

A Royal Flush

A case study of the discourses surrounding the Urine Diversion Toilet and barriers to its sustainability.

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Introduction

Our project aimed to investigate the discourses and barriers surrounding the Urine Diversion (UD) toilet in Zwelibomvu, a rural area in Kwazulu-Natal, South Africa. The research question was specifically formulated to assess eThekwini's UD project because the UD toilets have the potential to solve a number of South Africa's social problems. By analysing the knowledge, attitude and behaviour of 21 users of the Urine Diversion toilet, the project intends to monitor the discourses surrounding the Urine Diversion Toilet and barriers to its sustainability so that recommendations to improve the project can be made.

1.1 Project background

eThekwini's project aim is to provide an acceptable basic level of water and sanitation to all households in eThekwini's municipality's rural and peri-urban communities by 2010 through the supply of urine diversion toilets. This urine diversion toilet is a dry system designed to deal with human waste in an environmentally and economically sustainable way. Through separating urine and faeces by the use of a double vault system, this allows for the toilet user to safely handle matter that has been left to dry in the sealed vault after about 1 year. The eThekwini Water and sanitation programme is a population-based programme. Such programmes are aimed at reducing a specific disease group (Walley; 2001: 11). In the case of the eThekwini water and sanitation programme, the project aims to reduce cholera outbreaks.

1.2 eThekwini water and sanitation approach

There has been a strong focus on the use of community participation as an approach in the eThekwini water and sanitation program. Education has aimed to teach people about breaking the cycle of waterborne disease and introduce the operation and maintenance of the Urine Diversion toilet (Water Information Network).

Five visits take place to households where the project has been rolled out conducted by project facilitators who are employed from the local community and trained by a consultant from the sanitation programme. These facilitators use educational material and approaches developed by the municipality to guide each of these visits.

The first visit to the household is used to explain the plans to provide sanitation and water. The second visit focuses on health and hygiene and individuals are made aware of health hazards associated with unhealthy sanitation. They are told that clean water breaks the cycle of disease. The third visit explains how the Urine Diversion toilet works and the fourth with how it will be supplied to them. The last visit deals with the operation and maintenance of the toilet after it has been installed and how to use the toilet correctly, how to maintain it and how to empty it. In this visit the family is given a poster which is stuck inside the door of the toilet and explains the do's and don'ts (Water Info Network).

1.3 Study Limitations

The decision to use formative research was based on the nature of this question and the existing UD project. Formative Research, according to DeCarlo, P, et. al (1998), is meant to help in understanding the interests, attributes and needs of different populations and persons in their community and can be carried out whilst a program is being conducted.

A meeting was set up with Teddy Gounden, who is in control of community education and councillor liaison at the eThekwini Water and Sanitation Unit. The meeting aimed to provide us with a good understanding of eThekwini's Water and Sanitation project, and we realized that eThekwini's UD project was already well underway in Cato Manor. We had to change research site from Cato Manor to Zwelibomvu because Cato Manor was not using the same Urine Diversion toilets that we wanted to conduct formative research on. Our research project thus took on more of a monitoring form but still aimed to provide a theorized understanding of eThekwini's entertainment education intervention and other communication efforts.

1.4 Methodology

The decision on how to collect data and actually conduct the formative research posed to be a huge problem. The group considered a range of different options such as whether to conduct focus groups, individual interviews or questionnaires. Focus groups provide a dense amount of data but are exceptionally time consuming. Respondents may also limit their responses in a focus group of individual interview because of the assumed intimate nature of the topic, and finally both focus groups and individual interviews would have posed a problem for us, as none of our group members are fluent in Zulu, the first language of our target group.

Thus a questionnaire was developed for our research that contained both open and closed ended questions. A questionnaire gave us the ability to be both culturally and gender sensitive and proved to be the most practical way of collecting data in light of the language dilemma. The questionnaire was developed with indicator questions, which allowed us to link the community's responses with the theories we employed and thus made data analysis easier.

It was decided that an interpreter, trained in research techniques would administer the questionnaires. However as formative research is a practical process it can never be carried out exactly as planned, our researchers were unable to go into Cato Manor as planned, but were given the opportunity to conduct field work in Zwelibomvu a rural area just four days before we were due to present our research findings.

The trip into Zwelibomvu took on a different approach to how we had planned our trip into Cato Manor. Firstly on day one of our research our questionnaire, which was designed to be conducted with an interpreter from door to door in Cato Manor, had to be conducted with the audience for the street theatre production Umahlukanisa without an

interpreter. Umahlukanisa is an educational street theatre production, which teaches its audience how to maintain the UD toilets correctly.

The fact that the questionnaires were conducted without an interpreter limited audience responses as we saw on the second day of our formative research, which we were able to arrange a translator for. Our questionnaires were thus administered from door to door with a trained interpreter on day two of our formative research. Such complications in conducting our research can be argued to have restricted our subjects' responses. However we feel that it has taught us to plan our research more flexibly in future and that it allowed for a more random selection of respondents, especially when we consider that the general responses of the people of Zwelibomvu showed consensus in such different research contexts.

Such complications with formative research caused researchers to employ the intercept method if interviewing thus allowing interviewers to further question respondents in order to gain more clarity or information on an issue. The intercept method of interviewing is usually employed when the target group "clusters in a particular location." (No Author: 2003)

Thus with regards to our research sample, the sample consisted of 21 random individuals, all of whom had a UD toilet at home and 61% of our respondents were female and 39% were male. Age groups ranged from under 20 years to people as old as 60. We would thus argue that it is reflective of the people of Zwelibomvu based on the consistency of opinions and general feelings towards the UD toilets across such a broad range of people.

2.1 Literature review

A literature search was undertaken to establish which theories or methods we would employ, and how UD sanitation works. However there is a tremendous lack of information relating to how UD systems are accepted by communities in society.

Search terms used in library and online resources

Search terms varied depending on the particular databases and the category of literature that was being searched. The terms we used can be broadly summarised into the following categories:

- Discourse Theory
- Social Marketing and health promotion
- Diffusion of Innovations Theory
- Conversion Model
- Community health promotion and different strategic approaches that have been used successfully so as to compare with the eThekweni's water and sanitation programme.

2.2 Social ecology

The framework of social ecology is a set of theoretical principles for understanding the relations between diverse personal and environmental factors in human health and illness.

It explains the influences of behaviour change and reflects not only behaviour and environmental change but also the interplay between persons, groups and their social, physical and cultural environments (Kar, Alcalay; 2001: 112). It is a framework that accommodates the Diffusion of Innovations theory and Conversion Model because it indicates the factors that exist in communities that determines health behaviour.

The framework explains the factors that allow for behaviour to exist in communities that influence the processes of the diffusing of an innovation in a community that the Diffusion of Innovations theory explains.

The framework states that behaviour is determined by five levels of influence:

Intrapersonal Factors

Individual characteristics such as knowledge and attitudes

Interpersonal Factors

Relationships with primary social groups, including the family, peer or community networks

Institutional Factors

Social institutions with organizational characteristics such as economic and social resources

Community Factors

Primary social groups to which an individual belongs such as families, neighbourhoods and relationships among social groups and organizations within a defined area

Public Policy

Local and national regulations that affect individual health

(Kar, Alcalay; 2001:112).

2.3 Diffusion of Innovations Theory

2.3.1 The Main aspects of the theory

The Diffusion of Innovations theory will be used in our monitoring of the eThekweni water and sanitation project. It is well suited in explaining what the barriers are towards the UD. It is a theory that helps explain the adaptation of a innovation that is perceived as new and diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system (McCormack; 1999). This process includes both the planned and spontaneous spread of new ideas (Rogers, 1995).

The model was developed by Everett Rogers and has contributed to a greater understanding of behavioural change, including the variation in rates of adoption of innovations and it has held a broad scope of practical applications in the field of public health (Haider, Kreps; 2004:3).

2.3.2 The five elements of the theory

The five elements of the theory: innovation, communication, channels, time and the social system are the factors that influence the discourses surrounding the urine diversion

toilet and by examining these using this theoretical framework, it should indicate to us the barriers to its sustainability.

The UD is the innovation that can be perceived as new in the Zwelibomvi area as opposed to the existing pit latrine system. Innovations in public health also have defining characteristics that affect and help to explain their differential rate of adoption and optimization of relative advantage, compatibility, complexity, trialability and observability will allow an innovation to be adopted more rapidly than other innovations that lack them (Haider, Kreps; 2004 :4).

With this framework, we want to evaluate how the users feel about the UD toilet by assessing how well it suits their needs and how they compare this toilet to the previous pit latrine system. We want to monitor how easy the users find it to maintain and use the UD toilet and see if they are influence by other factors such as observing what community leaders have to say about the UD.

The communication of messages concerning this new innovation would involve the active creation and sharing of information among people to reach a mutual understanding (Haider, Kreps; 2004:4). The communication strategy that eThekwini has chosen and the actual facilitators, posters and street theatre would be the active creation of the information concerning the UD toilet and the response that the target audience have to these messages would influence if there is a mutual understanding between the message source and audience. Our monitoring will examine how well this knowledge about the UD has been diffused within the community. We are focusing on individuals that are already using the UD so in terms of the time element in the Diffusion of Innovations, it is evaluating the users at a post-implementation stage of the UD not a pre implementation stage. The members of the social system of Zwelibomvi can be classified as poor, rural community.

2.3.3 Ryan and Gross' diffusion study

The diffusion of innovations model was influenced by case studies such as the Ryan and Gross' diffusion study which was used to break up a population of hybrid corn seed farmers into 'innovators', 'early adopters', 'early majority', 'late majority' and 'laggards' (Gladwell,1997). The Diffusion of Innovations model explains that people fall into one of five adopter categories that describe their rate of adoption of a new behaviour or product (Haider, Kreps; 2004:5).

The first batch of farmers willing to try the new corn seeds could be regarded as the innovators. The characteristics that describe these types of farmers are venturesome, risk-taking, information seeking individuals with a higher financial status (McCormack; 1999). The UD users at Zwelibomvi do not fall in this category because the UD was part of the eThekwini water and sanitation programme.

Those farmers that acted as community leaders responsible for looking out for new corn technology and observed the innovators and saw the positive results can be regarded as

the early adopters. These farmers can be characterized as having the greatest degree of opinion leadership and respected by other members of the social group (McCormack; 1999). They can be regarded as 'change agents' that is an individual who influences individual decisions in the direction deemed desirable by a change agency (Haider, Kreps; 2004:5). Since this model allows for opinion leaders to become agents that would allow for behaviour change to occur in a community, this aspect of the model makes it applicable to the community context (Airhihenbuwa; 2000 8).

Therefore we wanted to monitor the role that traditional and community leaders had in informing the decisions of the users to use or not to use the UD to see if this influenced the knowledge and perception of the UD. If there was a link between the UD users perception of what community leaders had to say about the UD and positive or negative UD usage it would indicate how important these community leaders were to the change agency that is the eThekweni water and sanitation programme.

The early majority refers to the farmers that decided to use the UD only once they felt comfortable enough after observing what the community leader had to say about the UD. These members are more likely to adopt an innovation just before the average person. The first individual users of the UD within a community that decide to use the UD as opposed to existing latrine systems would be regarded as the early majority who were influenced by what a community leader had to say.

The late majority refers to those farmers that were aware of the good quality of the UD but still happy to use the tried and trusted latrine. These farmers required peer pressure to adopt the new UD and were sceptical about the new UD (Gladwell, 1997). In the rural community system of Zwelibomvi, we expected that most UD users would fall under this category and would only be willing to use the UD if they were educated about how to use and maintain it.

The final adopters in a system are the laggards. They tend to be the least educated and would be most suspicious of innovations and take a great deal of time to adopt the new innovation (Haider, Kreps; 2004: 5). We wanted to identify the late majority and laggards as their responses to why they were not willing to use the UD toilet even if they had one would allow for us to identify the barriers to the sustainability of the UD.

2.3.4 Innovation-decision model

The Diffusion of Innovations model uses the innovation-decision model to explain the process by which users unfamiliar to a new product understand how it functions, why they need it in their lives, how they choose it and whether they will stay committed to it (Rogers; 1995)

The innovation-decision process involves five main steps: Knowledge, Persuasion, Decision, Implementation and Confirmation (Rogers; 1995). We are monitoring the users at a post implementation stage and to understand the discourses and barriers to the UD, so understanding this process and how it relates to the users we questioned is a crucial part

of our project. Knowledge occurs when an individual learns of the innovation's existence and gains some understanding of how it functions (Haider, Kreps; 2004:4).

The 5 visits to each household by the facilitators to the community to explain how to use and maintain the UD toilet and the street theatre and posters would be the knowledge part of the process. In our project, we want to focus on if there are any barriers to the sustainability of the UD and whether such barriers are the result of communication issues in terms of how knowledge about the UD toilet is disseminated or problems with the innovation itself. Problems with the innovation would influence the 'persuasion' aspect of the innovation-decision process.

Persuasion occurs when an individual forms a favourable or unfavourable attitude toward the innovation (Haider, Kreps; 2004:4). Understanding the attitudes of the users towards the UD will explain how it influences them in the innovation-decision process. The Diffusion of Innovation theory was also chosen because we wanted to assess the role that traditional and community leaders played as 'change agents' in the rural context of Zwelibomvi. These change agents influence the persuasion aspect of the innovation-decision process.

'Decision' takes place when an individual engages in activities that lead to a choice to adopt or reject the innovation (Haider, Kreps; 2004:4). This decision would depend on how easy the users find it to maintain and use the new UD toilet compared to the pit latrine and the positive and negative attitudes they feel towards how it suits their current situation regarding sanitation.

Implementation occurs when an individual utilizes an innovation and this stage is where behaviour change can be measured as the new idea becomes a reality in the lives of the user (Haider, Kreps; 2004:4). We decided to focus on just users of the UD with a UD toilet already installed so that we could see if there had been any behaviour change. Barriers to this behaviour change would influence the users in the next step of the innovation-decision process.

Confirmation occurs when an individual seeks reinforcement of an innovation-decision that has already been made, but may be reversed if the individual is exposed to conflicting messages about the innovation. At this point the individual can either decide to make full use of an innovation as the best course of action available or choose not to adopt it (Haider, Kreps ;2004:4).Conflicting messages would include politicians making promises of providing water based toilets as opposed to the dry system of the UD.

2.3.5 The measurable objectives of public health campaigns

The field of public health is concerned with promotion and maintenance of the health of a community or population (Walley et al; 2001:2). Disseminating effective messages regarding health education and health behaviour is a critical component of most public health programs (Haider, Kreps; 2004:6) and the Diffusion of Innovations model facilitates the spread of health messages within a community.

Three types of behaviour change relevant to the Diffusion of Innovations theory can be used to identify the measurable objectives of public health campaigns like the eThekwini water and sanitation programme. Three types of behaviour change relevant to the Diffusion of Innovations theory are commencement, cessation and adoption; that is behaviour change (Haider, Kreps; 2004:5).

Commencement describes initiating a new, desirable behaviour within a target population (Haider, Kreps; 2004:5). In the eThekwini water and sanitation programme, this behaviour change includes promoting good sanitation with the use of the UD as part of a healthy way of life (Water Information Network). Cessation refers to ending pre-existing and undesirable or risky behaviour (Haider, Kreps; 2004:5). The eThekwini water and sanitation project promotes improved sanitation as a means of reducing water-borne disease like Cholera (Water Information Network). Adoption refers to the prevention of an undesirable behaviour and this is a stage that facilitates the actual behaviour change (Haider, Kreps; 2004: 5). Our project focuses on this aspect and how and why adoption of the UD toilet occurred as it did in this particular area and the discourses surrounding the UD toilet and barriers to its sustainability.

2.3.6 The value of identifying social norms for the Diffusion of Innovations

Identifying the strengths and weaknesses of the innovation using the factors that affect the rate of adoption is crucial in the designing and implementing of the message campaign (Haider, Kreps; 2004:4). We are monitoring the audience reaction to the UD toilet attempting to find negative factors that have been barriers to its sustainability because diffusing an innovation in a way that emphasizes its benefits and downplays the negative consequences can considerably enhance the social acceptance and ultimate efficacy of a public health campaign (Haider, Kreps; 2004:4). By addressing the barriers to the UD toilet's sustainability in the form of recommendations at the end of this report, it will benefit the eThekwini water and sanitation programme.

The identification of societal norms-that is the value system and the accepted practices of a target audience is useful in the Diffusion of Innovations theory (Haider, Kreps; 2004:7). Culture is central to planning, implementation and evaluation of health communication and health promotion programs (Airhihenbuwa, 1995; Edgar, Fitzpatrick, Freimuth1992). In the diffusing of an idea or technology within a community, culture needs to be taken into account. This is because recognizing the community's cultural principles that may seem to oppose a health innovation is crucial to the efficacy of the diffusion of an innovation because such factors will affect the innovation-decision process (Haider, Kreps; 2004:7).

2.4 Case study- UD and Makoti in Maphephetheni

Culture is a factor that we focused on in finding case studies that have taken place concerning the beliefs, attitudes and usage of the UD. We limited our focus to South Africa because we wanted the case study to be relevant to the rural context in this

country. It has been found that cultural taboos have been identified as a problem in the way the toilet is accepted and used within the community of Lower Maphephetheni (Water Information Network). Maphephetheni is a rural area similar to Zwelibomvu where the UD toilet has been introduced. The project steering committee for Lower Maphephetheni mentioned that cultural taboos have been identified as a problem in the way the toilet is accepted and used within the community. In that community, the Makoti or daughter-in law was not allowed to use the toilet (Water Information Network). As households in Maphephetheni and Zwelibomvu could include extended families we wanted to pick up on this issue in the Zwelibomvu context to see if the same issue was identified.

Culture is a human phenomenon and not an individual but is shared by the members of a group and develops in reaction to their need to adapt to their natural environment and to other members of their group (Herselman, Parry; 2004:66). Culture entails a degree of standardisation, which is general acceptance among persons who adhere to it although this does not mean that cultural variation does not occur (Herselman, Parry; 2004:66). The issue of Makoti not being able to use the toilet in Maphephetheni was an issue in that area so it was important to see if the same cultural issue applied to Zwelibomvu or if it was isolated to Maphephetheni. A makoti could interfere with the diffusion of the UD so it was important for this project to assess the influence that this concept had in the users questioned.

2.5 Discourse theory

Research into cultural issues affecting health and health care usually falls within the qualitative research paradigm (de Villiers, van der Wal; 2004:238). Qualitative research is the systematic inquiry concerned with understanding human beings and the nature of their transactions with themselves and with their surroundings (Benoliel in Brink & Wood 1998:335). The discourse theory is a theory that we have used as a theoretical framework in understanding the discourses concerning the UD toilet and barriers to its sustainability. It complements qualitative research that involves exploring and describing the nature of a social phenomenon, including culture and the inter-relationships between its components (de Villiers, van der Wal; 2004:238).

According to Burr, alternative approaches have developed that examine human beings as social animals and 'discourse analysis' is one approach that can be used to explain not only how individuals but communities create their identities. Discourse theory uses the concept of 'social constructionism' in explaining how a social phenomenon is developed within society (Burr: 1995:1). Social constructionism breaks away from the traditional view of Sociology concerning how social phenomena exist. Traditionally Sociology described how 'social structures give rise to social phenomena' (Burr: 1995:7). Social constructionism is different focusing instead on how 'social practices engaged by people and their interactions with each other' shape social phenomena through interactive processes that take place between people (Burr: 1995:7).

What this entails is that we as individuals are not only shaped by institutions in society but how we construct our identities and view in relation to other identities when we interact with people. The aim of qualitative research is to obtain in-depth understanding of human beings, their relationships, their experiences and their behaviours (de Villiers, van der Wal; 2004:238). Therefore, a qualitative approach to the monitoring of UD toilet usage in a selected study population in Zwelibomvi will be used to assess the discourses surrounding the UD.

How we construct ourselves is largely influenced by the discourses prevalent in a society. Behaviour is linked to the creation of our identity as it is through our behaviour that we define who we are. There are social, cultural and economic factors that may affect how the UD has been used in the community and influence the discourses surrounding it. To understand how these factors are linked involves using qualitative research as this entails relating the actions, interactions and experiences of individuals to the ideas, values beliefs and purposes that allow for actions, interactions and experiences to happen (de Villiers, van der Wal; 2004:238).

2.6 Buckle up: A case study in incorporating qualitative research and audience segmentation to move beyond positive campaign results and foster sustainable behaviour

This case study introduces the concept of segmenting a population based on its commitment to a type of behaviour so that a better understanding of the target population can help establish behavioural objectives in the public awareness campaign (Henry; 2003: 48). It incorporates qualitative research in audience segmentation that is the basis of how the Conversion Model will be used to explain the commitment of users to the UD. The case study is an introduction to the principles of the Conversion Models and illustrates how qualitative research was used to segment a population based on the commitment to using seat belts. Our project will also use qualitative research to segment the sample population of UD users according to their commitment in using the UD toilet based on the theoretical analysis of the Conversion Model.

In 2001 the National Highway Traffic Safety Administration awarded the University of West Florida with the project to increase safety belt use among drivers and passengers of pick up trucks. The project site was a rural county in Florida and safety belt observational studies by National Highway Traffic Safety Administration indicated that only less than half of the population of pick up truck drivers and passengers wore safety belts despite the ongoing efforts to increase their use through public information and enforcement campaigns (Henry; 2003:48). The project team used qualitative research to gain insight into potential barriers associated with safety belt use by the targeted population of pick up truck drivers in order to develop a campaign strategy that would increase their use of safety belts and sustain this behaviour over time. Our project will also use qualitative research to gain insight into potential barriers to the sustainability of the UD toilet by using the Conversion Model so as to be able to segment the population.

Qualitative research of the target population was significant. The University of Florida research revealed that the pick up truck drivers believed that their trucks were sturdier than other vehicles and that driver and passengers in these trucks were less likely to need safety belts for protection. Regarding enforcement of the safety belt law, the population expressed a disregard for enforcement campaigns and shared ways in which they could avoid getting a ticket for not wearing a safety belt, such as the tinting of the windows of their trucks (Henry; 2003:48). The study population also found that it was not comfortable using seat belts. This particular aspect of seat belt use could reflect the similar issues of users and the way they feel about the UD.

The research team was able to develop a campaign strategy based on the findings of their research. They wanted to dispel the belief that pickup trucks were safer than other vehicles. To enhance the enforcement campaigns, the visibility of law enforcement in the community was to increase by using traffic safety educators from the community that could also use the law against those that did not use seat belts. This aspect of the case study is applicable to the UD toilet because it indicates that enforcement was emphasised to encourage those individuals most unlikely or unwilling to change their behaviour and commit to using the seat belt. In the case of the UD, the project facilitators from the community would be regarded as sanitation enforcement but obviously these facilitators would not be able to use the law against those that do not use UD. Emphasizing advocacy and who to emphasize it to makes the Conversion Model useful to identifying who to target in the recommendations of this report.

There was an overwhelming belief among the pick up truck drivers that they themselves should take personal responsibility for their safety, rather than be coerced to do so by law enforcement (Henry; 2003:49). By using individuals that had lost family members to accidents as channels, an effective awareness campaign was developed. Using traffic safety educators to educate pick up truck drivers on the dangers of not using seat belt dispelled the belief that pick up truck drivers were safe and these drivers were encouraged to be responsible for their safety. The campaign was communicating in accordance to how they wished to be addressed and in a way that converted those individuals committed to not wearing seat belts to change their behaviour. The seat belt was made more comfortable and through a partnership with a local radio station, these law enforcement officers would reward those drivers wearing seatbelts.

By segmenting the population, it was possible to understand the barriers that prevented the drivers from wanting to use belts. The individuals in the study that were only willing to use the belt as long as it was comfortable were able to do so after it was improved and rewards for those that used seat belts did not allow for ambivalence to occur. This is a dimension of commitment that the Conversion Model describes as the influence that alternative lifestyles that attract individuals more have on individuals choosing sustainable behaviour (Hjelmar; 2005; 6). The rewards that drivers received for wearing seat belts were more attractive than not wearing seatbelts. The observational results of safety belt use among pick up truck drivers in the Florida county revealed 21% increase in the total number of seatbelt users from the baseline usage rate of 47% to the six-month follow-up rate of 68% (Henry; 2003:49).

This case study introduced principles of the Conversion Model. Our research will incorporate similar principles in interpreting the findings from the qualitative research. The Conversion Model will be used in the segmentation of UD toilet users on the basis of commitment.

2.7 The Conversion model

The Conversion model was created by South African sociologist, Jan Hofmeyr in the 1980's in order to understand political commitment and conversion (Hofmeyr & Rice, 2000). He wanted a research model that could explain why white South Africans were stuck in certain patterns of political activity despite their awareness of a need for change (Hjelmar; 2005:60). The conversion model is a psychologically based model which focuses on the concept of commitment and refers to the strength of the relationship between the citizen and a specific form of thinking or form of behaviour (Hjelmar; 2005:60). In the context of Zwelibomvu, we are going to use this research tool to measure the commitment to the societal need for appropriate sanitation.

The Conversion Model is appropriate to use in monitoring the commitment of the users in reference to how they use the UD toilet because it segments the population. The Conversion model divides people into specific groups defined by their commitment to a specific type of behaviour or thinking and gives a description of the various groups enabling public organizations to better understand and target specific services and campaigns (Hjelmar; 2005:60). This is effective in helping to understand how different groups of users should be approached (Marks, Hofmeyer, Ratheb, 2000).

2.7.1 Segmentation

The Conversion Model segmentation divides the population into eight segments- four 'user' segment and four 'non user' segments (www.conversionmodel.co.nz).

We are monitoring the level of commitment in individuals that already have the UD toilet so they would be classified as users. The description of the non-user segmentation will not be included as it is not relevant to individuals that already have the UD toilet.

The effectiveness of the Conversion model is that it segments the population of users into four types of individuals based on their commitment to a specific form of behaviour (Hjelmar; 2005:60). Although the marketing influences of this segmentation are evident, it can be applied to how users of the UD toilet view their toilet in relation to an alternative like a flush toilet.

Entrenched users resist competitive offers and are strong brand advocates (www.conversionmodel.co.nz). Users that only use the UD toilet and strongly believe that it benefits their health and suits their lifestyle would fall under this category.

Comfortable users are committed to staying to a brand but may also use other brand. They have an occasional interest in competitive offers (www.conversionmodel.co.nz).

Users of the UD toilet that are committed to using the UD toilet but still use the pit latrine would fall under this category.

Shallow users are likely to spend more on competitors and choose alternatives although often they do not care what brand they use (www.conversionmodel.co.nz). Users of the UD toilet that spend more time using the pit latrine and who are impartial to using the pit latrine without caring about the health risks that the eThekweni water and sanitation programme has identified would fall under this category.

Convertible users are those users most at risk of choosing a competing brand and may even resent the brand and actively seek alternatives (www.conversionmodel.co.nz). Individuals that have UD toilets but choose not to use it would fall into this category.

Examining the responses of these individuals concerning why they would rather use an alternative such as the flush toilet or pit would be useful in understanding the barriers to the sustainability of the toilet.

2.7.2 Case study: Environmental Campaign in New Zealand

In 2002 the Greater Wellington Regional Council in New Zealand decided to commit itself to sustainable development plan. Key to the plan was a social marketing campaign called 'Be the difference' seeking citizens to adopt environmentally sustainable behaviours (Hjelmar; 2005:61). An ongoing assessment of the success of this campaign was an important part of the policy of the actual campaign and what this assessment focused on was how effective the campaign was in changing the environmental behaviours of citizens. The key indicator of the success of the campaign was whether there was a movement in the environmental lifestyle segments along the continuum from a complete non-environmentally considerate lifestyle to a totally environmentally considerate lifestyle (Hjelmar; 2005:61).

The Conversion Model defines commitment as having 3 dimensions- satisfaction, involvement and ambivalence (Hjelmar; 2005:60). These dimensions of commitment were applied to measure whether the campaign led to a change in lifestyle and how committed people were to their current lifestyle and what it would take to change their lifestyle. Satisfaction is how satisfied people were with the fit between their chosen environmental lifestyle and their individual needs (Hjelmar; 2005:61). Satisfaction in terms of the users of the UD toilet at Zwelibomvu would measure how satisfied those individuals are when they use the UD toilet or alternatives such as the pit latrine and how suits their individual needs.

The second dimension measured a person's level of psychological involvement with the environment or the extent to which protecting the environment mattered to them.

The importance that users place on the usage of the UD toilet in their lives in terms of its health and environmental benefits influences the involvement aspect of their commitment to using it. Assessing whether users focus more on the practical design of the UD toilet than the health benefits of the toilet will indicate the commitment of these users to the

toilet. The third dimension measured the influence that alternative lifestyles had on the commitment of individuals to use more environmentally sustainable behaviour as commitment could be undermined by environmentally unsustainable lifestyles that attract individuals more. (Hjelmar; 2005:6). This project will monitor whether individuals that have UD toilets still use other systems like the pit or would like to use alternative systems such as water based toilets as the appeal of using other toilet systems would influence commitment to the behaviour of using the UD toilet.

The results of the 'Be the difference' campaign included a segmentation of the citizens of Wellington based on commitment to their current environmental lifestyle and identifying people most likely to change behaviour. Citizens were broken into categories based on their commitment to an environmental lifestyle.

There were 12% of the study population committed to a totally environmentally considerate lifestyle (Hjelmar; 2005:6). The vulnerable segment was the segment vulnerable to switching to a less environmentally considerate lifestyle and 23% of the population fell into this group (Hjelmar; 2005: 6). Opportunity segment was 32% of the population and this was those individuals that could convert into living a totally environmentally considerate lifestyle (Hjelmar; 2005: 6). The unavailable segment was those individuals unlikely to convert into a more environmentally considerate lifestyle and 30% of the population was under this category (Hjelmar; 2005:6).

The two strategic segments that the town council in the campaign focused on was the vulnerable segment and the opportunity segment because within these segments, it was most likely that an increased effort of education and promotion could trigger a change in attitude and behaviour (Hjelmar; 2005:6). This segmentation will be applicable for this project as it is useful to identify the proportion of the study population that find themselves in the vulnerable and opportunity segments. Those in the vulnerable segment would be the UD users that would be willing to switch to a less environmentally considerate lifestyle and using the pit latrine as opposed to the UD would classify these users as vulnerable. The UD users that are willing to use the UD as long as they perceive its benefits as being greater than using a pit latrine would fall under opportunity. The research in the 'Be the difference' campaign identified the environmental thinking and behaviour of these specific segments and our project will identify the sanitation behaviour of the study population so that recommendations can focus on actions that eThekweni water and sanitation programme need to take to result in more UD users using the UD as it was designed to be used.

3.1 Findings

The project focused specifically on the Urine Diversion toilet. We wanted to assess its acceptance by the community and whether or not it fitted comfortably into the lives of the people of Zwelibomvi. Participation in answering the questionnaire was completely voluntary and the identity of respondents was kept anonymous.

3.1.2 Analyzing responses based on The Diffusion of Innovations theory

The Diffusion of Innovations theory will be used in the analysing of the responses to the questionnaire. The four elements of the theory: innovation, communication channels time and the social system are the factors that influence the discourses surrounding the urine diversion toilet and by examining these using this theoretical framework, it should indicate to us the barriers to its sustainability.

3.1.3 Innovation factors influences the diffusion of the UD toilet

Innovations in public health have defining characteristics that affect and help to explain their differential rate of adoption and optimization of relative advantage, compatibility, complexity, trial ability and observability will allow an innovation to be adopted more rapidly than other innovations that lack them (Haider, Kreps: 2004: 4).

The respondents were asked if the Urine diversion toilet was an improvement to their previous way of life to see if there was a relative advantage seen by respondents concerning the UD toilet relative to other systems like the pit. With 33% of respondents agreeing that the UD toilet was an improvement in their life, this shows that there was no perceived advantage of the UD toilet in two thirds of the respondents and this is a barrier to the rate of adoption of the UD toilet.

The respondents were asked if the Urine diversion toilet suited their needs and asked to describe how the toilet fitted into their way of life. The compatibility of the innovation also influences the rate of adoption. Only 19% of the respondents were happy with the toilet and stated that it suited their needs and was good for their family while 29% were happy because the UD was better than having nothing but were willing to use flush toilets if they had the option. However the toilet was not compatible for 29% of the respondents because they believe that the pit toilet is better as it does not fill up as quickly. The respondents stated that the toilet was small and it smells and it is situated far from the house making it difficult to use the toilet at night. People also complained that when visitors had to use the toilet, they had to clean the toilet with sand. The remaining 23% of respondents were not using the toilet at all because it was not easy to clean and children could not use it as they were not allowed to be around ash. The compatibility of the UD toilet is low and this is a barrier to the sustainability of the UD toilet.

When asked what the respondents thought of cleaning out the chamber in the UD. This was done to see the perceived complexity of maintaining the UD toilet as this is a factor in the adoption rate of an innovation. It was found that 52% had a positive view when focusing just on the complexity aspect of the maintenance of the UD toilet with many saying that it was not an issue as long as they were shown by the eThekwini facilitator or had gloves. But 48 % responded by saying that it was not easy to maintain the toilet and that it was difficult for old people to clean the toilet. The problem of old people not finding it easy to clean is a potential barrier to the sustainability of the UD toilet.

The fact that 48% still did not have a positive attitude to cleaning the UD toilet even though 90% knew how to maintain it shows that there are still a substantial percentage of the population finding it complex to maintain. This is also a barrier to its sustainability.

With 90% of respondents knowing how to maintain the toilet, the trialability and observability of the UD toilet is optimized with the visits by the facilitator from eThekwini effective in showing users how to maintain the toilet by actually going to the household of the user and showing the person how to maintain the toilet.

3.1.4 Communication Channels and the innovation –decision process

We asked the respondents through which channels they heard of the UD toilet. This is an important aspect of the Diffusion of innovations theory because the adaptation of a innovation that is perceived as new is the process by which an innovation is communicated through certain channels over time among the members of a social system (McCormack; 1999). The innovation-decision process involves five main steps: Knowledge, Persuasion, Decision, Implementation and Confirmation (Rogers; 1995) and the channels through which the respondents first heard of UD toilets influences the knowledge aspect of the innovation-decision process. Knowledge occurs when an individual learns of the innovation's existence and gains some understanding of how it functions (Haider, Kreps; 2004). In the case of the UD toilets, respondents could choose:

Radio
Street theatre
Word of mouth
Newspapers
Posters

The respondents were asked how they found out about the UD toilet. The house to house visits by eThekwini was the most popular channel through which the respondents heard about the UD toilet with 67% of the respondents saying that they found out about the UD by the house- to house teaching. The radio, which would be characterized as a mass media channel, was only the source of information for 14% of the population while one household said that through the chief is how they found out.

The first visit to the household by an eThekwini facilitator consists of the facilitator explaining to the household the plans to provide sanitation and water. The second visit focuses on health and hygiene and individuals are made aware of health hazards associated with unhealthy sanitation. They are told that clean water breaks the cycle of disease. The third visit explains how the UD system works and the fourth with how it will be supplied to them. The last visit deals with the operation and maintenance of the toilet after it has been installed and how to use the toilet correctly, how to maintain it and how to empty it (Water Information Network).

The nature of the eThekwini visits show that interpersonal channels are used in the knowledge stage of the innovation-decision process. Since 90% of respondents claimed that they knew how to maintain the toilet, the strategy of using interpersonal channels appears to work as opposed to focusing on mass media channels like the radio. The communication of messages concerning this new innovation would involve the active

creation and sharing of information among people to reach a mutual understanding (Haider, Kreps; 2004: 4). With 90% of respondents understanding how to use and maintain the toilet, this shows that using facilitators from the community is an effective way of diffusing knowledge about an innovation. We were not able to measure the effects of the street theatre on diffusing knowledge about the UD because 76% of respondents had not seen the street theatre production Umhlakanisa. This is because we asked the questions to respondents that were going to see the production. We did not have time to ask them what they recalled from it.

Persuasion occurs when an individual forms a favourable or unfavourable attitude toward the innovation (Haider, Kreps; 2004: 4). The respondents were asked what they thought of the urine diversion toilet. According to our research results 24% of respondents had a favourable attitude and 76% had a negative attitude. The general response of the 24% of the respondents with a favourable attitude to the UD was that it was better than not having a toilet or using another system but not the best.

Respondents' comments on which this statement is based include

“It's good for my family”

“It's healthy if you take care of it”

“It works well when you do as eThekweni Water and sanitation taught you”

Most of the respondents had an unfavourable attitude to the UD toilet. It was structural issues like cleaning the chamber of the UD toilet that 63% of the negative response of 76% mentioned as problems. Comments of respondents included:

“Doors do not fit”

“New one is a problem because of cleaning”

“They are not nice we have to put sand in it”

The UD toilets were seen to be more work to maintain than the pit toilets people used previously because respondents were expected to empty the UD toilet themselves. One respondent commented by saying

“The pit toilet is better because you can make it deeper and then it takes time to fill”

The diffusion of the toilet is likely to be undermined because 76% of the respondents have an unfavourable attitude to the UD toilet.

‘Decision’ takes place when an individual engages in activities that lead to a choice to adopt or reject the innovation (Haider, Kreps; 2004: 4). This decision would depend on how easy the users find it to maintain and use the new UD toilet compared to the pit latrine or other alternative systems. While the diffusion of the product was unanimous with all 21 respondents owning a UD toilet, 24% of respondents used the UD for other purposes such as using it as a place to wash and as a place to keep tools. Clearly there is a

gap between knowledge and practice and this is linked to the maintenance aspect of the UD toilet as 50% mentioned the maintenance aspect of the toilet as being the problem.

Comments from the respondents include

“We are using the septic tank instead at least we do not have to empty that”

“It is a nuisance by filling up easy”

“You have to touch your own waste”

“New one is a problem because of cleaning”;

Implementation occurs when an individual utilizes an innovation and this stage is where behaviour change can be measured as the new idea becomes a reality in the lives of the user (Haider, Kreps; 2004: 4). Implementation is at 76% with 24% of respondents not using the toilet in the way that it was designed to be used. But with 76% of the respondents having a negative view of the toilet, implementation could decrease as more people choose not to use the toilet.

Confirmation occurs when an individual seeks reinforcement of an innovation-decision that has already been made, but may be reversed if the individual is exposed to conflicting messages about the innovation. At this point the individual can either decide to make full use of an innovation as the best course of action available or choose not to adopt it (Haider, Kreps ;2004). We asked respondents if the Urine diversion toilet was an improvement to their previous way of life. The respondents could choose from a scale of Strongly Agree to Strongly disagree and 14 % strongly agreed that the toilet was an improvement to their previous way of life, 19% agreed, 52% disagreed and 10% strongly disagreed. The promises of flush toilets that respondents expect politicians to provide could influence the conformation stage. While eThewini water and sanitation programme may educate the users about the health benefits of the toilet and focus on this aspect, they seem to focus less on the structural aspect of the toilet that is more important to the respondents with 63% of respondents focusing on structural issues as the problem. This apparent lack of cooperation could influence users to choose alternative systems that they were using before and use the UD toilet for other purposes like 24% of the users already do.

3.1.5 Makoti

In the diffusing of an idea or technology within a community, culture needs to be taken into account. This is because recognizing the community’s cultural principles that may seem to oppose a health innovation is crucial to the efficacy of the diffusion of an innovation because such factors will affect the innovation-decision process (Haider, Kreps; 2004:6). The project steering committee for Lower Maphephetheni mentioned that cultural taboos have been identified as a problem in the way the toilet is accepted and

used within the community. In that community, the Makoti or daughter-in law was not allowed to use the toilet (Water Information Network). We wanted to see if the same issues were identified in Zwelibomvu.

Our respondents were asked if they were familiar with the concept of 'Makoti' and 67% said yes. The respondents that understood about the concept of the 'makoti' were asked what they understood about the concept and 36% mentioned that 'makoti' were not allowed to use the same toilet with everyone in the house. It was mainly identified as a term to describe a married woman and the respondents 64% mentioned that makoti is a married woman that stays in the household and who they pay lobola for. The respondents that had mentioned that the makoti were not allowed to use the toilet were questioned about the concept of makoti and it was revealed that it is a very traditional belief and in most cases the practices surrounding it were outdated and no longer followed.

One respondent commented

"I think that not allowing someone to use the same toilet as you is discriminating"

When those individuals that knew of the makoti were asked how many makoti lived in the house, only 3 households out of 14 said that they had a makoti in the house and 79% of the households that knew what a makoti was did not have one living with them. Out of the 3 household that had makoti living there, 2 allowed the makoti to use the UD. The concept of the makoti was not a factor that opposed the UD toilet in the innovation-decision process.

3.1.6 Traditional and opinion leaders as change agents

The diffusion of innovations model was influenced by case studies such as the Ryan and Gross' diffusion study which was used to break up a population of hybrid corn seed farmers into 'innovators', 'early adopters', 'early majority', 'late majority' and 'laggards' (Gladwell,1997). In the case study, the farmers characterized as having the greatest degree of opinion leadership and respected by other members of the social group were regarded as 'change agents' that is an individual who influences individual decisions in the direction deemed desirable by a change agency (Haider, Kreps; 2004).

We attempted to identify opinion leaders by asking respondents to identify their traditional and community leaders. Our analysis shows that 76% of the respondents said that there was a traditional leader for the area and 10% said no with the rest not being sure. When asked if they knew what opinion these traditional leaders had concerning the toilet, only one third could identify what the traditional leader had to say. From this third 71% stated that the traditional leader did not like it.

"He does not like it because in our culture there are some people who are not allowed to share the toilet with another"

"He is not happy, he wants to redo to flush".

The rest that said that he liked it said it because he had one in his house. Mr Mkize, Manqane, Mr Ngubane, Mr Ngobo and Induna Magcaba were the different traditional leaders identified. The traditional leader did not seem to play the role of 'change agent' as only a third of the respondents were able to say what the traditional leader thought of the UD toilet.

When asked if they knew if they had a community leader, 48% said yes. From this 48% 60% knew who the individual was although the name of this individual differed and no single person was identified. From the 60% that know who the individual was, they all knew what the community leader had to say about the toilet. The views of the community leaders were divided with 50% being positive about the UD toilet in the community and 50% negative. From these results, the traditional leader was more widely known as existing in the community compared to the community leader. But there was no correlation in these individuals influencing the diffusion of the UD toilet because while more people knew what the community leader had to say about the UD, only 48% knew that one existed.

The facilitators from eThekwini would be classified as the change agents as they mediate between the change agency that is eThekwini water and sanitation programme and the social system of the rural Zwelibomvu. The house to house visits by eThekwini was the most popular channel through which the respondents heard about the UD toilet with 67% of the respondents saying that they found out about the UD by the house- to house teaching.

3.1.7 'innovators', 'early adopters', 'early majority', 'late majority' and 'laggards'

The respondents were asked if the Urine diversion toilet suited their needs and asked to describe how the toilet fitted into their way of life. It is possible to break down the respondents according to how the UD toilet fitted into their lives.

Only 19% of the respondents were happy with the toilet and stated that it suited their needs and was good for their family. In Ryan and Gross' diffusion study the early majority referred to the farmers that decided to use the corn only once they felt comfortable enough after observing what the community leader had to say about the corn. These UD toilet users are comfortable to use the toilet because it suits them and their family and they were taught about the UD toilet by the project facilitator. These members are more likely to adopt an innovation just before the average person.

The late majority refers to those farmers that were aware of the good quality of the corn but still happy to use the tried and trusted corn. These farmers were skeptical about the new corn. Most respondents were part of the late majority as 29% were relatively ambivalent being happy because the UD was better than having nothing but were willing to use flush toilets if they had the option. Then there were 29% of the respondents using the UD toilet but not happy with the toilet and so these respondents were also using the pit because they believed that the pit toilet is better as it does not fill up as quickly.

The final adopters in a system are the laggards. They tend to be the least educated and would be most suspicious of innovations and take a great deal of time to adopt the new innovation (Haider, Kreps; 2004). It was found that 23% of the respondents were not using the toilet at all. This was not because they were not educated as 90% of respondents knew how to maintain the toilet. These individuals were not happy with the innovation because the toilet was seen as being difficult to clean and children could not use it.

3.1.8 Conversion Model and category of UD toilet user

The conversion model was used to measure the commitment of the UD users to the adoption of the toilet in the community. The decision aspect in the innovation-decision process is about the commitment of an individual to the adoption of a technology. The effectiveness of the Conversion model is that it segments the population of users into four types of individuals based on their commitment to a specific form of behaviour.

The respondents were segmented into the categories of entrenched, comfortable, shallow and convertible users based on how committed they were to using the UD toilet. The respondents were asked if the Urine diversion toilet suited their needs and asked to describe how the toilet fitted into their way of life. Only 19% of the respondents were happy with the toilet and stated that it suited their needs and was good for their family. The respondents are regarded as entrenched users because they resist competitive alternatives like a pit and are strong advocates of the UD toilet. They believe that it benefits their health needs.

Comfortable users are committed to using the UD toilet but have the occasional interest of using an alternative like a flush toilet. From our analysis, 29% of the respondents were relatively ambivalent and said they were happy because the UD was better than having nothing but were willing to use flush toilets if they had the option.

Shallow users are likely to use the pit more than the UD toilet and 29% of respondents were using the pit as well as the UD toilet. This is because they were not happy with the toilet and believed that the pit toilet is better as it does not fill up as quickly

Convertible users are those users most at risk of resenting the UD toilet and choosing an alternative like using the pit or not using the toilet at all. In our analysis, 23% of the respondents were not using the toilet at all because it was not easy to clean and children could not use it. One respondent was using it for the storage of garden equipment.

3.1.9 The Three dimensions of Commitment

In the Buckle up case study, campaigners focused on the 3 dimensions of commitment as a way of making individuals adopt more environmentally sustainable behaviour. We needed to focus on the same dimensions in the commitment UD toilet users had to using the toilet so that recommendations from our monitoring could be made if there were barriers to its sustainability. We focused on the 76% of respondents that had chosen

to use the UD as satisfaction is how satisfied people are with the fit between their chosen environmental lifestyle and their individual needs (Hjelmar; 2005:61). Since 52% disagreed that the UD toilet was an improvement to their lives and 63% of the respondents that were not happy with the toilet blamed structural issues like maintenance, there is not much satisfaction in users and their UD toilet. Only 19% of the users were satisfied that the UD toilet suited their individual needs.

The second dimension of commitment measured a person's level of psychological involvement with their sanitation or the extent to which protecting their health mattered to them. Since more people focused on structural issues than health issues, the emphasis of health benefits of the UD toilet will not increase the commitment that UD users have to use the toilet.

The third dimension in the Buckle up campaign measured the influence that alternative lifestyles had on the commitment of individuals to use more environmentally sustainable behaviour as commitment could be undermined by environmentally unsustainable lifestyles that attract individuals more. The respondents were asked what they used before they got a Urine Diversion Toilet and 67% used the pit toilet while 19% used other systems like public lavatories or bush. The respondents were asked if they could revert back to the way things were before and 43% of pit users that had these before UD said yes and 57% said no.

4. Recommendations

Communicating strategically requires a clearly defined strategy with specific goals established in advance (Health Communication partnership; 2003). The P process is a framework designed to guide communication professionals as they develop strategic programs with measurable impact (Health communication partnership). It is a 5 step process that includes analysis, strategic design, development and testing, implementation and monitoring and evaluation and replanning. (Health communication partnership).

We will focus on the implementation and monitoring step and evaluation and planning. This is because eThekweni has already implemented the campaign and is at the monitoring stage and evaluation stage. This project involved monitoring and it involves tracking outputs to be sure that all activities take place as planned and potential problems are addressed (Health Communication). This evaluation of the data in this project is crucial because evaluation measures how well a program achieves its objectives and good program evaluation stimulates program improvements and supports advocacy (Health Communication).

4.1 Third generation EE-empowerment and structural change

A new wave of initiatives is being seen in the field of education entertainment where the focus is on problem identification, challenging power relations and advocating social change (Tufte; 2005:164). Solutions to problems are sought by strengthening people's ability to identify the problems in everyday life and their ability to act collectively upon

them (Tuftte; 2005: 164). In this project, issues of social inequality apply to the users of the UD toilet because they are poor and have no option of using the flush toilet because of the cost involved. Third generation EE interventions advocate for social change and a strong community based approach and community based participatory work (Tuftte; 2005: 164). The eThekwini water and sanitation program involves community participation before construction work begins on the toilet as this involves consultation with community structures and tribal authorities. But more involvement with the target group of UD users is recommended. This will allow for issues that the respondents identified as problems to be addressed so that barriers to the sustainability of the UD toilet are understood.

The main aspect of third generation EE interventions is empowerment (Tuftte; 2005: 164). The eThekwini water and sanitation program does have a post-delivery education programme where follow-up education uses the participatory health and sanitation training approach. Groups of people talk about their experiences in a workshop situation but the focus of the workshop is on health issues. The eThekwini uses a third generation strategy in involving the target groups in workshops. But this workshop was not identified by any of the respondents and the health issues and sanitation training seems to be unnecessary because 90% of respondents knew how to maintain the UD toilet. Their main focus was on structural issues of the toilet and not health issues. The workshops do not seem to involve getting the actual users to talk about issues that affect them so that recommendations can be made. This is against the third generation approach to health interventions. A clear strategic aspect required for social change communication is the need to conquer space, challenge normative, moral and social borderlines and arrange a critical dialogue on issues as a pathway towards social change (Tuftte; 2005: 164). This is identified as being important in the P process where a strong communication program should fully engage the stakeholders at the national, district and community level.

4.2 How to address different segments of the population

Of the factors that determine the effectiveness of health interventions, audience characteristics and audience research are linked because the formative and summative research that is required in a campaign for it to be effective measures audience needs assessment and ongoing mechanisms that incorporate audience feedback (Singhal, Rogers; 1999:206). The audience characteristics influence the effectiveness of the campaign because people have different values, degrees of personal interconnectedness and socio economic status (Singhal, Roger; 1999;207).

The 'Be the difference' campaign segmented the citizens of Wellington based on commitment to their current environmental lifestyle and identified people most likely to change behaviour.

The totally committed UD users were those users that were committed to a sanitation considerate behaviour and 19% of the respondents believed that the toilet suited their needs and was good for their family because it was safe.

The vulnerable segment was the segment of shallow users vulnerable to switching to a less sanitation considerate lifestyle and 29% of the population were using a pit latrine and the UD toilet.

Opportunity segment was the 29% of the population of comfortable users that could convert into living a totally sanitation considerate lifestyle (Hjelmar; 2005: 6). The comfortable users used the UD toilet but only used it because they had nothing else.

The unavailable segment was those individuals unlikely to convert into a more sanitation considerate lifestyle and 23% of the population were not using the UD toilet.

The two strategic segments that the Wellington town council focused on was the vulnerable segment and the opportunity segment because within these segments, it was most likely that an increased effort of education and promotion could trigger a change in attitude and behaviour. The eThekweni council should address the structural issues that users identified as being the problem. The focus on health does not deal with the practical issues of the toilet being badly constructed with doors that do not fit or it being dangerous to use the toilet at night. To prevent vulnerable users from using a pit, the UD toilet should be improved so that it does not fill up so quickly. The opportunity segment should be taught that it is not practical to install flush toilets in the area because the infrastructure and money is not available. To encourage the 23% of unavailable users to use the UD toilet, incentives like the rewards that pick up truck drivers in the Buckle up campaign received by using seatbelts, should be given to those people that choose to use the UD toilet. Users of UD toilets could be rewarded with food or crops that they can plant.

Conclusion

Our research into the barriers to the sustainability of the UD toilet concluded that structural issues of the UD toilet influenced how it is diffused in the innovation decision process. Addressing the complexity of having to clean the chamber would make the UD toilet easier to use and persuade users to use the UD toilet.

Government must involve itself more in the promotion of the UD toilet. In campaigns, organizational factors are crucial for the effectiveness of the campaign. Political officials must become interested in a project and put the weight of their influence behind the idea as committed leadership is effective (Singhal, Roger; 1999:207). The UD user needs to see a relative advantage when they chose to use the toilet. The promises of water-based toilets to all people affects the levels of commitment of UD users, making them shallow users. These users use alternatives like pit because they do not see the advantage of using the UD toilet. More focus should be placed on educating the public on the environmental and social negatives of using a pit latrine and how the UD toilet serves to reduce these negative outcomes like cholera outbreaks. Government could provide those users that cannot have flush toilets with rewards such as food stamps, because this could further encourage users to use the UD toilet.

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