

RESEARCH ARTICLE	The Conceptual Grounding of Electoral Engineering	
Kamel Belacel	Department of Political Science, University of Oum El Bouaghi Algeria Email: kamel.belacel@univ-oeb.dz	
Badreddine Laifaoui	Mohamed Boudiaf University of M'sila Algeria Email: boudersa.nassira@ensc.dz	
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Abstract	<p>This article explores the concept of engineering as an emerging analytical tool in the field of political science. It traces its transition from its original domain in management—where it was used to redesign administrative processes—to the political realm, where it now serves as a new approach aimed at renewing political concepts and keeping pace with contemporary transformations. The article specifically focuses on electoral engineering as one of the most prominent applications of this concept, highlighting its role in designing electoral systems that respond to the specificities of societies and fulfill standards of transparency, integrity, effectiveness, and the representation of popular will. It also examines sub-concepts derived from democratic engineering, such as participatory democracy, democratic quality, and local democracy, illustrating how these notions contribute to enhancing the legitimacy of the political system by establishing electoral frameworks that support the peaceful transfer of power and uphold the values of participation and legitimacy. The article draws on the contributions of several thinkers—including Max Weber, Robert Dahl, David Beetham, and Karl Deutsch—to underscore the central role of elections in establishing democratic systems. Accordingly, the article seeks to establish electoral engineering as a strategic tool for advancing democratic practice, tailored to the political and cultural contexts of each country.</p>	
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Introduction

In recent decades, political science has witnessed a growing openness to concepts borrowed from other fields of knowledge, particularly from the domains of management and organizational studies, in an effort to renew analytical tools and keep pace with the complexities of a rapidly evolving political reality. Among these imported concepts, the notion of *political engineering* stands out as an analytical tool aimed at redesigning political systems and institutions according to the principles of efficiency and effectiveness. This concept has taken on multiple dimensions, the most prominent of which is *electoral engineering*, which seeks to construct electoral frameworks that reflect the specificities of societies and fulfill the requirements of democratic representation and political legitimacy.

The central issue addressed by this article revolves around the question of how effective electoral engineering is as a modern approach for consolidating democracy and reinforcing the legitimacy of political systems, particularly in

light of the political and social transformations shaping contemporary societies. This raises the question of whether this tool is capable of overcoming the crises of political representation and achieving a balance between the need for stability on the one hand, and the demands for popular participation and electoral justice on the other, within contexts characterized by pluralism and continuous change.

The two main hypotheses put forward in this article suggest that electoral engineering is a strategic and effective tool that can contribute to improving the quality of democratic practice, by designing electoral systems that are compatible with the political and cultural specificities of each country. However, the success of this tool in achieving its reformatory objectives remains contingent upon the presence of genuine political will, as well as the existence of an institutional framework that ensures transparency, integrity, and strengthens trust in the electoral process as a whole.

1- The Concept of Electoral Engineering

The notion of "engineering" may seem foreign to the field of political science, yet it has been employed by many researchers to denote creativity and innovation in the political domain.

It has been widely used in studies related to the concept of democracy (*l'ingénierie démocratique*), which provides the foundational pillars for discussing the subject of democratic renewal or innovation. This concept—**democratic engineering**—relies, as both a theoretical and practical approach to democratic action, on key ideas such as the concept of participation, from which *participatory democracy* emerged, as well as concepts like *democratic auditing*, *democratic quality*, and *local democracy*. (Mohamed, November 23-24, 2005, p. 17)

However, the term "engineering" was initially associated with developments in administrative thought and was applied at the level of administrative organizations as a mechanism known as **business process reengineering**. This refers to the radical and rapid redesign of administrative and strategic processes, along with supporting policies and organizational structures, with the aim of maximizing workflow efficiency and dramatically increasing productivity. (Jamal Eddine, 2003, p. 69)

It was employed in the field of administration and adopted by contemporary organizations as a new approach aimed at achieving goal-oriented requirements and performance efficiency. In this manner, it transitioned into the field of political science, where the concept of reengineering gave new momentum to many political concepts, especially those related to political transformations.

The concept of **electoral engineering** (*l'ingénierie électorale*) is capable of offering initial insights into the new transformations concerning electoral renewal or innovation.

The purpose of electoral engineering is to take into account the specific characteristics of each society and each democratic process in order to provide well-grounded and in-depth solutions during electoral practice. (Bouhenia, 2011, p. 322)

Electoral engineering also refers to the formulation of rules, frameworks, and mechanisms capable of ensuring citizens' periodic political participation under conditions of integrity, freedom, pluralism, and regularity—that is, providing the essential conditions for election transparency at the organizational, procedural, managerial, operational, and even informational levels.

According to **Robert Dahl**, elections represent the procedural and democratic dimension. For **Max Weber**, they constitute a source of legitimacy. According to **David Beetham**, elections provide the initial legitimacy of the political system. As for **Karl Deutsch**, he considers elections to be a periodic communicative process between society and the political system.

Elections also embody the fundamental dimensions of political participation—provided that the essential conditions for their effectiveness and efficiency are met. These include the existence of genuine political and civil pluralism, an

active and independent media, as well as representative and effective structures and institutional quality.

Hence, elections can only be understood by placing them within the **functional and structural perspective of the state** (whether monarchy, republic, etc.) and by linking them to the nature of the political system.

Electoral engineering refers to the formulation of frameworks and mechanisms capable of ensuring citizens' periodic political participation under conditions of integrity, freedom, and regularity—in other words, providing the necessary conditions for the transparency and credibility of elections at the organizational, financial, procedural, and informational levels. Electoral processes are fundamentally based on the fulfillment of a set of conditions, including:

- The **independence of the judiciary** and its capacity to ensure control and enforce the law equally on all.
 - The **need to take into account the prevailing political culture** in society from the perspective of participatory democracy standards.
 - The **existence of political parties** that embody participatory democracy.
 - **Consideration of the nature and composition of society** (pluralistic, homogeneous) in constructing the electoral system (e.g., the division of electoral districts, the type of voting—direct or indirect, etc.).
 - The presence of a **clear human rights framework** based on respect for the citizen as a fundamental source of political action.
 - **Consideration of population density and distribution**, and the **geographical expanse** of the state.
 - The **status of the legislative authority** within the existing political system.
- In addition to the aforementioned conditions, there are other important requirements that have a tangible impact on the nature of the political system and serve as tools to ensure the true purpose of elections:
- The presence of a **legal framework** that defines, enables, or restricts citizens' right to run for office, clarifies the type of electoral system in use, and explains how electoral districts are divided and on what basis.
 - The **necessity of administrative neutrality** in the electoral process, where its role remains technical—such as registering or removing citizens from electoral lists, providing suitable conditions, and mobilizing material and financial resources—without favoring any party over another in order to ensure the success of the electoral process.
 - **Media pluralism**, which upholds freedom of expression and thought in the service of the public interest.

From this, it becomes clear that **electoral engineering**, in its broad sense, is one of the operational dimensions of **political engineering**. The design and structuring of electoral systems must align with the circumstances of each country (the particularities of each society), in a way that ensures **social justice, freedom of choice and representation, and the expression of opinion** through the effectiveness and impact of the electoral vote. (Robert A, p. 233)

It is a well-established principle in major democracies that **electoral laws must be (Robert A) compatible with human rights**. If a democratic country adopts an electoral system that does not meet its needs, it must replace it. The electoral system can be **tailored** to fit a country's unique characteristics—its history, traditions, and culture. Before deciding to adopt a new electoral system or to retain the current one, the country must thoroughly study all alternatives, with the assistance of qualified experts in the field of electoral systems.

Electoral systems are considered the fundamental mechanism that translates what occurs in the political process into tangible gains through the programs on which both candidates and parties win. Therefore, when designing an electoral system, it is essential to ensure that it allows for **genuine representation** in elected bodies and avoids exclusionary policies, while accepting all key actors in society. The ultimate goal of electoral design and engineering is to achieve **constructive and effective participation** from all voters, thereby fulfilling one of the most important pillars of democracy and reinforcing the credibility of institutional structures.

Elections form the foundation of the democratic model for **appointing or removing rulers**. They are the cornerstone of liberal democracies, where **all authority must be grounded in elections**, and these elections must be held at regular and reasonably close intervals, so that rulers do not feel detached from the ruled.

Popular Representation and Elections: Elections are considered a tool for representing the people in choosing their representatives and leaders. This process is fraught with many difficulties related to its management, integrity, and transparency, as it is one of the most important pillars and components studied in electoral systems. Therefore, it is essential to understand the nature and details of this concept before delving into other specifics, by first clarifying the meaning of elections and electoral engineering. Linguistically, the meaning of elections is **selection and choosing**, from which comes the concept of the **elite**—a group that selects from among men and extracts from them.(Ibn & Jamal Muhammad, p. 649)

The technical meaning of elections refers to the act of citizens—the **voters**—selecting some among themselves, provided that they are competent to manage purely political and administrative bodies, through the process of voting.(Al-Qarram, 1998, p. 276) The term **election** generally corresponds to **voting** or **balloting**, which means the act of casting a vote in elections with the aim of expressing an opinion on a presented issue, and the necessity of obtaining a certain number of votes to make a decision.

By which citizens legally select the individuals entrusted with the tasks of exercising sovereignty or governance on their behalf, whether at the political level (such as legislative or presidential elections), at the administrative level (such as municipal or provincial council elections), or within various social institutions.

The majority of constitutional law scholars view elections as a means for the **peaceful transfer of power** and the embodiment of the right to participate in political life. They also

consider elections the **fundamental mechanism for legitimizing authority** in contemporary democratic systems on one hand, and for enabling individuals in society to exercise their right to political participation on the other.(Abd Al-Ghani Basyuni, 1990, p. 212)

Current electoral systems also carry many foundations and principles that have emerged from the development of human societies as a result of numerous political, social, cultural, and religious dynamics. The actual emergence of the principles underlying electoral systems (such as equality, fairness, freedom, etc.) dates back to the Greek era, when human gatherings first recognized the fundamental principles of politics. It was possible then to gather all free citizens on the hill of "Pnyx" to discuss matters concerning their everyday lives.

Elections did not initially arise in the form they exist today; rather, the concept developed during the seventeenth century, stemming from the English word "to vote," which is derived from the Latin root *votum*. This term expresses a religious meaning related to a wish or pledge made to the gods or the Lord, implying a commitment toward a person or a cause.

Another concept was adopted for the meaning of expressing opinion and putting it forward for discussion and this right was initially restricted to a minority in society, namely the nobles and the wealthy. It later evolved into its current form, where conditions and restrictions on the right to vote were removed, and voting became the sole act that legitimizes representative democracy in political systems.

From this perspective, elections became one of the most important scientific subjects in the fields of political science and law. While initially part of constitutional law, it later became an independent branch of public law known as **electoral law**.

Elections have also become a turning point in the transformations of many political systems that have shifted from one system to another (such as Algeria's transition from a one-party system to pluralism).In studies related to the electoral field, many concepts with precise meanings are often used interchangeably or inaccurately. These concepts include the **electoral regime**, **electoral systems**, and **electoral laws**. Confusion usually arises between the concepts of electoral systems and electoral regime.

From this standpoint, it was necessary to delve into this topic by defining its concepts. **Electoral law** is the set of legislative texts that regulate elections in any given country at a specific time. These legislative and regulatory texts simultaneously include electoral systems and an electoral system.

The **electoral system**, in its simplest definition, is the set of mathematical techniques that shape and organize representativeness in elected councils. It is the mechanism that allows for the counting of votes and their allocation to seats in these councils.

Here, we find two major foundations: the **majority system** and the **proportional system** or the **mixed system**.

The **electoral system** is the set of legal rules and procedures that govern the various stages of the electoral process, starting from registration on the voter lists, the preparation for the electoral process through the mobilization of material

and human resources, the announcement of results, and the examination of appeals.

Most constitutional law scholars have defined electoral systems with a focus on them being tools for the peaceful transfer of power. They also state that elections are the essential and sole means of conferring authority in contemporary democratic systems on one hand, and on the other hand, a means for individuals in society to participate in political life.(Al-Amin, 2002, p. 212)

Therefore, it is a mechanism followed to express popular governance through elections. These systems are necessary for sorting and determining the elected representatives. Thus, electoral systems differ from the right to vote, as the right to vote and its regulation is a stage preceding the electoral systems. These systems are a practical necessity based on specific technical methods characterized by complexity.(Souad & Abdullah, 1994, p. 79)

In this way, they are mechanisms used to convert the votes of the electorate into corresponding seats in elected bodies by following certain mathematical methods, influenced by the social, economic, and political context of the country. However, there is no ideal electoral system that fits all political systems or societies, nor is there a universal ideal standard for an electoral system at the global level.

2-Types of electoral systems:

2-1 Direct elections and indirect elections: An election is direct when voters choose members of representative bodies directly without an intermediary, and the election occurs in a single round (one stage). As for indirect elections, they take place in two or more stages, where the role of voters is limited to electing representatives (delegates) who then choose the members of parliament from among the candidates. Therefore, the criterion distinguishing direct from indirect elections lies in this process of choosing representatives (directly / indirectly). It is noted that this system (direct elections) is considered more compatible and harmonious with democratic systems, as Saeed Boush'ir, an expert in constitutional law, states. By reforming it, the freedom of voters to choose their representatives—deputies—is guaranteed, because it is difficult to influence the electorate due to their large numbers. It should be emphasized that the purpose of following this system is to ensure that voters possess a sufficient level of political understanding and culture, enabling them to select their representatives in authority.

-Indirect elections: These are elections in which the voters delegate representatives to elect their representatives, where the delegates in turn choose the candidates. This system was applied by France in all its constitutions until 1814, as well as by the United States in presidential elections. The President of Germany is also elected in a similar manner through the Federal Convention convened for this purpose.

2-2 Single-member (Nominal) Voting, Voting in the Hall:

This type of election is based on individuals or a specific person to be elected in each electoral district. The single-member voting system means that voters in a specific electoral district vote for one person to represent them in parliament. The country is divided into a number of electoral districts, with one representative elected from each district. Therefore, each voter casts only one vote for a

single candidate among the competing political parties or independents in the district. This is why it is called single-member voting. (Mohamed & Mohamed, 1988, p. 198)This system is characterized by simplicity and ease of procedures, due to voters' familiarity with their representatives. It also offers an opportunity for small parties or independents to win parliamentary seats in certain electoral districts. What is considered a drawback of this system is that it is a system for electing individuals rather than programs. As "Raymond Poincaré" (correction: the user's text says "Radoard Herriot," referring to Édouard Herriot, former French Prime Minister) put it, the single-member election system is like electing gladiators. The single-member system focuses on practical issues and often neglects major national issues and broad public policies. The country is divided into relatively small electoral districts, each represented by one deputy elected by its residents. Thus, a voter casts their vote for only one candidate, regardless of how many candidates there are.

2-3 List-based electoral system: In this system, the country is divided into large electoral districts, where each voter submits a list of names of the candidates they wish to elect. The list-based electoral system comes in various forms, such as closed lists, closed lists with preferential voting, and mixed lists.(Fawzi O, 1994, p. 32)

3- Elections and Political Engineering Elections are considered the legal organization of the principle of legitimacy in exercising authority in the name of the people. They allow a voter to support or reject a policy while simultaneously choosing a team of deputies tasked with implementing a specific policy and adopting the candidates' programs.

One of the most prominent recent concepts in political science, especially with the emergence of globalization and the phenomenon of global public politics, is political engineering. This concept refers to the generalization of political institutions in society and often involves the use of official decrees in the form of laws, referendums, decrees, or others in an attempt to achieve some desired influence.

The standards and constraints used in this design vary according to the methods of improvement applied. The changing balance of political forces within the state and the diminishing role of these forces in deciding the state's fate is a strong factor pushing towards adopting advanced political mechanisms and building institutions compatible with public policies.(Naima, 18/04/2014) Although studies have not yet provided a clear definition of this relatively new concept, it refers to the practical and systematic methods through which society changes via its institutions, laws, and political processes in order to design political behavior in the state, build institutions, and shape the political geography.

Political engineering, in its meaning, is the reshaping or redesign of old and traditional institutions and mechanisms to align with the requirements of the era and the necessities of life. It aims to enable the citizen to fully enjoy their rights, which is achieved through studying and analyzing the existing processes, institutions, mechanisms, prevailing laws, and models used in society, while attempting to understand all their components.(Naima, 18/04/2014)

Political engineering is linked to two concepts that cannot exist except in their presence, as it is based on the citizen

and what they do, as well as their rights and participation. The achievement of human dignity and the satisfaction of basic needs are considered among the main goals; therefore, political engineering seeks to establish institutions and mechanisms that ensure the individual's fulfillment of citizenship. At the pinnacle of these rights is political participation, or participatory democracy, which implies the existence of active and strong popular involvement through the redistribution of power and authority within society. This also enables the people to play an effective role in shaping public policy. Participation plays a fundamental role in political stability, which is an important indicator for the success of political engineering. Moreover, it is closely linked to human rights. (Ibrahim Khidr, 2006, p. 179)

3-1 Pillars of Political Engineering

Participatory Democracy: It is defined as the participation of citizens in policy decisions that directly affect their lives, instead of relying entirely on elected members for these matters. Therefore, this participation by citizens is characterized by direct and active interaction. It takes place within small communities where opportunities for communication among the masses are greater. There are three types of methods that can be identified as follows:

A- Periodic Participation: This refers to the existence of regular, "periodic" elections resulting from the presence of party pluralism. These elections are conducted in an atmosphere of transparency, integrity, and freedom because elections effectively contribute to the sharing of power among national groups and actors in society and serve as a means of power rotation. Therefore, we must say that electoral engineering is the essence of political engineering, as it touches on various fields related to political participation and the legitimacy expressed through the rotation of power. Political engineering aims to activate this by developing an electoral system that reflects the popular will. The effectiveness of the political system fundamentally depends on the effectiveness of the electoral system, which in turn depends on political culture in general and on the culture of electoral behavior—that is, the existence of a representative culture within elected parliamentary institutions characterized by competence and quality in performance.

B- Representative Participation: Political engineering requires the existence of parliaments and bodies characterized by effectiveness, transparency, democracy, and the rule of law, capable of coordinating the demands of electoral districts and formulating solutions to problems. This leads to effective public policies and allows for participation in the making of public policies that citizens aspire to. (Maamarim

& Rabah, January 2012, p. 63) Political engineering activates the role of Representative institutions through two main axes:

- * Strengthening the intellectual organizational structure of these institutions and their independence from authority institutions, enabling them to participate politically.

- * Creating effective information systems that increase the capacity, efficiency, and crystallization of interests and transform them into public policies.

C- Permanent participation: The existence of political life is activated by parties that work to spread their ideas and programs and present issues that concern society. This participation consolidates the activation of intermediary institutions (parties, civil society, etc.). They seek to establish a pluralistic party structure that organizes democratic life, alternation of power, contributes to spreading awareness, and creates public opinion. Political engineering activates these intermediary bodies, making them capable of raising awareness and performing their true function in aggregating interests and transmitting them. Political engineering cannot function in the absence of human rights and participatory democracy, as it is fundamentally based on enabling citizens to contribute to shaping public policies. (Marcel, 2007, p. 92)

Participatory democracy is considered a catalyst for the transition from practicing sovereignty as the expression of the unified will of citizens to focusing on individual rights.

Some thinkers present participatory democracy in its simplest form, relying on the broad participation of citizens in directing and managing the political system. It is also the right of citizens in democratic systems to participate, as it is the duty of citizens to take part in decision-making by their representatives, which directly relates to citizens' lives.

Conclusion

It can be said that the concept of electoral engineering is one of the most prominent contemporary reform approaches that seeks to reorganize the political landscape and ensure fair representation reflecting pluralism within societies. However, the effectiveness of this approach remains contingent upon its adaptation to local political and cultural contexts, and on achieving a balance between the requirements of political stability and the demands of democracy. Electoral engineering is not merely a set of technical tools for delimiting constituencies or amending laws; rather, it is a complex political process that requires genuine reformist will and an institutional environment that guarantees transparency, justice, and the genuine participation of citizens.

References

1. Abd Al-Ghani Basyuni, A. (1990). *Electoral Systems in Egypt and the World* Dar Al-Ma'ref Establishment Alexandria.
2. Al-Amin, S. (2002). *A Concise Guide to Constitutional Law and Algerian Institutions*. University Press Office.
3. Al-Qarram, I. (1998). *Legal Terminology in Algerian Legislation in Arabic and French*. Qasr Al-Kitab.
4. Bouhenia, K. (2011). *Elections and Democratic Transition in Contemporary Arab Experience*. Dar Al-Raya for Publishing and Distribution.
5. Fawzi O, S. (1994). *Al-Wafi in Explaining Constitutional Law* (Vol. 3). University Press Office.

6. Ibn, M., & Jamal Muhammad, i. M. A.-A. *Lisan al-Arab* (Vol. Vol. 2). Al-Dar Al-Masriya for Authorship and Translation.
7. Ibrahim Khidr, L. (2006). *Democracy Between Truth and Illusion*. Alam Al-Kutub for Publishing.
8. Jamal Eddine, M. (2003). *Strategic Human Resource Management*. Al-Dar Al-Jamia'iya.
9. Maamarim, M., & Rabah, L. (January 2012). *Effective Electoral Engineering: A Real Approach to Parliamentary Development* (Vol. 6). Policy and Law Notebooks.
10. Marcel, G. (2007). *Religion in Democracy: The Practice of Secularization, translated by Shafiq Mohsen*. Arab Organization for Translation.
11. Mohamed, F., & Mohamed, A. (1988). *Systems and Procedures for Electing Members and Local Councils in Light of Judiciary and Jurisprudence: An Original Applied Study in Egypt and the Maghreb Countries* Cairo: Dar Al-Nahda Al-Arabiya.
12. Mohamed, J. (November 23-24, 2005). *"Innovating Democracy: Preliminary Notes on the Concept of Democratic Engineering," in the International Scientific Forum on Emerging Democracies: Causes of Setbacks and the Need for Reform* University of Ouargla]. Algeria.
13. Naima, B. D. (18/04/2014). *Political Engineering in Achieving Democracy and Activating Governance*, . Al-Rashed. <http://platform.almanhal.com>.
14. Robert A, D. *On Democracy, translated by Saeed Muhammad Al-Husniya* Al-Matbouat Publishing and Distribution Company).
15. Souad, A.-S., & Abdullah, N. (1994). *Electoral Systems in the World and in Egypt* (2nd ed ed.). Cairo: Dar Al-Nahda Al-Arabiya.