at least one woman – European: Zipper <b>Executive quota:</b> Parity <b>Electoral rule:</b> Cantonal: The substitute must be of opposite sex  Spain: <b>Legislative quota:</b> – Local: 40% to 60% for either sex in each stretch of five candidates Towns with over 5 000 inhabitants (2007) and over 3 000 (from 2011 onwards) – Regional: 40% to 60% for either sex in each stretch of five candidates. Some regions use zip lists or 50% for either sex – Congress of deputies: 40% to 60% for either sex in each stretch of five candidates – Senate: Two men and one woman, or two women and one man – European: 40% to 60% for either sex in each stretch of five candidates	Before intervention (France): – Local: 2 – Regional: 3 – Cantonal: 5 – National Assembly: 5 – Senate: 4 – Europe: 5 – Executive: 1 Before intervention (Spain): – Local: 7 – Regional: 7 – Congress of deputies: 7 – Senate: 7 – Europe: 5 After intervention (France): – Local: 2 – Regional: 2 – Cantonal: 2 – National Assembly: 2 – Senate: 3 – Europe: 2 – Executive: 1 After intervention (Spain): – Local: 1 – Regional: 2 – Congress of deputies: 1 – Senate: 1 – Europe: 1	Political parties at the local, regional, subnational and national levels (France and Spain) Executive office at the local and regional levels (France)	National lower house France: 2000 (except cantons in 2007) Spain: 2007

Finally, Verge and Troupel (2011) evaluate the effectiveness of institutional interventions voted in France and Spain between 2000 and 2007. The French interventions described in this study are the same as in the precedent study (Sineau, 2008), except for an electoral rule added for the cantonal elections that forces candidates to run for office with a substitute of the opposite sex. As for Spain, it evaluates the effectiveness of different interventions implemented at the local, regional and European levels, as well as for congressional and senatorial elections at the national level. Since 2007, local, regional congressional and European political parties must present at least 40% of either sex in each stretch of five candidates on their lists. For the case of senatorial elections, parties must present at least one candidate of either sex in every three position.

## Quality assessment of included studies

Studies included in the review present certain methodological weaknesses that can generate risks of bias in the interpretation of the results. Following the quality assessment, we observe that only two (Gorecki and Kukoowicz, 2015; O'Brien and Rickne, 2016) of the nine studies included in the review present a low risk of bias, the other ones having a medium or uncertain level of bias. One of the most common risks of bias among the studies is the absence of a control group as in the case for Verge and Troupel (2011) and Shin (2014). Moreover, a small number of studies report a calculation that adjusts the intervention effect according to the observed trend of the outcome variable before the intervention (e.g. Folke, Freidenvall and Rickne, 2015; Lee, 2015). These weaknesses make it difficult to isolate the specific effects of gender quotas on women's representation in political institutions. Variations in the outcome variable could therefore be caused by other factors. Another risk of bias frequently observed in the included studies refers to the lack of statistical interpretation of effect size. Indeed, few studies present statistics such as odds ratios or even confidence intervals and rather simply present descriptive statistics (e.g. Verge and Troupel, 2011; Shin, 2014).

**TABLE 5**  
**Risk of bias analysis**

	Low risk of bias (3)	Medium risk of bias or uncertain (2)	High risk of bias (1)	Average / 3
<b>Controlled before and after studies (9 questions)</b>				
Paola, Scoppa and Lombardo (2010)	4	5	0	2.44
<b>Uncontrolled before and after studies (9 questions)</b>				
Gorecki and Kukoowicz (2014)	5	4	0	2.56
Oñate (2014)	3	5	1	2.22
Sineau (2008)	3	5	1	2.22
<b>Interrupted time series (10 questions)</b>				
Folke, Freidenvall and Rickne (2015)	4	4	2	2.20
Lee (2015)	6	2	2	2.40
O'Brien and Rickne (2016)	6	3	1	2.50
Shin (2014)	5	2	3	2.20
Verge and Troupel (2011)	2	4	4	1.80

## Intervention effect

In their study focusing on a quota imposed by the national branch of the SDP in Sweden, Folke, Freidenvall and Rickne (2015) find that the intervention had a positive and statistically significant effect on the political representation of women in Parliament. The proportion of women elected under the SDP banner rose from 37% to 47% following the passage of the measure in 1993. The subsequent elections confirmed this upward trend, with parity practically reached (49% women elected) in 2010. Also, the authors note that the number of elected SDP women is higher than the average for all parties combined (41%). Finally, it is noted that the increase in the number of women elected to the SDP has been the same for women from ethnic minorities as for women from the majority.

Gorecki and Kukoowicz (2014) observe that the legislative quota introduced in 2011 by the Polish national government had a moderate effect on the increase in the number of elected women. Indeed, although the proportion of women candidates has increased from 23% in 2007 to 43.5% in 2011, this would have had little effect on the number of women elected. The proportion of women MPs increased by just over 3%, prompting the authors to believe that quotas are only one reason among others that may explain the increase. A trend was already observed in previous elections.

In a study of the two legislative quotas imposed in 2000 and 2004 by the South Korean government, Lee (2015) notes that the first legislation had a relatively small (albeit positive) effect on the representation of women. This increased from 3% to 5.9% following the quota on the SMD seats. However, the second law, which was more restrictive, had a positive and significant impact, raising the proportion of women to 13%. According to the author, the fact that the quota was mandatory and that it was imposed on the PR seats might explain this greater effectiveness.

O'Brien and Rickne (2015) focus on evaluating the effects of the party quota imposed by the national branch of the SDP in Sweden. They find that the quota had a positive and significant impact on the proportion of women elected at the municipal level. Indeed, the proportion of female representatives increased by 10% following the passage of the measure in 1993. The increase would have been as strong in the most populous municipalities as in the small ones. Finally, the authors note that the number of women in positions of authority at the municipal level has increased steadily since 1988.

Oñate (2014) finds that the quota introduced by the Spanish government in 2007 had a positive effect on the number of women MPs at the national and regional levels. Respectively, the proportion of women increased by 0.3% (national level) and 4.5% (regional level) in the following elections. However, the isolated effect of quotas is hard to demonstrate since there was already an upward trend in the number of women in the political sphere. Moreover, the increase following the introduction of the quota is too small to conclude that there was a causal relationship.

Paola, Scoppa and Lombardo (2010) find that legislative quotas in Italian municipalities had a positive and significant effect since the percentage of women in municipal councils where quotas had been set increased from 7, 8% to 18.4% in the next election. Moreover, these same municipalities recorded a decrease in the number of women once the law was invalidated a few years later. This suggests that the increase was due to the intervention. Secondly, the authors show that the effect of quotas was nonetheless sustainable as the level of involvement of women was maintained and was significantly higher in municipalities experiencing a quota.

**TABLE 6**  
**Thematic summary for interventions assessed in the studies included in the review**

Intervention	Number of interventions	Positive results	Significant results	Studies
<b>Legislative quota</b>				
Zipper system (PR)	4	4	1	Lee (2015); Shin (2014); Sineau (2008); Verge and Troupel (2011)
Minimum 35% of either sex (PR)	1	1	N/A	Górecki and Kukoowicz (2014)
Voluntary 30% of women (PR)	1	1	1	Lee (2015); Shin (2014)
Voluntary 30% of women (SMD)	1	1	1	Lee (2015); Shin (2014)
At least two candidates of either sex in every five positions (PR)	4	4	N/A	Oñate (2014); Verge and Troupel (2011)
Minimum 25% of either sex (PR)*	1	1	1	Paola, Scoppa and Lombardo (2010)
50% of each sex, +/- 2% (SMD)	1	1	N/A	Sineau (2008)
50% of each sex for big departments (PR)**	1	1	N/A	Sineau (2008)
At least one woman every three candidates (PR)	1	1	N/A	Verge and Troupel (2011)
At least one candidate of either sex in every three positions (PR)	1	1	N/A	Verge and Troupel (2011)
At least three candidates of either sex in every six positions (PR)	1	1	N/A	Verge and Troupel (2011)
<b>Party quota</b>				
Zipper system (PR)	1	1	1	Folke, Freidenvall and Rickne (2015); O'Brien and Rickne (2016)
<b>Executive quota</b>				
50% of each sex	1	1	N/A	Verge and Troupel (2011)
<b>Electoral rule</b>				
Substitute of the opposite sex	1	1	N/A	Verge and Troupel (2011)

The effects of legislative quotas introduced by the South Korean government were assessed by Shin (2014). This study reaches the conclusion that the 2004 law (mandatory zipper system) had a greater effect than the 2000 law (voluntary quota of 30%). The proportion of women increased from 4% in 1996 to 6.2% in 2000 and 13% in 2004. In each case, the majority of women have been elected through the PR seats system.

The study of Sineau (2008) shows that the 2000 law had a symbolic and effective impact on the representation of women in French politics. It has also been shown that the size of the quota effect varies depending on the institution targeted by the intervention. In the National Assembly, the proportion of women rose from 10.9% in 1997 to 12.3% in 2002. In the Senate, this proportion has also increased from 5.9% in 1998 to 10.9% in 2004 and 16.9% in 2004. At the regional level, the proportion of women increased by more than 20% following the passage of the law. However, no statistical test was performed to isolate the effect of quotas in particular.

In their study of the various institutional interventions voted by France and Spain between 2000 and 2007, Verge and Troupel (2011) find that the imposition of quotas and electoral rules had a positive effect on the representation of women. In Spain, the quotas introduced in 2007 appear to have had a positive (albeit moderate) impact on all levels of government, although an upward trend has already been observed. In particular, the proportion of women elected at the local level increased from 25.6% in 2003 to 31% following the introduction of the quota. A similar trend was observed in France. The parity law has reinforced an already increasing trend in the representation of women. Its effect seems to have been positive, especially at the municipal level, where the percentage of women rose from 26% to 47.3% between 1995 and 2001.

# Discussion

## Summary of main results

The systematic scoping review focused on interventions promoting political representation of marginalized populations. Despite the fact that the search strategy was aimed at collecting research evidence on several types of interventions (electoral rules, financial incentives, etc.), we found studies on quotas almost exclusively. Indeed, all studies analyze the effectiveness of quotas, whereas only one analyzes an electoral rule. Furthermore, all studies included in the review focus on increasing the representation of women with the exception of a study that also covers the representation of ethnic minorities.

There was a great diversity in terms of the types of quotas as well as their modalities. This makes it difficult to compare the types of quotas in terms of their effectiveness. We have listed three main categories of quotas: legislative quotas, party quotas and executive quotas. Regarding legislative quotas, we find in the literature that they tend to be effective mechanisms to increase the representation of women in legislative assemblies. Indeed, each of the interventions listed resulted in an increase in the number of women in parliaments. However, the effect of several of these interventions was not subjected to a statistical significance test. It can also be noted that legislative quotas seem to be more effective when they are mandatory rather than voluntary and when they are implemented in proportional electoral systems rather than in majority ones. Moreover, quotas seem to show better outcomes when they require alternating candidates on the basis of gender (e.g. the zipper system).

With respect to party quotas, only one intervention was analyzed, showing a positive and significant relationship between the intervention and the representation of women. This relationship was demonstrated in two different publications analyzing the same intervention that was implemented by the Swedish Social Democratic Party (Folke *et al.*, 2015; O'Brien and Rickne, 2016). As for the executive quotas, only one study reported results. The study shows that this type of quota has a positive effect on the number of executive members. However, we are not in a position to judge the significance of this result since no statistical test was performed.

The only study that analyzes a type of intervention other than quotas assessed the effect of an electoral rule, namely the requirement for candidates to present a substitute of the opposite sex (Verge and Troupel, 2011). The study demonstrates a positive relationship, but did not carry out a statistical significance test.

Overall, our findings suggest that institutional interventions to increase the political representation of women, regardless of their nature, generate positive results. However, regarding party quotas, executive quotas and electoral rules, we cannot draw any definitive conclusions about the effectiveness given the small number of studies captured in the review. Finally, several studies point out that the effectiveness of interventions depends in part on the electoral system in which a quota is implemented.

## Overall reviews' completeness and applicability

The review includes nine studies out of a total of 3,665 unique bibliographic records captured by the research strategy. The systematic application of the selection criteria for country (i.e. OECD countries) and publication date (i.e. the 10-year coverage imposed by the funder) significantly reduced the number of studies included in the review. In fact, a large portion of the literature on quotas concerns African or South American countries. However, the restrictive criteria for country and publication date were used for the sake of portability of the results. Also, constraints in terms of resources such as time and money made us focus exclusively on studies

published in peer-reviewed journals. As a consequence, we might have missed relevant studies published on the Internet as working papers, doctorate dissertations or research reports.

It is also important to note that the review findings do not cover all underrepresented groups defined in the research protocol. The review findings are thus not generalizable to all marginalized populations beyond women.

Nevertheless, the evidence summarized in the review allows us to adequately address part of the research questions originally set out in the protocol.

## **Quality of evidence**

Only four out of the nine selected studies present statistical analyses of intervention effect. Furthermore, considering the strong heterogeneity of the quota modalities, we were unable to conduct a quantitative meta-analysis. In general, the studies included in this review were of fairly good methodological quality based on a systematic risk of bias analysis. However, none of the included studies were randomized controlled experiments, the gold standard for limiting confusion in estimating intervention effect. However, the use of random allocation is challenging in the process of assessing the effectiveness of quotas.

The GRADE analysis performed also shows serious doubts about the quality of the evidence. Indeed, as presented in Table 7, the quality of the evidence has been rated as very weak for each of the four categories. The quality was downgraded by two levels for each outcome due to serious imprecision of the results. The studies included in this review contain limited statistical analysis and most of them do not contain confidence intervals preventing us from obtaining a precise effect size. The quality of the evidence also had to be downgraded due to the indirectness of the evidence. Indeed, the intervention and the outcomes of the included studies were much narrower than the initial objective of the systematic review as they focussed essentially on the effects of quotas on the representation of women. The results stemming from this systematic review must therefore be used with great caution as the evidence is not very strong.

## **Limitations and potential biases in the review process**

As in all systematic reviews, it is possible that the list of search terms used in our search strategies leads to potential selection bias. Using a search strategy based on three concepts rather than two or four was a deliberate choice of the research team. We did a few trials to test our strategy to ensure that our results were as complete as possible, but there is still a possibility that we have missed some studies.

## **Agreements and disagreements with other studies and reviews**

To our knowledge, there was no systematic review on the effectiveness of institutional interventions aimed at improving political representation of marginalized populations.

# Conclusion

## Implications for practice and policy

The research findings retrieved and summarized in the knowledge synthesis suggest that institutional interventions are effective tools for increasing the political representation of women, especially when these provisions are binding. One important challenge regarding the effectiveness of quotas relates to the technique chosen to order the candidates. A systematic alternation between men and women imposed on the political parties through legislation seems to give better results. The review findings might not be transferable to any electoral system since most of the assessed measures were implemented in an electoral system comprising a proportionality component. A main factor to be taken into consideration by decision makers who might wish to improve political representation of a specific group would be the specificity of their electoral system, as the objectives of a reform should ideally be aligned with the institutional constraints.

## Implications for research

We were able to point to a positive link between the use of quotas and the increase in the representation of women. In order to deepen knowledge about political representation, more research should be conducted to assess the effectiveness of other types of institutional interventions: financial incentives, electoral rules, etc. Researchers and evaluators might also wish to look at other marginalized populations beyond women, such as Aboriginal peoples, poor people, ethnic minorities, etc. The majority of the interventions analyzed took place in proportional systems, which prevent us from generalizing the results to countries using another method of voting. In this regard, measures exist to favour the representation of marginalized populations in countries using a majority system, such as the All-women shortlist in the United Kingdom. Rigorous evaluations of such measures are needed.

**TABLE 7**  
Quality of evidence

Number of Studies	Study Design	Quality Assessment				Quality of Evidence
		Risk of Bias	Inconsistency of Results	Indirectness of Evidence	Imprecision	
<b>Proportion of members in legislative assembly (legislative quota)</b>						
7	Interrupted time series (3), Before and after study (4)	Serious limitations (-1)	Serious inconsistency (-1) Interventions differ from one another	Serious indirectness (-1) Mostly women quotas	Serious imprecision (-2) Small samples, confidence intervals not presented	Very low (1)
<b>Proportion of members in municipal councils (party quota)</b>						
1	Mixed method study	Serious limitations (-1)	N/A	Serious indirectness (-1) The only intervention is a quota of women	Serious imprecision (-2) Small sample, confidence intervals not presented	Very low (1)
<b>Proportion of candidates on top of party list (party quota)</b>						
1	Interrupted time series	No serious limitation	N/A	Serious indirectness (-1) The only intervention is a quota of women	Serious Imprecision (-2) Small sample, confidence intervals not presented	Very low (1)
<b>Proportion of executive members (executive quota)</b>						
1	Interrupted time series	Serious limitations (-1)	N/A	Serious indirectness (-1) The only intervention is a quota of women	Serious imprecision (-2) Small sample, confidence intervals not presented	Very low (1)

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## APPENDIX 1

### Search strategy

#### WPSA (ProQuest)

Conducted on May 24th 2017

#	Request	Results
S1	TI(quota* or "parity law")	587
S2	TI(intervention* or strategy or strategies or measures or solution* or implementation or apportion* or reapportion* or "positive discrimination" or (parliament* N/3 (rule* or procedure* or reform*)) or ((electoral or election*) N/3 (rule* or law* or policy or policies or reform*)) or ((financial or monetary) N/3 (incentive* or compensation* or motivation)) or wage*) OR AB(intervention* or strategy or strategies or measures or solution* or implementation or apportion* or reapportion* or "positive discrimination" or (parliament* N/3 (rule* or procedure* or reform*)) or ((electoral or election*) N/3 (rule* or law* or policy or policies or reform*)) or ((financial or monetary) N/3 (incentive* or compensation* or motivation)) or wage*) OR SU.EXACT("Apportionment" OR "Legislative Apportionment" OR "Quotas" or "Election Law" or or "Compensations" or "Wages" or "Incentives")	158 631
S3	TI(underrepresent* or misrepresent* or ((politic* or balanc* or substantive or descriptive or minority or group or legislative) N/3 representation) or "political presence" or "legislative presence" or parity or ((substantive or descriptive) N/3 democrac*)) OR AB(underrepresent* or misrepresent* or ((politic* or balanc* or substantive or descriptive or minority or group or legislative) N/3 representation) or "political presence" or "legislative presence" or parity or ((substantive or descriptive) N/3 democrac*)) OR SU.EXACT("Political representation")	9 306
S4	TI(gender* or woman or women or female or feminis* or sex or poor* or underprivileged or (low* N/3 (income or class)) or pauper* or disadvantaged or youth or young or immigrant* or ethnic* or (cultur* N/3 communit*) or "foreign born" or blacks or "african american*" or latino* or asian* or "first nations" or indian* or "native american*" or minorit* or marginalized) OR AB(gender* or woman or women or female or feminis* or sex or poor* or underprivileged or (low* N/3 (income or class)) or pauper* or disadvantaged or youth or young or immigrant* or ethnic* or (cultur* N/3 communit*) or "foreign born" or blacks or "african american*" or latino* or asian* or "first nations" or indian* or "native american*" or minorit* or marginalized) OR SU.EXACT("Low Income Groups" OR "Lower class" OR "Minority Groups" OR "Disadvantaged" OR "Immigrants" OR "Ethnic groups" OR "Blacks" OR "Black Americans" OR "Foreign Born Citizens" OR "American Indians" OR "Youth" OR "Young Adults")	192 299
S5	TI(Improve* or unimproved* or decrease* or increase* or reduce* or reduction* or enhanc* or efficiency or efficacy or impact* or effect* or ineffective or evaluat* or assess*) OR AB(Improve* or unimproved* or decrease* or increase* or reduce* or reduction* or enhanc* or efficiency or efficacy or impact* or effect* or ineffective or evaluat* or assess*) OR SU.EXACT("Effectiveness" OR "Efficiency")	289 249
S6	S2 OR S4	320 842
S7	S3 AND S6	5 442
S8	S1 OR S7	5 826
S9	S5 AND S8	2 979
S10	Limite Anglais et Français	2 787

**IBSS (ProQuest)**

Conducted on May 24th 2017

#	Request	Results
S1	TI(quota* or "parity law")	1 787
S2	TI(elect* or politic* or senat* or legislat* or party or parties or deput* or candida* or assembly or assemblies or democra* or minister* or gouvernement* or parliament*) OR AB(elect* or politic* or senat* or legislat* or party or parties or deput* or candida* or assembly or assemblies or democra* or minister* or gouvernement* or parliament*) OR SU.EXACT("Political behavior" OR "Elections" OR "Democracy")	710 285
S3	TI(intervention* or strategy or strategies or measures or solution* or implementation or apportion* or reapportion* or "positive discrimination" or (parliament* N/3 (rule* or procedure* or reform*)) or ((electoral or election*) N/3 (rule* or law* or policy or policies or reform*)) or ((financial or monetary) N/3 (incentive* or compensation* or motivation)) or wage*) OR AB(quota* or intervention* or strategy or strategies or measures or solution* or implementation or apportion* or reapportion* or "positive discrimination" or (parliament* N/3 (rule* or procedure* or reform*)) or ((electoral or election*) N/3 (rule* or law* or policy or policies or reform*)) or ((financial or monetary) N/3 (incentive* or compensation* or motivation)) or wage*) OR SU.EXACT("Apportionment" OR "Quotas" OR "Election Law" OR "Electoral reform" or "Wages & salaries" or "Compensation" or "Monetary incentives")	445 245
S4	TI(underrepresent* or misrepresent* or ((politic* or balanc* or substantive or descriptive or minority or group or legislative) N/3 representation) or "political presence" or "legislative presence" or parity or ((substantive or descriptive) N/3 democrac*)) OR AB(underrepresent* or misrepresent* or ((politic* or balanc* or substantive or descriptive or minority or group or legislative) N/3 representation) or "political presence" or "legislative presence" or parity or ((substantive or descriptive) N/3 democrac*)) OR SU.EXACT("Political representation")	18 351
S5	TI(gender* or woman or women or female or feminis* or sex or poor* or underprivileged or (low* N/3 (income or class)) or pauper* or disadvantaged or youth or young or immigrant* or ethnic* or (cultur* N/3 communit*) or "foreign born" or blacks or "african american*" or latino* or asian* or "first nations" or indian* or "native american*" or minorit* or marginalized) OR AB(gender* or woman or women or female or feminis* or sex or poor* or underprivileged or (low* N/3 (income or class)) or pauper* or disadvantaged or youth or young or immigrant* or ethnic* or (cultur* N/3 communit*) or "foreign born" or blacks or "african american*" or latino* or asian* or "first nations" or indian* or "native american*" or minorit* or marginalized) OR SU.EXACT("Low income groups" OR "Minority & ethnic groups" OR "Aliens" OR "Blacks" OR "Native North Americans" OR "Young adults")	598 432
S6	TI(Improve* or unimproved* or decrease* or increase* or reduce* or reduction* or enhanc* or efficiency or efficacy or impact* or effect* or ineffective or evaluat* or assess*) OR AB(Improve* or unimproved* or decrease* or increase* or reduce* or reduction* or enhanc* or efficiency or efficacy or impact* or effect* or ineffective or evaluat* or assess*) OR SU.EXACT("Effectiveness" OR "Effectiveness studies" OR "Efficiency")	914 145
S7	S3 OR S5	951 735
S8	S4 AND S7	8 288
S9	S1 OR S8	9 861
S10	S2 AND S6 AND S9	2 146
S11	Limite Anglais et Français	2 039

**Érudit et Persée (Érudit)***Conducted on May 24th 2017*

#	Request	Results
1	<p>Titre, résumé, mots-clés : (quota* OR intervention* OR strategie* OR mesure* OR solution* OR implementation OR répartition* OR "discrimination positive" OR "regle electorale" OR "reglement electoral" OR "loi electorale" OR "reform electorale" OR "reform parlementaire" OR "regle parlementaire" OR "reglement parlementaire" OR "motivation financière" OR "motivation monétaire" OR "compensation financière" OR salaire*) OR (genre* OR femme* OR feminis* OR sexe* OR pauvre* OR pauperis* OR "faible revenu" OR defavorise* OR noir* OR "afro-americain" OR "afro-americains" OR asiatique* OR immigrant* OR autochtone* OR "premieres nations" OR indien* OR amerindien* OR minorite* OR marginalise*)</p> <p>ET Titre, résumé, mots-clés : (parit* OR "democratie effective" OR "representation politique")</p> <p>ET Titre, résumé, mots-clés : (amelior* OR aggrav* OR degrad* OR augment* OR diminu* OR reduction* OR redui* OR efficac* OR efficien* OR impact* OR effet* OR evalu*)</p>	180

## Francis (Pascal et Francis en accès libre – CNRS)

Conducted on May 24th 2017

#	Request	Results
1	<p>(title.\*: (quota* OR intervention* OR strategie* OR mesure* OR solution* OR implementation OR apportion* OR reapportion OR répartition* OR "positive discrimination" OR "discrimination positive" OR "regle electorale" OR "electoral rule" OR "reglement electoral" OR "loi electorale" OR "election law" OR "reforme electorale" OR "electoral reform" OR "reforme parlementaire" OR "parliamentary reform" OR "regle parlementaire" OR "parliamentary rule" OR "reglement parlementaire" OR "motivation financière" OR "motivation monétaire" OR "compensation financière" OR salaire* OR "financial incentive*" OR "monetary incentive*" OR "financial compensation" OR "monetary compensation" OR "financial motivation" OR "monetary motivation" OR wage*) OR (genre* OR gender* OR femme* OR woman OR women OR feminis* OR sexe* OR pauvre* OR poor* OR pauper* OR "disadvantaged" OR "low income" OR "lower class" OR "faible revenu" OR defavorise* OR noir* OR black* OR "afro-américain" OR "afro-américains" OR "african american" OR asiatique* OR asian* OR immigrant* OR autochtone* OR "native american*" OR "premieres nations" OR "first nations" OR indien* OR indian* OR amerindien* OR minorite* OR minority OR minorities OR marginalise* OR marginalized)  OR abstract.\*: (quota* OR intervention* OR strategie* OR mesure* OR solution* OR implementation OR apportion* OR reapportion OR répartition* OR "positive discrimination" OR "discrimination positive" OR "regle electorale" OR "electoral rule" OR "reglement electoral" OR "loi electorale" OR "election law" OR "reforme electorale" OR "electoral reform" OR "reforme parlementaire" OR "parliamentary reform" OR "regle parlementaire" OR "parliamentary rule" OR "reglement parlementaire") OR (genre* OR gender* OR femme* OR woman OR women OR feminis* OR sexe* OR pauvre* OR poor* OR pauper* OR "disadvantaged" OR "low income" OR "lower class" OR "faible revenu" OR defavorise* OR noir* OR black* OR "afro-américain" OR "afro-américains" OR "african american" OR asiatique* OR asian* OR immigrant* OR autochtone* OR "native american*" OR "premieres nations" OR "first nations" OR indien* OR indian* OR amerindien* OR minorite* OR minority OR minorities OR marginalise* OR marginalized) )  AND (title.\*: (parit* OR "democratie effective" OR "substantive democracy" OR "decriptive democracy" OR "representation politique" OR "political representation") OR abstract.\*: (parit* OR "democratie effective" OR "substantive democracy" OR "decriptive democracy" OR "representation politique" OR "political representation") )  AND (title.\*: (amelior* OR aggrav* OR degrad* OR augment* OR diminu* OR reduction* OR redui* OR efficac* OR efficien* OR impact* OR effet* OR evalu* OR Improve* or unimproved* or decrease* or increase* or reduce* or reduction* or enhanc* or efficiency or efficacy or impact* or effect* or ineffective or evaluat* or assess*) OR abstract.\*: (amelior* OR aggrav* OR degrad* OR augment* OR diminu* OR reduction* OR redui* OR efficac* OR efficien* OR impact* OR effet* OR evalu* OR Improve* or unimproved* or decrease* or increase* or reduce* or reduction* or enhanc* or efficiency or efficacy or impact* or effect* or ineffective or evaluat* or assess*) )</p>	485

## Overall Results

Database	Results	Total
WPSA	144	1 569
IBSS	142	
Érudit	177	
Francis	824	
ERIC	282	

**APPENDIX 2****Results for studies included in the review**

Study	Intervention	Outcome variable	Key findings	Statistically significant results
Folke, Freidenvall and Rickne (2015)	Party quota – Zipper system (50%)	Proportion of members in municipal councils	<p>Elected women among SDP: 1991: 37% (Before intervention) 1994: 47% (After) 1998: 47% 2002: 47% 2006: 48% 2010: 49%</p> <p>Elected ethnic minorities among SDP: 1991: 5.00% (Before) 1994: 5.46% (After) 1998: 5.72% 2002: 6.71% 2006: 7.06% 2010: 8.41%</p>	Impact of the gender quota on ethnic minorities representation: Non-significant (-1.24)
Górecki and Kukoowicz (2014)	Legislative quota – Minimum 35% of either sex on electoral party lists	Proportion of lower house member and proportion of candidates	<p>Proportion of female candidates: 2007: 23.0% 2011: 43.5%</p> <p>Proportion elected female MPs: 2007: 20.4% 2011: 23.9%</p> <p>Number of seats in the Sejm: 460 Number of candidates: 2007: 6 187 2011: 7 035</p>	
Lee (2015)	<p>Legislative quota – 2000 legislation: 30% quota of women candidates (voluntary) in PR seats</p> <p>2004 legislation: 30% quota of women recommended for SMD seats and 50% quota of women candidates for PR seats (zipper system)</p>	Proportion of lower house members	<p>1996 election: – total legislators: 299 – total no. of women elected: 9 (3%) – women elected with SMD: 2 (0.7%) – women elected with PR: 7 (2.3%)</p> <p>2000 election: – total legislators: 273 – total no. of women elected: 16 (5.9%) – women elected with SMD: 5 (1.8%) – women elected with PR: 11 (4.1%)</p> <p>2004 election: – total legislators: 299 – total no. of women elected: 39 (13%) – women elected with SMD: 10 (3.3%) – women elected with PR: 29 (9.7%)</p> <p>2008 election: – total legislators: 299 – total no. of women elected: 41 (13.7%) – women elected with SMD: 14 (4.7%) – women elected with PR: 27 (9%)</p>	Positive and significant (4.266**)

Study	Intervention	Outcome variable	Key findings	Statistically significant results
O'Brien and Rickne (2016)	Party quota – Zipper system (50%)	Proportion of women candidates occupying the top position on the party list	<p>“Both above- and below-median-sized municipalities experienced a 10% jump in the average proportion of elected women in the year the policy was first applied.”</p> <p>“Women’s access to power has risen steadily since 1988.”</p>	<p>Positive and significant for all post- intervention years (reference = 1991):</p> <ul style="list-style-type: none"> <li>– 1994: 3.82*</li> <li>– 1998: 3.60*</li> <li>– 2002: 5.63***</li> <li>– 2006: 3.54*</li> <li>– 2010: 5.10**</li> </ul>
Oñate (2014)	Legislative quota – At least 40% of either sex in every five positions	Proportion of lower house members	<p>Female MPs in national lower house: 2004: 36.0% 2008: 36.3% Variation: +0.3%</p> <p>Female MPs in subnational legislatures: 2003: 37.0% 2007: 41.5% Variation: +4.5%</p> <p>Total number of MPs: 1564 MPs from 18 legislatures</p>	
Paola, Scoppa and Lombardo (2010)	<p>Legislative quotas:</p> <p>Municipalities under 15 000: Maximum two thirds of either sex on the party list</p> <p>Municipalities over 15 000: Maximum 75% of either sex on the party list</p>	Proportion of lower house members	<p>Gender quota municipalities 1985-1992: 7,6% 1993-1995: 18,4% 1996-2007: 16,2%</p> <p>Non-gender quota municipalities 1985-1992: 6,2% 1996-2007: 13,6%</p> <p>Seats on Municipal Councils range from 12 to 60, with a median of 15 seats</p> <p>“The proportion of women in politics increased by 7 percentage points after 1995, but it increased by 1.4 points more in municipalities directly affected by the reform (statistically significant at the 1% level).”</p>	<p>Positive and significant: 0.081***</p>

Study	Intervention	Outcome variable	Key findings	Statistically significant results
Shin (2014)	<p>Legislative quota – 2000 legislation: 30% quota of women candidates (voluntary) in PR seats</p> <p>2004 legislation: 30% quota of women recommended for SMD seats and 50% quota of women candidates for PR seats (zipper system)</p>	Proportion of lower house members	<p>1988 election: – Total number of legislators: 299 – Total number of elected women: 6 (2%) – SMD: 0 – PR: 6</p> <p>1992: – Total number of legislators: 299 – Total number of elected women: 8 (2.9%) – SMD: 1 – PR: 7</p> <p>1996: – Total number of legislators: 299 – Total number of elected women: 12 (4%) – SMD: 3 – PR: 9</p> <p>2000: – Total number of legislators: 273 – Total number of elected women: 17 (6.2%) – SMD: 6 – PR: 11</p> <p>2004: – Total number of legislators: 299 – Total number of elected women: 39 (13%) – SMD: 10 – PR: 29</p> <p>2008: – Total number of legislators: 299 – Total number of elected women: 41 (13.7%) – SMD: 14 – PR: 27</p>	
Shin...			<p>2012: – Total number of legislators: 300 – Total number of elected women: 47 (15.7%) – SMD: 19 – PR: 28</p>	

Study	Intervention	Outcome variable	Key findings	Statistically significant results
Sineau (2008)	Legislative quota: – National Assembly: 50% of each sex plus or minus 2% (financial penalty if not respected) – Senate: Big departments 50% (zipper), small department (no quota) – Regional: 50% of each sex (zipper) – European: 50% of each sex (zipper) – Municipalities over 3500: 50% of each sex (2001: 3 candidates of each sex on every 6 names on the list) – 2008: Zipper  Municipalities under 3500: no quota – Cantonal: no quota	Proportion of lower and upper house members	National Assembly (577 counties): – 1997: 63 women elected (10.9%) – 2002: 71 (12.3%) – 2007: 107 (18.5%) A progression of 12.8% between 1997 and 2002 as well as a progression of 50.4% between 2002 and 2007. Senate – 1998: 19 (5.9%) – 2001: 35 (10.9%) – 2004: 56 (16.9%) Regional: – 1998: 517 (27.5%) – 2004: 895 (47.6%) European: – 1999: 35 (40.2%) – 2004: 34 (43.5%) Cantonal: – 1998: 175 (8.6%) – 2001: 189 (9.8%) – 2004: 222 (10.9%) – 2008: 264 (13.1%)	
Sineau...			Municipalities under 3500: – 1995: 88 778 (21.0%) – 2001: 118 321 (30.0%) – 2008: (32.2%) Municipalities over 3500 – 1995: 19 198 (25.7%) – 2001: 38 072 (47.5%) – 2008: (48.2%) For the national election (National Assembly), the proportion of female candidates increased from a little less than 25% in 1997 to 38.9% in 2002 and 41.6% in 2007.	

Study	Intervention	Outcome variable	Key findings	Statistically significant results
Verge and Troupel (2011)	<p>Legislative quotas:</p> <p>France:</p> <ul style="list-style-type: none"> <li>– Local: 2000: At least 3 candidates of either sex in every 6 positions on the list (for municipalities of over 3 500 inhabitants)</li> <li>2007: Zipper</li> <li>– Regional: 2007: Zipper</li> <li>– National Assembly: 50% of candidates of each sex</li> <li>– Senate: Every party presents three-candidates lists which must include at least one woman</li> <li>– European: Zipper</li> </ul>	<p>Proportion of lower and upper house member (as well as executive member in France)</p>	<p>For each election, two results are presented before the election, and two after</p> <p>France:</p> <ul style="list-style-type: none"> <li>– Local: 1989-22%, 1995-26%, 2001-47.3%, 2008-48.5%</li> <li>– Regional: 1992-12%, 1998-27.5%, 2004-47.6%, 2010-48%</li> <li>– Cantonal: 2001-9.8%, 2004-10.9%, 2008-13.1%, 2011-13.8%</li> <li>– National Assembly: 1993-6.1%, 1997-10.9%, 2002-12.3%, 2007-18.5%</li> <li>– Senate: 1995-5.6%, 1998-5.6%, 2001-10.6%, 2004-16.9%, (2008-21.9%)</li> <li>European: 1994-29.9%, 1999-40.2%, 2004-43.6%, 2009-44.4%</li> <li>Executive: Before the 2007 law: "almost a third of cabinet positions in town councils and regional assemblies"</li> <li>After 2007: "47.6 per cent of regional councillors and 35 per cent of local councillors with government responsibilities"</li> </ul>	
Verge and Troupel...	<p>Executive: Parity</p> <p>Electoral rule: Cantonal: The substitute must be of opposite sex</p> <p>Spain:</p> <ul style="list-style-type: none"> <li>– Local: 40% to 60% for either sex in each stretch of five candidates Towns with over 5 000 inhabitants (2007) and over 3 000 (from 2011 onwards)</li> <li>– Regional: 40% to 60% for either sex in each stretch of five candidates. Some regions use zip lists or 50% for either sex</li> <li>– Congress of deputies: 40% to 60% for either sex in each stretch of five candidates</li> <li>– Senate: Two men and one woman, or two women and one man</li> <li>– European: 40% to 60% for either sex in each stretch of five candidates</li> </ul>		<p>Spain: Two results are presented before the intervention and one after</p> <ul style="list-style-type: none"> <li>– Local: 1999-21%, 2003-25.6%, 2007-31%</li> <li>– Regional: 1999-29.5%, 2003-35.6%, 2007-42.8% (2011-41.1%)</li> <li>– Congress of deputies: 2000-28.3%, 2004-36%, 2008-36.3%</li> <li>– Senate: 2000-23%, 2004-25.1%, 2008-30.5%</li> <li>– Europe: 1999-33.3%, 2004-33.3%, 2009-36%</li> </ul>	

