The Principlism Method Applied Utilitarianist in Mathematical Calculations for an Ethical Decision

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Abstract Part of the extremely studied concept of ethical management is the ethical decision-making process within an organization designed to determine how the members of the organization should proceed in order not to violate already established ethical codes or generally accepted moral principles. In order to be able to count the morality of an action by evaluating its effects on the beneficiaries, they usually resorted to primary arithmetic calculations in which the consequences on the beneficiaries receive positive or negative values of 1, 2, 3 by reference to few moral principles or institutional rules. The model proposed by us will no longer have to choose the priority of one principle over another based on unclear criteria. We propose a model of calculations that is made by reference to moral values that are supposed to be respected in an organization and, correlatively, the impact evaluated in figures of compliance or non-compliance with these moral values. The proposed mathematical formula is complex and allows quick calculation regardless of how many variables are involved. Also, the impact is then calculated separately from a financial, intellectual, moral, educational, and psychological point of view.

Keywords Ethics · Principlism · Decision · Math

1 Introduction

In the middle of the last century, Rawls (1951, p. 187) asked himself: "Is there a well-founded decision-making procedure which is strong enough to determine the manner in which competitive interests are to be awarded and that in which, in cases of conflict, we must give priority to one preference over another? Furthermore, can

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the existence of this procedure, as well as its well-founded nature, be established by rational means of research?" Ethical decision, as part of the broader concept of ethical management of an organization, has selected over time several major directions and also a series of alternatives to them: the two-level utilitarian method of Hare (1981), moral casuistry, the principlism method, the ethical matrix, Christian morality as a form of principlism, ethical narrative, methodological pluralism, the manner of some questions we have to answer, the ethical OPIS, etc. We will detail only those that are of interest and from which we will start to describe a new model of organizational ethical decision, taking schools as an example.

Moral case law is a model of ethical decision that appeals to paradigmatic cases and the analogy with them for a new ethical situation we face. It is dependent on social consensus on the paradigmatic cases, definitions, and ethical meanings of a cultural society at a given historical moment and not on one ethical theory or another. Therefore, one of the limits of this approach is, in the opinion of thinkers such as Beauchamp and Childress, or as Muresan (2009, p. 200) states "raising social prejudices to the rank of ethical conclusion." In addition, the analysis of the situation we face, which allows us to make a final reviewable decision at any given time, is done using a kind of flair, to phronesis (practical wisdom), which cannot be constituted in an algorithm. Additionally, this kind of phronesis is the one responsible for misunderstanding some gestures of the others. Many companies today have forbidden even the mere appearance of unethical behavior in their Ethics codes. These appearances, for example, could be objects of misunderstandings sometimes and some authors reject this appearance standard, like Kaptein (2018) noticed that for Luban (2001, p. 26), the problem is that appearance is a "conceptual accordion that can expand as widely as suits the eyes of the beholder" while the beholder has not analyzed the observed behavior properly.

Distinguishing between appropriate rules and moral rules, Hare's (1996) preferential action utilitarianism differs from simple action utilitarianism in that the preferences of the people involved are compared, taking into account that the rule that has the expectation of satisfying the highest preferences has priority if it is respected. Usually, moral decisions are made intuitively, meaning that we do not calculate the consequences and preferences, but we relate the action we evaluate to the moral rules and principles that we have internalized over time. Moral debts at this level are called by Hare (1981) prima facie debts, which means prohibitions or moral obligations that are not absolute, but support exceptions, are not strictly hierarchical, but can be outclassed in various situations, and remain valid even if they can be violated. Codes of ethics contain such prima facie debt.

There is, however, a second level of ethical decision, that Hare (1996) named the critical level, for which we have to make key decisions related either to the introduction of a new moral rule or the elimination of rules that no longer correspond. This level is the one that updates the ethical codes of organizations; also, it is the one where it is necessary, in the author's opinion, to apply preferential action utilitarianism. This method follows the evaluation steps as it follows: first, the class of actions we are considering (not just a particular action) is determined; then, we determine the persons or groups that are affected by the action. In this way, we find

out what the consequences of the act are and we give weight to these consequences depending on the degree to which they satisfy the preferences of the people involved. After this, the probability of such consequences to happen is estimated and the expectations of satisfying the above-mentioned preferences are calculated. These expectations are compared by calculating the balance of satisfaction and dissatisfaction of preferences and, finally, the moral decision that was chosen is the one that results in the greatest satisfaction of the preferences of as many of the actors involved as possible.

If Hare (1981) had taken into account only the maximization of the utility and the satisfaction of those involved, this would have been, in his opinion, only the demonstration of the opportunity of that action, not its morality. The actions we call moral, following ethical decisions such as those described above are opportune, but, in addition, they become moral debts, such as they cover a whole range of acts, not just individual and accidental ones; they are coercive, imposed by the organization or society; they produce interpersonal goods but not personal goods, which are socially important and involve internalization through education. However, when Hare talks about preferences and consequences for the involved actors, what kind of consequences does he refer to? What is their essence? He does not specify. We can be affected by psychological or intellectual preferences and by professional or moral preferences. These are not specified, and as such we have to think about them unlabeled. This, however, makes it difficult to try to count the impact in numbers. In the actual literature, the analysis of the action is taken from very few aspects on a very basic level which made us extend it so that we can take into account all the moral values and almost all identifiable points and direction of analyzing the actions and actors. We will continue to see the presentation of a possible problem in an educational institution in the light of established ethical decision methods, such as Hare's utilitarianism, principlism, ethical matrix, and then to present the mathematical approach we propose to draw the necessary conclusions.

2 Problem Identification

As an example, let us suppose that the action we are judging is to expel from class a student who is in some way disturbing the smooth running of that class. Between the countless orders and laws of the relevant Ministry, there is this implicit clarification, but, in fact, the codes of rules of schools do not provide a ban on doing so, and many teachers do not even believe that this ban exists. In order to proceed according to Hare's model, we must first classify this action in a category of facts, and we do so considering that these are acts that limit the student's access to education. Then, we determine the people or groups involved and we will consider that it is about the students, their parents, teachers, and the school management. The consequences of the presented gesture are the following:

Table 1 Degree of satisfaction / dissatisfaction (D)

Student	D	Parents	D	Teacher	D	Leadership	D
Loses the lesson	−2	Suffering	−3	Satisfaction	+2	Weak teachers	−1
Something bad happens to him	−3	Reprimand	−2	Quiet	+3	Confrontation of parents	−2
Doing a bad deed	−3	Infringement of rights	−2	Consequences if something bad happens to the student	−3	Grounded	−3
Dignity touch	−1						
Isolation from group	−1						
The joy of not making the class	+2						
Total:	−8	Total:	−7	Total:	+2	Total:	−6

Source: Author's own research based on the proposed example

- For the student: He loses the part of the lesson he did not attend, he can leave school being unsupervised and do bad deeds or even suffer something, he can feel isolated from the group and will be able to experience the feeling of his dignity being stripped off in front of the group, he could be glad that he had escaped that hour.
- For parents: They will suffer if the child suffers something bad, they will suffer consequences from reprimand to receiving a fine if the student does something bad while he is not present in class, they will feel their rights violated because the son (daughter) does not participate in classes.
- For the teacher: The satisfaction that he punished the student's behavior, silence during class, negative consequences if the student suffers something or does a bad deed.
- School leadership: Dissatisfaction that teachers do not control the students, dissatisfaction with possible confrontation with revolted parents, punishment if it ends badly.

The determination of preferences results from the positive, negative, desirable, and undesirable nature of the actions felt by those involved. The degree to which the consequences satisfy the preferences of those involved can be imagined as follows, considering from 1 to 3 that 1 is weak, 2 is moderate and 3 is strong, with positive or negative signs, as they are presented in Table 1 with their grade evaluation.

Further on, the probability is estimated to be from 1 to 5, where 1 is very unlikely, 2 is unlikely, 3 is likely, 4 is very likely, 5 is almost always, and is multiplied by the degree of satisfaction/dissatisfaction, taking into account that those intended consequences are conditioned and may or may not occur, the value of the probability given to a consequence on one actor will also determine the value given to the related consequence on another actor.

For example, the probability of a student getting hurt while staying out of class is estimated at 2, based on the survey on multiple teachers asked about their classes; if the student suffers something bad, the suffering that the parent feels is sure to exist, so it is assessed at the value of 5, but because it is likely that the student will suffer something only from the value 2, we have to estimate the probability of the parents suffering at the value of 2. We reach this conclusion by interviewing a few parents that went through this experience with their children been expelled from the class because of their disrespectful attitude towards the teacher's class.

The probability that the actions identified in our example will happen is presented in Table 2, where R represents the results of Degree of satisfaction (D) multiplied with Probability of it happening (P) ($R = D \times P$).

In the last stage, all the calculations obtained are summed up, in our case being a total result of -38, and in terms of positive or negative results for each party involved, we have only one with a positive value, namely the teacher. This result shows us that the teacher's action to expel a student from class is not advisable and, in fact, violates the rules in force. It is a simplistic and simplified example designed to illustrate how the Hare method is applied. What we note is that Hare (1981) considers the evaluation of situations from an ethical point of view by referring to the actors' understood consequences as being their preferences, expectations, and probabilities for them to occur, and not by referring to values or principles: as Hare (1996, p. 14) said ". . .since in actual cases we never know enough and never have enough time to think about it, it is very hard to be sure that this is a case in which we ought to depart from the principle. . .This, I think, would be a sound attitude, and fundamentally a utilitarian attitude. . ."

Principlism referred to as a method of moral evaluation in bioethics by Beauchamp (2001) is not an ethical theory and does not appeal to any. It starts from the establishment in the American environment of four fundamental principles that must be observed in the specified field: respect for autonomy, benevolence, avoidance of harmful actions, justice. In Europe, through the Center for Ethics and Law at the University of Copenhagen, these four are different: respect for autonomy, dignity, integrity, and vulnerability. These principles are then specified, meaning that by taking into account the particular context and circumstances, they are transposed into specific rules of conduct. At a third level, it goes even further towards particular rights, virtues, and particular moral judgments. It should be noted that the proposed principles are not absolute, there may be exceptions to compliance and are not hierarchically organized so that anyone can outperform the other.

In simple cases, the facts are simply confronted with the established rules and principles, and in the case of moral dilemmas, the principles are weighed and the coherence of the system of principles is maximized. Weighing is performed to eliminate normative conflicts, balancing the relevance for that case of each principle which can lead to non-compliance with one of the principles in that particular case. Maximizing coherence is a necessary step precisely in order to be able to choose between various competing specifications, keeping one and eliminating another from the calculation, and the coherence ensured must be within the system of general moral beliefs of people. If we try to exemplify the principle using the same situation

Table 2 Probability of it happening (P)

Student	P	R	Parents	P	R	Teacher	P	R	Leadership	P	R
Loses the lesson	5	−10	Suffering	2	−6	Satisfaction	4	8	Weak teachers	4	−4
Something bad happens to him	2	−6	Reprimand	2	−4	Quiet	5	15	Confrontation of parents	3	−6
Doing a bad deed	2	−6	Infringement of rights	5	−10	Consequences if something bad happens to the student	2	−6	Grounded	2	−6
Dignity touch	3	−3									
Isolation from group	2	−2									
The joy of not making the class	4	8									
Total:		−19	Total:		−20	Total:		17	Total:		−16

Source: Author's own research based on the proposed example

as in the case of the Hare (1981) model, we will be able to find that the principle of autonomy could become competing at least with the principle of avoiding harmful actions, even if Beauchamp (2001, p. 57) and Childress said: "We aim to construct a conception of respect for autonomy that is not excessively individualistic (neglecting the social nature of individuals and the impact of individual choices and actions on others), not excessively focused on reason (neglecting the emotions), and not unduly legalistic (highlighting legal rights and downplaying social practices)."

If you kick out a student who is disturbing the class, it could be considered a gesture in accordance with the teacher's autonomy to freely decide, which means to choose in order to properly exercise his teaching profession. At the same time, however, the gesture seems to be in conflict with the observance of the other mentioned principle because, without a doubt, being excluded is something harmful that you should refrain from. In this case, we must resort to weighing. The greatest relevance seems to be the autonomy principle because the school is meant to teach you and you are meant to learn, and the main role, in this case, is to ensure that the climate is the right one for teaching–learning in the classroom. Equally, however, if we look from the system coherence point of view with the value system of contemporary people, the principle of avoiding a harmful gesture seems to be much closer to satisfying this requirement. In this case, even the procedures described by the people with principles, become concurrent and relative to the very ethical theory to which you adhere even unconsciously, although their intention was precisely to get rid of the dilemma related to one or another of the ethical theories. If, instead of this approach, we took into account all the principles to which an institution can adhere, without eliminating one of them in particular concrete cases, and measured the impact on all from several points of view, the result would probably have been less dilemmatic.

Another approach designed specifically for a certain field is the ethical matrix. Created by Mepham (2005, 2015) and Mepham et al. (2006) in 1994 at the Center for Applied Bioethics at the University of Nottingham, the ethics matrix is considered by the author as an ethical analysis framework for deciding the ethical acceptability of new biotechnologies in the agri-food industry, not an ethical decision-making procedure. It is inspired by principlism and designed to be used not by specialists in ethics but by ordinary people. It starts from 3 prima facie principles that are not ranked and considered to be, for example, welfare, autonomy and justice, and these are concretized in criteria that can be analyzed in terms of the consequences on those involved. The matrix can be quantified with values from −2 to +2, but it is not necessarily demanded because the author insists on a global qualitative analysis on the matrix to guide us in our decisions, and not on the resulting final values. Using our example again, we could have a matrix of the following type as presented in Table 3 with the identified results and associated values.

Table 3 Ethical matrix

	Welfare	Autonomy	Justice
Student	He loses the information taught, but can relax (−1)	He has no freedom of choice whether or not to sit for class (−2)	It is unfair not to be able to attend classes like other students (−2)
Parents	They do not feel comfortable knowing that the son (daughter) does not attend classes (−2)	They do not have the freedom to choose to have their son/daughter attend all classes as they would like (−2)	They feel wronged that their son or daughter does not exercise the right to education (−2)
Teacher	He feels relaxed, but also avenged, and can teach the lesson (+2)	He has the freedom to choose who and if he attends his classes (+2)	He feels entitled to make such a choice and considers that the choice made means justice (+2)
Leadership	He does not feel comfortable knowing that teachers do not control the atmosphere in the classroom (−2)	Is not free to decide anything about the situation, preferring for students to sit in class (−1)	It is neutral because it is unfair for the student not to attend classes, but it is unfair for the teacher not to be able to support his classes quietly (0)

Source: Author's own research based on the proposed example

3 Problem Adaptation

After analyzing Donald (2012), Bentham (1834), Kaptein (1998), Laasch and Conaway (2015) and McNamara (2019) in the model we propose, the calculations are made by reference to moral values that are supposed to be respected in an organization and, correlatively, the impact, the consequences evaluated in figures of compliance or non-compliance with these moral values. In other words, it is a combination of Hare's (1996) utilitarian model with the principlism one combined in a different ethical matrix, with the possibility to introduce as many variables and as many nuances and numerous indicators of these variables that become easy to calculate with the help of mathematical formulas. The model is adapted and designed for school organizations. The consequences of an action when it comes to an organization are ultimately relevant from the perspective of the values and principles of the organization, and only in view of them in terms of the impact on individuals as such. Ultimately, the organization establishes those values that can bring back efficiency, profit, credibility, and the rules and regulations of conduct based on these values.

What matters ethically in the case of an organization is the extent to which it achieves the (moral) goals for which it exists, but the goals can only be achieved if the values by which it operates are respected. When one or more institutional values are undermined, disrespected by the conduct of the actors involved, the organization erodes or even loses credibility, and this leads to its inefficiency or even its disappearance from social life. The statement that the measure of organizational ethics is the degree of achievement of goals is not cynical, because it is an illusion

that there could be an effective organization that does not establish its values in accordance with moral principles accepted in society. The concept of corporate social responsibility (CSR), defined as coordinated businesses aiming at a more sustainable world, talks about the efficiency of these businesses. Nijhof and Jeurissen (2010) draws attention to this fact when they say that this at least requires that managers should show commitment to certain social values, be able to defend it in good and bad times and prepare all employees to deal with the inherent dilemmas of bearing different responsibilities. Therefore, we cannot talk about efficiency in an immoral setting. The idea that, for example, a company pursuing financial profit can achieve this goal by acting immorally is also an illusion. At some point, losing credibility with customers, for example, will lead to bankruptcy. Moratis (2018) evokes statistics like a survey among consumers from ten of the world's largest countries showed that some 81% thought that firms have responsibilities going (far) beyond creating shareholder value, with 31% thinking that firms should change the way they operate to align with greater social and environmental needs. In the article published by Wilson et al. (2021), it is shown that consumers learn to detect and penalize misleading tactics.

We consider the reporting to the rules of the institution, as Hare (1996) does, unsatisfactory. Of course, the rules of an organization derive from the very values or principles to which the organization adheres. However, not reporting to the rules, but directly to the values, eliminates the disadvantage of being in the situation to ask yourself if a certain rule should not be eliminated and a new one should take its place before deciding how we stand with the morality of the deed we judge. In other words, aware that the rules are more changeable than values over time, depending on new contexts, precisely as a result of an ethical decision that we had to make, we will not refer to them. The same value can be applied by different rules. Changing a rule does not mean that the value behind it will change as well. But the rules are less stable, depending on the very particular concrete conditions of the respective environment. In addition, the codes of conduct of an institution that have rules and derive, of course, from the values of the institution are and must be only highlights, concrete examples of acting in the given context, in such way that not every employee has to become a small ethical philosopher to be able to act.

When new contexts decide new understandings of values or even change them, the rules will change or enrich as well. Ethical leaders are the ones who, in Kaptein (2019, p. 1143) opinion, "create new ethical norms, standards, principles, or values." but because those who create new ethical norms are called moral entrepreneurs in sociological literature, Kaptein (2019) noticed that in the definition of ethical leadership, which consists of two components, the moral person and the moral manager, should add to the moral entrepreneur. About these kinds of persons, Kaptein (2019, p. 1143) said that "leaders base their arguments on principles that they believe are right and good for society," which means that ethical leaders first have a certain vision on principles and values, and then eventually change the norms and the rules. If so, the question is why not make a moral analysis for an ethical decision directly on values, not on rules? The values we will take into account cannot be inter-conflicting, meaning there is no question of taking one into account as a

matter of priority and eliminating the other, but together they must be respected, while an adjustment coefficient is introduced to show the relevant part of each value for that organization. It is understood that for each organization their relevance may be different, and this fact shows the specificity of each organization. In this way, performing calculations related to the values of the consequences on the actors involved, there is no need to resort to contentious principled steps of weighing the principles (values) and maximizing the coherence of the value system, steps that do not have precise indications or rules of application, but rather intuitive rules.

We will no longer have to choose the priority of one principle over another based on unclear criteria. We also wonder why are four principles proposed by principlism? It is true that they are extremely comprehensive and universal as their authors have set themselves, but we can take as a benchmark as many values that the organization has set out to respect. In addition, each organization may consider any other values that may lead, if met, to the achievement of the organization's goals. Also, in order to take everything into account, the significant ways in which an actor involved can be affected by an action, and not only in general, we also introduce types of classified impact: financial, intellectual, moral, educational, and psychological. In this way, we can follow the concrete way in which an actor can be affected, which can be the basis for any subsequent analysis of remedial measures that can be taken. Of course, following the calculations made by the model proposed by us, a certain ethical decision emerges. But this is not the end of the analysis because this decision must be passed through the filter of the consensus of the people involved in the organization. Without this consensus established by the agreement of the majority of the representatives of the parties involved, any ethical decision becomes without a final and sterile. We consider the goals of the organization and the agreement of those involved to act in a unitary way in order to achieve those goals. Recently, Kristjánsson (2021) spoke in his published article about the importance of building an individual and collective *phronesis* due to which the focus has remained mostly on the construct at the level of individual decision-making but, until education can confer such an ethical level for everyone, ethical decision-making remains a difficult task in the hands of those who represent ethical management.

4   Mathematical Methodology Approach

In order to determine the calculation of the level of moral values on the actors involved, a unit of measurement in *PM* points (measurement points) and an adjustment coefficient are applied to the related variables, according to Table 4, consisting of moral values identified by us for the proposed example in order to obtain a uniform calculation. The adjustment coefficient as a moral value is given by the connection between the moral value and its impact on the actor and is used to transpose the moral values into measurable and approximate mathematical values in units of measurement.

Table 4 Moral values

No.	Moral values *(Mv)*	Adjustment coefficient *(Ac)*
1	Impartiality and objectivity	0.5
2	Independence and professional freedom	0.9
3	Moral, social, and professional responsibility	0.8
4	Moral and professional decency	1
5	Confidentiality and respect for the private sphere	0.87
6	The primacy of the public interest	0.66
7	Respecting and promoting the legitimate interest of the educable	0.4
8	Compliance with general and field-specific legislation	0.8
9	Respect for personal autonomy	0.9
10	Intellectual honesty and fairness	1
11	Decent and balanced attitude	0.5
12	Tolerance and encouragement of diversity	0.2
13	Self-exigency in the exercise of the profession	0.5
14	Involvement in the democratization of society	0.2
15	Interest and responsibility in relation to one's own professional training, in increasing the quality of teaching activity and the prestige of the pre-university education unit/institution, as well as of the specialty/field in which it carries out its activity	0.67
16	Respect for the dignity of the person	1

Source: Author's own research

Observation: The moral values listed in Table 4 can and might differ from each example analyzed by removing or adding new moral values according to the example that fit the necessities of actions in an organization made by the actors involved.

To express the computational value of a moral value *v* (*VMv*) on the actor involved, we propose the formula:

$$VMv_v = IR_v \times NP_v \times AC_v, \text{where} : \tag{1}$$

v, represents the moral value, according to Table 4
IR_v, relative impact of moral value *v*
NP_v, damage level of moral value *v*
Ac_v, adjustment coefficient of the moral value *v*, has the values according to Table 4

Observation: the PM measurement points are considered as the unit of measurement of the calculation.

The following formula is used to calculate the relative impact of a moral value IR_v:

Table 5 Link between impact and probability

Impact / Probability (IR)	Non-existent (1)	Unlikely (2)	Likely (3)	Very Likely (4)	Existing (5)
Minimum (1)	1	1	2	3	4
Weak (2)	1	2	2	3	4
Medium (3)	2	2	3	4	4
Important (4)	3	3	4	4	5
Maximum (5)	4	4	4	5	5

Source: Author's adaptation from Stoica (2013)

Table 6 Damage level of moral value

Losses	Results	NP
Minimal	Minimum chances of affecting the actor	1–10
Low	The actor is affected to a small extent	11–20
Medium	The actor is affected	21–50
High	The actor is greatly affected	51–65
Total	The actor is irreparably affected	66–100

Source: Author's adaptation from Stoica (2013)

$$IR_v = I_v \times P_v, \text{where} : \qquad (2)$$

I_v, the impact produced by the moral value v

P_v, probability of applicability of moral value v

Take into account the fact that the impact has values between 1 and 5, 1 representing minimum impact and 5 maximum impact and the probability of occurrence of the moral value on the actor in the analysis takes values from 1 to 5, where 1 represents the lack of moral value and 5 its absolute existence in the analysis performed on the actor involved. Table 5 shows the calculation of IRv according to the possible influence values.

The values for the relative impact IR_v are from 1 to 5, where 1 is non-existent and 5 is existing, 0 meaning that there is no impact. The NP_v damage level of a moral value v is given by the correlation between the dispersion of the impact surface and the consequences on the actor. There are values by loss categories and corroborated with the relative impact approximates the real mathematical value of the moral value on the actor involved. A sampling of the injury level is shown in Table 6.

The value of an NP damage level corresponding to a moral value is between 1 and 100. It is given by the estimated value through the statistical analysis on the actors involved and the type of their recovery. Value 1 meaning an almost non-existent damage that can be ignored and 100 representing a maximum damage with irreparable repercussions.

To calculate the value of consequence of the action for an involved actor from the moral point of view we use the formula (MCV_a):

$$MCV_a = \sum_{v=1}^{15} VMv_v \times e_v, \text{where :}$$ (3)

MCV, consequence of the action in terms of moral values
a, actor involved according to the identification in the analysis
e, represents the value of the existence of the moral value in the analysis, having the
   absolute values 0 or 1, 0 for inexistence and 1 for presence.

For a more efficient analysis, the type of impact on the actor is taken into account in terms of aspects, and it is considered significant from a social and individual approach, namely the financial, intellectual, moral, educational, and psychological impact—Classified Impact *IC*. It is also expressed in *PM* measurement points, which represent standard and final units of measurement for evaluating the mathematical approach. A clarification about psychological impact must be made here. If the other forms of classified impact are aspects usually considered quantifiable, the psychological impact could be suspected as not being subject to a mathematical calculation. But it is so important, especially for those members of the organization who are devoted and have high levels of the conscientiousness, that it cannot be circumvented, even if the quantification risks are subjective. Zheng (2015) showed that applying trait activation theory and a resources-based stress (*COR*) theory, we explained how (via low levels of valued work conditions or resources) and when (primarily among individuals approaching the high end of conscientiousness) low levels of ethical leadership affect team cohesion and emotional exhaustion.
IC is calculated according to the actor's damage in terms of moral values, representing the amount of *MCV* for each financial, intellectual, moral, educational, and psychological classification. To calculate the value of the classified impact on an actor (IC_a), the following formula is proposed:

$$IC_a = \sum_{j=1}^{5} MCV_j, \text{where :}$$ (4)

j, represents the classified impact

The extended and complete Classified Impact formula is:

$$IC_a = \sum_{j=1}^{5} \sum_{v=1}^{15} I_v \times P_v \times NP_v \times AC_v \times e_v$$ (5)

For the evaluation of a decision, the decision value (DV) of all the actors involved is calculated, representing the sum of the classified impact of each actor:

$$DV = \sum_{a=1}^{n} IC_a, \text{where}:$$ (6)

n, represents the number of actors involved.

5 Practical Example of Mathematical Approach

Based on our initial example with the teacher expelling a student from the class, we use the proposed methodology to calculate the impact of the decision taken by the teacher as follows in Table 7. The values displayed in the table were obtained and analyzed tracking the teachers' questionnaires, as well as the interviews with the parents, based on the case of the student that was expelled from the class and then, the final parameters were obtained by adjustment. As an example, following the discussions with the parents, if for a share of them the impact was either maximum or minimum but for the average it was a normal impact, we allocated the average as the impact on parent level. The values in the table were assigned on the same principle for all the actors identified. We randomly interviewed 12 teachers, 16 students, 7 parents, and 4 college directors.

Mv, Moral value, from Table 4
Ac, Adjustment coefficient from Table 4

Table 7 Practical example

		Student			Teacher			Parents			Leadership		
Mv	*Ac*	*IR$_v$*	*NP$_v$*	*VMv$_v$*	*IR$_v$*	*NP$_v$*	*VMv$_v$*	*IR$_v$*	*NP$_v$*	*VMv$_v$*	*IR$_v$*	*NP$_v$*	*VMv$_v$*
1	0.5	4	60	120	4	50	100	4	55	110	4	80	160
2	0.9	1	40	36	5	80	360	3	40	108	5	80	360
3	0.8	1	20	16	4	60	192	3	20	48	5	80	320
4	1	3	40	120	4	60	240	4	40	160	4	60	240
5	0.87	2	10	17.4	3	40	104.4	2	20	34.8	3	20	52.2
6	0.66	1	5	3.3	4	50	132	2	10	13.2	4	50	132
7	0.4	1	5	2	4	60	96	3	35	42	5	55	110
8	0.8	1	1	0.8	5	80	320	4	80	256	5	100	400
9	0.9	3	60	162	4	70	252	4	80	288	4	80	288
10	1	2	20	40	4	40	160	4	40	160	4	50	200
11	0.5	2	40	40	5	50	125	4	50	100	5	50	125
12	0.2	1	5	1	4	30	24	4	30	24	4	30	24
13	0.5	1	1	0.5	4	30	60	2	10	10	4	60	120
14	0.2	1	1	0.2	2	10	4	1	1	0.2	3	30	18
15	0.67	1	5	3.35	4	40	107.2	3	40	80.4	4	50	134
16	1	2	60	120	4	60	240	4	60	240	5	80	400

Source: Author own research based on proposed example

Table 8 Financial values of moral value for each actor

Financial		Student			Teacher			Parents			Leadership		
Mv	Ac	IR_v	NP_v	VMv_v	IR_v	NP_v	VMv_v	IR_v	NP_v	VMv_v	IR_v	NP_v	VMv_v
1	0.5	1	0	0	1	0	0	1	0	0	1	0	0
2	0.9	1	0	0	1	2	1.8	1	0	0	2	10	9
3	0.8	1	0	0	2	20	16	1	0	0	3	40	36
4	1	1	0	0	4	60	240	1	0	0	4	80	320
5	0.87	1	0	0	1	0	0	1	0	0	1	0	0
6	0.66	1	0	0	1	0	0	1	0	0	1	0	0
7	0.4	1	0	0	2	10	6.6	1	0	0	2	20	13.2
8	0.8	2	20	16	4	60	192	3	50	120	5	80	320
9	0.9	1	0	0	1	0	0	1	0	0	1	0	0
10	1	1	0	0	1	0	0	1	0	0	1	0	0
11	0.5	2	40	20	4	60	30	3	30	15	5	80	40
12	0.2	1	0	0	1	0	0	1	0	0	1	0	0
13	0.5	1	0	0	1	0	0	1	0	0	1	0	0
14	0.2	1	0	0	1	0	0	1	0	0	1	0	0
15	0.67	2	20	26.8	4	60	160.8	3	50	100.5	4	70	187.6
16	1	4	80	80	5	80	80	4	80	80	5	100	100

Source: Author's own research based on the proposed example

IR_v, Relative impact from Eq. (2)
NP_v, Damage level from Table 6
VMv_v, Moral value from Eq. (1)

After the obtaining of each value of moral value, we adjust the equation by introducing the existence of the moral value with values of 0 just for the student (in our case and this example) for the Moral values 4,6,7,10 and 16 and for the Parents for Moral value 14, so the MCV becomes:

$MCV_{\text{student}} = 517.25$
$MCV_{\text{teacher}} = 2516.6$
$MCV_{\text{parents}} = 1674.4$
$MCV_{\text{leadership}} = 3083.2$

(The MCV values are calculated based on Eq. (3))

The classified impact based on the five categories is presented in Table 8 for the Financial.

In the case of financial evaluation, we obtain:

$MCV_{\text{student}} = 142.8$
$MCV_{\text{teacher}} = 727.2$
$MCV_{\text{parents}} = 315.5$
$MCV_{\text{leadership}} = 1025.8$

The explanation is as it follows: student can lose the daily money from his parents for disturbing the class, the teacher can get a salary penalty for expelling the student,

the parents can lose money by needing meditation for the student to recover the lost hours, the leadership can hurt the school's prestige in front of other parents because of the teacher's decision. In the current studies, you cannot determine the detailed analysis of an action and current consequences and therefore we proposed the current model.

The mathematical model we propose is a much more precise way of being able to make an ethical decision without necessarily being an ethicist. One of the objections to the method of the ethical matrix that is inspired by bioethical principlism is that it only compares the consequences of the case with some basic principles that are briefly explained. As it looks, it is not an ethical decision-making procedure, but rather a tool that helps to make moral decisions in public debates rather than in institutions with precise values and rules. Likewise, principlism is a kind of guide to moral evaluation, not a decision algorithm. The complex mathematical calculation method that we propose, based on the conformity with the values of the respective institution, offers a much more exact perspective on the impact and its value dimension on each actor involved, as well as a whole. In this way, depending on the current priority interests of the institution, we can see which is the preferable ethical decision without having to adjust principles or see if the principle of coherence is respected. Moreover, we can find out, as it was presented, what is the impact of a gesture only through the prism of a certain aspect of interest: financial, psychological, moral, etc. And all this without having to be an ethicist. A clear and common-sense reason is enough. Also, following an ethical decision as a result of mathematical calculations, we can establish clear rules of conduct accepted in concrete situations. It is a kind of reversal of vision: we start from values, which are much more stable and general, in order to establish rules that are changeable and dependent on the needs of the institution, and not the other way around, as things have been understood so far.

6   Conclusion

This calculation example showed us how we can find out which is the value of the impact of an action on each actor involved, both from different aspects taken into account such as financial, moral, psychological, intellectual, educational, as well as from the perspective of agreed institutional moral values. The higher the resulting values, the greater the impact in that area. In this way, we can assess the extent to which institutional moral values are respected by members of the organization through their actions, but also how serious or even unacceptable the situation is. The more serious the situation is, the more it requires counteractive intervention because sometimes people simply do not realize how great the impact of their actions is on others. The use of these formulas has the advantage of not limiting the number of variables that can be introduced, which is important because the organizational ethical environment is a complex one that cannot be reduced to just a few ideas or principles.

The mathematical analysis developed for the study proposes a new approach on quantifying the impact of a decision on the actors involved based on the moral values identified or derived from the action itself. All the mathematical approach can be used into an informatic application, that does all the validations and calculations for a faster analysis and score results without the urgent need for ethicists to make them. The set of moral values can be adapted based on the organization needs and the decisions taken by employees can be evaluated from the moral point of view, interpreted by the equation results and used for future adjustments of the rules for a better practice in the society. The scope of the study was to offer a better perspective of decisions made from the ethical point of view and also to limit the damages created for the people involved in the action. Such easy-to-apply tools can become very important, especially in Central and Eastern Europe, where public and private corruption that affects general social behavior is maintained and, like Takacs Haynes and Rašković (2021) noticed, little is known about the cognitive and behavioral mechanisms in ethical decision-making.

In order to continue the research to optimize the calculations, the values of the parameters can be adjusted, as well as the number of moral values that were used and identified within the analyzed action. In addition, based on the result of these calculations, a set of decisions can be defined, following a moral and ethical perspective.

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