Determinants of households’ intention to pay for improved water services: an application of the theory of reasoned action

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Determinants of households’ Intention to pay for improved water services: 
Research findings from Ghana.

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Abstract
Providing a sustainable and improved water service to the increasing urban population 
across the developing world remains one of the biggest challenges towards meeting the 
water target set out in the millennium development goals. Increasingly, the application of 
marketing principles to water services is being promoted as an essential requirement for 
providing a sustainable water service. Within the sector, marketing improved water is 
commonly geared towards the health benefits. However, a recent study raises doubts about 
the effectiveness of this approach. In this study, the theory of reasoned action was 
employed in examining the factors that underpin the behaviour of the urban poor towards 
paying for improved water services. The findings show that both perceived social pressure 
and household’s attitude have similar importance in predicting and explaining households’ 
tention to pay for improved water services. Concern for a more comfortable life was the 
most important predictor of households’ attitude, while ‘the family’ was the most 
important referent group. The study showed that there is scope for marketing improved 
water services using a social marketing approach. However, focusing on hygiene-related 
benefits is unlikely to have a significant influence on the urban poor’s intention to pay for 
improved water services.

Keywords: Ghana, intention-to-pay, theory of reasoned action, urban poor, water service.

Introduction
The mid-term progress report published by the Joint Monitoring Program for water supply 
and sanitation (JMP) raises concerns about the current status of water supply services. 
With only ten years left for achieving the water supply target 1 enshrined in the Millennium 
Development Goals (MDGs). Though the world as whole is believed to be on track in 
meeting this target, there are concerns about the rate of progress across the developing 
world, particularly Africa (WHO/UNICEF, 2004). Recent figures shows that coverage 
levels in rural areas still lag behind that of urban areas, however coverage levels in urban 
have not improved over the last decade. Across the developing world, coverage levels for 
safe drinking water in urban areas have actually declined from 93% in 1990 to 92% in 
2002. The task of increasing coverage in urban areas in developing countries have been 
constrained by rapid expansion of urban centres, high rates of population growth, and the 
attendant increased incidence of urban poverty (World Bank, 2003, UNPD, 2004). The 
bulk of the un-served population in urban areas are the urban poor, the majority of whom 
live in burgeoning informal settlements and slums.

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1 The water supply target in the MDGs is to halve by 2015, the proportion of people without sustainable 
access to safe drinking water (based on 1990 figures). In 1990, about 1.2 billion people across the globe did 
not have access to safe drinking water.
Empirical studies from various parts of the developing world have provided compelling evidence to suggest that urban poor households have a high demand for improved services (Komives, 2001, Slattery, 2003). This demand is demonstrated by their willingness to pay higher fees for improved services (Whittington, et al., 2002), buying water at exorbitant prices from water vendor (Collignon and Vezina, 2000), and the fact that poor households often cite access to improved water supply services as one of their priority need (Chambers, 1997). However, serving urban poor households has been problematic and remains a big challenge for water utilities. The urban poor have peculiar financial, social and physical constraints that set them apart from other urban households and rural households. Hence, conventional methods used for non-poor urban households may not always be appropriate for the urban poor as their needs and expectation may vary. For this reason, the urban poor need be seen as a different category of customers and provided with types of services that suits their peculiar needs.

Over the past couple of decades, there has been an increased global trend towards private sector participation (PSP) and marketisation of water services. Njiru and Sansom, (2003), however, advocate for the application of marketing principles to water services because it provides a legitimate means of improving cost recovery, service management and efficiency, and attracting the needed investment to improve and expand services. They however note that the successful application of marketing principle to water services will require a good understanding of the consumers. This in view of the fact that the core proposition of marketing entails identifying, creation and maintenance of mutually satisfying exchange relations with customers (Barker, 1995). Addo-Yobo and Njiru (In press) also intimate that application of conventional marketing techniques for water services to the urban poor may not always be appropriate in view of the peculiar attributes of water, and the distinguishing traits of the urban poor. They therefore posit that an understanding of the water-related behaviour of consumers is a pre-requisite for the provision of a sustainable of water service to the urban poor. Consequently, they propose the use of consumer behaviour studies as a tool for designing and marketing a sustainable water service to the urban poor.

In this paper, we present part of the findings of a research carried out in two cities in Ghana - Accra and Kumasi. The study examined the water-related behaviour of urban poor households and established the implication of this behaviour for the design and provision of improved water services for the urban poor. This article focuses households’ intention to pay for improved water services, and looks at the fundamental determinants of this behaviour. This aspect of the research was guided by the Ajzen and Fishbein’s Theory of Reasoned Action (TRA). The next section of the paper provides a brief overview of the theory of reasoned action. This is followed a description of the methodology used for the study, a presentation of the results of the data analyses, and a discussion of the results.

**The Theory of Reasoned Action Model**

The theory of reasoned action (TRA) is based on the notion that human beings usually behave in a sensible manner; in that they “make systematic use of information available to them” and are “not controlled by unconscious motives or over powering desires” (Ajzen and Fishbein, 1980). The TRA maintains that baring any unforeseen events, people are likely to act in accordance with their intentions, and therefore posits that ‘behaviour intention ’ is a sufficient predictor of behaviour. According to the TRA, a person’s intention to carry out a particular behaviour can be predicted from two behavioural components - an attitudinal component, and a social or normative component. These two components act independently to shape a person’s behavioural intention. The attitudinal component is
based on personal factors, while the normative component is based on perceived social pressure. Both the attitudinal and normative factors are influenced by the beliefs associated with the behaviour in question. Thus, according to the TRA, a person’s beliefs constitute the fundamental determinants of his/her behavioural intention and consequent actions. Factors such as age, sex, culture and social class are not considered as independent variables in the TRA model because it is assumed that their influence acts through the attitude and/or subjective norm variables (Fishbein and Ajzen, 1975, McCarthy et al., 2003). Algebraically, the TRA can be expressed as:

\[ B \approx BI = (A) w_1 + (SN) w_2, \]

Where, B = the behaviour in question

BI = behavioural intention

A = attitude towards the behaviour

SN= subjective norm relating to the behaviour, and

\[ w_1, w_2, = \text{empirical weights indicating the relative importance of ‘A’ and ‘SN’}. \]

The theory of reasoned action, as described above, is specifically concerned with rational, volitional, and systematic behaviour (Ajzen and Fishbein, 1980, Sheppard et al., 1988). It relates to freely made choices, where individuals consider the implications of their actions before deciding whether or not to act. It follows then that the TRA is inappropriate to the study of behaviour which is involuntary; being required by social convention (e.g. going to work) or compelled by prior commitment or behaviours where little thought is involved (impulsive purchases). As pointed out by Fishbein and Manfredo, (1992), the application of the TRA is primarily concerned with identifying the factors underlying the formation and change of behavioural intent. To date, the TRA remains one of the most widely used framework for examining the motives that lie behind human behaviour. This theory is acknowledged as one of the most reliable theoretical approaches of understanding the cognitive construct underpinning consumers’ decision making process (Sheppard et al., 1988, Bosompra, 2001). The theory has been applied and validated in studies in various disciplinary fields, such as public health, nutrition, agriculture, marketing, and forestry to explore the behaviour of different social groups. The constructs of the theory of reasoned action are discussed below.

**Attitude towards an object**

Fishbein and Ajzen (1975) defined attitude as “the degree to which the person has a favourable or unfavourable evaluation of the behaviour in question”. In general, a person tends to favour an action s/he believes has desirable consequence, and frowns on one that is likely to have undesirable effects. Attitudes are determined by the beliefs associated with the behaviour in question (behavioural beliefs), and these beliefs are formed through associating the object of interest with various characteristics, qualities and attributes. Though, a person may hold several beliefs about a particular behaviour, it is only a small number of these beliefs, referred to as salient beliefs, which are significant determinants of one’s attitude. According the TRA, the attitude towards an object is expressed as the sum of the product of the strength of each belief associated with the behaviour and the importance attached to the belief (outcome evaluation). This relationship can be expressed as:

\[ \text{Attitude}(A) \propto \sum_{i=1}^{n} b_i e_i, \]

Where,

\[ b_i = \text{the } ith \text{ behavioural belief} \]
Thus, it can be seen that any change in the set of salient behavioural beliefs and/or their associated evaluations or importance is likely to result in a change in attitude. This knowledge is employed in marketing strategies to increase the strength and/or importance of one or more of consumers’ salient beliefs so as to increase their positive outlook towards the product or service (Assael, 1989, Kotler, 1994, Brassington and Pettitt, 2000).

Subjective norm towards an object
Subjective norm is the normative component of behavioural intention. It is defined as one’s perception of the extent to which other important people will approve or disapprove of him or her carrying out the behaviour in question (Fishbein and Ajzen, 1975). The subjective norm captures the influence of the social environment on behavioural intentions. A person’s subjective norms can be predicted from the normative beliefs that specific individuals or referents think he/she should or should not perform the behaviour in question; and the person's subsequent motivation to comply with the expectations of the referent groups (Ajzen and Fishbein, 1980). This relationship can be expressed as:

$$SubjectiveNorm(Sn) \propto \sum_{j=1}^{m} Nb_j Mc_j$$

Where,
- $Nb_j$ = the $jth$ normative belief
- $Mc_j$ = the $jth$ motivation to comply, and
- $m$ = the number of significant referents.

A schematic representation of the full TRA model is shown in figure 1 below. As depicted in the figure, the TRA can be thought of as a series of hypotheses linking (from right to left):

1. Behaviour to behavioural intentions,
2. Behavioural intentions to a weighted combination of attitudes and subjective norms,
3. Attitudes and subjective norms to behavioural and normative beliefs respectively.

Figure 1 Schematic representation of the Theory of Reasoned Action

Source: Ajzen and Fishbein (1980)
The TRA provides a framework that encapsulates the complex phenomenon of human behaviour in a simple, model. Importantly, the theory incorporates both personal and social influences in the behaviour model. The various constructs of the model are operationally defined and amenable to quantitative analyses. The strengths of the relationship between the variable constructs within the theory are measured using the correlation coefficients, while regression analyses is used to provide an index of the extent to which behavioural intention can be predicted from the simultaneous consideration of the attitude and subjective norm. The TRA therefore provides a structured means of studying behaviour, and makes the task of analysing behaviour less cumbersome. Hence, the TRA can be seen as providing a rapid assessment tool for capturing the strength of the underlying beliefs and social referents for a particular behaviour, and thus providing valuable information for constructing and targeting interventions. Essentially, the theory offers a simple but effective framework for understanding and prediction human behaviour.

Methodology

Data for the study were collected from four low-income urban communities in Ghana. Two communities each were selected from Accra and Kumasi; the two largest cities in Ghana. Both qualitative and quantitative data were collected from households using semi-structured interviews, questionnaire survey, and focus group discussions in that order. Responses obtained from during the interview phase were used in designing sections of the questionnaires, while the focus group discussions were used to gain more insight into some of the key issues that came up during the interview and questionnaire survey phases. All the research instruments were pre-tested before they were used. In all, 368 completed questionnaires, 25 interviews and 7 focus group discussion were analysed in this study. A gist of the how data for the study was collected and analysed is presented below.

Selecting Respondents households

Respondents for the study were selected from low-income urban communities that have a history of poor water services. It was assumed that the inadequate infrastructure, poor housing conditions, and poor social services and environmental conditions typical of low-income communities made residents in such communities susceptible to various forms of vulnerability and lack of entitlement, thus pushing them into the poverty bracket (see Wratten (1995) and Chambers (1987) for discussions on the links between vulnerability, entitlement and poverty). Thus, low-income communities were regarded as places with high concentration of poor households, and therefore suitable locations for a study targeted at the urban poor. However, it was also noted that not all households in low-income communities were necessarily poor. To get round this issue, ownership of certain household assets was used as a proxy for identifying poor households. Households that used cable television, multiple cars, and air conditions were considered as non-poor, and so were excluded from the study. A similar approach has been used in studies in Ghana, and it has proofed to be a useful way of distinguishing between poor and non-poor households (Benneh et al., 1993).

Respondent households for the questionnaire survey were selected using a systematic sampling approach. Since houses in the communities were not arranged according to any recurring pattern, there was no danger of selecting houses which shared common characteristics (Babbie, 1979, Kemper et al., 2003). The systematic sampling approach was therefore an appropriate strategy for the study. Furthermore, system sampling is generally much easier to use than simple random sampling. Respondents for the interviews and focus group discussions were, however, selected using a purposive, rather than a probability sampling technique. The focus here was on selecting the ‘right’ people who were
knowledgeable in the issues on interest in the study. Focusing the selection of respondents in this way was useful in enhancing the credibility of information obtained (Babbie, 1979, Patton, 2002, Kemper et al., 2003). Those interviewed included local leaders, teachers and adult females.

Measuring components of TRA model
Behavioural and normative belief with regards to paying for improved water services were elicited from respondents during the interview phase. Respondents were asked to list the advantages and disadvantages of paying for improved water services, as well as important individuals or groups of people who were likely to approve/disapprove of them taking this action. The lists obtained were collated and put into categories. These categories were used in designing the TRA questionnaire. All components of the model were measured on a 5-point semantic differential scale during the questionnaire survey. Although semantic differential scales are ordinal in nature, their use as interval data in statistical procedures is a common practice in social science; provided the scale item has at least 5 categories (Bryman and Cramer, 1993, Oppenheim, 1993). Hence, data from the semantic differential scales were treating the data from the as interval data, which permitted the carrying out a wide range of statistical analyses.

Data analyses
The usefulness of the TRA model for understanding and predicting the households’ intention to pay for an improved water service was assessed using correlation and regression analyses. Correlation analyses were carried out to examine the strength of linear relationships between pairs of components within the TRA model. Correlation coefficient values (r) less than 0.3 were described as showing a weak linear relationship. Values between 0.3 and 0.5 were classified as showing satisfactory relationships, while r-values greater that 0.5 were classified as showing strong relationships. Results were deemed to be significant if the probability value (p) was less that 0.05. All probabilities reported were based on two-tailed tests since the directions of the relationship between each pair of variables were not predicted prior to the analyses. Linear multiple regression analyses were carried out to examine the relative importance and explanatory power of the predictor components in the TRA model. The predictive power of the predictor variables were assessed by comparing their standardised β values. All the statistical analyses were carried out using the Statistical Package for Social Scientist (SPSS) software (version 11), and Microsoft Office Excel 2003. The results of the statistical analyses are discussed in the next section.

Results
The belief elicitation process identified six salient behavioural beliefs and four normative beliefs which respondents cited as influencing their intention to pay for an improved water service. These beliefs are shown in table 1. A one-way Anova test showed that there was no statistically significant difference in the intention scores among households in the four research communities. Consequently, the data from the four communities were combined for the rest of the analyses. Reliability and item analysis of the measuring scales showed that item B4 (Water shortage) exhibited poor internal consistency with other items on the behavioural belief scale; hence it was excluded from further analysis of the TRA model. The removal of item B4 from the behavioural belief scale improved its Cronbach’s alpha (α) value from 0.619 to 0.701, satisfies the minimum acceptable value of 0.7 recommended by Nunnally (1978). All the normative belief factors helped improve the reliability of the normative belief scale hence all items were retained in the TRA model. The Cronbach’s alpha (α) value for the normative belief scale was 0.744.
Table 1  Households’ salient behavioural beliefs and referent groups

<table>
<thead>
<tr>
<th>Behavioural beliefs</th>
<th>Normative beliefs/Referent groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paying for improved water services will lead to …</td>
<td>The following will agree/disagree with paying for an improved water service:</td>
</tr>
<tr>
<td>♦ Reduction in TIME spent collecting water (B1)</td>
<td>♦ Neighbours (N1)</td>
</tr>
<tr>
<td>♦ Reduction in MONEY spent on water (B2)</td>
<td>♦ Family (N2)</td>
</tr>
<tr>
<td>♦ Adequate water QUANTITIES for the home (B3)</td>
<td>♦ Government (N3)</td>
</tr>
<tr>
<td>♦ Water WASTAGE (B4)</td>
<td>♦ Opposition political parties (N4)</td>
</tr>
<tr>
<td>♦ A more COMFORTABLE life (B5)</td>
<td></td>
</tr>
<tr>
<td>♦ Improved personal HYGIENE (B6)</td>
<td></td>
</tr>
</tbody>
</table>

Regression analyses

Three separate regression analyses were carried out to examine the relative importance and explanatory power of the predictor components of the TRA model. Summary results of the regression analyses are shown in table 1. The F-ratio values for all the regression models were large and significant with p < 0.01, which suggest good overall model fits. Also, the Variance Inflation factors (VIFs) for the predictor variables in each of the regression models was less than 4, hence we safely concluded that there were no serious multicollinearity problems with the regression models (Field, 2000). In addition, normal probability curves on plots of the frequency of regression standard residual for each of the three models were bell-shaped and symmetrical; indicating that the residuals in the regression models were normally distributed. Furthermore, plots of standardised residual against standardised predicted values confirmed that the regression models were indeed linear. All regression models therefore satisfied the basic assumptions underlying the use of multiple linear regression analysis technique.

The overall efficacy of the theory of reasoned action in the context of the urban poor’s intention to pay for improved water services was supported by a multiple regression coefficient of $R = 0.499$. The standardised $\beta$ values for regression model 1 show that subjective norm was slightly more important than attitude with regards to explaining the variation in households’ intention to pay for an improved water service. However, the since the difference in values was so small ($\Delta \beta = 0.023$), the difference in their relative importance can be overlooked. The similarity in the predictive powers of attitude and subjective norm suggest that personal factors and social consideration have similar influence the urban poor’s intention to pay for an improved water service.
## Table 2: Summary results for regression analysis

<table>
<thead>
<tr>
<th>Outcome variable</th>
<th>Predictor variables</th>
<th>R</th>
<th>F-ratio</th>
<th>Standardised β</th>
<th>Variance Inflation Factor (VIF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Intention</td>
<td></td>
<td>0.499</td>
<td>57.582**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attitude (A)</td>
<td></td>
<td></td>
<td>0.281**</td>
<td>1.192</td>
</tr>
<tr>
<td></td>
<td>Subjective norm (Sn)</td>
<td></td>
<td></td>
<td>0.304**</td>
<td>1.192</td>
</tr>
<tr>
<td>II. Attitude</td>
<td></td>
<td>0.522</td>
<td>27.146**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time (B₁)</td>
<td></td>
<td></td>
<td>0.108*</td>
<td>1.338</td>
</tr>
<tr>
<td></td>
<td>Expenditure (B₂)</td>
<td></td>
<td></td>
<td>0.121*</td>
<td>1.547</td>
</tr>
<tr>
<td></td>
<td>Water quantity (B₃)</td>
<td></td>
<td></td>
<td>0.099*</td>
<td>1.309</td>
</tr>
<tr>
<td></td>
<td>Comfortable life (B₅)</td>
<td></td>
<td></td>
<td>0.387**</td>
<td>1.508</td>
</tr>
<tr>
<td></td>
<td>Hygiene (B₆)</td>
<td></td>
<td></td>
<td>-0.003ns</td>
<td>1.549</td>
</tr>
<tr>
<td>III. Subjective norm</td>
<td></td>
<td>0.447</td>
<td>22.647**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neighbours (N₁)</td>
<td></td>
<td></td>
<td>0.031**</td>
<td>1.647</td>
</tr>
<tr>
<td></td>
<td>Family (N₂)</td>
<td></td>
<td></td>
<td>0.383**</td>
<td>1.636</td>
</tr>
<tr>
<td></td>
<td>Government (N₃)</td>
<td></td>
<td></td>
<td>0.008**</td>
<td>1.493</td>
</tr>
<tr>
<td></td>
<td>Opposition parties (N₄)</td>
<td></td>
<td></td>
<td>0.091**</td>
<td>1.533</td>
</tr>
</tbody>
</table>

** Significant at p ≤ 0.01
* Significant at p ≤ 0.05
ns Not significant

In the second regression model, four out of the five behavioural beliefs came out as being significant predictors (p ≤ 0.05) of households’ attitude (A) towards paying for improved water services. All four significant predictors contributed positively to households’ attitude as indicated by the positive values of the standardised βs. Households’ concern for a comfortable lifestyle came up as the most important belief factor with regards to understanding and predicting households’ attitude towards paying for an improved water service. The only non-significant contributed to households’ attitude was households’ belief related to hygiene concerns (B₅: β = 0.387, p ≤ 0.001). Model II accounted for 27.3% (0.522² = 0.273) of variance in attitude towards paying for an improved water service. In the third regression model, ‘the family’ was the only significant independent predictor of households’ subjective norm towards paying for improved water services (N₂: β =0.383, p ≤ 0.001). The other referent groups contributed positively to households’ subjective norm towards paying for an improved water service, however, the probability of these contributions occurring by chance alone was high (p > 0.05) and were therefore considered as statistically insignificant. The four predictors in regression model III accounted for about 20% (0.447² = 0.20) of variance in households’ subjective norm.

### Correlation analyses

Table 3 shows the correlation coefficients (r) between the theoretical constructs of the TRA model. As shown in the table, both ‘attitude’ (A) and ‘subjective norm’ (Sn) correlated satisfactorily with ‘behavioural intention’ (BI). The strength of their association were similar (r = 0.42 and 0.40). Also, the sum of weighted behavioural beliefs (Σbiei) and the sum weighted normative beliefs (ΣNbₗMₗcₗ) correlated satisfactorily with ‘attitude’ (A) and ‘subjective norm’ (Sn) respectively. Furthermore, households’ intention to pay for improved water service (I) had a slightly stronger association with households’ subjective...
norms (Sn) than with their attitude (A). The table also shows that behavioural intention correlated weakly with both the sum of weighted behavioural beliefs (\(\sum b_ie_i\)), and sum of weighted normative beliefs (\(\sum NbiMc_i\)). This supports Ajzen and Fishbein’s assertion that behavioural and normative beliefs are not the immediate determinants of a person’s intention to carry out a particular behaviour (Ajzen and Fishbein, 1980). On the whole, the correlation coefficients values between the various constructs as posited by the TRA were greater than 0.3, and also statistically significant with \(p < 0.05\). The r-values between the various constructs therefore supported the basic structure of the theory of reasoned action.

The regression analyses identified the significant predictors of households’ attitude and subjective norm. The relative importance of the components of each of these predictor variables was assessed by correlating each outcome variable (attitude and subjective norm) with the strength and importance attached to the beliefs. As shown in table 3, the behavioural beliefs, outcome evaluations, and weighted beliefs, all correlated positively with ‘attitude’ and were also significant with \(p < 0.01\). Two of the weighted beliefs (‘Time’ and ‘Water quantity’) correlated weakly with ‘attitude’ (\(r < 0.3\)), while ‘money’ and ‘comfortable lifestyle’ showed satisfactory relationships with ‘attitude’ (0.3 < \(r < 0.5\)). The correlation coefficient values show that the ‘comfortable life’ factor had the strongest linked with households’ attitude. The results also showed that with the exception of ‘comfortable life’, the belief strength (\(b_i\)) of all the other behavioural belief factors correlated weakly (\(r < 0.3\)) with households’ attitude. Conversely, the importance attached to each behavioural belief factor correlated satisfactorily with attitude. Again, the strongest relationship was with ‘comfortable life’. For each of the behavioural belief factors, the belief importance (outcome evaluation) exhibited stronger relationships with attitude than was exhibited by the belief strength. With regards to subjective norm, the belief strength of the significant predictor variable (the family) was more strongly related to households’ subjective norm than motivation to comply with the family members.
Table 3  
Inter-correlation between constructs of the TRA model

<table>
<thead>
<tr>
<th></th>
<th>Behavioural Intention (BI)</th>
<th>Attitude (A)</th>
<th>Subjective norm (Sn)</th>
<th>Weighted behavioural beliefs ((\sum b_e))</th>
<th>Weighted normative beliefs ((\sum N_bM_c))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural intention (BI)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude (A)</td>
<td>0.403</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective norm (Sn)</td>
<td>0.416</td>
<td>0.401</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of weighted behavioural beliefs ((\sum b_e))</td>
<td>0.266</td>
<td>0.455</td>
<td>0.433</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Sum of weighted normative beliefs ((\sum N_bM_c))</td>
<td>0.299</td>
<td>0.409</td>
<td>0.383</td>
<td>0.437</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: All correlations are significant with p < 0.05

Figure 2  
Model overview of correlation coefficients between constructs of the TRA model

Correlation is significant at 0.01 level (2-tail)
Table 4  Relative importance of components of the significant predictor variables

<table>
<thead>
<tr>
<th>Significant predictor variable</th>
<th>Correlation with attitude</th>
<th>Correlation with subjective norm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Behavioural belief</td>
<td>Outcome evaluation</td>
</tr>
<tr>
<td>Time</td>
<td>0.21**</td>
<td>0.37**</td>
</tr>
<tr>
<td>Money</td>
<td>0.28**</td>
<td>0.39**</td>
</tr>
<tr>
<td>Water quantity</td>
<td>0.22**</td>
<td>0.40**</td>
</tr>
<tr>
<td>Comfortable life</td>
<td>0.45**</td>
<td>0.46**</td>
</tr>
</tbody>
</table>

** Correlations are significant with p < 0.01 (2-tail)

5. Discussion

In this section we discuss the key findings of the study and their implication for water service provision to the urban poor in developing countries. The findings are discussed as per the three basic hypothesis of the theory of reasoned action.

Relative importance of attitude and subjective norm

As shown by the results of the regression analyses (table 2), households’ attitude and subjective norm had similar predictive power with regards to households’ intention to pay for improved water service (standardised β values of 0.281 and 0.304 respectively). This implies a similarity in their importance in understanding and predicting the urban poor’s intention to pay for improved water service. This finding provides some useful insight into the water-related behaviour of the urban poor. It shows that urban poor households were not only concerned about the functional advantages/disadvantages that they are likely to derive from paying for an improved water service, but were also equally concerned about the acceptability of this behaviour to some important groups of people. This also reflects the important role that the perceptions and opinions of other important people play in shaping the intention of urban poor households to pay or not to pay for improved water services. This finding therefore suggests that interventions that are most likely to be successful in changing households’ intention to pay for improved water services are those that will attempt to increase both their attitude and subjective norm towards such behaviour. Hence, an effective means of providing and marketing water services to the urban poor will be by paying considerable attention to major beliefs that underpin households’ attitude and perceived social pressure (subjective norm) towards paying for improved water service. This inference also falls in line with the notion of social marketing. Social marketing techniques have often been associated with marketing of health products sanitation facilities, especially in rural areas. This finding suggests that there is scope for applying social market techniques to water services for the urban poor.

The similarity in the predictive power of ‘attitude’ and ‘subjective’ as found in this study is different from what pertains in the purchase intention of most goods and services. Generally, one of these two determinants on behavioural intention tends to assume a more important role than the other. Usually, the attitude factor often tends to assume higher importance in high-involving purchases, while subjective norm assumes prominence in socially motivated purchases (example buying a gift) as well as in spontaneous purchasing situations (Howard, 1989, Rutter and Bunce, 1989). The results of the TRA model showed
that households’ attitude and subjective norm exhibited similar degrees of importance in understanding and predicting households’ intention to pay for improved water service. This finding alludes to the widely held belief that water has peculiar characteristics that set it apart from other market goods, and hence it is unlikely to be amenable to standard marketing techniques. Furthermore, it resonates with the concept of regarding water as both a social and an economic good, in that both functional and social considerations were both important factors that influence households’ intention to pay for an improved water service.

Attitudinal factors
The sum of weighted behavioural beliefs ($\Sigma b_{ei}$) correlated satisfactorily with households’ attitude ($r = 0.46, p < 0.001$) as postulated by the TRA. The most important factor that influenced households’ attitude towards paying for improved water service was the belief related to a comfortable life. Households’ yearning for a more comfortable lifestyle can be traced to the difficulties that residents went through each day in their bid to get water for the home. The interviews and focus group discussions revealed that residents endured a great deal of mental, economic and physical distress as they went about their water-related activities. An underlying cause of the various forms of distress cited by respondents was the intermittent and erratic nature of water supply. The unreliable nature of water service had contributed to exorbitant water prices, inability to get obtain adequate quantities of water, and spending considerable time on water collection. The impacts of these problems in the communities were the decline in economic activities, increased cost of water dependent goods and services, and declining academic performance. Interestingly, the task of fetching water per se did not come up as a major problem issues. This was probably because the task of collecting water was seen by most households as part of the daily morning chores. The key problems that were of concern to urban poor households revolved around the amount of time spent collecting water and the unreliable nature of the water service.

In the TRA analyses ‘hygiene factor’ failed as a significant independent predictor of households’ intention to pay for improved water service. This was in spite of the fact that households attached great importance to improved hygiene, and believed strongly that paying for improved water service was likely to lead to improved hygiene conditions. The reason for this could be that the urban poor are all too aware of the impact of improved water services on health and hygiene, having been bombarded with information from a plethora of sources. Thus, while households’ beliefs about the link between improved water services and improved hygiene were stable, these believes were not significant in influencing their ‘intention to pay’ varied. Consequently, the hygiene factor came out as being an unimportant factor in predicting whether or not households will pay for improved water services. With regards to marketing water services, this finding implies that placing emphasis on health and hygiene concern in promotional campaigns is unlikely to result in a significant change in households’ intention to pay for improved water service. Messages for market communication to the urban poor may therefore need to depart from the tradition emphasis on health and hygiene and move to other issues that are likely to have a significant impact on their intention and consequent behaviour. Providing improved water services to the urban poor should therefore address the issue of service reliability and the time factor. In situations where a 24 hour service cannot be provided, the times and duration of water supply should ensure that households get the optimum benefit from the service provided.
Furthermore, the results of the study showed that households’ attitude towards paying for improved water service was more strongly related to the outcome evaluation \((e_i)\) than the beliefs strengths \((b_i)\) (see table 4). This provides evidence to suggest that it was the importance attached to the beliefs and not the strength of the beliefs per se that had the most impact on households’ attitude. It is obvious that most of the salient beliefs highlighted by households (eg comfortable life, time savings) cannot be attributed to poor water services alone, and hence improving water services in itself may not necessarily have a significant impact on households’ attitude towards paying for improved water service. Other factors, not directly related to water services, may also be linked to the problems of uncomfortable life, delays, and relatively high cash outflows. This therefore calls for a more holistic approach to addressing the needs of the urban poor. Focusing on a particular segment of the problems faced by the urban poor may not achieve the expected results. Indeed, experience from the first water decade (1980 – 1990) showed that providing improved infrastructure alone was a poor recipe for the provision of a sustainable service (Caincross, 1992).

**Perceived social pressure**

The family was the only significant predictor of households’ subjective norm towards improved water services (see table 3). Also, the belief that ‘the family’ will approve payments for improved water service was a more important determinant of households’ intentions than ‘motivation-to-comply’. In other words influencing households’ beliefs about their family’s approval for paying for improved water service is likely to have a huge impact of their intention to pay. This provides an important channel for whipping up households’ demand and willingness to pay for improved water services. The dominant influence of ‘the family’ on households’ intention reflects the central role of the ‘family’ in most Ghanaian cultures.

Also, the insignificant impact of ‘neighbours’ on households’ intention is an indication of the weak social ties typical of urban settlements. Amis (1995) and Wratten (1995) note that the relatively weak social ties in urban areas is a major factor that differentiates urban poverty from other types of poverty. It has also been observed that the weak social ties makes the urban poor more vulnerable to social and economic changes as it greatly hampers their ability to withstand or recover from ‘shocks’. Promoting stronger social ties may therefore be the key to improving the lot of the urban poor. However, achieving this is likely to be problematic in view of the heterogeneous nature of urban settlements. Hence, the strong reverence given to the family, which is culturally rooted, may be an effective channel for influencing the intentions and consequent actions of the urban poor. This can be achieved by carrying out promotional campaigns in rural areas since many key members of the external family live in rural areas. Another mean could be through children who have proofed to be good agents for promotion behavioural change at the household level.

**Conclusion**

This study has provided evidence that the theory of reasoned action (TRA) is a useful tool for probing the water-related behaviour of urban poor households. The analysis of the TRA model identified the important factors that influence the urban poor households’ intention to pay for improved water service. These important factors provide useful clues for the design and marketing of water services. The study showed the important effect of households’ attitude and perceived social pressure on households’ intention to pay for an improved water service. This study also showed that highlighting the health benefits of
improved water services was unlikely to achieve much success in marketing of improved water services to the urban poor. The major determinants of households’ intention to pay for improved water services were the reliability of service and time of supply. This implies that that an effective means of transforming the urban poor’s willingness to pay into actual paying behaviour will be to supply water at suitable times, and ensuring a reliable service. Importantly, improvements should be geared towards making access to water services less distressful and cumbersome. Furthermore, promotional campaigns should aim at increasing households’ perception of the acceptability of their actions to their referent groups, particularly their families. As is common with human behaviour, the acquisition of new information; and changes in social and economic situations may lead to the formation of new beliefs, with a resultant effect on behavioural intentions and actions. These changes may, over time, affect the stability of the Theory of Reasoned Action model for the urban poor’s intention to pay for improved water services. Hence, there is the need to regularly assess consumers’ beliefs and behavioural intention. As noted by Fishbein and Ajzen (1980), certain conditions may inhibit people from carrying out their behaviour intentions. An examination of such factors in the context of the urban poor across the developing world would be useful knowledge to guide policies and practices within the urban water sector.

References


