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Abstract—**Electronic voting is a new field inside the technology's applications. It was created with the objective to ensure accuracy and privacy of the votes. Nevertheless, it has been revealed that frames can influence results in electronic voting systems. This paper analyzes the impact of framing in the architecture of electronic voting systems. It is focused in the architecture of the ballots presented to the voters and how frames affect the voter´s behavior. A theorical study about concepts and experiments developed over the years and the application of a laboratory behavioral-experiment provide with empirical facts that electronic voting is framing-sensitive and influence in the voter´s choices.**

Index terms—**Electronic voting, behavioral economics, economic-experimental methodology, framing, nudge.**

I.   INTRODUCTION

Nowadays, the application of information and communication technologies influence the majority of activities and processes of the human being. One field affected is the government elections. Electronic democracy and electronic voting are new fields inside the technology's applications. Electronic voting uses electronic means for casting and counting votes. It was created with the objective to improve the government elections and therefore the democracy environment. The main goal of electronic voting is to ensure the privacy and accuracy of the votes. Also, another important objective is to influence the people to vote giving more easier mechanism of voting, so they can do it with their electronic devices. Some countries have implemented the electronic voting in their elections, for example: Brazil, Estonia and Argentina. (Saini, Verma & Sharma, 2017; Stoica & Ghilic-Micu, 2016; Barnes, Tchintian & Alles, 2017)

Electronic voting is rather a social and politician project than a technical one; it´s a component in the politician dimensions of the new media technology leading to improvements of social nature through increasing the number of citizens involved in decisions process. However, this is a topic under discussion. There are numerous debates contradicting terms due to security problems and social and political preferences. The most important problem associated is fraud. According to Stoica et al. (2016), Estonia was a victim of fraud in ones of their elections.

But one issue in the electronic voting that it´s not noticed is the choice architecture of the ballots presented in the elections. When an electronic voting system is implemented, the interface of the ballots has to be usable in reliable way by every citizen at least 18 years old. It´s important to include the disabled, uneducated and poor users; also, people who don't know anything about technology.

The framing impact on the choice architecture of the ballots is the central topic of this paper. Voting is a fundamental decision making in any consensus based society and plays a critical role in formation critical democracy environment which require a secure and fair voting system. But in some occasions, the framing of the ballots can affect the decision-making about the politicians and that influences the final results. According to Shoub (2018) there is a possibility that an election outcome can change from planning designs of ballots. Some studies confirm that frames can influence in the decisions of the people. In case of the ballots, the type of letter, images, different positions of information inside the page, age, gender, nationality, etc. produce different reactions in the voters and therefore the voters have different results. Another's studies explain that specifically

positions are more seeing by the people and this is why some results differs with primary decisions. (Marcinkiewicz & Jankowski,2014; Augenblick & Nicholson, 2016)

To have a better understanding of the problem, this paper is going to analyze if the framing effect in the choice architecture of the ballots has important influence in the outcome of the elections process. The electoral process of Argentina was the motivation to make an experiment of framing effect in the paper ballots. Argentina implemented electronic voting since 2011, but there has a debate about it; a concern is created that modifications on the ballots of an electronic system can influence in the ballot splitting and final results. Also, there is a preoccupation that these changes in the electoral process may have implications in the public policies. (Barnes et al., 2017)

This paper is composed by a theorical frame that includes meanings, examples and the hypotheses of the framing effect. Then, the part of method clarifies the behavioral-economic experiment developed, which is going to help answering the hypotheses suggested in the theorical part. Besides, the part of results analyzes the data found in the experiment. Finally, the conclusions of the search are presented.

II.   THEORETICAL FRAMEWORK

Electronic voting, known as e-voting, refers to a type of voting that uses electronic means for casting votes and counting votes. This voting system can include punched cards, optical scan voting system and specialized voting kiosks. Also, it involves the transmission of ballots via telephones, private computer networks or the Internet. (Saini et al., 2017).

According to Stoica & Ghilic-Micu (2016), e-voting has two classifications: supervised electronic voting and remote electronic voting. Supervised electronic voting requires the presence of a government or electoral authority during the electoral process. This means that voters are forced to go to a specific place where the electronic voting machines are available, such as polling stations. This kind of voting uses a method called Direct Recording Electronic (DRE). This method records votes by showing a ballot to a voter so that he or she can dial by means of bottoms or touch screen; after that, the votes are stored in an electronic memory. This system is commonly used in countries such as Brazil.

On the other hand, remote electronic voting does not require a supervision from a representative authority, and it is performed through Internet or mobile applications. This kind of voting process facilitates the user to vote in any location through his/her device; the voters don't have to go to a specific place. In addition, it promotes the development of voting stations in areas commonly used by the people to generate more participation of them in government elections. Estonia applies this type of voting in the government elections.

Saini et al. (2017) explain the five phases of the electronic voting process. The first phase is registration; the voter must register to provide his/her identification data for participating in the electoral process. After that, the SetUp step comes to generates the keys used to encrypt and sign votes. The third step is authentication; the administrator verifies that a citizen can be a voter by comparing his/her data to the data provided in the registration phase. Then occurs the voting phase that manages the casting of the vote in a secure manner. The final phase is the counting phase, where the invalid votes are removed and shows the result of the election.

Electronic voting is created with the objective to promote the electronic participation. This last concept means the interaction mediated by technology to establish relationships between political and social environments. There are a lot of means to encourage electronic participation, for example forums, blog, chats, etc. Electronic voting creates process and technologies according to the electoral process for the nation that is applied, because every electoral process differs one country to another. Likewise, e-voting has other objectives like ensuring privacy, anonymity, legibility and accuracy of votes, aspects that in the traditional elections generate constant discussions. (Stoica & Ghilic-Micu, 2016; Saini et al., 2017)

However, there are many problems that e-voting process can´t solve yet. The most important problem is fraud. Tarasov & Tewari (2017) explain that there are people believing that electronic voting cannot be trusted enough due to uncertainty in the authenticity and integrity of the machines. In many occasions it is possible to coerce and influence the outcome of the vote by compromising the electronic devices using during the voting

phase. To improve this conflict, Saini et al. (2017) say that e-voting starts to work with crytopgraphic algoritms that generate safer voting protocols.

Another issue of e-voting, which modifies electoral results and is the principal topic of this study is the framing of the ballots. The way that an issue, a politician, an event or other information about them is framed, can affect the decision-making of a person. Gong et al. (2013) clarify that this last concept refers to a process by with decision-makers judge, evaluate and make choices about behaviors or goals. The context where information is presented affects which considerations the people make about the data. (Binder, Childers & Johnson, 2014). A basic example of framing effects is developed by Kahneman & Tversky (1981). They made an experiment where participants were asked to image that the United States is preparing for the outbreak of an unusual Asian disease. Two alternatives to combat the disease have been proposed:

Positive frame:

- If program A is adopted, 200 people will be safe.
- If program B is adopted, there is a one-third probably that 600 people will be saved and two-thirds probability that no one will be saved.

Negative frame:

- If program C is adopted, 400 people will die.
- If program D is adopted, there is a one-third probability that no one will die and two-thirds probability that 600 people will die.

Option A and option C are the same as are option B and option D. But the people preferred to choose option A in the positive frame and option D in the negative frame. That's framing effects. (Mention in Gong et al., 2013).

Another example of framing is explained by Chien (2011), who identified an interaction between framing and colors by examining message framing and color combinations on participants perception of material promoting the H1N1 flu vaccine and their willingness to receive the vaccine after reading the information. The message framing had two results, gain-framed message and loss-framed message. The color combinations were red background and white characters in one, and, white background and black characters in another. After applied the experiment, the results showed that the participants rated vaccine information presented in loss-framed messages as more interesting. Then, the loss-framed messages with white background and black characters motivated the participants to receive the vaccine. (Mention in Gong et al., 2013)

The main goal of this paper is to analyze the impact of the choice architecture in the framing of the ballots. Studies confirm that frames can influence the attitudes, opinions, evaluations and behaviors of the voters. If the frames of ballots change one of another, there may be different results in each one. For example, in states such as California or Ohio, the ballot positions have a statistically and politically influence in who wins the elections. (Meredith, 2008). Based on this information, there is the first hypothesis:

H1. The choice architecture on the framing of the ballots can affect the decision-making of the voters.

Then, Augenblick & Nicholson (2016) explain that the composition of the ballots has three important factors that influence the final decision of the person; these are: information, confusion and fatigue. In their experiment, they concluded that the candidates who are in the first place on the ballot have more votes. That resolution is an advantage for candidates that are in the first place randomly. However, Marcinkiewicz & Jankowski (2014) explain in their study that the final position has a positive effect on a candidate´s results; the last place can be seen as a more prominent position on the ballot paper. Augenblick & Nicholson (2016) question if the effects hightailed are due to the fatigue produced in some people when they see a ballot frame. They call this term "choice fatigue" and it occurs when people´s decisions change after they have just made other particular decisions. The following hypotheses formalize the proposed information:

H2. When a list of candidates is presented in a ballot, the voters usually select the first candidate or the last candidate in that list. These positions have a positive effect in the candidate´s results.

H3. The fatigue is an important factor of why voter choose first or last place.

There is doubt that an election outcome can change from a planning and specific design of the ballot. (Shoub, 2018). This scene may be helpful for some politicians to know how ballots positions are working. In this environment, the concept of nudge takes an important place. Nudge is defining by Sustain and Thaler (2008) as "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives". The nudge theory says that positive reinforcement and indirect suggestion to try to achieve non-forced compliance can influence the motivates, incentives, and decision making of individuals or groups. (Mention in Chapman, 2016). Nudge can increase or decrease the autonomy in people´s choices, and in some cases operate through manipulate techniques. For example, if a cigarette package has messages about how bad is to smoke and the probabilities of die, some people may be decrease them consume while others don't care about it.

Nudge requires three aspects. First, the intervention must affect part of the choice architecture because it is the "context" in which people make decisions. Second, the intervention has to produce changes in people's decisions in a predictable way. And third, the intervention in choice architecture must be a liberty of choice constraint, that means that the opportunity set (the set of options from which voters can select) must be the same before and after the intervention; adding or eliminating choices don't count as nudge. (Chapman, 2016)

This paper´s research is analyzed from a behavioral economics viewpoint. According to Gong et al. (2013) behavioral economics theory describes the decision between alternatives that involves risk where the probabilities of outcomes are known. Behavioral economics is the combination of psychologist and economics that investigate what happens in events which some of the agents display human limitations or complications. This term tells that people rationality, self-interest and willpower are bounded. (Low, 2011)

Finally, it´s important to analyze the two models of cognition in the human behavior inside decision-making, system 1 and system 2. Kahneman (2011) mentions that system 1 is fast, intuitive, associative (with impressions and feelings); it operates automatically and quickly with little or no effort and without any sense of control. The human brain delegates a lot of decisions to system 1 because is faster and less cognitively burdensome. Most of the work of behavioral insights is dedicated to discovering biases and heuristic to tend to be manifestations on system 1. Furthermore, system 2 is slow and allots attention to the effortful mental activities that demand it; operations in system 2 are associated with the subject experience of agency, choice and concentration. In other words, system 1 operates on passive, reactive basics while system 2 operates via active thinking. (Mention in Chapman, 2016)

In terms of deliberation, Chapman (2016) clarify that system 1 is not very deliberate; automatically or instinctually reacting to stimulus is not a maker of deliberations. But, the reflecting thinking in one´s choices or motivations inside system 2 are a perfect example of deliberation. In system 1 choosers are simply reacting to choose stimuli and it means that they are not participating in their own self-governance; system 2 are more strongly in decision-making. The studies confirm that nudge is more effective in system 2 since the researches tell the decisions are more authentically when reached through deliberation.

III. METHOD AND MATERIAL

To answer the different hypotheses, we are going to make a stylization of a presidential election system. To have better analysis, this section will be part in three points: Introduction to the economic experimental methodology (A), the sample (B) and the description of the experiment (C).

A. Introduction to the economic experimental methodology

This study applies the Experimental-Behavioral approach. According to Hernandez, Martínez-Molés & Vila (2015), the Experimental-Behavioral approach is an alternative and complementary method to traditional approaches -such as qualitive methodologies or survey-based- that allows study consumer and citizen behavior. This approach is based in the collection of information through economic laboratory experiments. An economic

experiment is a laboratory method for inquiry for studying how individuals interact in controlled settings defined by specific set of rules; it is an orderly procedure carried out with the goal of verifying refuting or establishing the validity of a hypothesis. As a key difference with other experimental method, controlled experiments provide insight into cause-and-effect by demonstrating what outcome occurs when a factor is manipulated.

The Experimental-Behavioral economics can provide the organizations in industry or government with a powerful innovative tool to generate competitive advantage from the understanding and forecasting of consumer´s behavior. Other advantages are the high control of the experimental conditions and the possibility of replications. On the other hand, Smith (1991) clarifies that experimental-behavioral laboratory has three elements: environment, institutions and behavior. First, the environment specifies the initial endowments and costs of the participants; it is usually controlled by monetary incentives to induce the specific value or cost configuration. Then, the institutions define the language for communication with and among the subject, the rules that govern the exchange of information and the rules which the messages become binding contracts; the institutions describe the messages and procedures of the experiment. Finally, the behavior of the participants is observed as a function of the environment. (Mentioned in Hernández et al., 2015)

To end with this topic, it is important to clarify that not all the economic laboratory involving human behavior can be considered as an economic experiment. Hernández et al. (2015) mention strict requirements that the experiments need to be considered as economic experiments, namely:

- Application of economic incentives.
- Specific ethical considerations, that are: namely and non-deception.

B. Sample and implementation

The experiment was realized by 60 subjects. The subjects were clustered in groups of 15 people, so there were 4 groups participated in separate e-voting, two groups voting under treatment 1 and other two groups voting under treatment 2. Therefore, the sample size was 60 subjects, with a subsample of 30 subjects for each treatment.

C. Description of the experiment

A detail description includes the voting mechanism (a), candidates and parties (b), payoff mechanism (c), treatments (d), and questionnaires (e).

C.1 The voting mechanism

We organize the election process in two stages: compulsory primary elections and presidential elections. In the compulsory primary elections, a list with all candidates is presented to the subjects. Each candidate proposes a specific socio-economic policy. The candidates are part of a specific party, so the most voted candidate of each party will be the candidate of this party in the presidential elections, provided that his percentage of votes will be equal or higher than 1.5%. If none of the candidates of one party has at least 1.5% of votes, this party will not participate in the presidential elections.

Then, the presidential elections are organized in two rounds. In the first round, the voters have to select one candidate among those winning the compulsory primary election. The candidates appear alphabetically ordered. If one candidate obtains more than 50% of the votes, it is not required a second round, because the winning candidate becomes the new president. But, if no one of them reach at least 50% of the votes, the two most voted go to a second round, where voters have to choose between them.

It´s important to clarify that in this paper we only analyze the compulsory primary elections. The presidential elections will be study in countries such as Costa Rica or even Argentina.

C.2 Candidates and parties

The candidates are presented in a card, like in **figure 1.** This card contains the name of the candidate, which is composed by two random letters without any kind of meaning, and it is unique. Also, the card has his/her photo, the party which belong and the description of his/her program. The description of the program has four policy attributes:

- Poverty threshold (umbral): Subject are classified in two groups, in terms of their initial income. Each candidate proposes a poverty threshold, given as percentage, for example x%. The x% of subjects with the lowest initial endowment are defined as low-income subjects and the other (100-x%) as high-income subjects.
- Tax rate for high-income subjects: percentage of the endowment to be paid as taxes by high-income subjects.
- Tax rate for low-income subjects: percentage of the endowment to be paid as taxes by low-income subjects.
- Charity: Percentage of the aggregated taxes paid by all subjects that is donated to a charity and is not distributed among low-income subjects. The taxes that are not donated are equally distributed among the x% subjects characterized as low-income.

Then, we create a variable called "Progresivo", as the ratio between tax for high-income and tax for low-income. Each policy attribute can take three values: low, medium and high. The combination of the three values with the attributes allows the definition of 81 candidates. For a better explanation, **table 1** shows an example of the possible values of candidate's attributes.

Finally, the parties are defined as groups of candidates which the same Progresivo and the same value of threshold. As it shows in **figure 2**, each party is presented by a logotype composed by the word "Partido" and a geometric figure. All logotypes have the same font and the figures have the same color and thickness.

C.3 Payoffs mechanism

Once the president is elected, the payment for each subject is according to the following steps. First, each subject is assigned an initial endowment uniformly at random. The initial endowment was between 500 and 1500 ECUs; we established that 100 ECUs was 1 euro. Then, the subject is classified as high-income or low-income according to the income distribution among subjects and the poverty thresholds of the elected president. According to the tax rates for high and low income subjects established by the president, each subject pays the corresponding percentage of her or his endowment as taxes. The percentage of total taxes giving by the charity parameter of the president are donated to charity. Finally, the remaining taxes are equally distributed among low-income subjects.

C.4 Treatments

In order to analyze the impact of framing of the ballots in the compulsory primary elections, we made two treatments:

- Treatment 1: Framing by Candidates. Simultaneous presentation of all the candidates in just one layer from where the voter can select his or her best option. A 4x10 matrix is presented to the subjects, but the screen used in the experiment allows the subjects see two rows of candidates at the same time, in other words, eight candidates, **figure 3**. Each candidate has a numerical identification, that coincides with the order that the candidate is presented on the list.
- Treatment 2: Framing by Parties. In this frame, the parties are firstly presented to the voters and only after clicking in a party, the voters can see the list of candidates running in this party. A 3x3 matrix is presented to the subjects. All party cards can be visible at the same time. Once a subject clicked in a

party, the candidates of the party are shown and the voter can select one, **figure 4**. Also, each party has a numerical identification, as it shows in **figure 5**.

C.5 Questionnaires

Before the experiment begins, the subjects have to answer some questions about their ideal candidate in terms of high tax, low tax, charity and threshold. So, the subjects have to think about the candidate that they would vote. Once the experiment is finished, a demographic questionnaire is presented to the subject with questions like age, nationality, studies, if their candidate was the same of the ideal candidate and framing preference (framing by parties or framing by candidates).

IV.   RESULTS

This section presents the main results of the experiment. First, we describe the statistics of the sample. The subject´s average age was 28. All of them had the opportunity to vote in real election at least one time when participating in the experiment. About 40% were men and 60% were women. All the subjects have Spanish nationality and university studies. In general, treatment 2 was preferred by the 62% of the participants than treatment 1.

Then, the favorite candidate is defined as the candidate standing for primaries with the lowest distance to the ideal candidate elicited by this participant. This because in some occasions the ideal candidate was not there, so we had to find a nearest favorite candidate. This distance is calculated by the Euclidean distance:

$$\text{distance} = \sqrt{(h_i - h_c)^2 + (l_i - l_c)^2 + (t_i - t_c)^2 + (e_i - e_c)^2}$$

Where h, l, t, e, correspond to high tax, low tax, threshold and charity respectively. **Figure 6.a** shows the favorite candidates for the subject after applied the formula and **figure 6.b** shows the final results of favorite candidates of the primary elections.

There are relevant differences between both graphs. The favorite candidate for the 21.7% of the participants is candidate 2, who only has 5% of the votes in the primary elections. Only 11.7% of the participants vote their favorite candidate. In order to verify that these differences are significant, a chi-squared test was implemented. In this case, the chi-squared test shows a significant difference between both distributions (p-value 0.0001). With these results, we accept **H1**, because the candidate most voted is not the favorite candidate for the participants.

The same analyzes can be applied to parties. A favorite party is defined as the party containing the favorite candidate. **Figure 7** compares the distribution of favorite parties (**7.a**) and the results in the primary elections (**7.b**). The favorite party is Party 1 for the 50% of the participants, however it only obtains 23.3% of the votes in the primary elections. The chi-squared test shows a significant difference between both distributions (p-value of 0.007).

According to the last results, we establish a new question; Are the differences influenced by the treatment? **Figure 8** shows the comparison of the results of the primary election between treatments in where **figure 8.a** represents the distribution of the voted candidates by treatment and **figure 8.b** the distribution of the voted parties by treatment. The chi-squared test confirms the differences between both graphs (p-value 0.016 in figure 8.a and p-value 0.01 in figure 8.b).

As the results presented huge differences between treatments, we analyze each treatment. **Figure 9** contrasts the difference in the distribution of favorite and voted candidates for the subjects voting under treatment 1, framing by candidates. A chi-squared test confirms that difference (p-value 0.007). In **figure 9.b** is observed that the majority of the votes are in the last two rows of candidates. However, the favorite candidates are situated

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in the first rows. That fact accepts **H2** in terms of the last positions have relevance; the participants chose between the last candidates, accepting a candidate for the last two rows.

Then, in treatment 2, framing by parties, **figure 10.a** shows the distribution of favorited parties and **figure 10.b** shows the vote distribution in primary election. A chi-squared test clarifies the significant different between both graphs (p-value 0.006). According to the figure, 53.3% of the participants vote for Party 1 as a favorite party but party 1 only get votes for 6.7% of the participants. The 53.3% of the votes in the primary elections is concentrated on the party 5 and party 8. This resolution also agree with **H2** in terms of first places are more voted, because party 5 was in the first position.

In case of treatment 2, it is important to record the times that the people click at the party, in order to verifies if they open every party. The records display that a half of the participants only open one party. **Table 2** shows all the results of the parties, in where are included the number of the party, the order, the percentage of favorite party, the percentage of votes and the times that the party was clicked.

As **table 2** shows, the parties most clicked are party 5 and party 8 and both parties are the most voted. However, Party 1 is the favorite party for the 53.3% of the participants. The last proposed information could accept **H3** and may the fatigue a crucial factor of why people only click one party and focuses in particular positions.

V.   CONCLUSIONS

This paper applies an analysis of a laboratory behavioral-experimental study to provide evidence that e-voting is a very framing-sensitive and the choice architecture may nudge voter behavior and changes or influence the results of an election. In general terms, the results of the justify that the majority of the people do not vote for their favorite candidate. This is a fact that the people tend to use system 1 to decide their vote, because it faster and automatic.

Also, when an experimental-behavioral methodology is implemented, the people can change their decisions because they worried about their material, in this case the monetary politics. Maybe they prefer one participant but when the policies are explained they have to think if these resolutions are the best for themselves, so in some cases they change their opinion. This is a situation in where some people apply the system 2.

According to the affirmation of **H1**, the treatments have an important impact in the voter´s behavior. Some nudges patterns are detected in both treatments, that confirms that framing has an important effect in the decision-making of the people when there are going to vote. In case of treatment 1, there is a conclusion that the majority of participants scroll down until the end and vote for candidates for the last two rows, even if they aren´t their favorite candidates are in the first rows. Then, in treatment 2, the parties most voted are the first and the central ones, but the real party is in other position. The candidate and the party most voted by the participants were never elected during the electoral process exemplified in the experiment developed.

Then, with the confirmation of **H2** and the information hightailed, it can be concluded that the positions more attractive by the participants in both treatments are the first one (in treatment 2) and the last one (in treatment 1), even though their favorites candidates are not in some of these positions, so candidates and parties may have a huge advantage if they are in these positions.

An important fact, that creates a new doubt inside **H2** is that in treatment 2 the center position is attractive by the people. A psychologist study explain that people tend to usually see at the center of objects. One theory about center-viewing is that people might look to a particular point in the center in attempt to minimize the eccentric of the objects presented. The center is the balance point between the foci attention directed to the objects presented; also, in some occasions the center point is formed by the objects presented to the people, and that produce attention. There is a question if directing attention is a center-viewing strategy because attending to the center will decrease the amount of attention available to each object presented. The people are better at detecting object when they are on the top or the center. (Fehd, 2009). With that theory and the results in the

experiments, there is a question if strategies in center-viewing may be a factor that changes voter´s behavior in elections process.

Another fact that supports **H3** is that a lot of participants only click in one party and vote for one candidate in this party. This resolution makes the treatment 2 less effective because the people don't open all the parties, so in the other elections (presidential elections) could be unknown candidates. This resolution may be for the fatigue produce by the frame. It´s important to remark that the participants prefer treatment 2 than treatment 1 in terms of choice architecture, but with the final results, it can be confirmed that in treatment 2 it is more difficult to find a candidate, and the participants don't have the initiative to see all the candidates, so this method is less efficient in terms of results.

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VII. TABLES AND FIGURES

Table 1. Possible values of candidate's attributes.

	IR Alta	Progresivo	Umbral	Desarrollo
Low	10%	0%	10%	0%
Medium	30%	50%	50%	20%
High	50%	100%	90%	40%

Table 2. Treatment 2 summarize.

Party	5	Party	1	Party	2
Favorite	13.33%	Favorite	53.33%	Favorite	0.00%
Votes	20.00%	Votes	6.67%	Votes	6.67%
Times	29	Times	19	Times	19
Order	1	Order	2	Order	3
Party	3	Party	8	Party	7
Favorite	3.33%	Favorite	13.67%	Favorite	3.33%
Votes	6.67%	Votes	33.33%	Votes	3.33%
Times	24	Times	29	Times	16
Order	4	Order	5	Order	6
Party	4	Party	9	Party	6
Favorite	0.00%	Favorite	6.67%	Favorite	3.33%
Votes	6.67%	Votes	10.00%	Votes	6.67%
Times	17	Times	14	Times	13
Order	7	Order	8	Order	9

Figure 1. Sample of o candidate card.

Figure 2. Sample of o party target.

Figure 3. Screen of Treatment 1.
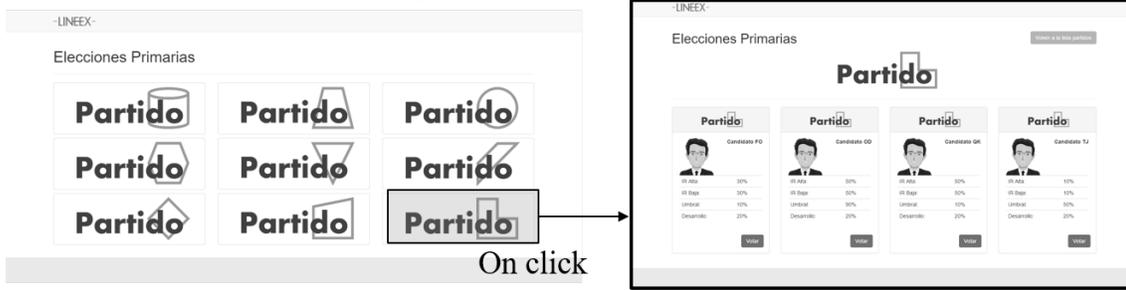
Figure 4. Screens of Treatment 2.

On click

Figure 5. Party cards position.

5	1	2
3	8	7
4	9	6

Figure 6. a) Distribution of favorite candidates. b) Distribution of primaries election result.
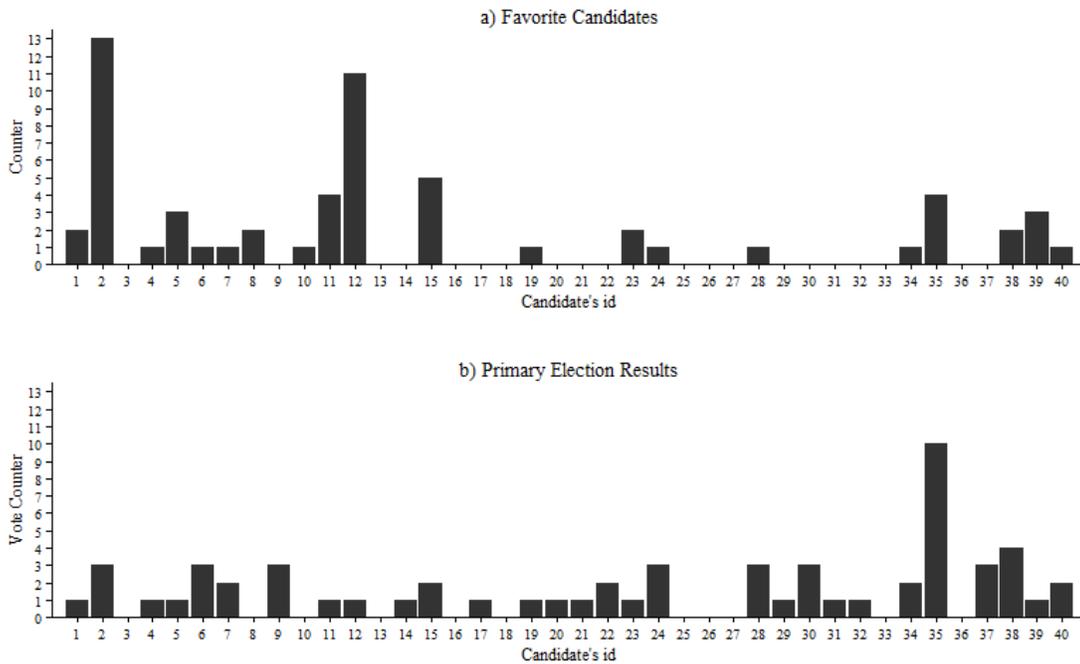
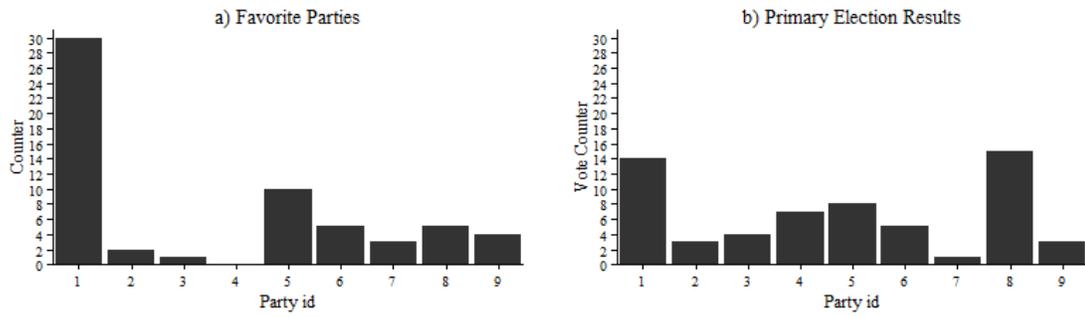**Figure 7**. a) Distribution of favorite parties. b) Distribution of primaries election result.

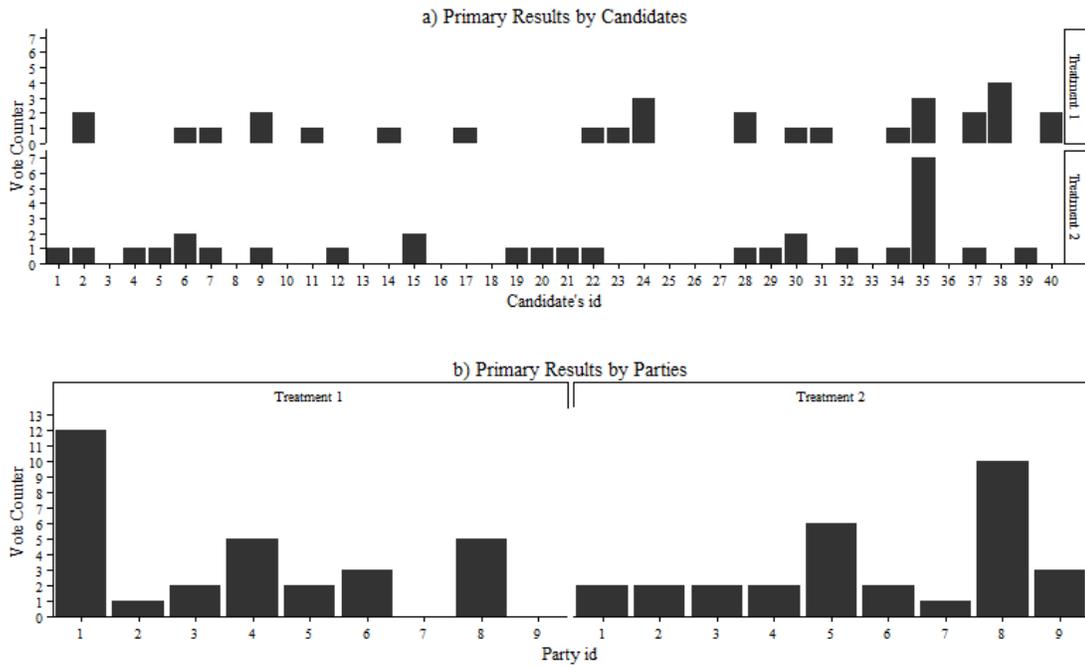**Figure 8**. a) Results of primaries by Treatment. b) Result of primaries by Treatment.

Figure 9. Treatment 1. a) Distribution of best candidates. b) Distribution of primaries election result.

a) Favorite Candidates - Treatment 1
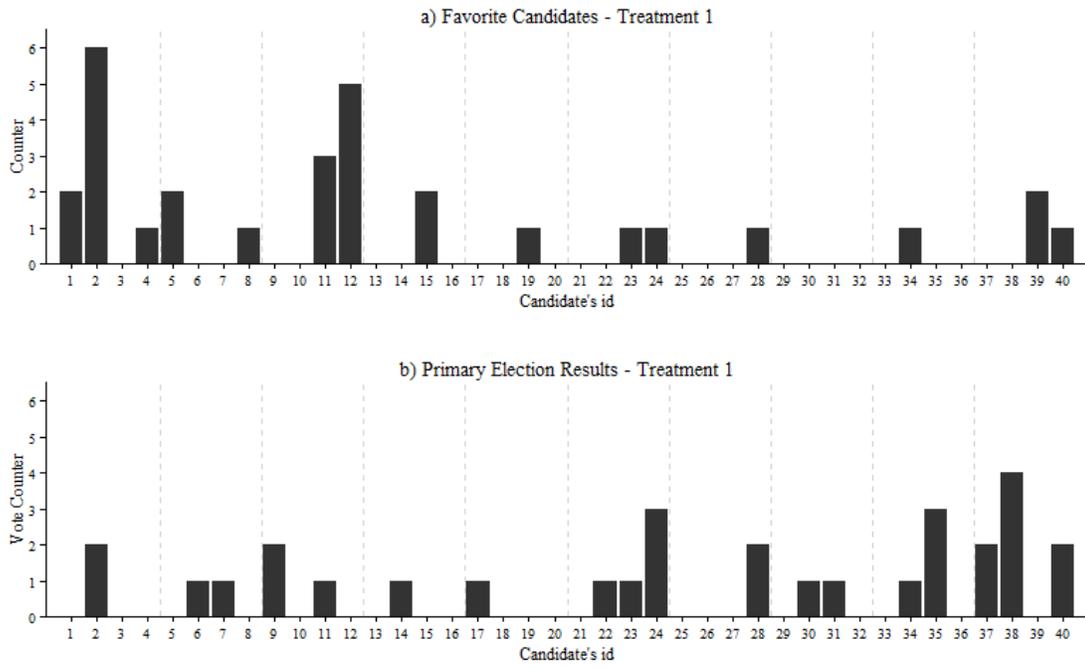

b) Primary Election Results - Treatment 1

Figure 10. Treatment 2 – by parties. a) Histogram of best candidates. b) Histogram of primaries election result.

a) Favorite Parties - Treatment 2

b) Primary Election Results - Treatment 2