The "real" winner (An exploration from experimental economic behavior)

El "verdadero" ganador (una exploración a partir del comportamiento económico experimental)

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Abstract

There is a problem in life when a certain number of individuals, have to decide between alternatives available, such as investment projects, products and services or maybe about artistic, intellectual or another technical quality. In those subjective decisions, but especially those from strategic intentions "juries " could have a fundamental impact on the outcome. The problem arises when the decision would maximize or not the value of the company, depending on whether this has been made based taking into consideration the individual or the public interest, for example when it is necessary to filling vacancies, when it is expected to hire the candidate better trained, above the best positioned on subjective preferences. By the participation of rotating juries is possible to identify the existence of strategic and non-strategic votes.

Investment Projects, Participation, Juries

Resumen

Hay un problema en la vida cuando un cierto número de individuos, tienen que decidir entre alternativas disponibles, tales como proyectos de inversión, productos y servicios o tal vez sobre cualidades artísticas, intelectuales u otra técnica. En ese caso, las decisiones subjetivas, pero especialmente las de los "jurados" de intenciones estratégicas, podrían tener un impacto fundamental en el resultado. El problema surge cuando la decisión maximizaría o no el valor de la empresa, dependiendo de si ésta se ha tomado teniendo en cuenta el interés individual o el público, por ejemplo, cuando es necesario cubrir vacantes, cuando se espera contratar al candidato mejor formado, por encima del mejor posicionado en base a preferencias subjetivas. Mediante la participación de jurados rotativos es posible identificar la existencia de votos estratégicos y no estratégicos.

Proyectos de Inversión, Participación, Jurados

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Introduction

It is commonly seen in real life a problem when it take place tournaments and wins the participant with gets the bigger number of votes and these come from the decision of a jury.

In this case the problem arise from the need to determine the real winner, that is the best among a group of participants, taking into account all specific skills, instead of only identify the strategic winner from having obtained the highest score of the conquest.

Understanding that the true winner is the one who best represents the economic or social interest of individuals or groups on a particular project, a product or service within a public or private organization, therefore, becomes the best alternative once they have been discarded the subjective preferences for strategic choice.

When the real winner is identified within a company, it could be happening that it‟s a supporting practice of financial management, under which they are taking actions to maximize its value, also in the field of public property to allocate fiscal resources it could mean that give back benefits to society, but could also have positive impacts over several sectors as in the environment of the marketing competition, sporting or artistic competence such as speech contests, beauty, and cultural poetic declamation, to name a few, especially when participants can win or not based on subjective judgments .

Examples of this abound in real life one that might seem trivial, it is seen in the TV show " Dragons" famous in different latitudes and Japanese origin, where different individuals are faced with the decision of others to access to monetary resources to enable them to develop their investment projects.

The problem is also present when it is necessary to validate the independence of decisions that the "jury" and "committees" take in cases like those mentioned above, and certainly in situations where the public interest is involved.

The question is not whether the majority is able to make better decisions that taken individually, as regards (Kirstein, 2006) and the Condorcet Jury Theorem " that these are taken sincerely, but in this study it is take the assumption that individuals can act honestly or not, especially when the benefit of the latter can yield them a higher profit.

The study adds further to the decisions made in a group perspective, prevailing majority system to declare a winner in a contest of different kinds, as with voters in an election, however despite the vote majority in certain circumstances it is necessary to question if the winner is the best alternative according to the purpose for which it is convened.

The problem arises when the decision is made based on individual strategic interests above the group benefit (public goods).

Conditions of experiment

The document was developed in the framework of a research experiment, considering that "an economic experiment aims at analyzing a problem in laboratory conditions" (Brañas, Et al 2011), and of course following the development of this branch of economics that has had a boost from the award of the Nobel Prize for Vernon L. Smith in 2002 "for having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms".

It has taken into account that an appropriate experimental design allows to focus research on exactly what are looking to meet (Irlenbush, 2006), reducing exogenous impacts and the problem on the provision of experimental incentives (Rosenboim 2012), further knowledge of the behavior that cannot be invented just in the comfort of an armchair (Harbring , Et al 2010) .

The experimental protocol was applied at the National Polytechnic Institute in Mexico City. Participants were students in the second year of the bachelor of Trade Relations. The experiment was applied to 145 students divided into 4 separate groups of 44, 40, 41 and 20 members, respectively.

Within groups each participant was taking any of the following roles such as a "rapporteur ", "investor" or in any of the roles different times, although the investor only on one occasion.

The application took place just days after the start of the school year sessions and participation was voluntary. Participants were asked to prepare a presentation on a business project, as if seeking monetary resources by advertising support the development of a museum or cultural center of their choice, where success would be to achieve substantially increase the number of visitors, for which they could make use of visual materials technology audio, whatever they could have in the institution, that is, they could freely choose those resources that allow them to convince his group mates, that their project might be the best under the tournament scheme, in this case only one winner would receive a payment in kind, which would be obtained during the first evaluation period an additional weighting factor, unlike what is proposed by (Filippin and Guala 2012) where not only a participant receives payment.

The incentive allowed a total of 52 students chose to participate that is, just over 1 in 3. Eventually a list of each group directly concerned was made. The experimental mechanics was simple, they were informed that the winner would be the one who received the most investment in terms of "virtual dollars" (VD). The scale ranged from 0 to 6, meaning that if someone received an equivalent to 0 score receive virtual 0.0 (VD), 1 is the equivalent of investing 1,000 (VD) and so on until 6 which amount to 6,000 (VD). At the time of allocation were made to know that any vote received by any participant up to 6 stay at that amount for purposes of control.

They were also informed to decide to participate as "rapporteur ", they should try to make the presentation as if it will be real investors and as such should take care on details of preparation, hence they have to go as deep as necessary to respond in time questions that could made the "investors".

Once completed the presentation, 10 virtual investors went to register their resource allocation in a computer, ranks as they sat thus a total of 52 rounds representing equal number of participants were generated considering all groups.

Students in each group should declare its willingness to invest virtually several times, including also the "rapporteurs", which at the time could do so as "investors" on projects of their competitors.

It is necessary note that to register their investment decision on the virtual computer, each participant could do it independently, and had the opportunity to observe at least a few seconds, the records provided by other investors, although not the total summations, which allowed them make estimates quickly, about how they would behave assignments to the "rapporteurs" in progress.

That is, it was public but limited information. Additionally participants "investors" could communicate.

The proposed virtual investments were completed immediately after each round but also in some cases the question and answer session. According to the original proposal would be winning the participant who obtained the largest amount of resources in other words the highest score, so at the end, 4 winners were identified, one for each group.

After analyzing the results, as expected these showed interesting behaviors.

While the initial purpose was to determine the best project it is also true that once the incentive on the evaluation was set and the situation of public information available on the performance, was expected that participants especially those who are considered most likely to win attempted " vote " or " invest " strategically, whenever they had a chance to do so, in relation to the presentations of other participants, but also considering that all participants could communicate between them and generate preferences or not over other, taking subjective or personal considerations, beyond the projects presented.

Moreover, the rational behavior of the participants put them in the dilemma of supporting a good project and consequently affects their self-interest, or vote strategically. Thus the participant who obtained the highest score in each group was called "the strategic winner."

Therefore, and for the purposes of this study that is searching to identify those strategic actions and remove them and only leave those that were directed to show the true value represented by the project, hence the data were analyzed looking to get supported conclusions, to identified the "non-strategic winner" or "the real winner".

Having in to consideration the task around this purpose, it was developed a methodology that could be applied consistently to all observed results, eliminate the "strategic movements" and keep those that were not.

Hence a basic assumption was taken, that "non- strategic intentions" should show a consistent pattern and therefore "strategic" should be identified significantly.

In other words the problem is similar to the one faced by judges in Olympic competition diving (diving rules FINA<2013-2017), where in general terms, the highest and the lowest scores are eliminated.

As discussed below in relation to these conquests, it is possible to detect a uniform pattern in some assessments made by judges between particular individuals; at least that's what appears at the men's final in diving 10 meters global competition held in Barcelona Spain in 2013.

That is, when a competitor had a high evaluation, all the judges seem to agree to assign similar levels with minor variations, the above regardless of the degree of difficulty assigned to diving. This does not allow to draw conclusions about whether a group of judges in a competition, could have anticipated preferences for one or more competitors or blocks of them, which would have to be tested if applying a rotating system where judges could generate a more objective and independent from different latitudes or regions assessment, which would probably give greater certainty about the process of decision making.

However, unlike the process of diving Olympic Games mentioned, at the present experimental conditions it was proposed the use of rotating juries; hence this role was played in this case by the virtual investor which may also be called "electors" as the same time, because ultimately assigned quantified votes which are register on the computer considering the presented projects.

Now, in regard to the present study the rotation of juries "electors" should be a good practice in the public sector entities such as the case of Mexico, where open calls are made to individuals who feel professionally capable, and they could participate in competitions for various jobs. Independently of the selection process it is possible to identify some discretionary steps, which could also have some impact over technical evaluations.

However, evaluations are often conducted by the areas of recruitment, which can lead to the classic agency problem where certain individuals with potential access to inside information could have a better chance to get better ratings.

In this case it could be apply a rotating juries or independent reviewers as is proposed at this study, and not only the scheme presented for evaluation by the judges in competitive diving, because in that case the elimination of high evaluations could leave out a very good candidate without having access to privileged information.

However, reviewing the results of a set of candidates analyzed with the idea of identifying a "strategic winner " and " a real winner " could be solved by applying a methodology of behavior, being consistent could identify both and propose the implementation of a new assessment, this time by another governmental entity where the hypothetically strategic winner together with the non- strategic winner, should show the necessary knowledge to fill the seat.

But even more, in such case if a strategic winner do not show that could became a real or not strategic winner, would give the relevant information to undertake a thorough review of the applied selection practices, considering that as a problem of public goods, taking in to consideration that a strategic candidate could be a good element from the perspective of a one public official, but not for the society in general, which would be waiting that engaged employees are the most qualified.

Returning to the experiment in question taking into account the previous paragraphs, was raised, the possibility of identifying the best project, and then compare the result with the strategic winner.

From results obtained during the 52 rounds, and taking into account that each participant received 10 votes, it was extracted an algorithm that could be used with rotary juries, to identify strategic and non-strategic behavior.

Initial arithmetic media was calculated " $\bar{x}$ „.

$$\bar{x} = \frac{\sum_{i=1}^{n} xi}{n}$$

Based on the above was also obtained the standard deviation "s" from each of the results.

$$s = \sqrt{\frac{\sum_{i=1}^{n}(xi - \bar{x})^2}{n-1}}$$

$s/\bar{x}$ Hence the standard deviation was divided by $\bar{x}$ to obtain a percentage relevance indicator .

-   It was looking for repeated assignments, for which it was decided only to this point, rounding results considering that some of the participants used feedback with decimal numbers (in order to identify a pattern of behavior) , having done this, the first and the second mode were calculated. (To avoid the need for rounding it could be good indicate to participants the use of numbers without decimals).

In other words and for practical purposes, are selected numbers that are repeated more times in first and second place. However it should be noted that some data are more than a first mode. As it could be understand later, calculating the mode solves the problem previously commented on the selection of good candidates for a job, when they really are not strategic winners.

In the case of this study, which sought to avoid accidentally removing a good project, how it could have happened, if it had applied the above methodology used in diving rating. At first modes has been possible to calculate considering rounding results, but also because the maximum number of evaluation is 6, which is smaller than the total of investors 10.

-   Hence s" was added and subtracted to $\bar{x}$, the same happened with respect the mode $\hat{x}_n$, in order to calculate upper and lower limits on the observations, Those whosoever data that is below the lower limit or above the upper limit should be considered a strategic allocation.

Obtained, in this case the highest and lowest of the two is taken. Therefore, it is necessary to be cautious at this point and take into consideration that when more than one mode $\hat{x}_n$ is found in a data, for calculation purposes it has to take the bigger and the smaller mode with respect to $\bar{x}$ in order to determine de upper or lower limit as applicable.

Only when there are two modes $\hat{x}_1$ and $\hat{x}_2$, in that one is above $\bar{x}$ and the other bellow, both are taken under separated bases to define the upper and lower limit, and then be compared with $\bar{x}$ and keep the true upper and lower limits as indicated in paragraph above.

$\hat{x}_{n-1}$If there is a $\hat{x}_n$, followed by a second mode-having only one repetition below in comparison to the first $\hat{x}_n$, but also that this second is bigger than the first $\hat{x}_n$, the second $\hat{x}_{n-1}$ determines the upper limit and if it is less than the lower limit.

Finally when it has a $\hat{x}_{n-1}$ having only one repetition below in comparison to the first $\hat{x}_n$, is used to determine upper and lower boundaries so long as this is within the upper or lower range of the first mode $\hat{x}_n$ respect to $\bar{x}$, and under this assumption the other changes that may arise .

-   Once the strategic allocations were identified by the methods described above, these are removed from the data set and replaced by a second media $\bar{x}_2$. The $\bar{x}_2$ is obtained by taking into consideration only the non-strategic data. After that the $\bar{x}_2$ this is multiplied by 10, which is the total of investors (the electors) who have participated, producing a second score, at this stage a "strategic winner" have been obtained, resulting from the initial sum of the original data but also a "real winner" which come from the product of the previous estimation.

In a first approximation applying the previous criteria to data generated from the experimental exercise, was possible to identified strategically behavior, in cases where the standard deviation was equal or higher than 25% with respect to the $\bar{x}$.

It is worth remembering at this point that a strategic behavior according to the present studio is the one that could be related to other interest different from the purpose of making that the best project wins the contest. To take one example it has been taken a data from votes generated by the experimental group 4 having a result like the following:

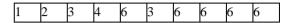| 1.0									

Group 4: individual with the number 26

In previous assignments can be identified that 50% of the data are the number 6 under the assumption that the majority number gives the trend or the actual preference of investors, the problem to solve then comes from the way in which could be discarded the strategic data and keep the assessment that expresses the reality of the project.

After applying the points outlined in the previous methodology is naturally obtained a standard deviation exceeding the 25%, which confirms that there may be strategic values in the data row.

Then the numbers are rounded:

1	2	3	4	6	3	6	6	6	6

Group 4: individual with the number 26 with rounded data

Therefore a mode $\hat{x}_n$ is obtained, which is the number "6" , and the second mode $\hat{x}_{n-1}$ is the number "3" but is not taken into account because only repeats 2 times, while the initial mode in 5. The second mode would be taken into account if repeated 4 times, in other words one time less in comparison with the first mode, as explained above.

To ensure consistency in the analysis model, the results are successively applied according to the methodological criteria explained above, as follows:

An initial $\bar{x}$ with the results as they appeared for each rapporteur and the "s" were calculated, and of course the mode $\hat{x}_n$, also identified after having rounded the data, once obtained mode, the original data are left .

The lower and upper limits were obtained through first mode $\hat{x}_n$ and the media $\hat{x}_n$ respectively, as follows being 2.4 and 7.9 respectively. Thereby the data below 2.4 were remove, in this example the numbers 1 and 2 , whereas for the upper limit, the result indicates that could only withdraw the votes above 7.9 , but, it is know that the scale of the experiment allowed a maximum value of 6, that is, hence must not be removed any number.

Through this exercise was possible to identify two strategic voting, made it very consistent under experimental conditions taking in to consideration that at the time 2 of the investors (electors) had also been rapporteurs and considered potential winners by themselves.

Results

According to the experimental results to determine the "real winner", is required to develop an algorithmic process, which assumes the elimination of strategic votes through the following actions: Step 1.

To consider if the following condition $s/\bar{x} \geq 1/4$ is present in data, where its application suggests that there is a probability of at least one strategic voting is included $n(x)/\sum_n(x)$, according with the experimental results in the rounds.

In contrast, $s/\bar{x} < 1/4$ could mean that the data series under observation does not include strategic votes, otherwise the judges in a competition, would be voting sincerely and specifically with respect to the experiment in this study explained, would mean that investors in that round would be deciding objectively.

Otherwise, the probability of finding a strategic or not strategic voting could be found from

the following proposition $n(NE)/n(\sum NE) < 1$ $\Leftrightarrow s/\bar{x} < 1/4$ o bien que $n(E)/n(\sum E) > 1 \Leftrightarrow s/\bar{x} \geq$.

Step 2. The mode $\hat{x}_n$ is obtained from the set n(x). The case of an experimental proposal for a mode must met the following conditions, the first scale assigned to the votes that can be assigned to decide on a particular issue should be lower by at least 1 item. That is, if the observations are for example 10, the maximum scale must be 9 or down, this considering whether the voting process may include decimals.

To make efficient the process, it is suggested use scales from 1 to 10 and if there were higher numbers simplify figures at that level. The second condition is that only for the purpose of calculating a mode, the data set should be rounded to the nearest point, once obtained this or that result, the observations must be returned to the original state, another alternative is to work with numbers without decimals.

In situations where it is not possible to participate under laboratory conditions, considering that it is desirable to analyze a set of data derived from real life, and would apply the algorithm, hence it is possible that it may be the case that is not met the first condition, then by necessity the only available indicator comes from the $\bar{x}$, as is considered later in an example application used. This event may take place generally with a small number of observations, or when the current scale itself prevents repetition of numerical results.

Step 3 . A lower and upper limit is determined as a basis for discard the strategic votes. Given the assumption that the non-strategic participants will move within a consistent range from "s" when you have the $\bar{x}$, as well as when it is possible to identify a mode, a number or a second (n- 1 repeats). The above assumption is based on the fact that an individual, who has decided to issue a sincere vote and act accordingly, could coincide in their action within a range consistent with the other participants, which also act sincerely.

However, the upper and lower limits are taken considering the least of them, from both the $\bar{x}$ (media), and the $\hat{x}_1$ (mode), again in both adding or subtracting cases applying "s" as applicable, and taking into account the assumption that an individual who has a sincere action may exercise a vote that could match or at least be close to another, even around the $\hat{x}_1$ and not just the $\bar{x}$.

The basis of the experiment takes into account that some individuals may act subjectively (strategically), the same as if they do to benefit or affect a " rapporteur" and they would do it rationally, searching to impact on the final result, hence the vote could be out of range in comparison with the sincere electors, furthermore the rotary system of judges allows to incorporate the possibility of this kind of votes in addition to those exerted strategically.

Thereupon having $\hat{x}_1$

Upper limit $\bar{x} + s < \hat{x}_1 + s \Rightarrow$

$$\hat{x}_1 + s \tag{5.2}$$

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Lower limit $\bar{x} - s$ $<$ $\hat{x}_n - s$ $\Rightarrow$

$\bar{x} - s$ (5.3)

$\hat{x}_1 - s < \bar{x} - s \Rightarrow$ $\hat{x}_1 - s$

With $\hat{x}_1, \hat{x}_2 ... \hat{x}_n$

When inside the date there is found a multimodal result, the higher mode is taken for purposes of calculating the upper limit and the smaller to get the lower limit is taken, replacing the mode shown in the case of a unimodal observation discussed above.

$\hat{x}_1 < \hat{x}_n \Rightarrow \hat{x}_n$

$\hat{x}_1 > \hat{x}_n \Rightarrow \hat{x}_1$

When it has a second mode $\hat{x}_{n-1}$ and that this is higher than the first, when both are located above the $\bar{x}$, then $\hat{x}_{n-1}$ is taken as basis for the calculation of the upper limit and conversely, when it is below the $\bar{x}$ and the second mode it is smaller than the first, the latter is used to calculate the lower limit, then applying this mode to comparative limits discussed above when only unimodal result be had. However, the second mode is valid for these purposes if it is different from the first mode for the difference of 1 repeat and meets the condition of being in the range of the first mode, thus above or below the media $\bar{x}$.

$\hat{x}_{n-1}$ $\hat{x}_n \Leftrightarrow \hat{x}_{n-1}$ $\hat{x}_n \Leftrightarrow$ $\hat{x}_{n-1} > \bar{x}$ (5.5)

$\Leftrightarrow$ $>$ $\Leftrightarrow \hat{x}_n$ $<$
$\hat{x}_{n-1}$ $\hat{x}_n$ $\hat{x}_{n-1}$ $\hat{x}_n$ $\hat{x}_{n-1}$ $\bar{x}$

After applying the algorithm to the 4 experimental groups considering the 52 rounds, the results are summarized in 2 columns A and B, the first corresponds to the observations derived from the strategic action and the second the real winner, and were found the main remarks by each group as follows:

Group 1. The winner A remained its place in B, but also the second place is maintained, while 3rd in A, changed to 5 in B. It is noteworthy that who occupies the 7th place in A, changed to 4 in B.

Group 2 , The strategic winner in A, passed to the 2nd, in B. The third place in A, becomes the strategic winner in B. It is relevant to put attention to the fact that participants occupying positions 8 and 11 in A, passed to the sites 12 and 14 respectively in B.

Group 3. The winner in A, it is also in B. The second in A, changed to 4th in B. Between the notable changes it could be see a jump of A taking the place 6 to 9 in B.

Group 4. The winner in A, changes to be the 2nd in B, changing his place respectively.

Hence after applying the algorithm it is possible to find that the "strategic winner2 may or not also "real winner". In theory both should be equal if all experimental participants avoid conducting subjective votes and decide to support the best project in qualitative and quantitative terms, above their personal interests.

As seen in the experimental groups 1, 2 and 3, it could be found noticeable jumps between participants when they occupy a place in A, by removing strategic observations and take them to B in their proper place.

The above taken to real life, could have significant implications, given the examples set forth throughout this study. It should be noted that another advantage of the experimental exercises is that could be seen directly both potential strategic winners and the real winners.

Supplementary example

As an example of a practical application of the algorithm it could be consider the following data sets:

a=	18.8	6.4	10.4	8.8	7.2	6.8	6.8

b=	27.3	20.4	19.5	19.5	19.5	17.7

c=	28.5	10.5	15.6

d=	27.0	8.4	6.0

e=	24.0	21.0	20.4	21.3	17.7	17.1	16.2

f=	16.6	14.6	15.6	15.8	18.6	14.0	12.0

Considering previous set it is applied the procedure in the algorithm base thus the following steps were developed:

Step 1. The corresponding $\bar{x}$ and the "s" were calculated to determine whether $s/\bar{x} \geq 1/4$. Accordingly, in the sets "e" and " f " have not been identified strategic movements, it could be said that the score obtained it represents the "real winner." However, the rest of the sets contain strategic and non- strategic decisions.

Step 2 . The data are rounded to identify the existence of one or several modes. According to the above is not possible to determine a mode in the sets "c" and " d", so when calculating lower and upper limits only took as a basis the derived from $\bar{x} - s$ y de $\bar{x} + s$ respectively .

Step 3 . The top and bottom limits are then determined from $\bar{x}$, and when it is also possible as well from $\hat{x}_n$.

Step 4 . Once you have determined the upper and lower limits, following the steps set out in the experiment that gives rise to this study, would have been necessary to calculate the second media   and from it get the final scores again.

However, with respect to the above sets the algorithm must be adjusted to the circumstance that the score displayed is individually unlike the experiment under consideration, where each participant could be up to 10 evaluations, in this case it is not necessary to calculate new scores, but directly determine if that individual results are consistent with a strategic and non-strategic behavior.

Thus as can be seen, in this case refers to a competition type tournament, hence would win at each set, the individuals which could had the highest scores, in other words would be the strategic winners.

Applying the methodology it could say under a simple analysis that data being off limits should be removed to leave only the non-strategic votes, as happens in some way with the competitions of diving.

However, this could be as simple, if these sets were not to the result of the tests performed on people who were competing for a vacancy in six different government agencies in Mexico that were obtained randomly.

This might seem trivial, however it is sometimes possible for individuals seeking new employees made the technical evaluation as well, in this case the individual interest may or not prevail over the collective (public goods), also this could be the problem of the relations between work teams (Seigyoung, et al. 2014) , or derived production (Fatas, E et al 2011) and consideration of the cost of having to monitor each employee constantly during the workday to act properly, but also the incentives of Prendergast (1999) who stated that "Incentives are the essence of the economy."

While it is possible that the need for recruitment exist, so is that an external interest might prevail over the natural objective in organizations such as the maximization of profits in the case of private companies and public welfare in government.

Taking into consideration the above paragraph, the situation can derive into the following:

1. That if the highest scores were discarded it could keep leaving out or not a candidate with an outstanding technical or professional capacity.

2. In order avoid the mistake of eliminating a good candidate, that could take place if the highest scores were removed, which a similar methodology as the one is mentioned above to the competitions of diving. However, it would suggest at least to setting a second assessment of the leading candidate perhaps the first, second and third place or other, depending on the consistency of the results by a completely independent entity. From which the strategic winner could challenge this decision considering the logical impact of this, however, it is also true that under the assumption that it is a qualified person, should be in the best position to confirm its technical skills, otherwise would accept that he is not the real winner.

3. The third had to consider the need for a review of the procedures used to perform such tests, by virtue of having several subjective or discretionary steps to evaluate a candidate, as the interviewing stages. In the case of knowledge examinations the objectivity should prevail, unless there were an additional factor (an externality) influencing the process. Because in any case, a good candidate could perhaps respond more or less successfully a test, but surely under reasonable bases and close between the first and second evaluation levels. In this example if the first (the strategic winner) completely collapses in the second examination, could means that he has had access to insider information.

4. The fourth suggests that there are preliminary evidence to encourage the pursuit of a thorough analysis, maybe at all government agencies where such assessments take place, which ultimately are related to public goods, because theoretically hire a trained employee is a better decision than not.

5. The fifth would infer that if the phenomenon occurs in the public sector, there would be no reason to suppose that does not happen the same way in the private sector, on which the major shareholders of any corporation where such assessments are practiced, would also have the hope to hire the best candidate instead of "strategic winner."

Significantly, this is a preliminary approximation derived from a set of data from a sample, thus expanded research on this field could lead to interesting results.

Also from the observed results, could be considered for a subsequent investigation if the real winners are those who are generally in the second place, or those who are on the step immediately following, where theoretically not reach any awards that is from that place, in that strategic decisions will cease to have an interest. In other words in the place from which could be present the real winner by his own merit.

Another example of application

The results of the competition of diving 10 meters platform men of Barcelona Spain (2013) were taken, before applying the degree of difficulty. The algorithm of this study was then applied and identified that all results showed that $s/\bar{x} < 1/4$, so at the first instance, it could be said that at least individually all participants received a non-strategic voting.

However, unlike the algorithm applied in the exercise of this experimental study, the judges are not rotating, hence, it could not be ruled out, but neither affirms under these assumptions, that there was some strategic voting. In other words, it seems that the ratings given by the judges for each competitor are consistent with each other, although it is not possible to determine if the judges could have defined or previously a strategic winner or not.

In this case, an alternative could be a confirmation that a system of rotating or changing juries shall apply, with different characteristics, as performed in the experiment of this study, which could be identified or not the existence of votes strategic. This leaves open the possibility of a subsequent interesting research.

Conclusions

It is possible to identify strategic and non-strategic behavior by applying an algorithmic process, extracted from the observation of experimental results; it must comply consistently with each of the criteria established for all given values.

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The algorithm assumes that individuals may or not act sincerely, especially when the latter option may be more profitable, taking into account also that through the use of rotating juries, strategic decisions and those that are not will be leaving a record that can be identified and then exploited according to the needs of a correspond case .

It could be tell that a strategic winner is one who manages to get the highest scores in a tournament, which may be beneficial to him personally, but not necessarily to the public interest, hence the need to find a real winner, that would be one that represent the best project or in the field of politics the most qualified candidate if it were a choice for the exercise of public office in the government or syndical administration, perhaps also the employee with greater technical tools, or the artist with the most remarkable qualities, among others.

This may have practical application in the process of making business decisions, either to support an investment project or another, the launch or improvement of a product or service, or perhaps in the workplace, for the recruitment of new employees or for scholarships for students or other funding from public and private resources, or elsewhere to help provide greater certainty in the celebration of sports, educational, artistic and cultural events to name a few, where the subjective decisions of certain groups of individuals take place.In theoretical terms the real winners must match the strategic winners, if voters act all the time sincerely.

Hence, this study opens the possibility into new lines of research in the fields of behavioral economics, management and finance, and certainly in the opening of new experimental laboratories that could contribute to private and public organizations to maximize shareholder value in the first case and the second to make better use of fiscal resources.

It could be interesting to watch later through the application of dynamic software for the identification of both the strategic winner as the real winner in real time process.

References

Brañas, P, Tarrazona, Ivan. "Mercado de trabajo: Incentivos, salaries y contratos", 2011 In: Economia Experimental. Antoni Bosch Publisher UEA (Chapter 1) pp 1-38.

BBC, bbc.co.uk, about Dragon´s Den 2014.

Fatas, E., Morales, A. (2011) "Mercado de trabajo: Incentivos, salaries y contratos", 2011 In: Economia Experimental. Antoni Bosch Publisher UEA (Chapter 14) pp 263-275.

Fédération Internationale de Natation, "15th FINA World Championships", July 19 – August 4, 2013 - Barcelona (ESP), final results. Fédération Internationale de Natation, "diving rules FINA<2013-2017", August 25, 2013, pp 1-30. Filippin and Guala, "Costless discrimination and unequal achievements", Journal of the Economic
Science Association, September 2013, Volume 16, Issue 3, pp 285-305.

Harbring, C Irlenbusch, B, Sliwka, D, Sutter, M, "The Analysis of Incentives in Firms: An Experimental Approach", The Selten School of Behavioral Economics, 2010, pp 221-241.

Irlendbush, B, "Experimental perspectives on incentives in organisations", Central European Journal of Operations Research February 2006, Volume 14, Issue 1, pp 1-24

Kirstein, R, "The Condorcet Jury-Theorem with two Independent Error-Probabilities", 2006, Center for the Study of Law and Economics, Discussion Paper 2006-03, version (04) of April 2006 pp 14

Prendergast, Canice, "The provision of Incentives in Firms", Journal of Economic Literature, American Economic Association

Rosenboim, M, Shavit, Tal "Whose money is it anyway? Using prepaid incentives in experimental economics to create a natural environment" Experimental Economics , 2012, Volumen 15, Issue 1, pp 145-157

Secretaría de la Función Pública, trabajaen.gob.mx, 2014

Seigyoung, A, Stavroula, S, Bulent, M, and Aypar, U "When and how does sales team conflict affect sales team.