

Building Consensus for Sustainable Development: Evaluation Theory Insights

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Abstract

The sustainable development goals orient the development path for each country by defining goals, sub-goals, and indicators for programming and control. The goals achievement is conditioned to the consensus of the populations involved; indeed, politicians cannot or do not want implement projects without gathering the necessary consensus. To achieve the demanded transition, tools evaluating a set of projects achieving targets, well-being, and consensus simultaneously are required. This manuscript enquires the generation of such tools by extensively debating willingness to pay and related techniques by seeking a theory bridging the actual value and actual consensus of projects. The outcome is a theoretical base useful to orient evaluation research toward the design of tools helpful to achieve sustainable development goals.

Keywords: Sustainable development; Consensus; Multidimensional evaluation, Willingness to pay

1. Introduction

When the United Nations created the sustainable development goals (SDGs), they provided a clear trajectory for the world nations and goals, sub-goals, and indicators to program and monitor it [1]. However, many politicians lack information and struggle to reach the goals and maintain or increase consensus simultaneously, and, without consensus, they cannot succeed. A theory and technique to evaluate the consensus for different development paths is needed, especially locally [2] [3]. This manuscript debates these evaluation tools from an economic standpoint by

(i) **considering multidimensional utility maximization as the decisional driver for individuals.** Individuals are assumed to vote for the project or policy providing the highest expected utility. Such multidimensionality is fundamental to coping with sustainable development policies and consensus evaluation.

(ii) **debating the willingness to pay (WTP) and to accept (WTA) multidimensional utility estimation tools.** WTA and WTP are the main tools for non-market evaluation and represent a strong base for multidimensional utility variation estimation. However, their utilization is proven limited in cases of expensive goods, structural change of opportunities, and other [4] [5] [6] [7].

(iii) **highlighting differences in policies evaluation due to the adoption of different ethical and decisional principles, namely, Utilitarianism [8], Libertarianism [9], Rawlsian [10], Democratic, and Sustainable Development Goals.** Each ethical framework helps evaluate long term policy; however, these do not necessarily agree on

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which is the right thing to do [11] [12] [13]. This misalignment entails the policy evaluation being ethic-dependent [14].

(iv) **identifying democratic** consensus as a necessary condition for long term policy success. Mainstream economic policies evaluation is generally based on the aggregate utility maximization or Paretian improvement. These principles are not necessarily consistent with democratic consensus, leading potentially to ignore it while it is necessary for long-term policy success.

(v) **comparing sustainable development goals and other evaluation principles.** Sustainable development goals are not dependent on the expected utility and, therefore, on consensus, utility maximization, and other individual-based approaches. Hence, to adopt these principles may be an unfeasible base for SDGs achievement.

2. Theory

2.1 Evaluation Theory

The first step needed to analyse and measure individual vote choices is the individualisation of a model. The model initially adopted is the homo economicus a la Becker [15] that, by maximising its utility, decides what to buy and what to vote. Since utility is a mere preference function ordering different status, goods, opportunities, etc., it can be expanded by including everything the decision-maker considers valuable for the very same decision. In this way, the utility can include altruism and other variables without losing its ordering and decisional capacity while it moves far from the anthropology that Becker's homo seems to invoke.

Consider a utility function (U) of an individual 'i' over a vector (q) of goods, services, and states (from now on simply goods). Following [16] let decompose the latter in market consumption of the individual (Y_i), of other than that individual (Y_{-i}), and consumption of goods provided by public expenditure (S). Furthermore, let us both distinguish local idiosyncratic factors (E), that is crucial for local well-being measurement [2]. Let me remark that the vector q is given by the sum of the subgroups (Y_i, E, S), and not by their union, such that these can insist on the same goods; the only independent factor is Y_{-i} that refers to all the goods of others individual in the same community and that, although it maintains its initial notation, here must be intended as comprehensive of income, idiosyncratic, and public provided goods.

$$U_i(q) = U_i(Y_i + E + S, Y_{-i}) = U_i(Y_i, Y_{-i}, E, S) \quad (1)$$

If this approach is correct, then implicitly, the individual in the market neglects Y_{-i}, E , and S (i.e., are constants) such that its maximization depends only on Y_i . When the government introduces a policy (p), all variables but E (that is idiosyncratic) change respectively of (Y_i^p, Y_{-i}^p, S^p) and the new utility function of the individual is denoted as U_i^p .

$$U_i^p(Y_i + Y_i^p, Y_{-i} + Y_{-i}^p, E, S + S^p) \quad (2)$$

In particular, $Y^p > 0$ is a subsidy, $Y^p < 0$ is a tax, S^p is the provision (>0) or reduction (<0) of goods by government. The same vector S^p may contain both positive and negative values by impacting differently on different goods while the income of the individual Y is either increased or decreased.

According to the type of policy, for simplicity, either $S^p > 0$ or $S^p < 0$, we can recall

respectively the definitions of either willingness to pay (WTP) as $WTP = \Delta Y_i < 0: U_i^p = U_i$ or willingness to accept (WTA) as $WTA = \Delta Y_i > 0: U_i^p = U_i$. These refer respectively to the maximum (minimum) tax (subsidy) that the state can impose on the individual 'i' in order to have, if the project is implemented, a Pareto improvement (i.e., everyone is not worst-off and at least someone is better-off).

Now consider the assignment of a budget (b) to everyone spendable only on public goods such that $b = Y^b > 0$ and $S^b > 0$; the rational individual will choose the basket S^b maximising his utility and it is trivial to show that $U^b \geq U$. Let us now consider the possibility that a part of the budget ($0 \leq tr \leq b$) can be used by the individual also for his public expenditure, it is trivial to show that, labelling the new utility U^{tr} , it is necessarily true that $U^{tr} \geq U^b \geq U$.

2.2 Capacity to pay and to decide

This section introduces two indicators useful for tracking what we are measuring and how the evaluation and the consequent decisional process should be driven.

2.2.1 Capacity to pay

The capacity to pay is defined as the ratio between the utility generated from a further good q and the willingness to pay for it.

$$CTP = \frac{WTP}{\frac{\Delta U}{\Delta q}} \quad (3)$$

It measures the proportion according to which the need or utility of the individual is proportional to his WTP. If all participants assign the same CTP, the market is hereby defined as need-equalitarian (M-NE). It is helpful to compare different individuals with the same utility functions and incomes to isolate the latter's impact on WTP. We will show how does affect the capacity to pay and, consequently, entail that some evaluation and decisional processes are not necessarily M-NE.

2.2.2 Capacity to decide

The capacity to decide is defined as the ratio between the utility generated from a further good q and the votes (v) the individual can assign to it.

$$CTD = \frac{v}{\frac{\Delta U}{\Delta q}} \quad (4)$$

The capacity to decide describes the capacity to influence decisions proportional to the need. If the decisional process adopted ensures a constant CTD for all voters, then the decisional process is hereby defined as need-equalitarian (D-NE).

2.2.3 Discrete quantities and need to pay: A revealed preferences lack

The following example shows how revealed preferences methods are potentially biased compared to the willingness to pay when the results are interpreted through a marginalist approach assuming divisible goods. If the goods are non-divisible, then the buyer's allocation is not efficient in the same terms of marginal economics. Let us briefly prove it in an easy contest where an individual with a finite budget B maximises his utility by choosing the quantity of two goods q_1 and q_2 respectively with prices P_1 and P_2 . If

the quantities of these goods are integer, then the solution is:

$$Hps: q_i \in N \forall i \in (1,2), \frac{dU}{dq_1} \gg \frac{dU}{dq_2}, P_1 > B > P_2 \quad (5)$$

$$MaxU \Rightarrow \left\{ q_1 = 0, q_2 = \text{integer part of } \frac{B}{P_2} \right\} \quad (6)$$

Where the marginalist solution with divisible goods would be $\{q_1 = B/P_2, q_2 = 0\}$. This would lead to an inconsistent revelation of revealed preferences. Such an error can be extended to all goods with a non-neglectable cost (i.e., hardly approximable to a divisible good). Indeed:

$$\text{given } q_i \in N \forall i \in (1,2), B > P_1 > P_2, \text{ if } \forall \left(q_1 < \left(\frac{B}{P_1} \right) \wedge q_2 < \left(\frac{B}{P_2} \right) \right) \Rightarrow \left(\frac{dU}{dq_1} > \frac{dU}{dq_2} \right) \quad (7)$$

$$\text{then } MaxU \Rightarrow \left\{ q_1 = \text{int} \left(\frac{B}{P_1} \right), q_2 = \text{int} \left(\frac{B - q_1 P_1}{P_2} \right) \right\} \quad (8)$$

$B - q_1 P_1$ is the share of the budget allocation suboptimal with respect to the marginalist solution that would be interpreted as a too-large preference for the second good. Differently, the survey asking for the WTP would make the individual claim a WTP equal to $B - q_1 P_1$ giving a piece of precise information. The difference between P_1 and $B - q_1 P_1$ is hereby defined as need to pay (NTP), it is the further quantity of money necessary to have not a suboptimal solution.

Let us stress, to prepare our further discussion, that (i) in the example done, the budget does affect the WTP (ii) in the first example, an increase of income from $B < P_1$ to $B \geq P_1$ may leads, by unlocking the access of a further good, a utility increment over quantity increment ratio higher than the same ratio for an income below the critical threshold P_1 (iii) the more expansive the goods, the higher the probability that the suboptimal allocation grows. Finally, such an analysis may be expanded to include some type of Giffen good without contradiction in the utility theory.

2.2.4 Basket expansion

The availability of one or more new goods, hereby labelled basket expansion, generates a higher or equal utility by allowing for a more efficient budget allocation. Indeed, the availability of a new good before absent or inaccessible is equivalent to eliminating or relaxing a constraint imposing that good quantity must be zero. Let us consider both the utility function before ($U(Y)$) and after ($U^{sw}(Y)$) the basket expansion. Since both represent the set of indifferent points between the goods maximising the utility given a budget constraint (Y), the effect of the basket expansion can be described as hp (i). Let me show formally that the basket expansion can be interpreted in WTP and WTA terms.

$$Hps: \quad (i) U^{sw}(Y) = a U(Y), \quad (ii) a, Y \geq 0, \quad (iii) \frac{dU(Y)}{dY} > 0, \quad (iv) \frac{d^2U(Y)}{dY^2} < 0 \quad (9)$$

If $a > 1$ (expansion we can add two further implications:

$$(v) \frac{dU^{sw}(Y)}{dY} > \frac{dU(Y)}{dY} > 0, \quad (vi) \frac{d^2U(Y)}{dY^2} < \frac{d^2U^{sw}(Y)}{dY^2} < 0 \quad (10)$$

Consequently:

$$WTP: U(Y) = U^{sw}(Y - WTP) \quad (11)$$

$$WTA: U(Y + WTA) = U^{sw}(Y) \quad (12)$$

Vice versa for $a < 1$ (reduction)

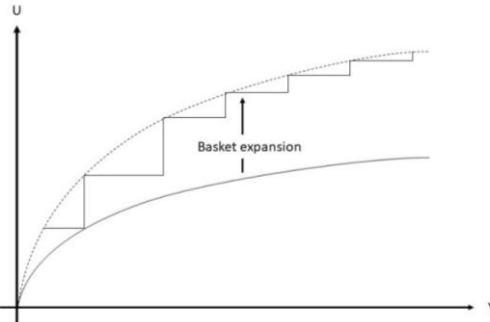


Figure 1: Restricted and unrestricted baskets of goods with non-neglectable discrete prices

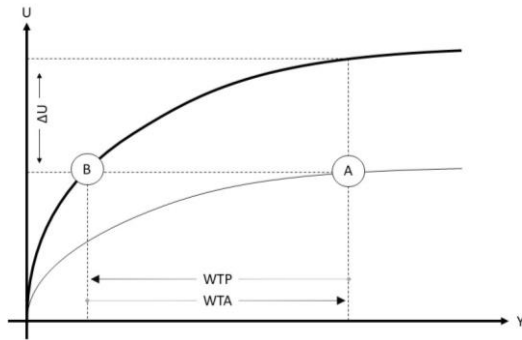


Figure 2: Basket expansion and willingness to pay (A->B) and accept (B->A) on an approximated continuous utility curve

Public goods and expenditures extend the basket of goods available by financing them (overcoming discrete quantity optimization issues) or making them possible by any means (extending the basket). In the same way, moving to or from a place with idiosyncratic goods is equivalent to have a basket extension or reduction. Hence, even individuals with the same utility function and income but in a different place and with different public services may have different satisfactions and reactions to the change of basket goods.

2.2.5 Capacity to pay and income

Let us show that the capacity to pay is affected by income by proving that, ceteris paribus, the higher the income, the higher the WTP. Let us consider two individuals with the same continuous and double differentiable utility function and with two different incomes Y_1 and Y_2 , where $Y_1 < Y_2$. Let us assume that a basket expansion S generates the same utility for both. Then the willingness to pay for the richest is higher than the willingness to pay of the poorer.

Hps: (i) $\frac{dU(Y,S)}{dY} > 0$, (ii) $\frac{d^2U(Y,S)}{dY^2} < 0$, (iii) $\frac{dU(Y_1,S)}{dS} = \frac{dU(Y_2,S)}{dS}$, (iv) $Y_1 < Y_2$ (13)

Proof:

$$\begin{aligned} \Rightarrow \frac{dU(Y_1,S)}{dY_1} > \frac{dU(Y_2,S)}{dY_2} &\Rightarrow \int_{Y_1-WTP_1}^{Y_1} \frac{dU(Y_1,S)}{dY_1} dY_1 + const \\ &= \int_{Y_2-WTP_2}^{Y_2} \frac{dU(Y_2,S)}{dY_2} dY_2 + const \Leftrightarrow WTP_1 < WTP_2 \end{aligned} \quad (14)$$

2.2.6 WTP conversion to Marginal Utility

Since revealed preferences may suffer from the constraint said it is vital to be able to estimate the WTP of individuals and to be able to transform it in utility variation in order to (i) measure the capacity to pay and to vote (ii) use utilitarian approaches that will be very useful in the following paragraphs (iii) take advantage from a well-established methodology. We need to assume a particular utility function or estimate it. To do it is beyond the aim of this paper and the author will, for the proximity of fields and intentions, adopt the logarithm as [17]. Assumed $U = a \ln(Y+1)$, then we can convert the WTP in the variation of utility. Let the two functions be:

$$U = a \ln(Y + 1), \quad U^{sw} = b \ln(Y + 1) \tag{15}$$

Where a and b are constants and b/a is an index of basket extension. We can compute both the utility variation, the WTP, and the relationship between the first and the latter (see: Figure 2 Basket expansion and willingness to pay (A->B) and accept).

$$\Delta U = b \ln(Y + 1) - a \ln(Y + 1) \tag{16}$$

$$WTP = Y + 1 - (Y + 1)^{\frac{a}{b}} = Y + 1 - e^{\frac{a}{b} \ln(Y+1)} \tag{17}^1$$

$$\frac{dWTP}{d(\frac{a}{b})} = -\ln(Y + 1) (Y + 1)^{\frac{a}{b}} \tag{18}$$

$$\Delta U = \ln(Y + 1 - WTP) \frac{b}{a} (b - a) \tag{19}^2$$

2.2.7 WTP and WTA limit for superior goods

WTP and WTA have a firm limit when applied to dimensions as, for instance, health and friendship. Let us prove that when some dimension has a too high perceived value compared to market goods, then the consistent WTA (WTP) answer is “there is no quantity of money enough to accept to lose the good in question” (“I would give all the money of the world to have it”).

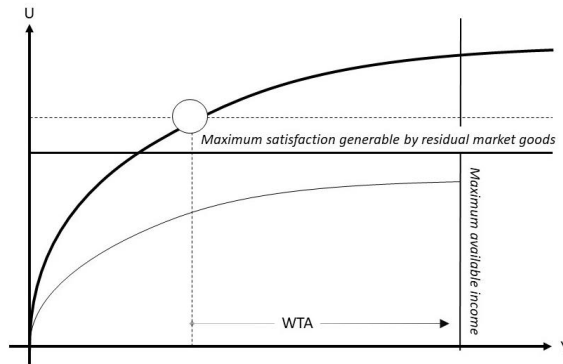


Figure 3: Example of a Basket restriction with a value reduction over any possible Willingness To Accept compensation

¹ From $a \ln(Y + 1) - b \ln(Y + 1 - WTP) = 0$

² From rearranging (16) to $\Delta U = \frac{\ln(Y+1)}{b-a}$ and rearranging (18) to $WTP = 1 - e^{\frac{a}{b} \ln(Y+1)} = Y + 1 - e^{\frac{a}{b} \ln(Y+1)}$ →

$$\Delta U = \ln(Y + 1 - WTP) \frac{b}{a} (b - a)$$

Let us assume that a given dimension d provides, ceteris paribus, utility $U(Y, q_d)$ and that we ask for the WTA to reach $q_d=0$. Let us assume that for the maximum available income that could ever be provided Y^m we have $U(Y, q_d)$ higher than $U(Y + WTA, 0)$, then no quantity of money could compensate the utility loss.

$$\text{if } U(Y, q_d) > U(Y^m, 0) \forall Y^m = \text{const} \wedge Y^m - Y \geq WTA \Rightarrow \nexists WTA: U(Y, q_d) = U(Y + WTA, 0) \quad (20)$$

With adequate precautions, the proof could be extended to a lower variation of q_d that remains in the field of budget expansion and reductions. Symmetrically we may proceed with WTP.

2.2.8 Expenditure redistribution: multidimensional relative prices

Let us now consider the aggregate of the individuals. The relative prices across dimension can be measured by converting the declared WTP in utility variation and then approximating the relative prices as the ratio among them.

$$\frac{\Delta \bar{U}_i / \Delta Q_i}{\Delta \bar{U}_j / \Delta Q_j} \cong \frac{P_i}{P_j} \quad (21)$$

Where $\Delta \bar{U}$ is the average utility variation and $\Delta \bar{Q}$ is the average quantity variation. Without loss of generalities, relative prices can be used (i) by the government to determine the best budget expenditure (ii) to compute multidimensional actual values for projects (iii) evaluate the companies’ impact on the target population.

2.2.9 Isolation of altruism effect

To isolate the altruism effect (Awtp), we could add a question similar to “how much would you pay if the others would gain access to that service while you do not”. It is the equivalent of the willingness to pay for a satisfaction increase due to the others utility increase, formally:

$$U(Y_i - Awtp, Y_{-i} + \Delta Y_{-i}) = U(Y_i, Y_{-i}) \quad (22)$$

2.3 Decisional processes

2.3.1 Development with consensus

Let us focus on four decisional processes to capture both if they constrain the development path and if the result is performed according to a theory of Justice and democratic consensus. The decisional mechanisms included are the Democratic, Libertarian or Paretian, utilitarian, and Rawlsian that refer to the influent works of [8] [10] [18] [9].

Let us define a decisional process as a rule assigning a result equal to either ‘approved’ or ‘rejected’ and where the result is ‘approved’ if the sum of votes V is higher than a certain threshold T and where each individual has a number of votes v_i .

$$\text{Decisional result} = \begin{cases} \text{approved if } V = \sum_{i=1}^{i=n} v_i > T \\ \text{rejected otherwise} \end{cases} \quad (23)$$

The votes and the threshold can be assigned by different rules that we are going to restrict to the following cases stylized as follows (table 1).

Table 1: Selected decisional rules

Rules	Votes	Thresholds	Further conditions
Democratic consensus	v_i equal either to one (approve) or zero (reject)	(majority) 50% of the number of voters	Quorum
Libertarian (Pure Paretian)	v_i equal to the amount an individual is ready to pay (+WTP) or to accept (-WTA)	Cost of the project (including the damages to things and persons)	No one worst-off
Quasi-Libertarian (Kaldor-Hicks Paretian improvement with transfers)	v_i equal to the budget an individual is ready to pay (+WTP) or to accept (-WTA)	The cost of the project (including the damages to things and persons)	No one worst-off after transfers
Utilitarian	v_i equal to the need of the individual ΔU_i	0	None
Rawlsian	v_i equal either to an individual's need or zero if its utility is over a certain threshold N (to include only the needy part of the population).	0	No needy worst-off

Looking to the CTD, it is naïve to prove that:

- The democratic consensus approach guarantees an equal CTD to all the voters if the voters have the same preferences (U) and contingencies (Y, E, S). Hence, in general, it does not.
- The Libertarian approaches guarantee an equal CTD to all the voters if all the CTP is equal for everybody, which we proved false. However, the pure libertarian approach is Pareto efficient since the projects will be implemented if and only if nobody is worst-off and at least one person is better off. Extending such an approach with the Kaldor-Hicks solution, we obtain an improvement again if all the worst-off participants obtain a compensation equal to their WTA.
- The Utilitarian guarantees an equal CTD to all citizens if we convert the WTP properly to MU and we use the latter as the number of votes.
- The Rawlsian, in this stylization, has the same characteristics of a pure Libertarian approach where those who can vote are restricted to the needy.

From these considerations, we can conclude that the utilitarian approach is the only D-NE. Pareto efficient, utilitarian, and Rawlsian approaches may meet other objections that should be considered aside [11].

2.3.2 Decision mechanisms, consensus, and sustainable development

It is worth remarking that, assuming no quorum, the libertarian approval is a sufficient condition for the other mechanisms' approval but Rawlsian. Indeed, if there is no worst-off and at least a better-off, then there will be at least a positive vote and no vote against. If compensation is allowed, we can extend this property to the quasi-libertarian approach. The Rawlsian vote is a Libertarian vote applied to the needy part of the

population, and, as such, it may be approved when that part approves and may not approve even if the rest approves. However, a democratic vote is not necessarily conducive to them since the worst-offs may be overcome by the number of votes of the better-offs. The utilitarian vote cannot be reconducted entirely to the democratic vote since different utilities changes are all rescaled to a vote in the democratic approach. We can transform the democratic vote (v_i^{dem}) to the utilitarian decision mechanism modified assuming that an individual votes ‘yes’ (1) for a project or a set of projects represented by a party if and only if its expected utility variation (ΔU_i^e) is positive and that otherwise it votes no (0).

$$v_i^{dem} = \begin{cases} 1 & \text{if } \Delta U_i^e > 0 \\ 0 & \text{otherwise} \end{cases} \quad (24)$$

It follows that democratic consensus does not necessary brings neither to the utilitarian result nor to M-NE and D-NE. However, the set of policies satisfying all these decisional criteria is not empty and will be called the first feasible set or justice set.

2.3.3 Consensus constraint and Development

We aim to individualize how to evaluate policies achieving sustainable development goals and consensus. The success of sustainable development goals achievement can be measured as the sum of the negative distances between the goals (G) and the actual situation measured by indicators I where both of them have positive polarity (i.e., an increment of the indicator is an improvement). The problem becomes a minimization of such a distance subject to the project's democratic approval.

$$\begin{aligned} & \min \sum_{i=1}^{i=k} d_i \\ & \text{s.t. } \sum_{i=1}^{i=n} v_i^{dem} > T \\ & \text{where } d_i = \min(G_i - I_i, 0) \end{aligned} \quad (25. a)$$

Where k is the number of dimensions, G_i and I_i are respectively the goal and the state of the i-th dimension.

A policy vector S impact can be described as a new I and, as such, can be evaluated as an improvement or regress according to the new distances it entails to the goals. The policies that achieve both a reduction of the distance to the SDGs and satisfy the consensus constraint forms the hereby defined second feasible set or development set. Hence, such a set may lead us to choose the i-th best policy to move forward SDGs.

Whenever a development is reconducted to a theory of Justice j described by one of the decisional mechanisms seen or others, then the problem changes and becomes the achievement of its decision result constrained by democratic vote.

$$\begin{aligned} & \text{Decisional result}_j \\ & \text{s.t. } \sum_{i=1}^{i=n} v_i^{dem} > T \end{aligned} \quad (25. b)$$

As such it is reconducted to a subpart of the first feasible set given by the intersection of (i) the decisional result j that is adopted as a meter of progress and (ii) the democratic consensus. The relevance of such an analysis can be seen adopting, for instance, the sustainable development definition “development that meets the needs of the present without compromising the ability of future generations to meet their own needs “ [19]. Indeed, simplifying, it could be interpreted as a utilitarian decisional mechanism where the voters are both the actual and future generations.

2.3.4 Consensus and actual value

The elements we have are enough to evaluate the projects in terms of actual value and including the non-market prices of the dimensions affected. In turn, this actual value will allow us to determine the feasible sets. The actual value of the individual i on the project j on T years and D dimensions and J projects is given by the sum over time of the expected utilities ($\Delta U_{i,d,t}^e$) generated by this project actualised for a discount rate r :

$$AV_{i,j} = \sum_{t=1}^T \sum_{d=1}^D \frac{\Delta U_{i,d,t}^e}{(1+r)^t} \quad (26)$$

The decision concerning the discount rate to apply requires a careful analysis that is remanded to [20]. The democratic votes of an individual I are distinguished in potential democratic vote $v_{i,j}^p$, that is a vote for the project j without alternative, and expected votes $v_{i,j}^e$, that is the vote of a project j among alternatives. Formally:

$$v_{i,j}^p = \begin{cases} 1 & \text{if } AV_{i,j} > 0 \\ 0 & \text{otherwise} \end{cases} \quad (27.a)$$

$$v_{i,j}^e = \begin{cases} 1 & \text{if } AV_j > AV_f \forall j, f \in [1, J], j \neq f \\ 0 & \text{otherwise} \end{cases} \quad (27.b)$$

A project will satisfy the democratic consensus constraint if it leads to the majority, in other words, defined the actual consensus of the project j as the sum of the expected votes for j , if it is higher than the half of the number of the voters then the project satisfies the consensus constraint.

$$\text{Actual consensus}_j = \sum_{i=1}^{i=N} v_{i,j}^e \quad (28)$$

$$\text{Consensus constraint satisfaction condition: } \sum_{i=1}^{i=N} v_{i,j}^e \geq \frac{N}{2} \quad (29)$$

Important and remanded is the possible utilization of these data and the indicators for political analysis especially when clustered according to demographic characteristics and preferences [21].

2.4 Discussion

Our capacity to reach a sustainable future depends on long terms policies which implementational success is conditional on the consensus they gather. Nevertheless, when policies are evaluated, other principles than the Democratic Consensus are adopted, such as, among others, Utilitarian, Libertarian, and Rawlsian. This proliferation of evaluation principles may lead to a decisional impasse: one may promote a policy unacceptable to another. Even if the researcher has reason to prefer one of these principles, actual techniques based on revealed preferences, willingness to pay, or willingness to accept, have been proven to be inadequate to estimate the utility especially concerning certain non-market dimensions of sustainable development. Hence, we must cope with a methodological lack in predicting the right policy to do and if this policy is feasible in terms of Democratic Consensus and SDGs. We must also deal with two major facts; the very same democracy may be inadequate to achieve sustainable development goals [22] and SDGs may present trade-offs [23]. These issues are exacerbated by the fact that people voting decision depends upon their preferences which, in turn, may lead to unjust and unsustainable results [11, 24, 25]. Hence, the research frontier is to enquire about our evaluation principles and goals, the way preferences support or undermine them, and

extend our methodological toolkit to debate, include, and estimate all the relevant aspects of justice, democracy, and sustainable development [13, 26, 27, 28, 29].

3. Conclusions

If the consensus constrains any politician's choice, it affects their capacity to achieve any target, including the Sustainable Development Goals. Consequently, consensus must be treated as a binding condition to satisfy; it is a pre-requirement for any successful and feasible development path. The development can be defined either by a set of goals, as the sustainable development goals, or by other ethics as the Utilitarian, Rawlsian, or Libertarian. The manuscript showed that the democratic vote does not necessarily drive toward any development based on these other ethics. If individual's preferences are heterogeneous and if individuals vote according to their expected utility, then because their capacity to decide and pay differs, democratic vote, utility maximization, and Paretian improvement (with and without compensation) are hardly leading to the same result. Hence, these different decisional methods must be distinguished, and economists must justify their decision when adopting one or the other approach.

The manuscript also debated how to estimate the consensus of different projects or policies for sustainable development. The author adopted a multidimensional utility (beyond GDP) to explain the vote decision of individuals in the long term. He argued that classic non-market evaluation techniques, as the willingness to pay, willingness to accept, and revealed preferences, cannot be entirely adopted for the vote estimation. The author did not propose an alternative method; he merely showed that the same theory demands further research with a set of proofs of these methodologies' limits.

To conclude, the author argued that in democratic societies the consensus is a binding condition for any development path, whenever based on sustainable development goals, utilitarianism, libertarianism, or the Agenda 2030. Hence, the estimation of the consensus must be included in the toolbox of policy evaluation. The author provided a theoretical multidimensional utility analysis to model the vote decision. However, classic non-market evaluation techniques may be unable to estimate them because many crucial assumptions, such as goods divisibility or the possibility of having an infinite utility from market consumption, are unsatisfied for long-term and multidimensional development paths. Hence, the author suggests that the consensus estimation is a pre-requirement for any policy, but it must be more deeply studied, and research must develop new tools to address the sustainable development feasibility and economic policy consensus evaluation.

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