Role of Schwartz value traits in Decision Making in case of Social Dilemmas – An abstract report

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Contents

Abstract Introduction Motivation Prisoner's dilemma Game Theory Value Scale Discussion Situation 1 - Women Reservation Situation 2 - Caste based Reservation Situation 3 - Village Relocation Dilemma Situation 4 and 5 - Setting up of a mine industry Situation 4 - Villager's Perspective Situation 5 - Employee Perspective Situation 6 - Polluting Car Dilemma Situation 7 - Riots Dilemma **Observations and Analysis** Independent Samples test of values on Gender Effect of time frame on people's decision Correlation between gender and the situations Relation between values and the response to dilemmas Variation of Agreeableness with Time Conclusions and Future Work References

Abstract

To explore whether human beings are rational in their approach of making decisions and how the rationality is influenced by social factors like their ambitions and moral values. I thus devised a questionnaire which intended to study how people's decisions changes with the changes in the group being influenced by the decision. Also, I studied the dependence of the same on the person's background information and the variations with the effect of time dependence of the situation.

Introduction

Decision might be regarded as a problem solving activity which is terminated when a satisfactory solution is found. Therefore, decision making is a reasoning or emotional process which can be rational or irrational, can be based on explicit assumptions or tacit assumptions. Psychologists around the World agree that decision making is indeed a difficult problem and defines what is known as bounded rationality while making decisions. The problem is even difficult to approach when we have to take a decision posing delays where on one side a smaller part of the society may benefit from it, but in the long run the bigger group would be harmed because of the concerned decision.

In the remainder of the report, discussion of the results obtained is done preceded by the motivation for the project. This will be followed by a detailed analysis of the results and will be concluded by a conclusion and any scope of future work.

Motivation

Prisoner's dilemma

The prisoner's dilemma is a canonical example of a game, analyzed in game theory that shows why two individuals might not cooperate, even if it appears that it is in their best interest to do so.

A classic example of the prisoner's dilemma (PD) is presented as follows:

Two men are arrested, but the police do not possess enough information for a conviction. Following the separation of the two men, the police offer both a similar deal - if one testifies against his partner (defects / betrays), and the other remains silent (cooperates / assists), the betrayer goes free and the cooperator receives the full one-year sentence. If both remain silent, both are sentenced to only one month in jail for a minor charge. If each 'rats out' the

other, each receives a three-month sentence. Each prisoner must choose either to betray or remain silent; the decision of each is kept quiet. What should they do?

Though a seemingly easy choice to make it often results in people ending up not cooperating with others. Situations I pose are similar to the problem discussed. Prisoner's dilemma expresses a trade-off between your choice for your self or your group (which constitutes of you and your friend). In our case the nature of dilemma is different as questions posed by us to the users do not pertain to his interest in self vs. his group but a dilemma between two different groups that he belongs to.

Game Theory

Mathematical method for analyzing calculated circumstances, such as in games, where a person's success is based upon the choices of others. Being Computer Science students game theory has motivated to add mathematics to the concept of decision making while taking decisions in a group.

Value Scale

I have used the Schwartz value scale for realizing the following values among the respondents.

Universalism	Equality, Inner Harmony, A World at Peace, Unity with Nature, A World of Beauty, Social Justice, Broad Minded
Power	Social Power, Wealth, Social Recognition, Authority, Preserving my public image
Self- Direction	Freedom, Self Respect, Independent, Choosing own goals, Curious
Benevolence	Spiritual life, Meaning in life, True friendship, Loyal, Honest, Helpful, Responsible, Forgiving
Security	Sense of belonging, Social Order, National Security, Reciprocation of favors, Family Security, Healthy

The values are used in regression analysis to see if there exists a direct relation between a particular value and the answer to the questions.

Discussion

Situation 1 - Women Reservation

Some people believe that women need one-third reservation in Parliament and state legislatures because society is "paternalistic" and it is difficult for them to contest and win elections against the established and entrenched male chauvinistic order in the society. If you agree with this view more women may be elected to Parliament, but this may wider the gap between the men and the women which might further lead to societal disharmony.

The above situation presents a dilemma between the benefit of a smaller group viz. women and a disharmony or loss of the bigger group viz. society. It is expected that the female respondents would tend to agree more than the male respondents.

From the collected data the mean of agreeableness of the women is 2.83 and for the men it is 2.68 strengthening our above claim.

Situation 2 - Caste based Reservation

Reservations are intended to increase the social diversity in campuses and workplaces by lowering the entry criteria for certain groups that are under-represented in proportion to their population. But on the other hand it disintegrates the society.

In the mentioned situation the smaller group which is going to benefit/loose will be the caste group which you belongs to (General/OBC/SC/Others) and the larger group which is going to be harmed will be the society. It is thus expected that people think in favor of the smaller groups to which they belongs to. Thus agreeableness will be more for people who belong to backward castes than the people who belongs to general castes.

Situation 3 - Village Relocation Dilemma

Government is relocating the village (and thus causing trouble) for the people near banks of a major river for building the dam which they seem is the only way to fulfill the growing demand for electricity around the city. Although, the relocation might trouble <u>you as a villager</u> but will help the society in rapid development.

The smaller group here is your village and the larger group which is going to be benefitted

Situation 4 and 5 - Setting up of a mine industry

A multinational company has invested a huge sum of money to dig a bauxite mine on Niyamgiri mountain in India. The mine is bound to have severely affected the forests on which the local population depends who perceive the mountain as their God.

Situation 4 - Villager's Perspective

Imagine yourself as a villager to be living in that area.

In this case the larger group is the society which is being benefited by the dilemma but the smaller group that is the villagers are loosing from the situation. Thus the respondents should be low on agreeableness.

Situation 5 - Employee Perspective

Imagine yourself as a dedicated employee of the company.

In this case the larger group is the society, while the smaller group that is the company employee and both are benefiting from the situation.

Paired Samples Statistics

	Mean	Ν	Std. Deviation	Std. Error Mean
Mining Villager	1.80	150	1.056	0.086
Mining Employee	3.39	150	1.129	0.92

Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval	t	df	Sig
-1.593	1.457	.119	-1.828,-1.358	-13.396	149	.000

As evident from the figures the agreeableness of the people increases while they are being asked to change their viewpoint from that of a villager to an employee.

Situation 6 - Polluting Car Dilemma

You are a office worker and have to use metro to travel daily to office like many other people. Recently, a company has launched a low cost car. It is pretty cheap (priced around 1 lakh), and offers high mileage, good services etc. But to reduce the price, the company has left one feature unattended. The carburetor in the car releases too much unprocessed smoke containing environment-polluting gases.

This is an example of a **social trap.** Here the smaller group is the individual and his family whereas the larger group is the complete society which will be harmed in a way if the individual chooses to agree with the view. The agreeableness should increase when time limit is fixed as the respondent would feel it less responsible.

Situation 7 - Riots Dilemma

Suppose due to some unfortunate incident Government has lead to falling of the temple or any religious building you have immense faith in. There is a protest which is disrupting the normal functioning in the city and injury to few people as well.

In this situation the smaller group is your group of religion (Hindi/Muslim/Sikh/Others) and the larger group is a society which will be disturbed by the riots. The agreeableness of the people is found to be lower compared to other questions with a value of 1.93.

Observations and Analysis

Independent Samples test of values on Gender

No significant results were observed except the dependence of Power as the value on the gender which exhibited a significance of 0.041. It was observed that males are more power oriented than the females which complies with the other studies.

Effect of time frame on people's decision

The situations/dilemmas posed in the questionnaire tend to compare following two scenarios to evaluate the effect of time limits on the decisions by the respondents :

- No time limit. Example : Women reservation in parliament
- Fixed time limit. Example : Women reservation in parliament for only five years.

Null Hypothesis: It was expected that the agreeableness of the people will increase when the duration of time is fixed as it would become easier to analyze the consequences of the results that they are making.

Following table summarizes our observations regarding this :

Paired Samples Correlations

S. No	Situation/Pair	Ν	t	Sig (2-tailed)
Pair 1	Women Reservation Question 1 & Women Reservation Question 1 With Time Constraints	149	-6.717	0.000
Pair 2	Caste Reservation and Caste reservation Time Variation	150	-6.005	0.000
Pair 3	Village Relocation and Village Relocation Time	148	-1.900	0.059
Pair 4	Mining Villager and Mining Villager Time	147	-7.431	0.000
Pair 5	Mining Employee and Mining Employee Time	150	-6.045	0.000
Pair 6	Car and Car Time	149	-1.654	0.100
Pair 7	Riots and Riots time	149	-5.477	0.000

Table4: Significance in answers of each question (i) with time and (ii) without time.

Inference: Since sig value < 0.5 and t is negative, answer value increase significantly with Time. Supports the hypothesis.

Correlation between gender and the situations

I also performed the Independent Samples Test for the dependence of gender with respect to the different situations. Correlation between the choice of the decision and the gender was usually missing from most of the observations except from the case of *Caste Reservation* (sig value of 0.046) and *Mining situation* where the worker is assumed to be an employee (sig value of 0.000). The correlation though not so obvious can be explained on the basis of the differences in the values of the two gender leading to a difference of opinion.

A major observation regarding this is that the female respondents tend to agree more on the situations than the male respondents.

But, according to the results, out hypothesis came out to be false. This can be explained by peoples' "empathy" towards the given situation while answering the questions.

Relation between values and the response to dilemmas

Regression Tests

Value	Q1	Q1t	Q2	Q2t	Q3	Q3t	Q4	Q4t	Q5	Q5t	Q6	Q6t	Q7	Q7t	То	Tt
Universalism	.63	.89	.26	.31	<mark>.00</mark>	<mark>.00</mark>	.23	.97	.41	.98	<mark>.00</mark>	<mark>.00</mark>	.07	.88	.36	.41
Power	.26	.07	.91	.09	.08	.13	.46	.40	.94	.47	.41	.11	.07	.28	.59	<mark>.01</mark>
Self Direction	.42	.11	.58	.56	.97	.63	.12	<mark>.04</mark>	.26	.79	.09	<mark>.04</mark>	.08	.43	.26	.51
Benevolence	.08	.82	.65	.94	.56	.15	.34	.15	.13	. <mark>03</mark>	.69	.46	.58	.84	.41	.06
Security	.87	<mark>.04</mark>	.12	.19	.71	<mark>.01</mark>	.26	<mark>.00</mark>	.99	.20	.49	.09	.77	.79	.87	.64

Table5: Table showing significance values in regression test of individual questions. X axis -> Value, Y axis -> Answer to the question in 9 point scale. "t" stands for with time constraint. "To" and "Tt" are for combined test of all the questions. If sig < 0.05, it denotes high dependence of answers to the question on values.

Inference: Values exhibited a strong correlation with a given situation. For instance Universalism was highly correlated to the response of the respondents towards the dilemma which talked about Village Relocation and purchase of a car which might pollute the environment.

Variation of Agreeableness with Time

Paired Sample Statistics

	Situation	Mean	Std. Deviation	Std. Error Mean
Pair 1	Women Reservation Question 1	2.73	1.050	.086
	Women Reservation Question 1 With Time	3.52	1.239	.101
Pair 2	Caste Reservation	1.75	1.279	.104
	Caste Reservation Time Variation	2.43	1.382	.113
Pair 3	Village Relocation	3.07	1.070	.088
	Village Relocation Time	3.30	1.436	.118
Pair 4	Mining Villager	1.78	1.050	.087
	Mining Villager Time	2.48	1.119	.092

Pair 5	Mining Employee	3.39	1.129	.092
	Mining Employee Time	3.83	1.169	.095
Pair 6	Car	2.36	1.231	.101
	Car Time	2.50	1.369	.112
Pair 7	Riots	1.93	1.157	.095
	Riots Time	2.44	1.411	.116

Table6: Mean and Std. Deviation for paired sample tests of answers to the individual question with and without time.

Inference: Value i.e. agreeableness increases as time of effect decreases which supports the hypothesis.

Conclusions and Future Work

In this survey I thus evaluated how our decision making process is influenced by the notion of the groups involved in the decisions. I analyzed the process using following three variables:

- 1 Effect of Time Variations on the decision
- 2 Effect of Gender on the decision making process
- 3 Effect of Values on the decision making process

While the first effect did show strong a correlation the other effects were not so dominant while making decisions.

Future work will involve study working on larger set of respondents and get a fair enough of people from different castes, different religions and observe if these variables have any influence on the decision making process of the people.

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