PREFACE

Water is an absolute vital resource for the survival of all living creatures, including human beings. Though 70% of the earth’s surface is covered with water it is not fit for drinking. Fresh water is a very scarce resource considering the fact that only 2.5% of the world’s water is not salty. The per capita availability of fresh water is falling all over the world including India. One of the most popular and widely used indexes used to indicate the extent of water scarcity is the Falkenmark water stress indicator. The index is based on minimum per capita water required for basic household needs and to maintain good health. They proposed 1700 m$^3$ of renewable water resource per capita per year as the as the threshold water limit, by taking into consideration the water required for household, agricultural industrial and energy sectors and the needs of the environment Countries which cannot sustain this figure are said to experience water stress, and when the supply falls below 1,000 m$^3$ the country is said to experience water scarcity and below 500 m$^3$ absolute scarcity. At levels below 500 m$^3$ per person per year it is a primary problem of sustenance.

In a developing country like India, not only is the issue of scarcity and crisis in freshwater availability important, but equally important, is the issue of is the quality of water. The twin problems in most developing countries including our study area are availability of fresh water as well as are the issue of safe drinking water quality. Safe drinking water is still inaccessible to many in developing countries. At any given time, about half the population in developing countries are suffering from one or more of waterborne disease leading to disability, morbidity and sometimes death. Along with the bacteriological contamination of water there is another problem of chemical contamination. Chemical contaminants include various harmful substances including the presence of arsenic in water. Drinking water Quality is an extremely important issue especially in a developing country because there are approximately 1.7 million deaths annually moreover 90% of those deaths are of children.

In developed countries the study of residential demand for water from the demand side may be considered to be adequate for the framing appropriate policies for water management. This is because the supply of clean water is reliable and to counter the scarcity issue calls for demand side management of water. In a developing country, like India, a study of only
demand for water without addressing the issue of water quality would be injustice to the people. This is because, no doubt, that every rational human being would agree that wastage of water is to be prevented at a time when scarcity of water is a major issue. However what about millions of people who do not have access to clean water and who suffer from a disease which originates primarily because of poor water quality and inadequate water supply. A serious study of water in developing countries is not merely about management of water but also provision of safe drinking water to households.

Households in developing countries because of intermittent supply of fresh water as well as because of poor and unreliable quality of supply have to incur a lot of coping costs in the form of carrying, storing and pumping water before final use. Furthermore poor quality of water supply means there is also a cost of purification of water. These are the costs that are being borne by households because of intermittent and poor quality of supply. Consequently, households should want better and steady supply of piped water.

The study not only focuses on the demand side of residential water use in terms of quantity of water use but also explores the determinants of demand for water quality. In particular it seeks to examine what are the motivating factors behind a households decision to purify water. Finally, the study examines the factors that determine whether a household will be willing to pay for an improvement in water service.

This dissertation prepared under careful watch of my supervisor has been designed to incorporate six chapters. In the first chapter an introduction is made about the present water situation and the likely future trend in water availability. The chapter also discusses about the drinking water quality and diseases that may result from contaminated water. The second chapter deals with survey of literature relating to several studies from both developed as well as from developing countries. Most studies have considered water from either quantitative aspect or from qualitative aspect. A single study which has integrated both quantitative and qualitative aspect of water is rare. We had tried to fill in the gap by a study designed to incorporate both. In chapter three we have discussed about methodology to be adopted. The empirical estimates for the District of Hooghly and Kolkata are discussed in chapter four and five. In chapter six we have discussed about policies that can be adopted based on our findings.
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Finally, I have tried my best to ensure that this dissertation be free of flaws. However, if any error has crept in then the responsibility is purely mine.

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