

MAXIMIZING THE BENEFITS FROM WATER AND ENVIRONMENTAL SANITATION

Maximizing the 'value' of improved water services in small towns

J Mugabi and C Njiru, UK

This paper examines the value concept drawing on literature from consumer behaviour and services marketing disciplines. The relevance of the concept to water services management, particularly in small towns is highlighted. Consistent with other services or goods, the authors contend that value perceptions play a crucial role in consumer decision-making as regards improved water service use. To influence consumer decisions to utilise improved water services such as piped water, and the willingness to sustain the services, service providers should put more emphasis on maximising consumer perceived value of the service offering. The authors propose a wide range of value maximisation strategies. It is also suggested that water sector practitioners and researchers pay more attention to consumer behaviour studies so as to promote a consumer-centred approach to water service delivery.

Introduction

Recent years have seen dramatic shifts in the attention given to small town water supply and sanitation services. During the 1980-90 decade most effort was concentrated on rural areas. But during the 90s it became clear that the majority of the underserved were actually living in urban areas, either in large conurbations or in small towns. In response to this imbalance, many developing country governments supported by their development partners have made considerable investments in piped water supply infrastructure in small towns over the last decade. The current trend however is that funding for recurring operation and maintenance expenditures and expansion costs is becoming a major concern as more systems come on-stream and the central government subsidy burden increases. Today, the main problems for small town water services are two-fold: the low utilisation levels of the new or rehabilitated piped water systems and the inability of system managers to recover costs related to providing the improved service. In Uganda's small towns for instance, system utilisation levels can be as low as 10 percent of design capacity, bill collection efficiency as low as 50 percent, and in some towns operation costs exceed revenues by up to 25 percent (Carl Bro Group, 2003). In Lao PDR, small town water system utilisation levels can be as low as 44 percent (WSP, 2002). The low income levels commonly found in small towns of developing countries is usually given as the explanation for this state of affairs.

However, it is important to note that small towns that install full service piped water systems for the first time face several other constraints. First, consumers supplied with water from existing point sources (e.g. private or communal wells) may be reluctant to abandon them and pay for an unproven service, especially if the quality of the existing

source is acceptable. Secondly, low income consumers and immigrants from surrounding rural areas previously supplied by wells or standpipes, are not accustomed to pay for water and may be reluctant to pay connection fees and tariffs. Thirdly, people may give priority to other needs in allocating their limited resources and not support water and sanitation investments. The benefits of a piped water system may be clear to its planners and local authorities but they may not be apparent to the consumers. Indeed, a consumer's evaluation of the new service offering is likely to be in terms of a comparison of what they expect to benefit and what they are expected to pay or sacrifice. This is where the concept of 'value' comes into play. The value that consumers attach to improved water services, and how this affects subsequent behavioural intentions, is an area that has received little attention in terms of research in the water sector.

In this paper, the authors draw on an exploratory literature review to show why it may be beneficial for small town water utilities to maximise the consumer perceived value of improved water services. The authors suggest alternative value maximising strategies relevant to small town water services, and conclude the paper by highlighting future research directions.

The 'value' concept

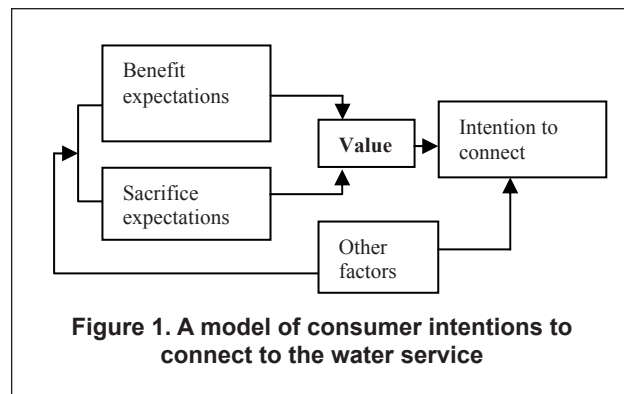
The value concept is old and endemic to consumer behaviour and exists only to a limited extent in the marketing literature. There is a myriad of competing definitions of value in the marketing and consumer behaviour literature, but the early conceptual proposal made by Zeithaml (1988 p.14) – "a consumer's overall assessment of the utility of a product based on perceptions of what is received for what is given" – is the most universally accepted definition of

perceived value. This definition suggests treating value as a trade-off between the relevant ‘give’ and ‘gets’. In what is regarded as an extension of this conceptualisation to the pricing literature, Monroe (1991) defines perceived value as the ratio between perceived benefits (the ‘gets’) and perceived sacrifice (the ‘gives’). For a piped water service, quality, reliability, time-saving and convenience can be identified as the salient ‘gets’ or benefits while the sacrifice (or ‘gives’) made to acquire and sustain the service can be identified as connection fees, water tariffs, time and effort expended in receiving and understanding bills, forwarding complaints in case of service failure, and making journeys to pay for bills. The services marketing literature also considers other sacrifices such as the risk assumption (e.g. physical, financial, performance, social and psychological risks) associated with a particular service (Cronin et al., 1997).

A review of exiting literature on consumer value provides insights as to why the value concept may be crucial to the water services sector. First, the value concept can explain different areas of consumer behaviour: product/service choice (Zeithaml, 1988), purchase intention (Dodds and Monroe, 1985) and repeat purchasing (Cronin et al., 2000). Secondly, value will often be related to customer loyalty in the marketing literature (Bolton et al., 2000) and more recently in the urban water services management (Kayaga, 2002). In the context of water services in small towns, where there are often numerous water sources and providers (e.g. vendors), consumers are likely to integrate their perception of what they benefit and what they must sacrifice (in the short and long term) in order arrive at a decision whether or not to use a particular water source or service provider. The obvious challenge for water utility managers in small towns is to determine how best to present the information used by consumers in this decision process so as to motivate them to choose and sustain the utility water service. In the next sections we examine the factors that influence consumer decision-making in the context of connecting to and sustaining a new piped water service, and outline ways in which water utility managers in small towns can potentially influence consumer decision making by increasing consumer perceived value.

Consumer’s intentions to connect to piped water services

Consumer willingness to pay is increasingly being accepted as a key indicator of demand that helps guide investment decisions urban water supply. However, many systems in small towns remain underutilised even after 3 to 5 years in operation. Indeed, there is a tendency for planners to assume that the benefits of a piped water supply are apparent to everyone and that the service will be utilised quickly. Consumers do not always perceive the benefits of a service offering uniformly (Zeithaml, 1988). Similarly, although cost factors have been shown to be an important predictor of demand (World Bank Water Demand Research Team, 1993), consumers do not always go for the lowest cost op-



tion. In an effort to enhance our understanding of the relative importance of perceived benefits and sacrifices in predicting consumer behavioural intentions to connect to piped water services, the value construct is presented as a crucial factor. Figure 1 shows a simplified model of consumers’ intentions to connect to the service. In this model, it is proposed that consumer intentions to connect to the piped water service may be limited to the level of benefits they desire and/or expect from such a service. It may also be affected by the level of sacrifice the consumer expects to make in order to acquire and sustain the service. Given that value represents a trade-off between benefits and sacrifices, it is reasonable to anticipate that a consumer’s decision to connect to the water service will be determined to a large extent by the value the consumer attaches to the service. However, due to the complexity of consumer decision-making processes, it is expected that a myriad of other factors (e.g. socio-economic and cultural factors) would influence the decision. However, we contend that a great majority of these other factors will influence decision-making only indirectly through formation of benefit/sacrifice expectations.

Influencing the decision to connect: Value creation

The authors’ proposition is that a consumer’s decision to connect to the water service will be determined to a large extent by the value the consumer attaches to the service. Therefore, to influence the decision to connect, managers need to create or increase consumer perceived value. Given that value is a trade-off between benefits and sacrifices, increasing value will involve either increasing benefits or reducing sacrifices. Before making the decision to connect, the consumer would have to first convince him/herself in two ways: that there are huge benefits associated with this service or that the sacrifices are low compared to the benefits to be gained.

Water utility managers in small towns may be able to influence consumer decision-making in the following ways:

- Educate consumers about the benefits to be gained from the service such as quality, health benefits, time-savings and convenience. Successful education campaigns will require an understanding of the dominant personal values

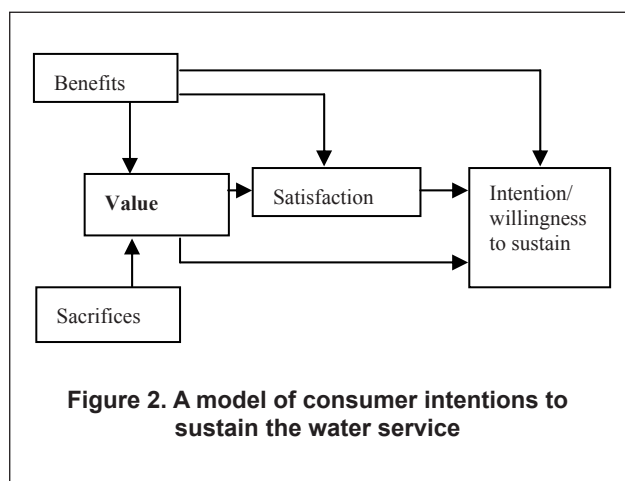
at play in the community since an extended sensitisation programme will have to be designed that also targets various influences on the formation of benefits/sacrifice expectations

- Involve consumers in the whole process of establishing the service. The sense of ownership or belonging that results may be perceived as an added benefit
- Ensure good quality construction to reduce perceived risks of non-performance and increase consumer confidence in the reality of benefits to be gained
- Reduce sacrifice by streamlining and simplifying connection procedures, implement flexible system of paying connection fees (such as spreading connection fee over long periods through a surcharge on tariffs), and ensure transparency and accountability in all dealings with the consumer.

Consumer's intention to sustain the service

Although small town water utilities may be able to experience reasonable growth in new connections by influencing consumer decision to connect, they face challenges in maintaining long-term profitable relationships with consumers. In some cases, as new consumers get connected, an almost equal number of already existing consumers get disconnected, thus creating a backlog of uncollected bills and non-performing capital equipment. This raises the question: how can water utility managers through their service offering influence consumer's intention or willingness to sustain the service? While there may be various factors (both external and internal to the service provider) that can influence consumer's intentions to sustain the water service, value is again proposed as having a dominant role, either directly or indirectly through customer satisfaction with the service. Figure 2 shows a model of consumer's intentions to sustain the service.

In figure 2, the authors also suggest that service benefits such as quality, reliability, and convenience can influence consumer intentions to sustain the service either directly



or indirectly through value and satisfaction. This influence comes from the fulfilment of benefit expectations as perceived by the consumer before the decision to connect was made. It is important to note that for a water service, service quality does not only refer to the technical or core quality but it also includes the quality of the relational or interaction process between the service provider and the consumer.

The effect of perceived value on intentions to sustain

It is reasonable to anticipate that value will have a direct influence on the intention to sustain the service. Consumers who value their water service are expected to have a higher willingness to sustain it. Value can also influence intentions indirectly through the construct of satisfaction. Achieving customer satisfaction is usually the primary goal for most water service providers, but many utility managers often assume that improving core quality is the only way to achieve it. As shown in figure 2 and the preceding reviews, it is likely that consumers will often assess the water service in terms of both benefits and sacrifices. This assessment is translated into a 'value tag'. It is this tag that service providers should be most concerned about.

Influencing the decision to sustain: Maximising value

Although there may be other external factors (such as inappropriate tariff regimes) that affect the decision to sustain the service, the authors contend that most of the factors that influence this decision or willingness are within the control of the service provider organisation. Again, maximising value by increasing benefits or reducing sacrifices is suggested as one way in which service providers can maintain long-term mutually beneficial relationships with consumers.

Specifically, service providers may be able to influence consumer willingness to sustain water services in the following ways:

- Reduce consumer's monetary sacrifice by increasing efficiency in water production, distribution and other management and administration costs
- Increase the perceived benefits obtainable from the end product by increasing the physical-chemical and biological quality of the water, increasing service continuity and reliability.
- Increase perceived benefits by increasing the quality of service pertaining to the interaction process between consumers and the organisational elements like staff and the service environment.
- Reduce the sacrifice consumers make through difficulties experienced in getting complaints addressed, efforts in getting incorrect bills corrected, inconveniences experienced in payment procedures and processes.

Conclusions and Implications of this Paper

This paper has examined the value concept drawing on literature from consumer behaviour and services marketing disciplines. The relevance of the concept to water services management, particularly in small towns has been highlighted. Consistent with other services and goods, the authors contend that value perceptions play a crucial role in consumer decision-making as regards improved water service use. Therefore, water utility managers should aim to maximise consumer perceived value rather than continuing to only maximise perceived benefits without adequate attention being paid to consumer perceived sacrifices. To influence consumer decisions to utilise improved water services such as piped water and willingness to sustain the services, service providers should consider a wide range of value maximisation strategies. As the quest to provide sustainable water services to millions of unserved people continues, it is suggested that water sector practitioners and researchers pay more attention to consumer behaviour studies to promote a consumer-centred approach to water service delivery. The authors are currently undertaking a field test of the proposed models in Uganda, and hope to share further insights.

References

- Bolton, R. N., Kannan, P. K. and Bramlett, M. D. (2000). "Implications of loyalty program membership and service experiences for customer retention and value." *Journal of the Academy of Marketing Science* 28(1): 95-108.
- CARL BRO Group (2003). Study on Tariffs and Subsidies for Small Towns and Rural Growth Centres Water Supply Systems. Kampala, Uganda, Ministry of Water, Lands and Environment, Directorate of Water Development.
- Cronin, J. J., Brady, M. K., Brand, R. R., Hightower, R. and Shemwell, D. J. (1997). "A cross-sectional test of the effect and conceptualization of service value." *Journal of Services Marketing* 11(6): 375-391.
- Cronin, J. J., Brady, M. K. and Hult G. T. M. (2000). "Assessing the effects of quality, value and customer satisfaction on consumer behavioral intentions in service environments." *Journal of Retailing* 76(2): 193-218.
- Dodds, W. and Monroe, K. B. (1985). "The effects of brand and price information on subjective product evaluations." *Advances in Consumer Research* 12: 85-90.
- Kayaga, S. M. (2002). The influence of customer perceptions of urban utility water services on bill payment behavior: Findings from Uganda. PhD Thesis, WEDC, Loughborough University.
- Monroe, K. B. (1991). Pricing - Making profitable decisions. New York, McGraw-Hill.
- World Bank Water Demand Research Team (1993). "The demand for water in rural areas: Determinants and policy implications." *The World Bank Research Observer* 47.
- WSP (2002). Lao PDR Water Supply and Sanitation: Development of Small Towns Management Models, The World Bank Water and Sanitation Program (WSP), available at: http://www.wsp.org/publications/LAO_STS.pdf [accessed 18 October 2004].
- Zeithaml, V. A. (1988). "Consumer perceptions of price, quality and value: A means-end model and synthesis of evidence." *Journal of Marketing* 52: 2-22.

Contact address

Josses Mugabi
PhD Research Scholar,
WEDC,
Loughborough University LE11 3TU, Leicestershire UK:
J.Mugabi@lboro.ac.uk

Dr. Cyrus Njiru
Research Manager,
WEDC,
Loughborough University, LE11 3TU, Leicestershire, UK:
C.Njiru@lboro.ac.uk