

How to measure polyarchy with Freedom House: a proposal for revision

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Abstract In studies on democracy and democratization, the Freedom House Index (FHI) is frequently used to measure the concept of polyarchy. This approach creates an often noticed discrepancy between the conceptual and measurement levels. The concept of polyarchy is regarded as a minimalist definition of democracy, which mainly refers to the procedural aspects of political systems, while FHI indicates a maximalist definition of democracy. This article presents a proposal to improve the conceptual validity when FHI is used to measure the concept of polyarchy. The proposal suggests that the FHI is adjusted in two aspects. First, some sub-categories within the FHI are excluded based on their lack of relevance for the concept of polyarchy. Second, the principle of aggregation is changed from simple arithmetic addition to multiplication, which corresponds to the idea that all democratic institutions, according to the concept of polyarchy, are necessary for the democratic system. These two suggestions create a revisited index that is based on the FHI. As illustrated with empirical analyses, the revisited index provides a quite different view of democratization at the global and state levels.

Keywords Polyarchy · Freedom House · Comparative methods · Index of democracy · Index of democratization · Robert Dahl

1 Introduction

Since the beginning of the 1970s, the concept of polyarchy has been at the heart of empirical studies on democracy and democratization. A reason for this is that the concept is regarded as well developed with a high level of analytical precision, which can guide the measurement of democratic systems and empirical analyses (Munck 2011). Dahl (1957, 1971, 1989, 1998; Dahl and Lindblom 1953) has, during more than a half of a century, developed the concept of polyarchy to refer to the historical outcome of attempts to democratize the political

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institutions of nation-states. The concept identifies a set of political institutions that are regarded as necessary for democratic processes in modern societies. One challenge for studies that use the concept of polyarchy is to measure the institutions of polyarchy. In comparative studies, the Freedom House Index (FHI) is frequently employed to measure the occurrence of democratic institutions. FHI is also one of the most widely applied indices in comparative research on political regimes and democratization. Together with other indices, such as Polity and Vanhanen, FHI has become standard in the research field (Gastil 1990; Marshall and Jaggers 2009; Vanhanen 1997, 2000). The increased use of these indices has contributed significantly to the measuring of political regimes and the ability to analyze their causes. Our knowledge about and understanding of the conditions for democratic systems and democratizations is largely based on the use of indices such as FHI.

However, studies that use FHI to measure polyarchy create a discrepancy between the conceptual and measurement levels. On one hand, the concept of polyarchy is regarded as a minimalist definition of a democratic system. Dahl (1971, 1989, 1998) adopts a procedural conception of a democracy system, which is about some institutional aspects of political processes, but not their substantive outcomes. More extensive definitions also include attributes that are related to other institutional aspects (e.g., rule of law) or political outcomes (e.g., social welfare). On the other hand, the FHI is viewed as maximalist measurement of a democratic system. This means that the FHI measures attributes that are more related to other concepts than the procedural conceptions of a democracy system (Munck 2009; Munck and Verkuilen 2002). When the FHI is used to measure polyarchy, the concept validity, therefore, fades because the conceptual and measurement levels are not in harmony with each other. As a maximalist measurement of a democratic system, the FHI indicates more attributes than the concept of polyarchy (Munck 2009, pp. 131–132).

This article will discuss how the conceptual validity can be improved when the concept of polyarchy is measured with the FHI. More specifically, this article presents a proposal on how the use of the FHI to measure polyarchy may be improved in two aspects: The first concerns the inclusion of indicators (measurement), whereas the second focuses on the structure of the index (aggregation). These improvements attempt to adjust the FHI to the concept of polyarchy. The inclusion of indicators and principle of aggregation are two central aspects that create conceptual validity, which refers to the extent to which the proposed measurements actually measure what they are supposed to measure according to the concept (Gerring 2007; King et al. 1994; Munck 2009).

The proposal is based on three assumptions. The first assumption is that the selection of indicators and design of the measurements are based on the concept that they aim to measure. An alternative is to base the conceptualization on indicators. The second assumption is that polyarchy is used as the conceptual base for empirical analyses. In theoretical discussions and empirical studies, there are a myriad of alternative concepts of democratic systems. This article does not claim that the concept of polyarchy is the only alternative or the best analytical concept of democratic systems. The third assumption is that the FHI is used to measure polyarchy. There are alternative indices to measure political regimes and there problems with the FHI. This article does not argue that the FHI is the most suitable index for measuring polyarchy (democratic system) or ignoring the methodological shortages with the FHI. What this article presents is a proposal that hopefully strengthens the validity of the studies that chose to use the FHI to measure the concept of polyarchy.

The continuation of this article consists of seven sections. The first section presents the concept of polyarchy. The way in which the FHI is constructed is presented in the second section. Criticisms of the index are discussed in the third section. The fourth and fifth sections present two proposals on how the measurement of polyarchy with the FHI can be improved.

The consequences of these proposals are subsequently discussed and illustrated in the sixth section. The last section discusses the remaining deficiencies and suggests how the efforts to improve comparative indices may continue in the future.

2 The concept of polyarchy

For most researcher, scholars, and students in political science, the concept of polyarchy is well-known. Robert Dahl and Charles Lindblom introduced the term of polyarchy. In *Politics, Economics & Welfare* (1953), polyarchy was presented as sociopolitical processes that “embrace the major possibilities for rational control” and where “non-leaders control leaders” (Dahl and Lindblom 1953, pp. 22–23). The term ‘polyarchy’ was derived from Greeks and combine the words for “many” and “ruled,” which give the term the meaning “rules by many” (Dahl 1998, p. 90). Dahl and Lindblom did not invent the term, but it was rarely used and not applied in the field of political science. The intention with the concept was to make an analytical distinction between democratic ideals (democracy) and democratic systems (polyarchy), which are institutional arrangements that are an imperfect application of the ideal (Dahl 1971, p. 9). Even if Dahl returned later to the concept of polyarchy in *A Preface to Democratic Theory* (1957), he continued to struggle with the concept until he reached a formulation in *Polyarchy* (1971) that has remained quite unchanged in later work. In this book, he formulates the concept in terms of institutions that combines a high degree of political contestation with political participation (inclusion).

According to Dahl (1989, 1998), polyarchy can be viewed from different perspectives. First, polyarchy may be seen as the historical outcome of efforts to democratize the political institutions of nation-states. By this definition, polyarchy is a historically conditioned set of institutions that result from attempts to adapt democratic ideals. Second, polyarchy may also be regarded as a distinctive political regime different from non-democratic regimes or small-scale democracies. The institutional combination of political contestation and political inclusion is characterizing polyarchy as a political regime. Third, polyarchy is viewed as a set of political institutions that are necessary to fulfill five criteria for democratic processes: voting equality, effective participation, enlightened understanding, citizen control of the agenda, and inclusion (Dahl 1989, pp. 108–114, 129–131). Dahl developed the concept of polyarchy to further specify the distinction between democracy as an ideal system and the institutional arrangements that are regarded as an imperfect approximation of an ideal, but also to identify the most basic requirements for democracy at a national level (Dahl 1989, pp. 220–222). Later, Dahl stipulated that the concept of polyarchy refers to a “modern type of large-scale democratic government” (Dahl 1998, p. 90). As a set of political institutions necessary for large-scale democracy, polyarchy is, according to Dahl in one of his latest books, characterized by six institutions (Dahl 1998, pp. 85–86):

- Elected officials: Control over government decisions is constitutionally vested in officials elected by citizens, which means that the government is representative.
- Free, fair, and frequent elections: Elected officials are chosen in frequent and fairly conducted elections in which coercion is comparatively uncommon.
- Freedom of expression: Citizens have the right to express themselves on political matters without facing the danger of severe punishment.
- Alternative information: Citizens have the right to seek alternative and independent sources of information, which are legally protected and not under political control.

- Associational autonomy: Citizens have the right to form relatively independent associations or organizations in order to exercise their rights.
- Inclusive citizenship: No adult who permanently resides in the state and is subject to its laws can be denied the rights that are available to others and necessary to the other political institutions.

The challenge when the concept of polyarchy is used in empirical studies is to design and develop measurements that indicate the occurrences of these political institutions. Several attempts to measure polyarchy have been presented. One of the first was published in *Polyarchy* (1971). With two colleges, Dahl presented a classification of 114 countries according to the eligibility to participate in elections and the degree of opportunity for public contestation. The classification was based on indicators and materials from a comparative database. A later attempt to measure polyarchy was presented by Coppedge and Reinicke (1990). They developed a scale based on the concept of polyarchy that includes variables about the existence of free and fair elections, freedom of expression, freedom of organization, and alternative sources of information. These variables are combined to measure the degree of public contestation and extent of suffrage. As all authors are aware, neither of these or other attempts offers a perfect measurement of polyarchy. Additionally, the coverage in time (years) and space (countries) by the measurements is limited. For example, the measurement developed by Dahl (1971, p. 231) covers only one year and not all states in that year. However, studies do occasionally use an index that is specifically designed to measure polyarchy. Instead, indexes that are originally developed for measuring other concepts are used. One of these indices is the FHI.

3 The construction of the Freedom House Index

In 1973, Freedom House published its first global study of freedom. At first these studies were published as articles, but later the organization issued extensive reports that presented global overviews and country reports. Since 1978, the annual report *Freedom in the World* has become the best-known Freedom House's publications. In these reports, the organization presents an annual survey of political rights and civil liberties in the world (Gastil 1990). The aim of the *Freedom in the World* is to provide an annual evaluation of the state of freedom as experienced by individuals.¹ The concept of freedom is defined as the opportunity to act spontaneously in a variety of fields outside the control of the government or other centers of potential domination. This concept is then divided into two dimensions: political rights and civil liberties. The work to measure these dimensions of freedom starts with the collection of information about social and political situations in states. A team of internal and external experts is responsible for the process of gathering evidence and information for all states and selected territories. Based on the collected material, a report is prepared for each state and territory. These reports briefly describe the situation in each society. With these reports as a foundation, the group of experts assesses the situation in the societies with the help of a checklist. This checklist consists of 10 questions on political freedoms, and 15 questions on civil rights. The questions are answered by the expert group, which designates a value between 0 and 4 in accordance with the degree of freedom the group finds in the examined society. A society with a complete lack of freedom receives a value of 0, while a society that displays complete freedom is assigned the value of 4 (Freedom House 2011).

¹ The presentation of FHI is based on documents that are also available on www.freedomhouse.se.

Table 1 Sub-categories in FHI

Sub-categories	Index	
	Political rights	Civil liberties
Electoral process (A)	X	
Political pluralism and participation (B)	X	
Functioning of government (C)	X	
Freedom of expression and belief (D)		X
Associational and organizational rights (E)		X
Rule of law (F)		X
Personal autonomy and individual rights (G)		X

The 25 questions are divided into seven sub-categories (see Appendix A for details): (a) electoral process, (b) political pluralism and participation, (c) functioning of government, (d) freedom of expression and belief, (e) associational and organizational rights, (f) rule of law, and (g) personal autonomy and individual rights. Four of the sub-categories include four questions, while three of the subcategories consist of three questions. Consequently, when the values of the questions are summarized for each group, they may vary between 0 and 12 or 0 and 16, depending on the number of questions in the group (Freedom House 2011).

In the next step, the seven sub-categories are divided into two categories, which are illustrated in Table 1. One category concerns political freedom and consists of three sub-categories: electoral process (A), political pluralism and participation (B), and functioning of government (C). The other category includes four sub-categories about civil liberties: freedom of expression and belief (D), associational and organizational rights (E), rule of law (F), and personal autonomy and individual rights (G). To arrive at a value of political freedom and civil liberties in societies, the values for the sub-categories are summed up. For the category of political freedom, the value can range between 0 and 45, while the value for the category of civil rights can vary between 0 and 60. In order to compare the two categories, the values of the categories are transformed into a seven-point scale, where 1 indicates the highest and 7 the lowest level of freedom. In the last phase, an average value of the two transformed scales is calculated. This calculated mean value, which can vary from 1 to 7, forms the basis for the classification of states into three groups: Free states (1.0–2.5), partly free states (3.0–5.0), and not free states (5.5–7.0). This way of assessing and classifying the states means that there are internal variations within the levels of freedom (Freedom House 2011).

In addition to the categorization of states, Freedom House provides materials on states' values on the two indices (i.e., political freedom and civil liberties) and, since 2006, their values in the seven sub-categories. The organization also publishes short descriptions of the conditions in each state, together with global and regional statistics based on the index (Freedom House 2011). Access to this material makes it practically possible to improve the use of the FHI to measure the concept of polyarchy, but there are also limitations. For example, information about the questions that constitute the sub-categories and considerations in the coding of states is not available.

4 Criticism of FHI

The structure of the FHI has been criticized from different perspectives. For example, some studies have claimed that the FHI has ideological biases. The structures and development

of the FHI have been criticized to favor conservative values (Scoble and Wiseberg 1981), pro-market institutions (Bollen 1986), Western-countries (Bollen and Paxton 2000), anti-left ideology (Mainwaring et al. 2001) and neo-liberal values (Giannone 2010). However, most criticism has been related to conceptual and methodological aspects of the structure (Armstrong 2011; Bollen 1991; Coppedge 2005; Coppedge et al. 2011; Foweraker and Krzmaric 2000; Hadenius and Teorell 2005; Hoyland et al. 2012; Munck 2009; Munck and Verkuilen 2002). The nature of the criticism varies depending on the criteria that are used to evaluate the index, but the most prominent and developed criticism focuses on three general aspects: conceptualization, measurement, and aggregation (Munck 2009; Munck and Verkuilen 2002).

The challenge of *conceptualization* concerns defining and specifying what attributes a concept is intended to refer to in a way that gives the concept a clear meaning. The criticism of the conceptualization of the FHI has targeted the conceptual basis for the index and the Selection of attributes (Hadenius and Teorell 2005; Munck 2009; Munck and Verkuilen 2002). Critics have argued that the index lacks a clear conceptual foundation, which more specifically means that the construction of the index is not based on a clear and precise definition of democracy. The selection of attributes, therefore, appears to be arbitrary and without conceptual justification. Another critique claims that the index includes aspects that are not typically included within the scope of democracy, such as socioeconomic rights or group autonomy. This type of failure is commonly referred to as the problem of maximalist definition, which means that the index measures aspects which are irrelevant to the concept of democracy. This criticism is primarily directed toward studies that use the FHI to measure democracy rather than toward the construction of the FHI itself, as it was originally constructed to indicate freedom, not democracy. A third critique is that the composition of the index is not structured in a systematic way. It includes a diversity of attributes that are not related to each other or to aspects of democracy. Some critics claim that it is more like a checklist of attributes than a developed index for research (Ryan 1994, p. 10).

The challenge of *measurement* is to select indicators and a measurement level that assess what is supposed to be measured according to the conceptualization. The conceptual attributes need to be linked to indicators that measure the attributes to which the concept refers. In the case of measurement, the criticism against FHI has mainly concerned four aspects (Coppedge et al. 2011; Hadenius and Teorell 2005; Munck 2009; Munck and Verkuilen 2002). First, the level of measurement is not conceptually or methodologically motivated. The index is based on sets of an ordinal five-point scale. This creates a symmetric structure, but there is a lack of reflection about theory and data in the selection of the measurement level. Second, the actual coding process cannot be tested. The coding rules are not explicitly formulated, which creates an uncertainty about the different property values are being expressed. Third, the measurement has been changed over time. Even if the index is presented so that change can be analyzed over time, there are considerable difficulties in comparing different years (Giannone 2010). Fourth, more advanced analysis or reanalysis is difficult to conduct as the disaggregated data is not available on every level in the index or year.

Aggregation concerns the choice of aggregation level and the principles for aggregation, which guide the research by generating a collective value from the underlying values. The principle of aggregation is simple and clear for the FHI. The values of the index are generated by adding up the values assigned to the attributes. However, this principle is neither theoretically nor methodologically motivated (Munck 2009; Munck and Verkuilen 2002). For example, no arguments are presented to justify why the attributes are equally weighted through addition. Some attributes that are marginally relevant for democracy (e.g., the size of family or business activity) are given the same weight as central attributes (e.g., free

election and freedom of expression). As the disaggregated data for lower levels in the index is not available, there is no opportunity for external researchers to develop and test alternative aggregation. However, since 2006 the data for the seven sub-categories is available for analysis, which provides possibilities to revise the structure of measurement and the criteria for aggregation.

5 Improvement of measurement

With knowledge about the structure of the FHI, it is possible to relate the seven sub-categories included in the index to the six political institutions of polyarchy. Table 2 gives an overview of how the sub-categories may be related to the political institutions of polyarchy. The first sub-category (electoral process) concerns the elections of the central authority and legislature of a state, and whether these elections are conducted in free and fair ways. The sub-category indicates the presence of fair and frequent elections of democratically elected officials, which are essential institutions of a polyarchy. The second sub-category (political pluralism and participation) includes information about citizens' rights to organize political parties and groups, the degree of competition between different alternatives, the presence of an opposition, and whether citizens are free in their political choices from domination by other actors or groups. These aspects are relevant in discussions about associational autonomy, but also when discussing free and fair elections. However, the sub-category also includes information about the autonomy and self-determination of groups (B4), which is an aspect that has limited relevance for the political institutions of polyarchy. The third sub-category (functioning of government) is even less relevant for measuring polyarchical institutions. This sub-category is about efficacy, corruption, openness, and transparency in decision-making processes, which are important aspects of political systems and political developments that are irrelevant for measuring the occurrences of the political institutions of a polyarchy. In the fourth sub-category (freedom of expression and belief), more relevant aspects are included. This sub-category indicates whether there are independent media, education, and research, and whether citizens can engage in religious expression and private conversations. The sub-category provides information about the possibilities for citizens to express beliefs and to have access to information from different sources that are independent from political control. By this, the sub-category is relevant as it presents information about freedom of expression and alternative information. The fifth sub-category (associational and organizational rights) includes relevant information about associational autonomy. The sub-category indicates whether there are free associations of various kinds, such as political organizations and trade unions, and if those organizations and their members have the opportunity to meet, demonstrate, and hold discussions. The same relevance for polyarchy is not found in the sixth sub-category (rule of law), which primarily concerns legal rather than political institutions. This sub-category provides information about the important aspects of social and civic life, such as the independence of the judiciary, civil control over police forces, protection from legal discrimination, and equality under the law. However, these aspects provide no relevant indication of the political institutions of a polyarchy. The same goes for the last sub-category (personal autonomy and individual rights), which concerns important aspects of economic and social freedoms. The information presented in this sub-category pertains to citizen freedoms or the right to travel, issues concerning residence, employment, property and business ownership, marriage, and family size, and the absence of economic exploitation and gender inequality. Even if these aspects are important in the daily

lives of citizens, their relevance as indicators of the political institutions of polyarchy is marginal.

The four sub-categories that are relevant for polyarchy have special relations with the institutions of inclusive citizenships. All of the subcategories consider limitations of inclusion as a restriction or lack of freedom. If an aspect of freedom only applies to a group, or if a group of citizens is not subject to the aspect of freedom, this is regarded as a restriction of freedom, which is expressed in the index with a lower value on that attribute. This means that all four subcategories and attributes are relevant to the institutions of inclusive citizenships.

The proposal to improve the measurement of polyarchy with the FHI involves reducing the sub-categories from seven to four: electoral process (A), political pluralism and participation (B), freedom of expression and belief (D), and associational and organizational rights (E). This proposal is supported by the argument that these four sub-categories represent conditions that are relevant to the political institutions of a polyarchy. The proposal is consequently built on polyarchy as the conceptual foundation for understanding democracy and democratization. Even if the proposal provides stronger conceptual validity, some problems remain. One issue that requires attention with respect to the proposed change is that categories overlap. As a result, one category may be relevant to several dimensions, which provides a structure that is not completely in accord with the conceptual structure of a polyarchy. The sub-categories are not independent from each other in the same way that discussions about polyarchy regard the political institutions in democratic systems. One low value of an attribute related to one democratic institution may decrease the value for another democratic institution that otherwise would have a high value. Another lingering problem is that the sub-categories are compounded by attributes that are related to each other by the addition of values from a five-point ordinal scale. Even if the attributes are relevant for the political institutions of polyarchy, their relationship within the sub-categories is not motivated by conceptual or methodological arguments. Additionally, one of the sub-categories (political pluralism and participation) has an attribute (B4) that is irrelevant but that cannot be excluded from the sub-category.

6 Improvement of the aggregation

A second way to strengthen the FHI as a measurement of polyarchy is by changing the aggregation rule for the index. Besides the selection of the level of aggregation, a critical step in constructing the index is the selection of an aggregation rule. This selection settles how to generate a single value on the index from a set of disaggregate values. As Munck (2009, pp. 48–51, 70–74) points out, there are five basic rules of aggregation for quantitative indices: multiplication, minimum, geometric mean, arithmetic mean, and maximum. These rules, which are presented in more detail in Table 3, express different ideas on how attributes (disaggregate values) are related to each other. First, the relationship between indicators may be interactive or noninteractive. This is a question of whether a value on one indicator is decreasing in response to values on other indicators (interactive), or if it is isolated from them (noninteractive). Secondly, the relationship may also be compensatory or noncompensatory. If a high value on one indicator can compensate for a low value on another indicator, the relation between the indicators is compensatory.

The selection of aggregation rule needs to be based on the concept that the index is intended to measure. Conceptualization generally provides information about how attributes, which the concept references, are regarded as related to each other. The selection of aggregation rule needs to correspond to this conceptual logic, which structures the attributes. The aggregation

Table 2 Democratic institutions and sub-categories in FHI

Sub-categories in FHI	Political institutions of polyarchy						
	Elected officials	Free and fair elections	Freedom of expression	Alternative information	Associational autonomy	Inclusive citizenship	External attributes
A: Electoral process	A1 A2	A3				X	
B: Political pluralism and participation		B2 B3			B1	X	B4
C: Functioning of government							C1 C2 C3
D: Freedom of expression and belief		D1 D2 D3 D4	D1 D2 D3 D4			X	
E: Associational and organizational rights					E1 E2 E3	X	
F: Rule of law							F1 F2 F3
G: Personal autonomy and individual rights							G1 G2 G3 G4

Table 3 Five basic rules of aggregation

Aggregation rule	Relationships between indicator	Example: 0.5, 0.5, 1.0
Multiplication	Interactive noncompensatory	0.25
Minimum	Noninteractive noncompensatory	0.50
Geometric mean	Interactive compensatory (partially)	0.63
Arithmetic mean	Noninteractive compensatory (partially)	0.66
Maximum	Noninteractive compensatory	1.00

Source [Munck \(2009\)](#)

rule that was selected for the FHI is adding up values for each attributes or sub-category. This is a simple and clear rule of aggregation. It means that the FHI is based on the use of arithmetic means, which implies that the attributes are regarded as noninteractive and partially compensatory in their relationship. However, as a consequence of the problems with the conceptualization of democracy, this rule is neither conceptually nor theoretically motivated. Actually, it remains unclear how the attributes or sub-categories are related to each other. This is one of the major criticisms against the FHI. In their insightful discussion on comparative indices on democracy, Munck and Verkuilen (2002, p. 25) summarize the criticism against the FHI in a straightforward manner: "...the numerous conceptual and measurement problems that weaken the Freedom House indices are compounded by the blatant disregard of the challenge of aggregation."

If the measurement is based on the concept of polyarchy, there is a need for another aggregation rule: multiplication. According to Dahl, democratic systems in large societies presume all six political institutions of polyarchy. For example, Dahl (1989, p. 222) states that "all the institutions of polyarchy are necessary to the highest feasible attainment of the democratic process in the government of a country," which does not mean that the institutions are sufficient. The institutions need to be interactive with each other and the absence of one institution cannot be compensated by the existence of the five others. As an example, a low level of freedom of belief cannot be compensated by a high level of freedom to speech. A democratic system requires high levels in both institutions. In his discussion on how the institutions of polyarchy are necessary to fulfill democratic principles for political processes, Dahl also emphasizes the importance of different combinations of democratic institutions. For example, in a central discussion about polyarchy, Dahl (1971, pp. 4–7) identifies two dimensions of institutions—public contestation and political inclusion—that have to be combined for polyarchy. With this, polyarchy is regarded not as a degree of one dimension but as that of an area, which is calculated by multiplying the two dimensions. This supports the argument of using multiplication as the aggregation rule.

In the previous section, four sub-categories in the FHI were identified as relevant to measuring polyarchy: electoral processes (A), political pluralism and participation (B), freedom of expressions and beliefs (D), and freedom of organization and association (E). The use of multiplication as an aggregation rule means that the values of these sub-categories are multiplied with each other. However, before applying this procedure, the values of the four sub-categories have to be standardized. As mentioned earlier, the sub-categories are comprised of different numbers of attributes (questions) that generate different maximum values for the sub-categories. The sub-categories may be standardized through a simple procedure. If the values for the sub-categories are divided by the maximum value, multiplied by each other, and then multiplied by 100, the values for all of the sub-categories range from 0 to

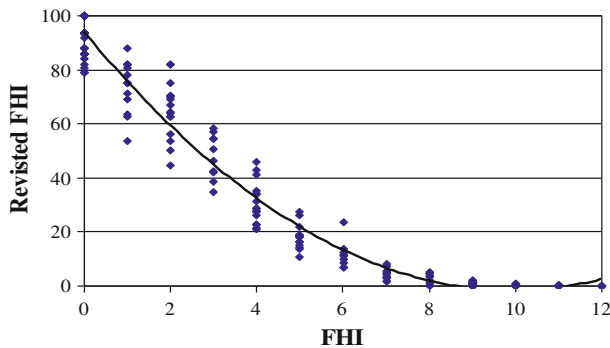


Fig. 1 FHI and revised FHI

1 and the value for the revised index range between 0 (complete non-polyarchy) and 100 (complete polyarchy). In sum, the proposal for a *revised index of polyarchy based on the FHI* may be expressed by the following formula:

$$R_i = (((A_i/12) * (B_i/16) * (D_i/16) * (E_i/12)) * 100)$$

where R_i is the value on the revised index for state i , A_i the value on the sub-category A for state i , B_i the value on the sub-category B for state i , D_i the value on the sub-category D for state i , and E_i is the value on the sub-category E for state i .

7 Illustration of the revised FHI

When the revised FHI is applied in a global analysis of democracy, the results present a view of the global situation for democracy than differs from when the current FHI is used. Figure 1 presents the values for 193 states on the revised FHI versus the FHI for the year 2010.² The values in the FHI are transformed to a scale from 0 (free states) to 12 (non-free states), which are based on summary values from the two indices (political freedom and civil liberties). As the figure illustrates, some states that are regarded as democratic according to the FHI (i.e., that have values which are equal 3 or lower) have significantly lower degrees of democracy when the revised FHI is used.³ For example, Argentina, Botswana, Brazil, Japan, South Korea, and Taiwan are all democratic states according to the FHI; however, they receive around 70 or lower when the revised FHI is applied. Montenegro received a low value (35) on the revised FHI, but is regarded as democratic according to the FHI. At the same time, there are states that have maximum values on the revised FHI and are regarded as democracies according to it. For example, one group includes states that are consolidated democracies (Belgium, Canada, Denmark, Finland, Ireland, Netherlands, Norway, Poland, Portugal, Spain, Sweden, and Uruguay), while another group has microstates as members (Bahamas, Barbados, Dominica, Iceland, Liechtenstein, Luxembourg, Malta, and San Marino). There is also one group that received the lowest value (0) on the revised FHI. This group consists of 19 states: Belarus, Brunei, Burma, China (PRC), Cuba, Equatorial Guinea, Eritrea, Ethiopia, Fiji, Laos,

² The analysis is based on material that is available on www.freedomhouse.se.

³ The relationship between the FHI and the revised FHI can be expressed with the following regression equation: $\hat{y}_i = 94,118 + 0,972x_i^2 - 19,311x_i$ ($R^2 = 0,972$), where y_i is the estimated value on revised FHI and x_i is the value on FHI for country i .

Libya, North Korea, Saudi Arabia, Somalia, Swaziland, Syria, Turkmenistan, Uzbekistan, and Vietnam. All of these states are regarded as non-democratic according to the FHI, but they receive relatively more positive values on the FHI than on its revised version. In sum, this illustrates that a new combination of sub-categories and another principle of aggregation affects the view of democracy on a global level as well for individual states. Particularly, the use of multiplication as an aggregation rule gives a more restrictive assignment of values.⁴ A low value on one sub-category cannot be compensated by high values on other sub-categories, which means that the revised FHI is more sensitive to deviation from democratic institutions than its original model. For example, it leads to a more negative view of the democratization on a global level when the revised FHI is used instead of the original FHI.

8 Conclusion

This article presents a proposal to strengthen the conceptual validity when empirical studies use the FHI to measure the concept of polyarchy. First, in order to provide a more solid connection between the conceptual and measurement levels, three sub-categories in the FHI are excluded. Instead of seven sub-categories, the revised index includes four sub-categories that indicate the occurrences of political institutions that are relevant for the concept of polyarchy. Second, the proposal provides a more theoretically motivated principle of aggregation. The FHI is based on a simple addition of values. In the revised index, this principle of aggregation is changed to multiplication. As a principle of aggregation, multiplication expresses that the included sub-categories are interactive with each other and are not compensatory. This corresponds with the view that all democratic institutions are necessary for the occurrence of a polyarchy. Together with the first adjustment, this modification is expected to create stronger concept validity for studies that use the FHI to measure the concept of a polyarchy.

The proposal is based on the assumption that FHI is used to measure a polyarchy. This assumption can be tested. First, the concept of polyarchy has been central in the comparative research of democratic systems and democratization. However, there are alternative concepts which challenge the use of a polyarchy as conceptual base. Second, the FHI is frequently used in comparative studies to measure democratic systems, but an increasing number of studies have criticized the FHI from different angles. In addition to alternative indices, there are also ongoing attempts to create new measurements of democratic systems or democratization. In any way, polyarchy and the FHI is still used in comparative studies and are essential parts of the research field.

Even if the revised index improves the measurement of a polyarchy, it is still an imperfect assessment tool. As mentioned earlier, there are some restrictions to a revised FHI. Above all, there are some defects with the measurement that the FHI provides which have a direct impact on the reliability of the revised index. There is a need to strengthen the theoretical justification of data level and coding rules, and to make the processes of measurement and scores of information open to critical examination by independent researchers. Additionally, there is also some potential to further develop the revised FHI. For example, one central question left for future examination is to identify and motivate critical values based on the revised FHI

⁴ If the values of the sub-categories were aggregated with addition, an analysis indicates that the average value on the revisited index would be 24.8 points higher and that the relationship to the original FHI would be more linear than if multiplication is used as principle for aggregation. This is indicated by the following regression equation: $\hat{y}_i = 101.57 - 7.8077x_i$ ($R^2 = 0.968$), where y_i is the estimated value on the alternative (addictive) FHI and x_i is the value on FHI for country i .

for different types of political regimes. What level on the revised FHI indicates that the state has a democratic system? Previous attempts to measure polyarchy have used the categories “full polyarchy” and “near polyarchy” to indicate different degrees of democracy (Coppedge and Reinicke 1990, pp. 63–66; Dahl 1971, pp. 246–248; 1989, pp. 234–241). These types of categories may also be relevant alternatives to include in a future classification based on a revised FHI.

The development of measurement is a key issue, as measurements are significant conditions or prerequisites for the developments of social science. Comparative studies on democracy and democratization are no exception. Our empirical knowledge about democracy and democratization increase as quantitative indices develops and improves. The challenge for comparative studies is not only to measure complex and abstract concepts such as democracy, but also to create and use measurements that work in different contexts, which is fundamental for comparison (e.g., Sartori 1970). Development and improvement of measurements are not solely a question for social sciences, but are also relevant for policymaking and policy-processes. Indices of democracy are used as the basis for decision-making by providing comprehensive information and overview. For example, information from an index may be directly relevant when states formulate their decisions on democracy promotion, foreign aid, and foreign policy. As indices are essential for both research and policy making, it is important to further explore how to measure polyarchy (democratic systems) in a more accurate way. One way to do this is to develop new measurements. However, this option is not always a realistic alternative, as developing new indices may be time-consuming and demand access to large amount of recourses (Coppedge et al. 2011). An alternative approach is to improve the existing indices. As illustrated in this article, there are opportunities to revise the existing indices in different aspects, which strengthen the measurements of political regimes.

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Appendix A

Composition of Freedom House Index

Political freedom

A. *Electoral process*

1. Is the head of state and/or head of government or other chief authority elected through free and fair elections?
2. Are the legislative representatives elected through free and fair elections?
3. Are there fair electoral laws, equal campaigning opportunities, fair polling, and honest tabulation of ballots?

B. *Political pluralism and participation*

1. Do the people have the right to organize in different political parties or other competitive political groupings of their choice, and is the system open to the rise and fall of these competing parties or groupings?
2. Is there a significant opposition vote, de facto opposition power, and a realistic possibility for the opposition to increase its support or gain power through elections?

3. Are the people's political choices free from domination by the military, foreign powers, totalitarian parties, religious hierarchies, economic oligarchies, or any other powerful group?
4. Do cultural, ethnic, religious, and other minority groups have reasonable self-determination, self-government, autonomy, or participation through informal consensus in the decision-making process?

C. *Functioning of government*

1. Do freely elected representatives determine the policies of the government?
2. Is the government free from pervasive corruption?
3. Is the government accountable to the electorate between elections, and does it operate with openness and transparency?

Civil liberties

D. *Freedom of expression and belief*

1. Are there free and independent media and other forms of cultural expression?
2. Are there free religious institutions, and is there free private and public religious expression?
3. Is there academic freedom, and is the educational system free of extensive political indoctrination?
4. Is there open and free private discussion?

E. *Associational and organizational rights*

1. Is there freedom of assembly, demonstration, and open public discussion?
2. Is there freedom of political or quasi-political organization?
3. Are there free trade unions and peasant organizations or equivalents, and is there effective collective bargaining? Are there free professional and other private organizations?

F. *Rule of law*

1. Is there an independent judiciary?
2. Does the rule of law prevail in civil and criminal matters? Are police under direct civilian control?
3. Is there protection from police terror, unjustified imprisonment, exile, or torture, whether by groups that support or oppose the system? Is there freedom from war and insurgencies?
4. Is the population treated equally under the law?

G. *Personal autonomy and individual rights*

1. Is there personal autonomy? Does the state control travel, choice of residence, or choice of employment? Is there freedom from indoctrination and excessive dependency on the state?
2. Do citizens have the right to own property and establish private businesses? Is private business activity unduly influenced by government officials, the security forces, or organized crime?
3. Are there personal social freedoms, including gender equality, choice of marriage partners, and size of family?
4. Is there equality of opportunity and the absence of economic exploitation?

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