THE POWER OF SHARING AND INCREASING SOCIAL MARGINAL UTILITY

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ABSTRACT
The concept of utility is well known in microeconomic theory with the decreasing marginal utility. On the contrary of the neo-classical approach of methodological individualism, we argue that a utility maximizing oriented self-interest behavior does not guarantee optimizing and maximizing social total utility. What can be done instead, sharing goods with the poor and even the non-poor can undoubtly make spectacular contribution to the total social welfare of society. As Kaldor-Hicks criterions state, it is possible to increase social welfare even after Pareto Optimality. This study analysis the individual and social utility effects of sharing goods and services among people in terms of welfare economics. The study introduces new terminologies into the economics literature which are vertical consumption, horizontal consumption, decreasing individual marginal utility, increasing social marginal utility, individual total utility and total social utility. It concludes that without altruistic behavior it is not possible to maximize social welfare. Therefore sharing makes the society better off.
Key Words: *Altruism, Self-interest, Decreasing Individual Marginal Utility, Increasing Social Marginal Utility, Total Individual Utility, Total Social Utility, Vertical Consumption, Horizontal Consumption.*

PAYLAŞMANIN GÜCÜ VE ARTAN SOSYAL MARJİNAL FAYDA

Fayda kavramı, mikro iktisat teorisinde daha çok azalan marjinal faydayla öne çıkar. Bu çalışmada, metodolojik bireyciliğe neo-klasik yaklaşımın aksine, fayda maksimizasyonu merkezli kişisel çıkarcı davranışın toplam sosyal refahı optimize ve maksimize etmeyi garantilemeyeceğini iddia etmekteyiz. Şu halde toplam sosyal refaha önemli bir katkı sağlamak için yapılması gereken şey mal ve hizmetleri fakirlerle hatta fakir olmayanlarla paylaşmaktır. Kaldor-Hicks kriterlerinin ifade ettiği gibi *Pareto Optimum*dan dahi öte sosyal refahın artırılması mümkündür. Bu çalışma, refah ekonomisi perspektifinden toplumun bireyleri arasında mal ve hizmetleri paylaşmanın bireysel ve sosyal faydaya etkilerini analiz etmektedir. Çalışma, iktisat literatürüne dikey tüketim, yatay tüketim, azalan bireysel marjinal fayda, artan sosyal marjinal fayda ve toplam sosyal fayda gibi yeni kavramlar katmaktadır. Çalışma, alturistik davranış olmaksızın sosyal faydayı maksimize etmenin mümkün

olamayacağını ortaya koymaktadır. Dolayısıyla paylaşma toplumsal refahı artırmaktadır.
Anahtar Kelimeler: Alturizm, Kişisel Çıkar, Azalan Bireysel Marjinal Fayda, Artan Sosyal Marjinal Fayda, Toplam Bireysel Fayda, Toplam Sosyal Fayda, Dikey Tüketim, Yatay Tüketim.

1. Introduction

There is a serious misconception about human nature which is called "self-interest hypothesis". This highly problematic area has been recognized by some academicians and a considerable researches have been carried out. These studies come up with a suggestion that selfishness should be replaced by an altruistic behavior in order to maximize social welfare, realize social peace, integrity and solidarity and so forth.

To show the importance of altruism, let us assume that a student in a classroom has a box of delight. S/he has two options in terms of consuming it. S/he could consume all of the box by himself/herself based on self-interest or s/he could share the box with his/her friends in the classroom based on altruistic behavior.

In the first option, the student would maximize his/her own total utility up to a certain point while his/her friends would have nothing in terms of utility. In the second option, the student's total utility would decrease some but his/her friends total utilities would increase much more than his/her loss.

In the first option, from psychological and sociological point of view his/her friends would not have a positive thinking about their friend in the classroom because of his/her selfish attitude. And the class would not be better off. In the second option, a totally different outcome would spring up. Because of the sharing, the student's friends would be happy as a result of their increasing total utilities. Furthermore, solidarity and integrity among the students would empower.

If a student shares his box of delight with his friends in the class, all students in the class would be happy even though delight is not a compulsory consuming good. If the shared good is compulsory one then the effect of sharing would be sky-rocketing. Consider that one is dying of hunger since s/he has nothing to eat and the other has bunches of consuming goods. If the latter person shares what he has with the hungry person, he lose little but the other gets more utility. Does not the social welfare increase? Of course it does. This study takes this point into account.

Altruism is to give what you have to the others who need indeed much more than you need. At first sight, it seems that altruism and economics are

irrelevant since the concern of economics is normally related with the behavior of rational and self-interested individuals trying to maximize his/her total utility under condition of scarcity. Altruism is being studied by various social disciplines. People being altruist take care of other family members, relatives and even the non-relatives. Many academic studies in various social disciplines confirm the existence of altruistic behavior in societies such as blood donation, kidney donation, charity activities, giving money, helping others etc.

Why should we share? Beyond the economic gains, sociological and psychological gains such as to be respected, to live in a peaceful society, to be happy, to feel brotherhood, to be humanitarian, to be loved, to be human being, to help others in need, to build sharing society, to be secured, to build strong society-solidarity, to access to Heaven, to be loved by God.

This paper makes use of utility theory of microeconomics and illustrates how maximization of social welfare differs from maximization of individual total utility/benefit through sharing. The second section includes a short literature review on altruism in economics. The third section explains the power of sharing and increasing social marginal utility. The study ends up with a conclusion.

2. Literature Review

As Adam Smith (1937) states self-interest as "It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages". Collard (1978) disagree with Smith on this point. To him, it is wrong to make self-interest an axiom of economics and some important results can be obtained from studying the economic behavior of altruists. He introduces altruism into economics by supposing that the utility which individual A gets from an allocation of goods depends not just on his own bundle but on the bundles possessed by at least some others.

The economic analysis of altruism first invented by Gary Becker (1974; 1976; 1981). He showed how altruism could be incorporated into economic theory. The central idea was that it is simply assumed that the altruist cares about the welfare of the others. Becker and the others used this assumption to try to analyze and explain a variety of behavior including that of parents towards children, of children to towards each other and of spouses towards each other, as well as charitable behavior.

Given an initial allocation of goods among a set of individuals, a change to a different allocation that makes at least one individual better off without making any other individual worse off is called a *Pareto improvement*. An allocation is defined as "Pareto efficient" or "Pareto optimal" when no further Pareto improvements can be made. In another words, *Pareto Optimality* or *Pareto Efficiency* is a state of allocation of resources at which it is impossible to make any individual better off without making at least one individual worse off. A *Kaldor improvement* is a potential Pareto improvement which is a change that would be a Pareto improvement if combined with a suitable set of cash transfers among those affected. A *Marshall improvement* is a net improvement which is a change whose net value is positive, meaning that the total value to those who benefit is larger than the total cost those who lose (Becker, 1974; Friedman, 1987; Jaffe, 2002).

Kaldor improvement states that as a result of transfer the altruist losses Z, the beneficiary gains X but the beneficiary transfers back to the altruist Y and if X>Y>Z then both the altruist and the beneficiary would be better off.

Friedman (1987) states that "If a change produces a gain of X to me and a loss of Z to you, with X>Z, it would seem that the same change, combined with a transfer of Y from me to you, where X>Y>X, must be a Pareto improvement, since it leaves both of us better off. So it appears that any Marshall improvement must be a Kaldor improvement as well."

Jaffe (2002) asks this question: "Would society be better off, in aggregate economic terms, if altruism was more widely practiced among its members?". He uses an agent based computer simulation model of a simple agricultural society. He mentions three kinds of altruistic behavior: dissipative, equitative (equitable) and synergistic. In a unidirectional altruistic interactions, the cost of utility of good donated to the altruistic individual (K) and the benefit received by the recipient (A) may have three cases: If K>A then it is a dissipative transfer, if K=A then it is an equatitative transfer, if K<A then it is a synergistic transfer [which is the case of Marshall improvement and also the subject of this study]. He concludes that the inclusion of a synergic effect in the mutualistic interactions increased the aggregated utility achieved by the virtual society. He also states that altruism is intuitively thought of as beneficial to the group the altruistic individuals belong, in economic terms. In another words, a society would be better off if altruism was widespread. He also mentions that some other utilities which may not be measurable in economic terms come out in the process of sharing or transfer from altruist to

recipient such as solidarity, security, belonging, access to paradise [for believers], happiness, transcendence, loving care, etc.

Friedman (1987) considers two individuals, an altruist, individual A and a beneficiary, individual B. He states that the altruist's utility function is assumed to include both himself and beneficiary's utility function. In another words the altruist's utility depends on his own consumption plus the beneficiary's consumption. He establishes or develops a model similar to Becker 's (1976) as below,

Ub = Ub (Cb)

Ua = Ua (Ca, Ub (Cb)) = Ua (Ca, Cb)

Ca = Ia - T

Cb = Ib + T

where;

a and b stand for the altruist and the beneficiary respectively; Ua and Ub are the utilities of the altruistic and beneficiary respectively; Ca and Cb are the consumptions of the altruistic and beneficiary respectively; Ia and Ib are the incomes of the altruistic and beneficiary respectively; T is transfer from the altruist A to the beneficiary B. The altruist A transfers the amount T* (called the optimal transfer) to the beneficiary at which he maximizes his total utility.

Piliavin and Charng (2010) review literature on altruism in social psychology, sociology, economics, political behavior and sociobiology since early 1980's. They take the position that "in all of these areas, there appears to be altruistic must, ..., be revealed as reflecting egoistic motives. Rather, theory and data now being advanced are more compatible with the view that true altruism - acting with the goal of benefitting another - does exist and is a part of human nature." Same argument is supported by Fehr and Schmidt (2006) that evidence in recent years disproves the self-interest hypothesis, suggesting that concerns for altruism, fairness, and reciprocity strongly motivate many people.

Phelps (1975:2) said that "The range of altruistic behavior ... is impressive ..." when he was introducing *Altruism, Morality, and Economic Theory*.

Adam Smith (1969: 47) mentions about altruism as "How selfish so-ever man be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he drives nothing from it, except the pleasure of seeing it".

Margolis (1982: 15) defines altruistic behavior is "that the actor could have done better for himself had he chosen to ignore the effect of his choice on others".

Margolis (1982: 12) states "Almost no economist would deny the possibility of altruism in rational choice". He points out that economists Arrow (1963), Buchanan (1954) and Harsanyi (1955) touched on the possibility of a dual preference structure that would allow for motives other than pure selfishness. Among them, Arrow (1975) suggests that there can be three classes of motives for giving which are; a generalized desire to benefit others, a desire to be agent by which others benefit, and a sense of obligation, based on social norms or an implicit social contract (Piliavin and Charng: 28).

Bal-Tar (1985-1986: 5) notes that most academician commonly agree that: altruistic behavior (i) must benefit another person, (ii) must be performed voluntarily, (iii) must be performed intentionally, (iv) the benefit must be the goal by itself, and (v) must be performed without expecting any external reward.

3. The Analysis of Decreasing Individual Marginal Utility and Increasing Social Marginal Utility

Total social utility/benefit/welfare may increase by sharing goods and services. Although an individual's marginal utility/benefit decreases because of sharing parts of his/her goods, the recipient/beneficiary who is in need gets higher marginal utility/benefit. When the individual shares his/her goods with the individual in need total social welfare increases. The reason for that is because the poor individual's benefit/marginal utility will be higher than the rich individual's benefit/marginal utility. It is tried to be explained in the paper.

Let us assume that there are two individuals (A and B) in a society. One is rich (individual A) and the other is poor (individual B). If individual A, who has money to buy goods as much as s/he wants, consumes in a non-altruistic way then his/her marginal utilities and total utility would be as it is seen at the Table 1. Individual A's marginal utility decreases as his/her consumption increases which is known as the principle of diminishing marginal utility in microeconomics literature. His/her individual total utility would be 75 utils so does social total utility. The reason for this is that individual B has no or enough money to buy and therefore no good to consume.

Table 1: Marginal utilities before sharing (pure self interest or non-altruistic case)

	Individual A (the rich one)	Individual B (the poor one)
Quantities of Good X	Marginal Utilities	Marginal Utilities
Unit 1	25	-
Unit 2	20	-
Unit 3	15	-
Unit 4	10	-
Unit 5	5	-
Unit 6	0	-
Individual Total Utility	75	0
Social Total Utility	75	

Let us assume now that individual A and individual B have identical preferences or marginal utilities. Let us also assume that individual A shares his/her goods (unit 6) with individual B who had nothing for consumption at the beginning. What happens after sharing is that individual B's individual total utility increases substantially (25 utils) while individual A's individual total utility stays the same as it is seen at the Table 2. Accordingly, social total utility increases from 75 utils to 100 utils since marginal utility of sixth unit of good X is zero util for individual A but 25 utils for individual B. The sharing of sixth unit of good X contributes 25 utils to the social total utility.

Table 2: Marginal utilities after sharing one good with individual B (social interest case)

	Individual A (the rich one)	Individual B (the poor one)
Quantities of Good X	Marginal Utilities	Marginal Utilities
Unit 1	25	25
Unit 2	20	-
Unit 3	15	-
Unit 4	10	-
Unit 5	5	-
Unit 6	-	-
Individual Total Utilities	75 (no loss)	25 (gain)
Social Total Utility	100	

If individual A shares his/her two goods (unit 5 and 6) with individual B, his/her individual total utility reaches 45 utils while individual A's individual total utility decreases only 5 utils as it is seen at the Table 3. Accordingly, social total utility increases from 100 utils to 115 utils since marginal utility of fifth unit of good X is 5 utils for individual A but 20 utils for individual B. The sharing of fifth unit of good X contributes 15 utils to the social total utility.

Table 3: Marginal utilities after sharing two goods with individual B (social interest case)

	Individual A (the rich one)	Individual B (the poor one)
Quantities of Good X	Marginal Utilities	Marginal Utilities
Unit 1	25	25
Unit 2	20	20
Unit 3	15	-
Unit 4	10	-
Unit 5	-	-
Unit 6	-	-
Individual Total Utilities	70 (-5 loss)	45 (gain)
Social Total Utility	115	

If individual A shares his/her thee goods (unit 4, 5 and 6) with individual B, his individual total utility reaches 60 utils while individual A's individual total utility decreases 15 utils as it is seen at the Table 4. Accordingly, social total utility increases from 115 utils to 120 utils since marginal utility of fourth unit of good X is 10 utils for individual A but 15 utils for individual B. The sharing of fourth unit of good X contributes 5 utils to the social total utility.

Table 4: Marginal utilities after sharing three goods with individual B (social interest case)

	Individual A (the rich one)	Individual B (the poor one)
Quantities of Good X	Marginal Utilities	Marginal Utilities
Unit 1	25	25
Unit 2	20	20
Unit 3	15	15
Unit 4	-	-
Unit 5	-	-
Unit 6	-	-
Individual Total Utilities	60 (-15 util loss)	60 (gain)
Social Total Utility	120	

Table 5 gives some information on individual and social utilities before and after sharing.

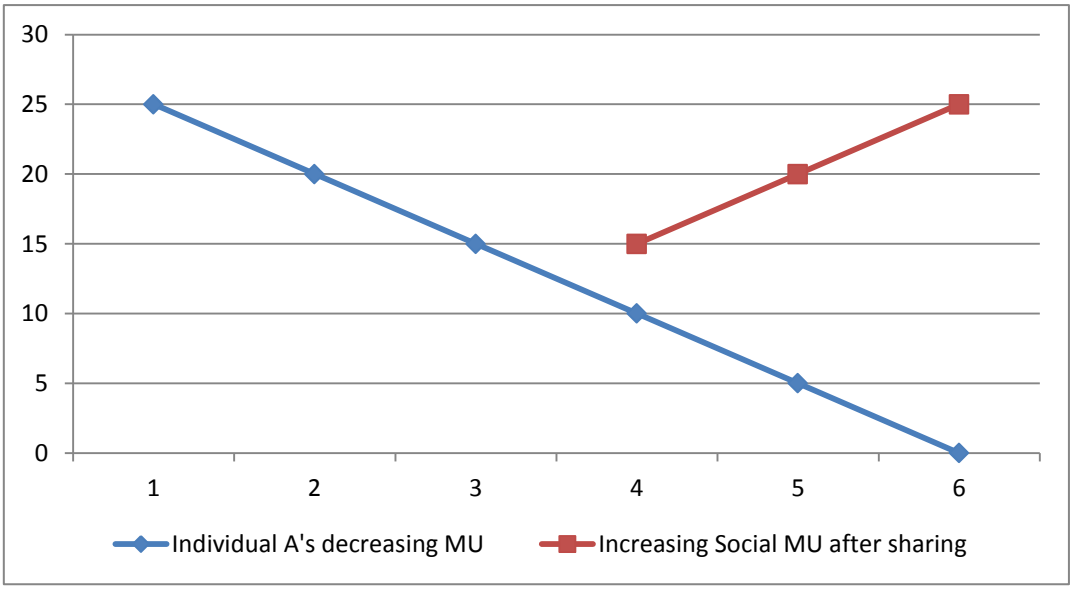
Table 5: Social Total Utilities and Social Marginal Utilities

	Individual A's Individual Total Utilities	Individual B's Individual Total Utilities	Total Social Utility before Sharing	Increasing Total Social Utilities after Sharing	Increasing Social Marginal Utilities of Sharing
No Sharing	75	0	75	75	-
Unit 6	75	25	75	100	25
Unit 5	70	45	75	115	15
Unit 4	60	60	75	120	5

At the Table 5, it is all summarized that if individual A shares sixth unit of good X with individual B, social total utility increases 25 utils. If s/he shares fifth unit of good X with individual B, social total utility increases 15 utils. Lastly, if s/he shares fourth unit of the good X with the individual B, social total utility increases 5 utils. No need to share third unit of good X since it does not contribute to the social total utility but decreases it. Graph 1 depicts clearly how decreasing individual marginal utility curve, which also represent the society's social marginal utility curve before sharing, turns out to be an

increasing social marginal utility curve for the shared unit fourth, fifth and sixth units of the good X.

Graph 1: Sharing and Increasing Social Marginal Utility instead of Decreasing



The two identical individuals case was our simple first case to make easy to understand the logic of the power of sharing. Now, more real world case which includes more than two non-identical individuals in preferences is our second case. These individuals are named as the rich (individual A), the poor (individual B), the poorer (individual C), the poorest (individual D) and the misery (individual E) in a society as it is seen at the Table 6, Table 7 and Table 8. The poorer gets higher marginal utility than the poor when s/he consumes the first unit of good since s/he needs more severely than the poor. With the same logic, the poorest gets higher marginal utility than the poorer when s/he consumes the first unit of good, and so on.[1] The logic is very obvious here that the individual who is severely in need gets higher marginal utility from the consumption of each unit of good.

Let us assume that individual A shares his/her goods, unit 5 and 6, with individual B and unit 4 with individual C who has nothing for consumption at the beginning. What happens after sharing is that individual B's total utility

[1] At this point we should make short clarification: Let us assume the good is water. It is obviously accepted that the individual who has been thirsty for two days needs water severely than the individual who has been thirsty for only one day. So, the first individual's marginal utility would be higher than the second individual's.

increases 55 utils, individual C's total utility increases 35 utils while individual A's total utility decreases only 15 utils as it is seen at the Table 6. Accordingly, social total utility increases from 120 utils to 145 utils.

Table 6: Marginal Utilities after Sharing with Individual B and Individual C (social interest case)

	Individual A (the rich one)	Individual B (the poor one)	Individual C (the poorer one)
QUANTITIES	Marginal Utilities	Marginal Utilities	Marginal Utilities
Unit 1	25	30	35
Unit 2	20	25	
Unit 3	15		
Unit 4			
Unit 5			
Unit 6			
Individual Total Utilities	60 (-15 loss)	55 (gain)	35 (gain)
Social Total Utility	145		

Let us assume that individual A shares his/her goods, unit 3, with individual D who has nothing to consume at the beginning. What happens after individuals A's sharing is that individual D's total utility increases 50 utils while individual A's total utility decreases 15 utils as it is seen at the Table 7. Accordingly, social total utility increases from 145 utils to 185 utils.

Table 7: Marginal and total utilities after individual B's sharing with individual D (social interest case)

	Individual A (the rich one)	Individual B (the poor one)	Individual C (the poorer one)	Individual D (the poorest one)
QUANTITIES	Marginal Utilities	Marginal Utilities	Marginal Utilities	Marginal Utilities
Unit 1	25	30	35	50
Unit 2	20	25		
Unit 3				
Unit 4				
Unit 5				
Unit 6				

Individual Total Utilities	45 (-30)	55 (-25)	35	50
Social Total Utility	185			

The misery one is added in the Table 8 but slightly different framework. Individual A shares his second unit of good X with individual E. Individual A's total utility decreases 20 utils but the misery's total utility increases 70 utils. Accordingly, social total utility increases from 185 to 235. So, we may say that sharing from the rich to the poor, the poorer, the poorest and the misery gradually increases social total utility of the society.

We use two new concepts in the study to distinguish two kinds of consumption which are vertical consumption and horizontal consumption. In the vertical consumption, individual consumes on self interest and individual marginal utility decreases. In the horizontal consumption, individuals share with others in need, as a result social marginal utility increases. The Table 7, including the misery, is updated below as the Table 8 to picture the vertical and the horizontal consumption.

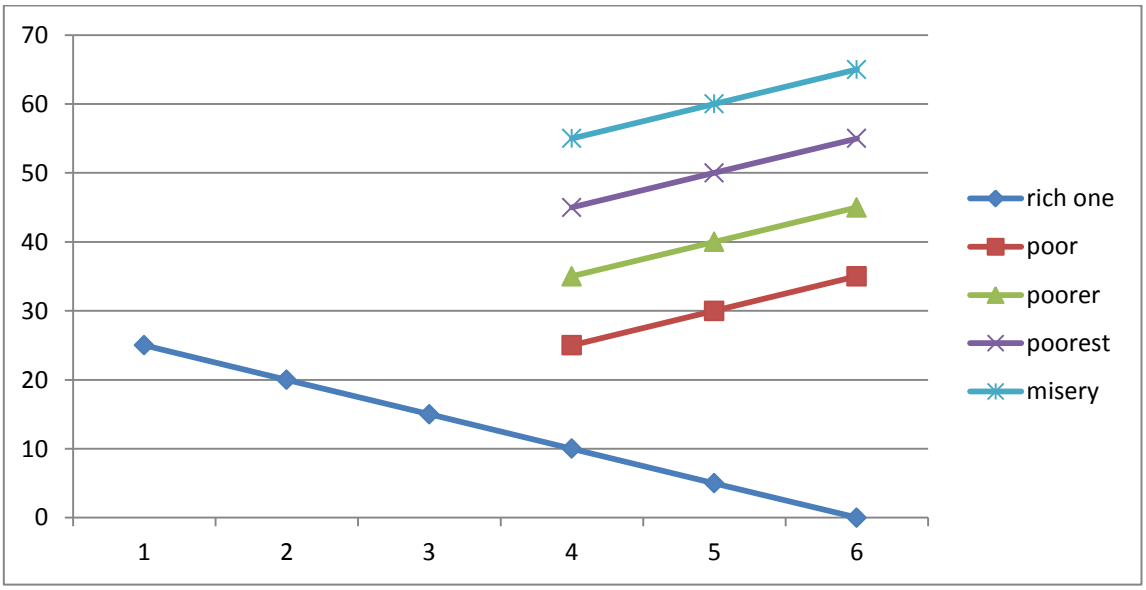
Table 8: Vertical Consumption versus Horizontal Consumption

		Horizontal Consumption: Increasing Social Marginal Utilities (altruism)				
		Individual A (the rich one)	Individual B (the poor one)	Individual C (the poorer one)	Individual D (the poorest one)	Individual E (the misery one)
Vertical Consumption: individual Decreasing marginal utilities	QUANTITIES	Marginal Utilities	Marginal Utilities	Marginal Utilities	Marginal Utilities	Marginal Utility
	Unit 1	25	30	35	50	70
	Unit 2	20	25			
	Unit 3	15				
	Unit 4	10				
	Unit 5	5				
	Unit 6	0				
Individual Total Utilities		75 (- 50 loss)	55 (gain)	35 (gain)	50 (gain)	70 (gain)

Social Total Utility	235

One may see the power of sharing which is explained through the Tables 8 above and depicted in the Graph 2 below. The Graph 2 depicts the increasing social marginal utility curves as a result of sharing. As sharing continuous from the rich to the poor, the poorer, the poorest and the misery (from the rich all the way to the misery) the increasing social marginal utility curve sifts up.

Graph 2: The Shift in the Social Marginal Utility Curve



In a society, social welfare will be higher depending on how strong sharing is in that society. The social welfare reaches maximum when individuals in the society share their goods until each individual's marginal utilities equals one another. This situation may be called as "the Principle of Equal Marginal Social Utility" similar to "the Principle of Equal Individual Marginal Utility".

4. Conclusion

This study concludes that, with a non-altruistic behavior in a society, it is not possible to maximize social welfare. Therefore, sharing as an altruistic behavior makes the society better off by turning out decreasing individual marginal utility to increasing social marginal utility. And also, by sharing, not only does social total utility increases in economic sense but also peace and solidarity in a society empower in social sense.

In the study, two new concepts are employed to distinguish two kinds of consumption which are vertical and horizontal consumptions. In the vertical consumption, individual consumes on self-interest and individual marginal utility decreases while in the horizontal consumption, individuals shares with others in need and social marginal utility increases.

The study, furthermore, suggests that by sharing, the society reaches at its maximum social welfare level which may be called as "the Principle of Equal Social Marginal Utility". The principle states that marginal utilities received or gained from consumed marginal goods by each member of the society equals to one other's.

Consumption for human being is a tool not a sole aim. In other words, the purpose of mankind is not to consume (as much as possible) at the highest level but as necessary as s/he needs.

Said Nursi (2006: 49-50) stresses two important distortions for a society. One of them is "while some work, others are free riders" which is the outcome of interest; the other distortion is that "I do not care others if I am fine" which is the outcome of selfishness. Nursi suggests that to eliminate these distortions, interest ought to be banned and altruism should be widespread in the society. In other words, with interest and without sharing solidarity, integrity and peace can never be accomplished in a society. Furthermore, if these distortions continue to exist, the society is polarized as the rich and the poor. So, conflict of interest between them becomes unavoidable.

In today's world, we all witness that the gap between the rich and the poor is getting larger and larger which is highly thought-provoking in the name of future generations. To what end? Each member of a society whether s/he is rich or not has to be aware of how important sharing is on behalf of herself/himself. In a society, moral values must be empowered as well as economic values. It is well known that human being is a social entity, s/he cannot live alone or without social relations. A person must take care of the others as well as himself/herself.

Finally, earning with a paying effort and sharing is a guarantee of existence of future generations and a peaceful society.

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