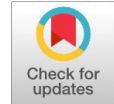


Food Consumption Analysis of Convict's Family: Application of Fuzzy Logic



Snigdha Sarkar, Sasmita Samanta, Arpita Mitra

Abstract: *In new age state of affairs Prisons are supposed not only to penalize the criminal but also correct the condition and behaviour of the criminals, who is accountable for inflicting injury on the victim. But family portion of the criminal are also the victim in the process and situation. Convicts family faces the dreadful condition during this procedure. Prisoner's families are ill-treated unswervingly and in a roundabout way by the society. They live in penury. Captivity of family member not only lessens the income of adult men but also reduces familial funds for the basic requirements of life. The family members have to sacrifice their children's education, ancestor's property, past savings, in some cases even essential requirements of their life. We always think about the victim on whom the harm has been directly inflicted and completely ignore the harm inflicted on the kin of the convict. The present study is an attempt to fetch to light the monetary susceptibility of families of criminal in a prison in Bhubaneswar. After interviewing the family members of prisoners, data is analyzed through fuzzy logic approach. The findings are explained in narrative manner so that the answer will be useful for policy makers in future.*

Index Terms: Prisons, Prisoner's families, Food consumption, Fuzzy logic

I. INTRODUCTION

The family members of criminals are vital member of the civilization who has undergo harm, secondarily, consequential from the offence [17]. Prisons are meant to ~~reprove the convict who is~~ accountable for inflicting injury on the victim. But the consequences is faced by their family member [19] Society is immersed in arresting, punishing the persons who are caught up in unlawful work, and holds itself accountable for doing so. Society is skeptical regarding the fortification of guiltless who are connected with the crook [3]. None thinks for families of convicts and they take the burden of the both social loss and financial loss. The poor family is compelled to forfeit their children's education, ancestor's property, past savings, in some cases even indispensable wishes of their life. We always imagine about the victim on whom the hurt has been directly inflict and entirely pay no heed to the harm inflicted on the kin of the convict. In most cases harm is more pecuniary. It makes them reasonably feeble. Through an interview method current research is an exertion to fetch to light the

susceptibility of families of offenders who are serving sentence in a prison in Bhubaneswar.

In the next section the concepts are elaborated. Review of literature is described in the section three. The methodology is explained in the section IV. The analysis of the paper and conclusion is penned in the sections V and VI respectively.

II. ELABORATION OF CONCEPTS

In this study our intent is to analysis the expenses of family members before conviction and after conviction. How family members are using their past saving to maintain the present situation. Family consists of many people like bold relatives, non blood relatives and kin. Kin refers to one's people and relative. The most universal and basic of all relationship is known as kinship [28]. Kinship, marriage and family are directly connected. It is placed in central place in all societies though differences in social, economic and political institutions. Kinship is also known as most organising standard in any society [21]. The relationship, which is well-known on the basis of blood and marriage, is recognized as kinship [1]. One of the chief organizing philosophies in every society is Kinship [14], which creates associations among individuals and groups. People are bound jointly in various bonds in the society [22]. Marriage and reproduction are the two fundamental bonds [12]. The institution of kinship is based on blood relationships or marriage [11]. Judge generally ordered a sentence if there is no jury or else his order is based on the conclusion of the jury within the possible punishments set by state law. Jail time is called sentence, the nature of sentence depends upon severity of crime [32]. Guilty person [23], once pronounced imprisonment is called convicts one who is behind the bar because the person found guilty of a criminal action [10]. The study revolves around convict's families and how victimisation creates lots of financial hardship upon the family members. The course from first to last which a person becomes a victim is recognized as Victimisation; it is the scientific study of victims of crime [6]. Victimisation is of three type's primary, secondary and tertiary victimisation. Victimisation refers to the individual who is harmed, injured, or killed as a result of a crime, accident, or other event or action [25], victim otherwise called, who have suffered loss, injury or traumas are termed as victim [38]. What the victim or his family consumes to satisfy human wants is known as consumption. Otherwise called destruction of utilities, it is treated as a vital spur on which the whole economic system of a country rests [31]. The family of victims is called secondary victims because they have directly or indirectly bear the loss during the procedure of law infringement. This study is concentrating on families of convict as secondary victim.

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III. REVIEW OF RELEVANT LITERATURE

This study is focused on the financial oppression of families of the criminal. It takes in explanation the main kin of the convict. Usually people exhibit their concern, regards and sympathy to the victims and on the other way they rudely behave towards the primary kin of the convict. This study defines the expenditure pattern through fuzzy logic approach. Before coming to the analysis part while delving into the literature of the topic, got to know that there are various types of types and factors affecting sentencing, types of victimisation, consumption behaviour and family members of offender and secondary victims. The two aspects of association like blood relationships and marriage are the roots behind two main types of resemblance. Such as Consanguine Kin: the relationships based on blood and affine Kin: the relationship formed on the basis of marriage [11]. The instance for consanguine kin or kinship is the relationship between parents and children, and between siblings. The affine kin or kinship: the relationships that consequence of marriage in between husband and wife [24]. Relationship is defined on the basis of closeness, which has three degree. These degrees depend upon how individuals are connected to each other. Primary kin is known as direct relation among individuals. The same way Primary affinity is of two types such as Primary Consanguine Kinship and Primary affine Kinship [26]. Any type of judgment is called sentence. It is different types depending upon the level of harshness of lawbreaking, such as imposition of a fine. Violent crime's sentence is much harsher than nonviolent crime's [9]. Minimum and maximum sentence is also there in legal system, which is operated as per the guideline of legal system. Separate convicts get separate sentence even in case of similar crime only due to delinquency. Sentencing of criminals is a slanted phenomenon or practice. It is not process which can be mathematically dogged and proved [29]. It also depends the areas of harshness, which helps to define penalty [15].

The consequence of wrongdoing of convicts is faced by the victim. Three essential types of victims such as Primary victims, who are directly suffered loss, injury or trauma by the critical event; victim of rape or a murder and Secondary Victims are those who in some way observers of immediate traumatic effects on primary victims or the people who are indirectly affected by a crime are known as indirect or secondary victim Such as immediate relatives of victims as well as convict. Lastly tertiary victims, who are removed from the critical event but who are impacted through encountering a primary or secondary victim are known as tertiary victims. After sole bread earner is punished the family member's welfare is jeopardized [20]. Though, the convict is not directly bringing hardship to his/her family members, but creating hardship, trauma and stigmatization to their lives [34]. How the life and consumption behaviour is changing out of this process, which is main part of the study, the process through which, individual quenches the want though the goods and services [4]. In this study we concentrate on the consumption behaviour of the families of convicts. The deterioration of consumption behaviour is a factor of economic victimisation in this analysis. Lives of family members go through vast and tragic changes. In spite of all odds, families are families, so they care for the prisoners [7]. Duesenberry's theory of consumption behaviour analysis helps in defining the consumption pattern,

because though income level slashed during the conviction process but the consumption pattern does not slashed as income. The main reason behind this is punishment. Punishment of prisoners include fines, forfeiture of property, imprisonment simple and rigorous, public scorn, death penalty and many more [32]. Theories of punishment justifies that this depends upon the restorative justice [5]. Restorative justice wants to restore the relationship between victim and offender [27]. The present study is taking into account the consumption of families of convicts. Consumption depends on various aspects such as wealth, availability of credit, future income, taste and preference of consumer etc. But the most important issue on which reliance of people's consumption is comparatively more is their income level [36]. Theories of consumption are basically four types like Absolute income hypothesis, Relative income hypothesis, Permanent income hypothesis and Life cycle Hypothesis [8]. For this study James Duesenberry's Relative income hypothesis (RIH) is taken into account. As par dussenberry "A real understanding of the problem of consumer behaviour must begin with a full reorganisation of social character of consumption patterns". The consumption pattern of families not only influence by the living standard of others but also influence by the past peak income level [18]. So reduction in consumption outline is not easy by the families who were enjoying a good and healthy outline of consumption before. This is basically known as Ratchet effect in Duesenberry's RIH.

The study attempts to measure expenses pattern of the families of criminal.

IV. METHODOLOGICAL ORIENTATION OF THE STUDY

This research is exploratory in nature. As it is an exploratory study no hypothesis has been constructed for the study. This study embraces collection of primary data through face to face interview of the primary kin of convicts visiting Jharpada Jail. Here by primary kin the researcher means parents, siblings, spouse and offspring between 12 to 18 years of the convicts. The area of research is Jharpada Jail Bhubaneswar. Here the sample size is 100 family members of the convicts serving sentence in Jharpada Jail, Bhubaneswar. Non probability sampling procedure is used in this research. It includes Purposive Sampling and Convenience Sampling. The sample then processed through fuzzy logic.

V. FUZZY LOGIC ANALYSIS OF THE STUDY

Hundred respondents have interviewed. Out of which 61% were female and 39% were males.

FigFigure.(1)

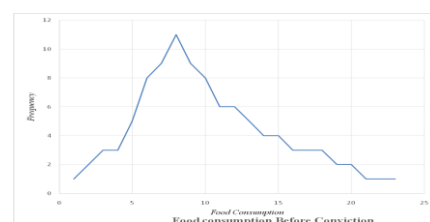
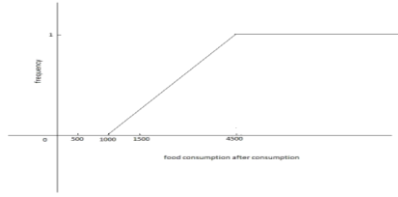


Figure. (2)



$$\mu_{FB} = \begin{cases} 0, & \text{if } FB \leq 1500 \\ \frac{FB-1500}{5000-1500}, & \text{if } 1500 < FB < 5000 \\ 1, & \text{if } FB \geq 5000 \end{cases} \dots \text{Equation 1}$$

From the collected data, it is clear that before conviction the amount of money spent on food (for family), gradually increases up to a certain limit and after achieving an average amount of money for a standard living, again it decreases with increase in standard of food. This is also reflected in the figure-1. In the figure-1, x-axis represents the amount of expenses incurred by the convict's family and the y-axis represents the frequency of the family. This is also same in the case of figure-3. But figure-3 represents only food consumption after conviction whereas figure-1 reflects the food consumption before consumption.

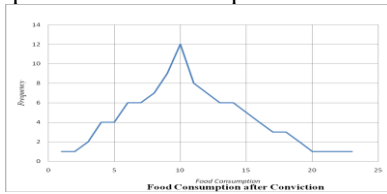


Figure.(3)

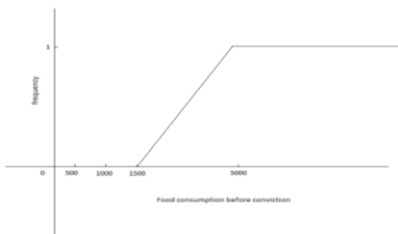


Figure.(4)

In figure-2, x-axis represents the food consumption and y-axis represents the frequency of the family members. Figure-2 reflects the food consumption before conviction whereas Figure-4 reflects food consumption after conviction.

$$\mu_{FA} = \begin{cases} 0, & \text{if } FA \leq 1000 \\ \frac{FA-1000}{4500-1000}, & \text{if } 1000 < FA < 4500 \\ 1, & \text{if } FA \geq 4500 \end{cases} \dots \text{Equation 2}$$

Equation- 1 and equation- 2 are membership function for food consumption before conviction and food consumption after conviction. In equation -1, it is shown that μ_{FB} , which represents food expenses before conviction, where it is shown that satisfaction is 0, if food consumption is equal or less than 1500. If the food consumption is equal or more than 5000, then it is treated as full satisfied. In between this if the expenses are hovering around 1500 to 5000, then it ranges from 0 to 1. The same is applied to equation -2, it is shown

that μ_{FA} , which represents food expenses after conviction where minimum or zero satisfaction is with 1000, which shows that due to conviction process and diminish in income the level of zero satisfaction declined from 5000 to 4500. Highest level of consumer expenses was 5000 in case of before conviction consumption (shown in equation-1), which is slashed to 4500 (shown in equation-2). Since the satisfaction is a relative term, therefore we have expressed in the membership function, which is given equation no-1. From equation-1, it is clear that the level of satisfaction above a standard living is one for those who spend more than or equal to 500. This reflects that the decline in income is also factored into the decline in lessening the food consumption.

VI. CONCLUSION

The families of offenders are also victims of the convicts'. Even these victims are not only treated as a second group of secondary victims but also forgotten victims of the crucial incident. Family members are not only suffering inexpensively but also going through a very decisive touching period of their lives. Some belligerent to cop up with the circumstances some are perplexed how to act and some are breathing with the hope that everything will be fine after the end of conviction. Whatever they are going through is not because of their blunder but still as the crook is the central part of their family that is why they have to stand the pain. So the soreness they have been bearing since or before conviction is because of the relationship they are having with the convicts. They not only need restoration but also need support from the state to maintain a life they are leading before. They are doing every type of possible work to uphold their preceding consumption outline. For this they are using their past savings they have borrowed money from others, some of the dependents started working and some have taken the charge of the business. Worsening of their standard of living is a direct result of the conviction of their kin. They are suffering from monetary squalor, scantiness of finances and burden of loan refund. These forgotten victims are very badly suffering from basic necessities of their life. Therefore, this category of people who are termed as "Convicts' Family Members" are also the victim of convict and the total procedure.

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