

2009

# An empirical analysis of public perception of reclaimed water applying the situational theory of publics

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An Empirical Analysis of Public Perception of Reclaimed Water Applying the Situational  
Theory of Publics

by

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A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts  
School of Mass Communications  
College of Arts and Sciences  
University of South Florida

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Date of Approval:  
May 19, 2009

Keywords: environmental communication, public relations

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# An Empirical Analysis of Public Perception of Reclaimed Water Applying the Situational

## Theory of Publics

Jessica Voss

### ABSTRACT

Utilizing J.E. Grunig's (1989a, 1997) situational theory of publics and Fishbein and Ajzen's (1975) theory of reasoned action, this empirical study examined the public's perception of reclaimed water. Specifically, the three independent variables – problem recognition, constraint recognition, and level of involvement – were separated into internal and external variables to determine their influences on behavioral intention. The independent variables were also used to determine the public's communication behavioral intention.

The findings of this study support the basic premise of the situational theory of publics and contribute to the extension of the theory through the inclusion of some of the variables used in the theory of reasoned action – subjective norm, attitude towards behavior, and behavioral intention. The importance of attitude towards behavior to the prediction of behavioral intention was found to be significant. Overall, the results of this research suggest that the situational theory of publics and the theory of reasoned action are very compatible together and can be combined in research to ultimately determine a public's communication behavior and actual behavior.

## Chapter One

### Introduction

#### *Water Reuse Background*

Population growth and economic development place a serious threat on water resources around the world. To combat this threat, communities are turning towards the idea of sustainable development (Risner, 2008). Water is a vital resource to the growth and success of developing environments (Cunningham, Holtzhausen, Jaward, & Yeh, 2007). Alternative water supplies are crucial to creating a sustainable healthy community and perhaps the most promising alternative is reclaimed water (Risner, 2008). *Reclaimed water* can be defined as wastewater that has been treated to remove solids and certain impurities. “Many water resource professionals believe that reclaiming water after it is treated in a modern wastewater treatment plant is an important and underutilized element of sustainable water resource management” (Hartley, 2006, p. 115). However, with the reuse of wastewater come the risks associated with micropollutants, including pharmaceutical and endocrine disrupting compounds (Risner, 2008).

Aside from chemical issues, public acceptance plays a key role in making such water initiatives a success. According to Cunningham et al. (2007), “often researchers in the fields of science, technology, engineering, and mathematics (STEM) either do not communicate well to the general public or fail to fully consider the significance and impact of public perception on their work, resulting in misunderstanding, mistrust, resistance to technological innovations, or lack of support for research funding” (p. 1). It



is now generally recognized that issues of public acceptance are paramount to successful implementation of water reuse programs. Most people working in the field of water reuse are familiar with cases in which a proposed reuse project was halted—often after considerable time and expense—due to lack of public support. “In general, trust and confidence in public agencies and officials is in decline in America – this appears to also be true for the wastewater utilities” (Hartley, 2006, p. 116). Moreover, the public continues to trust their own personal impressions of water quality more than those of experts such as university-based scientists or the medical community (Hartley, 2006).

There have been many documented cases of high-profile initiatives that have been shutdown after several years of planning and vast expenses (Hartley, 2003). Possibly the most well known example of the public effectively organizing in opposition to prevent a proposed reuse is the failure of a planned system in San Diego, Calif., in 1999 (Hartley, 2003; Hartley, 2006). This initiative failed despite having “all the main ingredients for success” (Po, Kaercher, & Nancarrow, 2003, p. 9). Recently, a plan in Tampa, Fla., to augment the Hillsborough River with high-quality outflow water from the Howard F. Curren Advanced Wastewater Treatment Plant met public opposition from Hillsborough County residents. “One thing is certain: no matter how sound the technology, unfavorable public perception and understanding can be enough to stop projects” (Cunningham et al., 2007, p. 2).

Along with the technological advances in wastewater treatments, the opportunity for water reuse has never been more feasible. The possible benefits of using reclaimed water include: protection of water resources, prevention of coastal pollution, recovery of nutrients for agriculture, augmentation of river flow, savings in wastewater treatment,

groundwater recharge, and sustainability of water resource management (Angelakis & Bontoux, 2001). These benefits can be seen as key motivations for using reclaimed water.

Table 1. Challenges and opportunities faced by water reuse professionals in the US (Hartley, 2006)

Challenges	Opportunities
<ul style="list-style-type: none"> <li>• Decline in public trust and confidence in public agencies and officials.</li> <li>• Decline in belief that best technologies can remove all impurities and germs from wastewater.</li> <li>• While the public tends to trust university-based scientists and the medical community on technical and health issues, they trust their own impressions of water quality more.</li> <li>• Public impression of water quality can often be based upon the water's turbidity.</li> <li>• While education and outreach activities can increase support, they can also intensify the extremes – those that oppose become more strongly opposed and those supportive are more strongly supportive.</li> </ul>	<ul style="list-style-type: none"> <li>• Public interest in being meaningfully involved in water reuse decisions.</li> <li>• Public interest in finding ways to ensure independent and secure water supplies for their community.</li> <li>• While the public is not well versed in the water cycle, they are generally aware that there are water supply problems in many parts of the country.</li> <li>• Belief that some form of potable reuse is inevitable, given growth and water supply constraints.</li> <li>• Information sharing, educational activities and opportunities for reflection upon the concepts of water reuse can increase support.</li> </ul>

Communities attempting to garner support for water reuse initiatives can benefit from a greater understanding of public perceptions and why residents hold these perceptions. An understanding of perceptions can help create more effective strategic communication programs. According to Major (1993), communicators require greater knowledge and understanding of the attitudes and communication behaviors of environmental publics in order to influence public perception and communicate effectively. Effective communication affects public acceptance of the credibility of proposed water reuse initiatives (Bright, Fishbein, Manfreda, & Bath, 1993). Therefore, it is important for communication professionals to understand public perceptions.

#### *Purpose*

The first purpose of this study is to apply J. E. Grunig's situational theory of publics (1989a, 1997) to better understand public perceptions of water reuse initiatives.

Introduced more than three decades ago, the situational theory of publics posits,

“communication behaviors of publics can be best understood by measuring how members of publics perceive situations in which they are affected” (Grunig & Hunt, 1984, p.148). Specifically, the theory uses problem recognition, level of involvement, and constraint recognition as independent variables to predict whether a public will become active on an issue. "The idea of audience segmentation into homogeneous groups that are likely to respond similarly to a message is widely accepted" (Werder, 2005, p. 225).

In addition to the situational theory of publics, the theory of reasoned action developed by Fishbein and Ajzen (1975) was also applied to address the limitations of the situational theory of publics. Derived from the social psychology setting, the theory of reasoned action consists of four major components: attitude towards the behavior, subjective norm, behavioral intention, and behavior. The theory suggests that a person's behavioral intention depends on the person's attitude about the behavior and their subjective norms. The theory then states that behavioral intention will lead to acting out that behavior. The second purpose of this study is to extend the situational theory of publics through the addition of some of the variables in the theory of reasoned action.

#### *Importance of study*

This study is important for three main reasons. First, this study is important due to the contributions it will make to current public relations theory. This study seeks to advance the situational theory of publics by contributing to the limited amount of research that has examined the external and internal dimensions of the three independent variables of the theory. This study will attempt to extend the situational theory of publics through the theory of reasoned action.

Second, the results of this study are expected to support the notion that STEM researchers will be significantly more successful at obtaining research funding, transferring research results, and affecting policy if they are (i) aware of the public's perceptions, beliefs and attitudes, (ii) cognizant of the public's perceived risks of science, and (iii) proactive in communicating strategically with involved communities.

Third, communities that are trying to implement water reuse initiatives can gain a lot from this information. Data gathered from this study should aid the development of effective strategies for communicating with publics about water reuse programs because the theory explains what affect communications about the situations might have (J. E. Grunig, 1989b). "Environmental communicators, for example, will be more effective if they can divide their audience into segments more or less likely to attend to and respond to their messages" (J. E. Grunig, 1989b, p. 55). Understanding audience segmentation certainly should improve design and targeting of messages (Slater, Chipman, Auld, Keefe, & Kendall, 1992).

### *Outline of Study*

Before the situational theory of publics and the theory of reasoned action can be applied in this study, a more comprehensive review of the literature that exists on previous studies needs to be done. Chapter 2 provides an extensive overview of the theoretical basis of this study. The chapter starts with the situational theory of publics by breaking it down into four sections: independent variables, dependent variables, internal and external independent variables, and limitations. The next section of the chapter examines the theory of reasoned action. The last part of the chapter reviews the hypotheses, propositions, and research questions proposed by this study.

Chapter 3 outlines the methodology that was used for this research. To test the proposed hypotheses and propositions a random sampled survey of Hillsborough County registered voters was conducted. This chapter has four sections: procedure, instrumentation, survey response statistics, and data analysis. Chapter 4 presents the results of the study, including the descriptives, hypotheses, and research questions testing. The last chapter, Chapter 5, consists of a discussion of the research's results and a conclusion of the study, including sections on the limitations and further research opportunities.

## Chapter Two

### Literature Review

The following chapter provides the theoretical framework for this research through a review of J. E. Grunig's situational theory of publics and Fishbein and Ajzen's theory of reasoned action.

#### *Situational Theory of Publics*

J. E. Grunig (1989a, 1989b) has spent the past 30+ years developing a situational theory of publics that is designed to predict and explain people's communication behavior and when communication attempts aimed at an audience are most likely to be effective. As the situational theory of publics has developed over the years, it has become a very significant component of a general public relations theory, especially of one major part of that general theory – the strategic management of public relations (J. E. Grunig, 1997).

J. E. Grunig (1978) defined a public as a group of people who “(1) face a similar indeterminant situation, (2) recognize what is indeterminant–problematic–in that situation, and (3) organize to do something about the problem” (p. 109). He began developing the theory with the assumption that Dewey (1927) first made about publics, which is that publics arise around issues or problems that affect them (J. E. Grunig & Hunt, 1984). “The situational theory improves upon the classical conceptions of publics, then, by formalizing those theories and providing means for identifying and measuring publics and their opinions” (J. E. Grunig, 1997, p. 9).

The key components of the theory are three independent variables – problem recognition, constraint recognition, and level of involvement – and two dependent variables – information seeking and information processing. The three independent variables are situational variables meaning “they describe the perceptions that people have of specific situations, especially situations that are problematic or that produce conflicts or issues” (J. E. Grunig, 1989b, p. 54). The theory provides a basis for understanding internal and external concepts of publics and variables that are important to segmenting publics, but past research suggests that there are other variables that play a role in the understanding of people’s communication behaviors (Werder, 2006). Specifically, Major (2000) used a fourth perception variable called media influence.

Research shows support for the usefulness of the independent variables that constitute attributes of publics identified by the situational theory of publics (Werder, 2005). At its current state, the theory provides a way to segment any general public into groups that will allow public relations practitioners to do their job more effectively. The situational theory developed by J. E. Grunig (1989b) is designed to “predict the differential responses most important to public relations and other communication professionals: responsiveness to issues; amount of and nature of communication behavior; effects of communication on cognitions, attitudes, and behavior; and the likelihood of participating in collective behavior to pressure organizations” (p. 52).

There has been extensive public relations research done applying the situational theory of publics. The theory has been studied in many different contexts. Some of the contexts researchers have examined include: environmental publics, health campaigns, and activists groups (J. E. Grunig, 1989a; J. E. Grunig, 1989b; Major, 1993; Major, 2000;

Slater, Chipman, Auld, Keefe, & Kendall, 1992). The results of these studies and other studies that applied the situational theory of publics have generally been consistent, as well as supportive of the theory. To see a review of the overall concepts of the theory and some of the research that has been done using the theory see J. E. Grunig (1997) and Aldoory and Sha (2007).

### *Independent Variables*

The independent variables identified in the situational theory of publics are meant to indicate when people will communicate actively or passively about an issue. As stated before, the independent variables represent three attributes of publics that are used to predict whether a public will engage in active or passive communication behavior.

The first independent variable in the situational theory that J. E. Grunig identified was problem recognition, which came from Dewey's theory of human behavior (J. E. Grunig & Hunt, 1984). *Problem recognition* is the idea that people detect something should be done about a situation and stop to think about what to do (J. E. Grunig & Hunt, 1984; J. E. Grunig, 1989b; J. E. Grunig, 1997). Put differently, people do not stop to think about a situation unless they perceive that something needs to be done about it (J. E. Grunig & Hunt, 1984). Problem recognition is not seen as a trait that a person takes from situation to situation; instead it is seen as a person's perception that a specific situation is problematic (J. E. Grunig, 1997). "Problem recognition increases the probability that a person will communicate about a situation and have a need for information about that situation" (J. E. Grunig, 1980).

The second independent variable identified in the situational theory is constraint recognition. This variable was developed when J. E. Grunig's (1969, 1971) studies



showed that “people have little need to communicate in situations where constraints prevent people from making choices” (Grunig, 1997, p. 11). *Constraint recognition* can be seen as the degree to which people perceive that there are constraints or barriers in a situation that limit their freedom to plan their own behavior, or in other words, do anything about the situation (J. E. Grunig & Hunt, 1984; J. E. Grunig, 1989b; J. E. Grunig, 1997). If people realize that there are obstacles affecting their choice of behavior in a situation then information about that situation is of little value to them. Therefore, a high level of constraint recognition decreases the likelihood that people will seek out information about a situation or that they will process any information about a situation that they are randomly exposed to (J. E. Grunig & Hunt, 1984).

The last independent variable that J. E. Grunig identified in his theory was level of involvement. *Level of involvement* is defined as the extent to which people connect themselves with a situation, or in other words, the extent to which they perceive themselves to be involved with a situation (J. E. Grunig & Hunt, 1984; J. E. Grunig, 1989b; J. E. Grunig, 1997). “When a person perceives himself as involved in a situation, he will be likely to seek information actively because his own behavior is involved” (J. E. Grunig & Hunt, 1984, p. 152). A person who perceives them self to be involved with a situation generally has high problem recognition and low constraint recognition for that situation and will usually be the most active public for that situation (J. E. Grunig & Hunt, 1984). Active publics will usually then seek and process information about a situation and use that information to develop ideas, attitudes, and behaviors (J. E. Grunig & Hunt, 1984). “Similarly, if an individual personally connects with an issue or message, then that individual will more likely attend to and comprehend it” (Werder, 2005, p. 226).

The theory states, and previous research validates, that high problem recognition and low constraint recognition increase both active information seeking and passive information processing; whereas, high level of involvement only increases information seeking (J. E. Grunig, 1989b). This means that level of involvement has little effect on passive information processing, especially if the person also recognizes the situation as problematic (J. E. Grunig, 1997). J. E. Grunig & Hunt (1984) stated that:

High level of involvement usually leads to problem recognition because it is difficult to be affected by an organizational consequence without seeing that consequence as a problem. High involvement decreases constraint recognition because involved people generally try to remove constraints that otherwise would discourage them from communicating and doing something about the problem. (p. 152)

J. E. Grunig & Hunt (1984) gave a brief summary of the influence of each variable by stating that:

High problem recognition, low constraint recognition, and high level of involvement increase information seeking. High problem recognition and low constraint recognition also increase information processing. Level of involvement however, has a limited effect on information processing. (p. 153)

A fourth independent variable, called media influence, will also be measured in this study. The perception variable *media influence* was chosen to examine a person's estimate of the influence of news media coverage on his or her perception of reclaimed water issues. Although J. E. Grunig has not used media influence as an independent variable in his studies, Major (1998, 2000) has. Media Influence has been found in past

studies to be correlated with situational publics characterized by “high levels of problem recognition and low levels of constraint recognition” (Major, 2000, p. 227).

### *Dependent Variables*

J. E. Grunig defined two dependent variables in the situational theory of publics: (i) *information seeking*, or active communication behavior; (ii) and *information processing*, or passive communication behavior (J. E. Grunig & Hunt, 1984; J. E. Grunig, 1989b; J. E. Grunig, 1997).

J. E. Grunig (1989b) described information seeking as what Clarke and Kline (1974) called “premeditated information seeking,” which is “the planned scanning of the environment for messages about a specific topic” (J. E. Grunig, 1989b, p. 54).

Information seeking is the deliberate search for information on a situation or issue (Slater et al., 1992). Publics whose members are actively communicating look for information and try to comprehend it when they acquire that information (J. E. Grunig & Hunt, 1984). Therefore, these publics become “aware publics” more often than those publics who have members that do not communicate or who only process information that they come across (J. E. Grunig, 1984). If a person seeks out information, the most effective type of media would be specialized media such as a brochure or a magazine.

Information processing is described as what Clarke and Kline (1974) called “message discovery” which is “the unplanned discovery of a message followed by continued processing of it” (p. 11). Information processing is the chance encounter with a message about an issue or situation (Slater et al., 1992). Publics who have members who passively communicate will not look for information about a situation, but they will process information that comes to them without any effort exerted on their part (J. E.

Grunig & Hunt, 1984). An example of this would be television commercials. Few people seek commercials out, but many people take in information from commercials that are played during a program that they are viewing (J. E. Grunig & Hunt, 1984). Members of this type of public exert much less effort to process information at random than to seek out information. Therefore, “processed information has fewer communication effects than information that is sought” (J. E. Grunig & Hunt, 1984, p. 151).

J. E. Grunig (1979) stated that, “the distinction between information seeking and processing is important in choosing a medium and communication strategy” (p. 742). Clark and Kline (1974) proposed that information seeking and processing communication behaviors guide individuals to use distinctive communication media and lead to different learning outcomes. If public relations professionals are able to segment their publics, they can become more effective with their communication by using specialized media to reach publics who seek out information. If they can separate those people who just process information about a specific situation than public relations professionals can focus on the style of their message differently. Whereas style and creativity of a message are important for those processing information to get the person’s attention, less time needs to be spent on style and creativity meant for those who are making an effort to obtain and understand that message (J. E. Grunig, 1979). “When a person processes information, the most effective media are the mass media that people use when they have available time free from decision making and information seeking activities” (J. E. Grunig, 1979, p. 742).

### *Internal and External Variables*

Limited research on the situational theory of publics has studied external and internal dimensions of the three independent variables (J. E. Grunig & Hon, 1988; J. E. Grunig, 1997). While the three independent variables were initially conceptualized as external perceptions of the environment, J. E. Grunig (1988, 1997) later distinguished that there are internal and external dimensions of the variables. J. E. Grunig (1997) defined internal concepts as those that are perceived (or cognitive) and external concepts as those that are perceptions of real situations. He went on to say that if the variables are internal, then they could be altered by communication and if they are external, then “real changes must be made in a person’s environment before his or her perceptions of the situation and, therefore, communication behavior will change” (J. E. Grunig, 1997, p. 25). Although there have not been many studies that have focused on the internal and external dimensions of the three independent variables, findings have indicated that the distinction is worthy of additional exploration (J. E. Grunig, 1997).

J. E. Grunig (1997) suggested that when applied to environmental publics, the internal situational variables would identify the publics that are concerned about the environment but not active in doing anything about it; whereas, the external variables would identify the publics that are willing to do something about environmental issues. J. E. Grunig (1997) further defined the internal and external variables by separating them and breaking them down. For problem recognition, internal refers to problems in a person’s mind reflecting curiosity or intellectual interests, whereas external refers to problems a person might recognize in his or her environment or in the real world (J. E. Grunig, 1997). For constraint recognition, internal refers to a constraint inside the mind

of a person, whereas external refers to a constraint that exists “out there” (J. E. Grunig, 1997, p. 27). For level of involvement, internal refers to ego involvement, whereas external refers to actual involvement with a specific situation (J. E. Grunig, 1997).

### *Limitations*

Although the situational theory of publics is a highly regarded, widely accepted and extremely useful theory, it still has some limitations. The first limitation of the theory is with the conception of the term *public*. Self (2009) stated:

The 20th century notion of public articulated by James Grunig and others in a “situational theory of publics” was grounded in the Chicago School of Philosophy, especially in the democratic notions of John Dewey and Herbert Blumer. However, the theory depends for its force upon deeper assumptions underlying the ideas of the Enlightenment itself. Those assumptions have been challenged by late 20th century thinkers and are under renewed attack by evidence that 21st century technologies have inverted our understanding of the role mediated communication plays in public decision making. Such a broad critique from so many quarters seems to call for a fundamental reconceptualization or at least a reexamination of the notion of the “public.” It calls for a new understanding of the role of media in communities. It also suggests the need for a reexamination of the principles guiding our thinking about the approaches public relations professionals take in dealing with the ideal of the “public.” (p. 1)

Botan and Soto (1998) stated that the theory assumes that “publics come into existence in response to situations. It therefore provides no real explanation of the

internal processes of publics that allow them to respond differentially” (p. 26). The theory also assumes the roles of the three independent attributes without offering logical explanations of how or why problems and constraints get recognized in close enough ways to allow responses as publics (Botan & Soto, 1998). The theory also assumes that different people’s behaviors will be more constant in the same situation than the behavior of the same person in different situations (J. E. Grunig, 1979). “However, the theory does not assume that the situation alone can predict a person’s behavior. Rather it assumes that a person’s perception of a situation best explains when and how he will communicate about that situation” (J. E. Grunig, 1979, p. 741).

Another limitation of the theory is that there is not enough literature about the internal and external concepts of the independent variables. These concepts are ill defined in the past literature on the situational theory of publics and so are the roles they play in the theory. The last limitation of the theory that is pertinent to this study is that it operationalizes an individual’s communication behavioral intention rather than actual communication behavior, as claimed by J. E. Grunig (1989a, 1989b, 1997). J. E. Grunig (1989b) defined the two dependent variables as active and passive communication behavior, but when surveying a public you are only truly able to find out whether they plan to seek out or process information, or in other words if they intend to act out a certain behavior.

Public relations research is interdisciplinary and by drawing from psychology the situational theory of publics can be reframed to become more compatible with attitude research. Fishbein and Ajzen’s (1975) theory of reasoned action contains the ideal variables to fill in the holes of the situational theory of publics. By using the concepts of

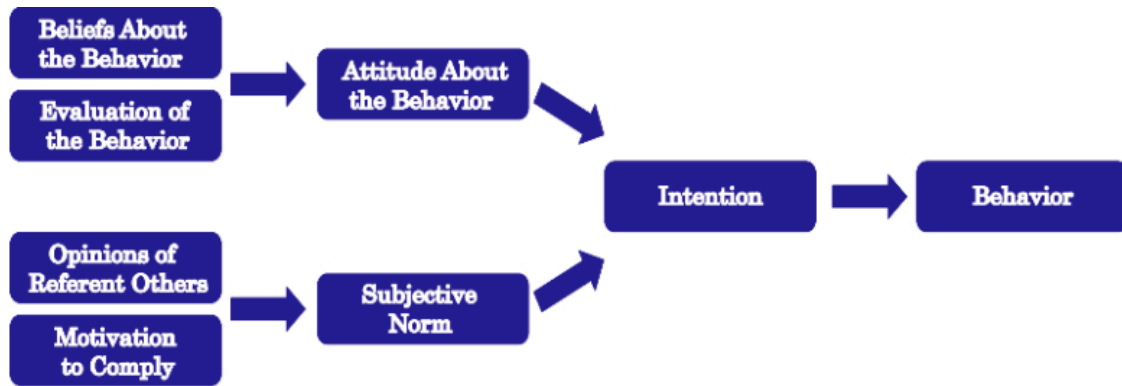
the theory of reasoned action, the situational theory of publics can be applied to attitude towards the behavior and behavioral intention, which will ultimately lead to behavior.

### *Theory of Reasoned Action*

Traditional approaches to attitude and persuasion communication stated attention, comprehension, yielding, and retention as the fundamental process in attitude and behavior change (Bright, Fishbein, Manfredo, & Bath, 1993). This process was in turn affected by the message, the source, the recipient, and the channel (Bright et al., 1993). Fishbein and Ajzen saw two problems with the traditional approaches: first, persuasion communication had only been loosely viewed as a means of causing attitude change (with attitude poorly defined); second, traditional approaches ignored the content of the message (Bright et al., 1993).

Fishbein and Ajzen (1975) proposed a theory of reasoned action that is founded on the relationships between the variables of belief, attitude, behavioral intention, and behavior (see Figure 1). The theory addresses both of the problems with the traditional approaches listed above by “making a clear distinction between beliefs, attitude, subjective norms, behavioral intention, and behavior...and by assuming that individuals process information in a systematic manner rather than as passive recipients” (Bright et al., 1993, p. 265). The theory of reasoned action has been widely applied to studies of environmental communication, concentrating on topics such as the burn policies of the National Park System (Bright et al., 1993) and water conservation (Trumbo and O’Keefe, 2001).





Fishbein-Ajzen Theory of Reasoned Action

Figure 1: The Fishbein and Ajzen theory of reasoned action (1975)

The theory of reasoned action has been widely used to predict a person’s behavioral intention and behavior in a variety of situations. “The essence of the theory is that a volitional behavior can be predicted by cognitive factors such as beliefs, subjective norms, attitudes, and intentions” (Vogt, Winter, & Fried, 2005, p. 338). The theory suggests that, “most human behaviors can be predicted and explained almost exclusively in terms of individual beliefs and attitudes” (Petty & Cacioppo, 1996, p.193). It posits that a person’s behavior can be determined by their intention to perform (or not perform) that behavior, and that a person’s intentions can be predicted by knowing the person’s attitude toward the behavior and the person’s subjective norm (Petty & Cacioppo, 1996). The theory in its entirety is built on the assumption that “people are rational and make use of available information to make decisions” (Dunkle & Hyde, 1995, p. 615).

The theory starts with a person’s beliefs about an object, or for this study a person’s beliefs about a behavior. “The totality of a person’s beliefs serves as the informational base that ultimately determines his attitudes, intentions and behaviors” (Fishbein & Ajzen, 1975, p. 14). A person usually forms beliefs from pre-existing beliefs,

direct observation or information given to them from another source. The theory then states a person's beliefs about the behavior lead to the formation of attitudes about the behavior. "Specifically a person's attitude toward an object is based on his salient beliefs about that object" (Fishbein & Ajzen, 1975, p. 14). A person's attitude about a behavior is the result of many beliefs about that behavior, along with the evaluation of that behavior. "A person's attitude toward some object is related to the set of his beliefs about the object but not necessarily to any specific belief" (Fishbein & Ajzen, 1975, p. 14). When forming an attitude a person will take in account the possibility that the behavior produces certain consequences and the evaluation of those consequences (Petty & Cacioppo, 1996). Attitudes can be the person's positive or negative evaluation of performing the behavior.

Next, the theory says that attitude toward a behavior directly relates to a person's behavioral intention. "Attitude toward an object is viewed as related to the person's intentions to perform a variety of behaviors with respect to that object" (Fishbein & Ajzen, 1975, p. 14). The other antecedent of behavioral intent in regards to this theory is subjective norm regarding the behavior. Subjective norm refers to "the person's perceptions of the social pressures to perform or not perform the behavior in question" (Petty & Cacioppo, 1996, p. 193). These social pressures usually come from that person's significant others. The subjective norm is not only composed of the person's perceived beliefs but also the person's willingness to meet these normal standards or in other words, their motivation to comply.

Behavioral intention can be defined as a decision to act in a particular way or "the person's motivation in the sense of his or her conscious plan to exert effort to carry out a

behavior” (Eagly & Chaiken, 1993, p. 168). In general, “people will perform behaviors that they value highly and that are popular with others and will refrain from behaviors that they do not regard favorably and that are unpopular with others” (Petty & Cacioppo, 1996, p. 193). The last part of the theory states that, “behavior is under the control of intentions” (Eagly & Chaiken, 1993, p. 168-169). Or in other words, behavioral intention leads to a behavior consistent with that specific intention. The behaviors that result due to the person’s behavioral intentions can be termed voluntary, that is, “behaviors that people perform because they decide to perform them” (Eagly & Chaiken, 1993, p. 169).

The theory makes sure it is clear that any attempt to change a person’s behavior must always be directed at one or more of that person’s beliefs (Petty & Cacioppo, 1996). Basically, to change a person’s behavior you must target that person’s beliefs, which will affect their attitudes, which will affect their behavioral intention, which will in the end, affect their behavior. According to Petty and Cacioppo (1996), “any other variable (e.g. sex, personality) can only indirectly affect behavior” (p. 200). However, external variables are of some use. Dunkle and Hyde (1996) stated that, “external variables can provide insight into the factors that determine beliefs and can increase understanding of the behavior in question” (p. 616).

#### *Connections Between STP and TORA*

This study is proposing that there are some connections between the situational theory of publics and the theory of reasoned action and that through the internal and external components of the independent variables of the situational theory of publics there is a way to link the theories together. As discussed above in the theory of reasoned action section, we can predict a person’s intentions by knowing their attitude toward the

behavior and their subjective norm. According to the theory of reasoned action, an alternative way of assessing attitude toward behavior is by measuring the person's salient beliefs (Petty and Cacioppo, 1996). The theory also states that subjective norm is based on the person's normative beliefs and motivation to comply (Petty and Cacioppo, 1996). It is through salient beliefs, normative beliefs and motivation to comply that the theory of reasoned action can be linked to the situational theory of publics.

This study is proposing that internal constraint recognition, problem recognition, and level of involvement can be seen as salient beliefs. The internal components of these variables are the ones that are perceived or cognitive, which is the same idea as a readily available belief a person might have. Whereas, the external variables can be seen as normative beliefs and the motivation to comply with referent persons or groups. The external components of the three variables are the person's perceptions of the environment around them. This is connected to normative beliefs because a person's referent groups are included in their environment.

### *Hypotheses*

The purpose of this study is to apply J. E. Grunig's situational theory of publics (1989a, 1997) and Fishbein and Ajzen's (1975) theory of reasoned action to better understand public perceptions of water reuse initiatives. Six hypotheses, one proposition, and three research questions were developed based on the purpose of this study and the literature reviewed in regards to this study.

The first two hypotheses concern the basic tenets of J. E. Grunig's situational theory of publics with a slight modification. Intention to seek out information and intention to process information have taken the place of information seeking behavior and

information processing behavior or what J. E. Grunig (1989a) terms “communication behavior.” This was due to the limitation of the theory that was stated earlier in this chapter.

H1: Problem recognition, level of involvement, and constraint recognition predict intention to seek out information.

H2: Problem recognition, level of involvement, and constraint recognition predict intention to process information.

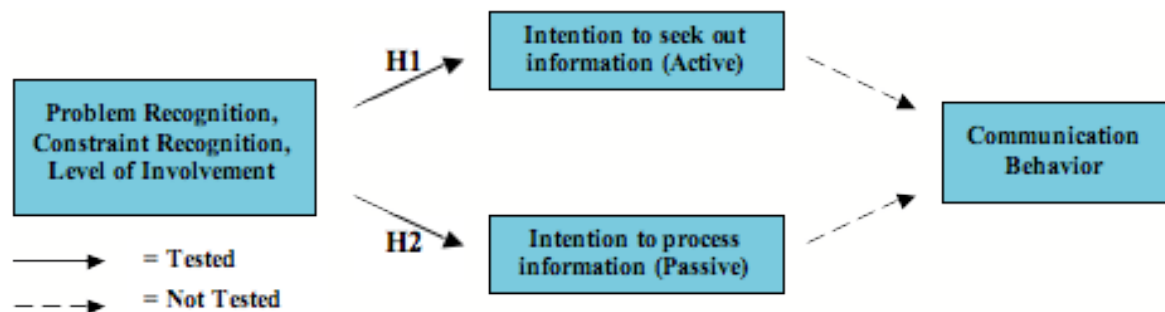


Figure 2: Model of hypothesized influences (hypotheses 1 and 2)

The first research question is also concerned with the situational theory of publics. As stated earlier, Major (1998, 2000) has added the independent variable called media influence when applying the situational theory of publics to her research. The media has been seen to play a major role in public perception of reclaimed water, for that reason, the following research question was asked.

RQ1: Will media influence have an effect on the public’s intention to seek out or process information?

Two of the basic tenets of the theory of reasoned action are that salient beliefs influence attitude towards behavior and motivation to comply influences subjective norm. This study is proposing that internal problem recognition, level of involvement, and constraint recognition can be seen as salient beliefs and external problem recognition, level of involvement, and constraint recognition can be seen as motivation to comply

with their environment. Therefore, the following two hypotheses were developed to test this assumption.

H3: External problem recognition, level of involvement, and constraint recognition influence subjective norm regarding behavior.

H4: Internal problem recognition, level of involvement, and constraint recognition influence attitude toward the behavior.

Another part of the theory of reasoned action states that attitude toward behavior and subjective norm influence behavioral intention. To examine this part of the theory the following two hypotheses and one proposition were developed.

H5: Subjective norm regarding behavior influences behavioral intention.

H6: Attitude toward behavior influences behavioral intention.

P6.1: Attitude toward behavior will have a stronger influence on behavioral intention than subjective norm.

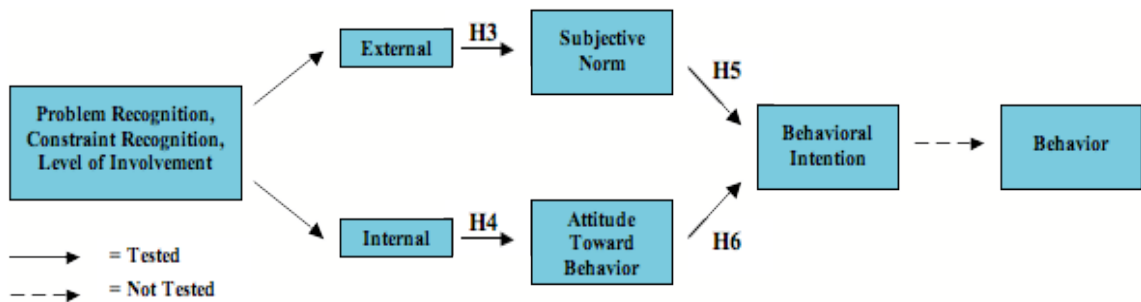


Figure 3: Model of hypothesized influences (hypotheses 3 – 6)

The last research question that was developed is concerned with the practical nature of this study. It addresses the benefits of using reclaimed water by asking about the motivations to use reclaimed water. Answering this question should help public relations professionals in developing their messages for water reuse initiatives.

RQ2: Which motivation will have the strongest influence on people’s intentions to use reclaimed water?

The next chapter presents the methodology used in this study to examine the

hypotheses, proposition, and research questions. In addition, more information about the sample, instrumentation, and data analysis will be discussed.

## Chapter Three

### Methodology

The following chapter outlines the procedure used to gather the data for this study and the methods used to analyze the data that were collected. This chapter also describes the instrumentation that was used when collecting the data.

#### *Procedure*

The population of the study was Hillsborough County residents (n=1,177,060 in 2007). The sample for the study was Hillsborough County registered voters (n=663,290). The sample frame that was used for this study was a list of Hillsborough County registered voters. A quantitative mail survey was administered to 3,514 randomly selected registered voters in Hillsborough County. The purpose of this survey was to test the variables of the situational theory of publics. In addition to the variables of the situational theory of publics, the survey also measured residents' beliefs, attitudes, and behavioral intentions toward water reuse initiatives.

A mail survey was chosen for this study due to its many advantages and on availability of a list of addresses that existed to help reach the target audience. There are many advantages to a mail survey. First, there is high convenience for the respondent (Stacks, 2002). Second, there is also high anonymity offered to the respondent for their response. Third, there is little to no risk of interviewer bias, intrusiveness, and administrative bother (Stacks, 2002). Fourth, there is medium control over the survey and it's design constraints, which is actually a benefit compared to the other survey options



(Stacks, 2002). Lastly, and probably most importantly, Stacks (2002) states that, “respondents completing the survey questionnaire can see, read, and think at length about the questions being asked” (p. 180). There are also some disadvantages to mail surveys, such as cost, low speed of return and low number of interviews completed (Stacks, 2002). These are things that were considered and accounted for when deciding to do a mail survey for this study.

Every recipient was sent a questionnaire packet and a prepaid return envelope. The questionnaire packet consisted of four pages – a front, two inside pages, and a back. The first page was a letter from the researcher that included an introductory statement about the researcher, an explanation of the purpose of the survey, a statement of appreciation for participating, a statement about confidentiality (paired with an informed consent statement at the bottom), and contact information for the researcher. The second page consisted of another statement of appreciation at the top, along with a statement defining the use of the term reclaimed water throughout the questionnaire. Each section throughout the next three pages provided specific instructions so that the respondent was clear on how they were to answer those specific questions. At the end of the fourth page there was one last statement of appreciation and a statement giving the recipient directions on what to do after they completed the questionnaire.

The questionnaire packets were sent out on March 18, 2009. Three weeks later, a postcard reminder was sent out to all of the recipients. The postcard explained that they had previously received a questionnaire and their responses were vital to the research. There was a statement of purpose and a statement that thanked the recipient if they had already sent in the completed survey. The last statement on the postcard gave contact

information for the researcher in case the recipient had misplaced the questionnaire and wanted another one sent to them.

### *Instrumentation*

To determine the effectiveness of the survey instrument created, it was pretested before actually sending it out to the randomly sampled registered voters. A *participating pretest* was done on a total of 40 Hillsborough County Residents to determine the strengths and weaknesses of the questionnaire concerning: the understanding of the concepts, the wording, the format, the length (for timing purposes), and the order. A *participating pretest* dictates that:

You tell respondents that the pretest is a practice run; rather than asking the respondents to simply fill out the questionnaire, participating pretests usually involve an interview setting where respondents are asked to explain reactions to question form, wording and order. This kind of pretest will help you determine whether the questionnaire is understandable. (“Pretesting the Questionnaire”, 1993-2009)

After the pretest was conducted it was determined that a focus group would be even more helpful in determining issues with wording and the length of the questionnaire. A class consisting of 14 mass communication graduate students participated in the focus group. Results indicated that there needed to be some wording changes for respondents to better understand the items. Also, it was determined that the length of the questionnaire was counterproductive. Several items had to be taken out of the questionnaire to make the length more desirable, resulting in some single item measurements.

The 69-item survey consisted of: 13 statements measuring the respondent’s

perceptions of problem recognition, constraint recognition, level of involvement, and media influence; 10 statements measuring the respondents communication behavioral intention; 6 statements measuring the respondent's subjective norm, behavioral intention, and behavior; 5 statements measuring the respondent's possible motivations for using reclaimed water; 4 statements measuring the respondent's attitudes towards reclaimed water; 8 statements measuring the respondent's current information seeking behavior; 10 statements measuring source credibility; and 13 demographic items. These items were categorized into six different sections.

In the first section, respondents were asked to indicate their level of agreement with the following statements by writing the appropriate number in the blank provided. There were 26 statements following these directions. A seven-point Likert-type response scale was used where 1 represented "strongly disagree" and 7 represented "strongly agree."

Out of the 26 items in the first section, 15 of them measured variables from the situational theory of publics. To measure internal and external *problem recognition* three statements were replicated from previous research; however, the items were modified to fit the context of this study. Two items measured internal problem recognition and one item measured external problem recognition:

- I do not think the use of reclaimed water in Hillsborough County is a problem. (External)
- I believe that there is a problem with the use of reclaimed water in Hillsborough County. (External)

- I recognize that there is a serious problem with reclaimed water use in Hillsborough County. (Internal)

To measure internal and external *constraint recognition* three statements were replicated from previous research; however, the items were modified to fit the context of this study. Two items measured external problem recognition and one item measured internal problem recognition:

- I do not understand issues related to reclaimed water use in Hillsborough County. (Internal)
- There are obstacles that prevent me from using reclaimed water. (External)
- I do not have the ability to influence decisions about the use of reclaimed water in Hillsborough County. (External)

To measure internal and external *level of involvement*, four statements were replicated from previous research; however, the items were modified to fit the context of this study. Two items measured internal problem recognition and two items measured external problem recognition:

- I am involved with reclaimed water use in Hillsborough County. (External)
- I have no involvement with reclaimed water use. (External)
- I have strong opinions about reclaimed water use. (Internal)
- I am informed about reclaimed water. (Internal)

The item “I am informed about reclaimed water” was considered an item measuring level of involvement because it assumes that people that are informed have some level of involvement.

In two studies that Major (1993, 2000) conducted using the situational theory of publics she included *media influence* as an independent variable. To measure media influence, the following statements were replicated from Major's (1993, 2000) studies; however they were modified to fit the context of this study:

- My knowledge of reclaimed water comes from the media.
- I don't believe anything the media tells me about reclaimed water.
- The media influences my perception of reclaimed water.

To measure *behavioral intention to seek out information and to process information*, the following statements were replicated from past studies with slight modifications:

- I plan to seek information about using reclaimed water.
- I will pay attention to information on reclaimed water that is given to me, but will not actively seek it out.

The following five items from the first section of the questionnaire measured variables from the theory of reasoned action. To measure *subjective norm*, the following statements were developed:

- My neighbors do not want to use reclaimed water.
- I would use reclaimed water if my neighbors did.
- I would use reclaimed water if my friends and/or family thought I should.

To measure *behavioral intention*, the following statements were developed:

- I would use reclaimed water if it were available to me.
- I never plan to use reclaimed water for any use.

Angelakis and Bontoux (2001) and Hartley (2003, 2006) stated in their research

that there are many benefits to using reclaimed water. In this study, the benefits were turned into items that could be seen as motivations to use reclaimed water. To measure *motivation*, the following statements were developed:

- I believe that the conservation of Florida's groundwater is an important motivation to use reclaimed water.
- I believe that an important reason for me to use reclaimed water is fewer water restrictions.
- I believe that it is important to use reclaimed water because it has more nutrients.
- I believe that it is important to use reclaimed water because it preserves the environment.
- I believe that it is important to use reclaimed water because it saves me money.

The second section consisted of four statements that measured the respondent's attitudes towards reclaimed water. The instructions were to complete the following statement by circling the number that best describes your opinion. The respondents were asked to be sure to answer all items and to only circle one number on a single scale. The statement was – My attitude towards reclaimed water is: – and the respondents were to answer on a seven-point semantic differential scale with the following endpoints: negative/positive, bad/good, unfavorable/favorable, and unhealthy/healthy.

The next three sections were used to study the applied nature of this study. The third section consisted of eight statements that measured the respondent's current information-seeking behavior. The instructions are for the respondent to circle the

number that best describes the frequency with which you use the following sources to gather information on current environmental issues. The seven-point semantic differential scale that was used measured whether a respondent would use a certain source never or very frequently. The sources that were included were: film, a newspaper, a brochure, Internet, radio, a magazine, a newsletter, and television.

The fourth section consisted of eight statements that measured the respondent's level of active communication behavior. The instructions were to circle the number that best describes how likely you are to use the following forms of communication to seek information about reclaimed water. The seven-point semantic differential scale that was used measured whether a respondent was extremely unlikely or extremely likely to use a specific source. The forms that were asked about included: film, a newspaper, a brochure, Internet, radio, a magazine, a newsletter, and television.

The fifth section consisted of 10 statements that measured source credibility. Respondents were asked to circle the number that best describes how trustworthy you find the following sources on the topic of reclaimed water. The seven-point differential scale that was used measured whether a respondent found a specific source to be very untrustworthy or very trustworthy. The sources that were asked about included: a family member, a professor/ university researcher, a friend, a medical professional, an engineer, a scientist, the media, a non-profit organization, an independent expert, and a Hillsborough County official.

In addition to the primary variables of interest in this study, the sixth section examined demographic variables of the Hillsborough County registered voters that were sampled. Respondents were asked 13 demographic questions measured on both nominal

and ordinal level scales. The questions asked were regarding sex, age, race, total household annual income, marital status, residential status, highest level of education completed, type of dwelling, source of water irrigation, access to reclaimed water, number of children (if applicable), number of pets (if applicable), and zip code.

#### *Survey Response Statistics*

A total of 3,514 questionnaire packets were sent out due to the amount of business reply envelopes that were available. Approximately 320 were returned unopened due to the recipient's change of address, decease of life, or current location being out of the country. There were four refusals due to age, disinterest, or change of location. The valid number is 3,190. The number of completed questionnaires returned was 478, yielding an approximate 15% response rate.

#### *Data Analysis*

Several statistical tests were performed on the data collected to test the hypotheses that were stated in Chapter 2. SPSS 17.0 for Windows was used to analyze the 478 completed questionnaires and perform all the statistical procedures. An alpha level of 0.05 was required for significance for all statistical procedures that were performed. Before the hypotheses were tested, a Cronbach's alpha was performed to analyze the reliability of scales that were used to measure the variables in the study. A Cronbach's alpha of .70 is considered reliable (Stacks, 2002). When a Cronbach's alpha did not meet the threshold of .70 then the items were tested individually without folding the questions into a construct.

Next, descriptive statistics for the data set were obtained. Finally, to test the hypotheses the following statistical procedures were conducted: correlations analysis



using the Pearson's  $r$ , linear regression analysis, and analysis of variance (ANOVA). The next chapter discusses the results of this study.

## Chapter Four

### Results

The purpose of this study was to extend the situational theory of publics through the theory of reasoned action, by adding the dimensions of subjective norm regarding behavior, attitude towards the behavior, and behavioral intention to the situational theory of publics. Another purpose of this study was to better understand public perceptions of water reuse initiatives. This study also sought to advance the situational theory of publics by contributing to the limited amount of research that has examined the external and internal dimensions of the three independent variables of the theory. To accomplish these objectives, six hypotheses, one proposition, and three research questions were tested.

#### *Descriptive Statistics*

Before beginning the analysis of the hypotheses and research questions, standard descriptive statistics were run on the data to determine the generalizability of the sample to the population. Of the 478, 41.8% (n=198) were male and 58.2% (n=276) were female. The majority of respondents were 50 years old or older (59.7%, n=283), Caucasian (79.3%, n=372), and married (53.8%, n=257). The majority of respondents have a household income of \$50,000 - \$74,999 (22.8%, n=99) and have either a college or postgraduate degree (53.9%, n=249). When asked about residential status and type of dwelling, 73.6% (n=349) of residents own and 76.6% (n=363) live in a house. It is important to note that 60.3% (n=286) of respondents stated that they do not have access to reclaimed water. When respondents were asked to divulge their zip codes the three

most common responses were 33629 (5.3%, n=25), 33647 (4.7%, n=22), and 33573 (4.3%, n=20).

The next set of results is based on a seven-point Likert-type scale, 1 represented “strongly disagree” and 7 represented “strongly agree.” Overall respondents’ attitudes toward reclaimed water were positive (mean=5.87), good (mean=5.82), and favorable (mean=5.75). Respondents also perceived reclaimed water to be healthy (mean=5.00). The top four motivations for using reclaimed water were conservation of Florida’s groundwater (mean=6.43), preservation of environment (mean=5.92), having fewer water restrictions (mean=5.28), and saving money (mean=5.04). See Table 2 for the means and standard deviations of these items.

Table 2. Means and standard deviations for attitudes and motivations

	N	Minimum	Maximum	Mean	Std. Deviation
27) Attitude: positive or negative	470	1	7	5.85	1.316
28) Attitude: Bad or Good	460	1	7	5.78	1.362
29) Attitude: Unfavorable or Favorable	461	1	7	5.73	1.470
30) Attitude: Unhealthy or Healthy	458	1	7	5.00	1.509
MOTIVE 4) I believe that the conservation of Florida's groundwater is an important motivation to use reclaimed water.	472	1	7	6.43	.942
MOTIVE 6) I believe that an important reason for me to use reclaimed water is fewer water restrictions.	471	1	7	5.28	1.743

Table 2. Means and standard deviations for attitudes and motivations (Continued)

MOTIVE 16) I believe that it is important to use reclaimed water because it preserves the environment.	467	1	7	5.92	1.296
MOTIVE 21) I believe that it is important to use reclaimed water because it saves me money.	465	1	7	5.04	1.598

Respondents felt that they had no involvement with reclaimed water (mean=5.05). Also, respondents do not feel that there is a problem with reclaimed water use in Hillsborough County (mean=5.00). The three items measuring constraint recognition show that respondents felt they don't have the ability to influence decisions about reclaimed water in Hillsborough County (mean=4.29), there are obstacles that prevent them from using reclaimed water (mean=4.39), and they do not understand issues related to reclaimed water in Hillsborough County (mean=4.32).

Although respondents were likely to seek out information about reclaimed water (mean=4.41), they were more likely to process information that is given to them about reclaimed water (mean=4.74). Although respondents' knowledge about reclaimed water comes from the media (mean=4.57), the media does not influence their perception of reclaimed water (mean=3.70). See Table 3 for the means and standard deviations of these items.

Table 3. Means and standard deviations for STP variables

	N	Minimum	Maximum	Mean	Std. Deviation
LI 1) I am informed about reclaimed water.	469	1	7	4.52	1.918
LI 3) I am involved with reclaimed water use in Hillsborough County.	452	1	7	2.43	1.968
LI-R 15) I have no involvement with reclaimed water use	465	1	7	5.05	2.117
LI 25) I have strong opinions about reclaimed water use.	466	1	7	3.97	1.820
PR-R 2) I do not think the use of reclaimed water in Hillsborough County is a problem.	465	1	7	5.00	1.644
PR 14) I believe that there is a problem with the use of reclaimed water in Hillsborough County.	462	1	7	3.49	1.645
PR 20) I recognize that there is a serious problem with reclaimed water use in Hillsborough County.	462	1	7	3.75	1.629
CR 7) I do not understand issues related to reclaimed water use in Hillsborough County.	471	1	7	4.32	1.954
CR 9) There are obstacles that prevent me from using reclaimed water.	464	1	7	4.39	2.071

Table 3. Means and standard deviations for STP variables (Continued)

CR 19) I do not have the ability to influence decisions about the use of reclaimed water in Hillsborough County.	466	1	7	4.29	1.874
INFOSEEK 17) I plan to seek information about using reclaimed water.	464	1	7	4.41	1.699
INFOPROC 23) I will pay attention to information on reclaimed water that is given to me, but will not actively seek it out.	469	1	7	4.74	1.673
MEDINF 10) My knowledge of reclaimed water comes from the media.	469	1	7	4.57	1.806
MEDINF-R 13) I don't believe anything the media tells me about reclaimed water.	464	1	7	3.01	1.459
MEDINF 22) The media influences my perception of reclaimed water.	464	1	7	3.70	1.790

Respondents believe their neighbors do not want to use reclaimed water (mean=3.24), but they would use reclaimed water if their neighbors did (mean=4.83). See Table 5 for the means and standard deviations of these items. When respondents were asked to agree or disagree with the statement, "I frequently use reclaimed water" the average mean was 2.71, which means that they do not frequently use reclaimed water. On the same note, respondents disagreed with the statement, "I never plan to use reclaimed

water” (mean=2.07). Respondents also said they agreed with the statement, “I would use reclaimed water if it were available to me” (mean=6.25). See Table 4 for the means and standard deviations of these items.

Table 4. Means and standard deviations for TORA variables

	N	Minimum	Maximum	Mean	Std. Deviation
SN-R 12) My neighbors do not want to use reclaimed water.	458	1	7	3.24	1.469
SN 18) I would use reclaimed water if my neighbors did.	461	1	7	4.83	1.967
BEH 26) I frequently use reclaimed water.	457	1	7	2.71	2.130
BI-R 11) I never plan to use reclaimed water for any use.	467	1	7	2.07	1.476
BI 5) I would use reclaimed water if it were available to me.	471	1	7	6.25	1.246

The top three sources of information about current environmental issues (CEI) were television (mean=5.15), newspaper (mean=4.91), and Internet (mean=4.43). The top three sources that respondents would like to use to seek information about reclaimed water (SIRW) were newspaper (mean=4.81), television (mean=4.77), and Internet (mean=4.70). The top five sources that respondents find to be trustworthy were a scientist (mean=5.68), a professor/university researcher (mean=5.42), an engineer (mean=5.26), an independent expert (mean=5.18), and a medical professional (mean=5.07). See Table 5 for the means and standard deviations of these items.

Table 5. Means and standard deviations for sources of information

	N	Minimum	Maximum	Mean	Std. Deviation
CEI 31) Film:	451	1	7	2.65	1.709
CEI 32) Newspaper	467	1	7	4.91	1.775
CEI 33) Brochure:	464	1	7	3.93	1.773
CEI 34) Internet:	462	1	7	4.43	2.105
CEI 35) Radio:	463	1	7	3.86	1.901
CEI 36) Magazine	462	1	7	3.65	1.820
CEI 37) Newsletter	460	1	7	3.72	1.895
CEI 38) Television	472	1	7	5.15	1.584
SIRW 39) Television	468	1	7	4.77	1.874
SIRW 40) Film:	460	1	7	2.56	1.681
SIRW 41) Newspaper	467	1	7	4.81	1.783
SIRW 42) Brochure	460	1	7	4.23	1.935
SIRW 43) Internet:	460	1	7	4.70	2.133
SIRW 44) Radio:	462	1	7	3.76	1.955
SIRW 45) Magazine	461	1	7	3.57	1.860
SIRW 46) Newsletter	462	1	7	4.06	1.941
TS 47) A family member:	464	1	7	4.81	1.609
TS 48) A professor / university researcher	465	1	7	5.42	1.374
TS 49) A friend	462	1	7	4.60	1.359
TS 50) A medical professional:	464	1	7	5.07	1.416
TS 51) An engineer	464	1	7	5.26	1.349
TS 52) A scientist	464	1	7	5.68	1.220
TS 53) The media	465	1	7	4.03	1.496
TS 54) A non-profit	462	1	7	4.57	1.423
TS 55) An ind. expert	463	1	7	5.18	1.364
TS 56) Hillsborough County official	465	1	7	4.43	1.646



Prior to hypotheses testing, Cronbach's alpha was used to assess the internal consistency of the multiple-item indexes used to measure the variables of interest. The results of these tests are shown in Table 6. The four items measuring attitude towards the behavior yielded an alpha coefficient of .910. The three items measuring subjective norm regarding behavior yielded an alpha coefficient of .506. Because it was so low, the reversed subjective norm item was dropped and the Cronbach's alpha was then increased to .65, which is still only considered a moderate internal consistency by Stacks (2002). The two items used for behavioral intention also drew a moderate internal consistency with a Cronbach's alpha of .597.

Table 6. Cronbach's alpha for multiple-item indexes

Variable	Cronbach's Alpha	N of Items
Attitude Towards Behavior	.910	4
Subjective Norm Regarding Behavior	.650	2
Behavioral Intention	.597	2

### *Hypotheses Testing*

H1 was that problem recognition, level of involvement, and constraint recognition predict intention to seek out information. To test this hypothesis, linear regression analysis was conducted. The intention to seek out information, the dependent variable, was regressed on the measures of problem recognition, constraint recognition, and level of involvement. Findings indicate that 2.4% of the variance of the intention to seek out information was due to problem recognition, constraint recognition, and level of involvement,  $R^2=.047$ ,  $Adj. R^2=.024$ ,  $F(10, 425)=2.081$ ,  $p=.025$ . The results indicated that

internal level of involvement #2 produced the strongest contribution to the prediction equation,  $\beta=.158$ ,  $t(434)=3.034$ ,  $p=.003$ . These results are shown in Table 7 indicating that H1 is supported.

Table 7. Regression model for STP variables predicting intention to seek out information

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.919	.561		6.987	.000
	External Problem Recognition - Reversed	-.075	.057	-.072	-1.317	.189
	External Problem Recognition #1	-.035	.059	-.034	-.593	.553
	Internal Problem Recognition #2	.141	.059	.135	2.385	.018
	Internal Constraint Recognition	.047	.049	.054	.961	.337
	External Constraint Recognition #1	.006	.044	.008	.145	.885
	External Constraint Recognition #2	-.086	.045	-.094	-1.898	.058
	External Level of Involvement #1	-.017	.052	-.019	-.326	.745
	External Level of Involvement #2	-.040	.056	-.047	-.712	.477
	External Level of Involvement - Reversed	.009	.055	.011	.154	.878
	Internal Level of Involvement #2	.150	.049	.158	3.034	.003

a. Dependent Variable: Intention to seek out information

H2 was that problem recognition, level of involvement, and constraint recognition predict intention to process information. To test this hypothesis, linear regression analysis was conducted. The intention to seek out information, the dependent variable, was regressed on the measures of problem recognition, constraint recognition, and level of involvement. Findings indicate that 5.2% of the variance of the intention to process information was due to problem recognition, constraint recognition, and level of involvement,  $R^2=.074$ ,  $Adj. R^2=.052$ ,  $F(10, 425)=3.391$ ,  $p=.000$ . The results indicated that external constraint recognition #2 produced the strongest contribution to the prediction equation,  $\beta=.184$ ,  $t(434)=3.792$ ,  $p=.000$ . These results are shown in Table 8 indicating that H2 is supported.

Table 8. Regression model for STP variables predicting intention to process information

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.360	.537		8.126	.000
	External Problem Recognition - Reversed	-.056	.054	-.056	-1.027	.305
	External Problem Recognition #1	.064	.056	.063	1.130	.259
	Internal Problem Recognition #2	-.070	.057	-.069	-1.228	.220
	Internal Constraint Recognition	.072	.047	.085	1.542	.124
	External Constraint Recognition #1	-.079	.042	-.099	-1.873	.062
	External Constrain Recognition #2	.163	.043	.184	3.792	.000

External Level of Involvement #1	.044	.050	.051	.872	.384
External Level of Involvement #2	.064	.054	.076	1.179	.239
External Level of Involvement - Reversed	-.087	.053	-.111	-1.644	.101
Internal Level of Involvement #2	-.041	.047	-.045	-.873	.383

a. Dependent Variable: Intention to process information.

H3 is that external problem recognition, level of involvement, and constraint recognition influence subjective norm regarding behavior. To test this hypothesis, linear regression analysis was conducted. Subjective norm regarding behavior, the dependent variable, was regressed on the measures of external problem recognition, constraint recognition, and level of involvement. Findings indicate that 1.9% of the variance of subjective norm regarding behavior was due to external problem recognition, constraint recognition, and level of involvement,  $R^2=.035$ ,  $Adj. R^2=.019$ ,  $F(7, 425)=2.195$ ,  $p=.034$ . The results indicated that external constraint recognition (item - I do not have the ability to influence decisions about the use of reclaimed water in Hillsborough County) produced the strongest influence on subjective norm regarding behavior,  $\beta=.138$ ,  $t(431)=2.816$ ,  $p=.005$ . These results are shown in Table 9 indicating that H3 is supported.

Table 9. Regression model for external variables influencing subjective norm

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.366	.442		7.610	.000
	External Constraint Recognition #1	-.027	.043	-.033	-.621	.535
	External Constraint Recognition #2	.123	.044	.138	2.816	.005
	External Level of Involvement #1	.092	.044	.108	2.084	.038
	External Level of Involvement #2	.057	.054	.068	1.055	.292
	External Level of Involvement - Reversed	-.045	.053	-.058	-.851	.395
	External Problem Recognition #1	.038	.054	.038	.710	.478
	External Problem Recognition - Reversed	.012	.053	.012	.222	.825

a. Dependent Variable: Subjective norm regarding behavior

H4 is that internal problem recognition, level of involvement, and constraint recognition influence attitude toward the behavior. To test this hypothesis, linear regression analysis was conducted. Attitude toward the behavior, the dependent variable, was regressed on the measures of internal problem recognition, constraint recognition, and level of involvement. Findings indicate that 17.2% of the variance of attitude towards the behavior was due to internal problem recognition, constraint recognition, and level of involvement,  $R^2=.179$ ,  $Adj. R^2=.172$ ,  $F(4, 440)=24.001$ ,  $p=.000$ . The results indicated that internal level of involvement #1 and #2 produced the strongest influences on attitude

towards the behavior,  $\beta=.234$ ,  $t(443)=4.558$ ,  $p=.000$  and  $\beta=.234$ ,  $t(443)=4.944$ ,  $p=.000$ .

These results are shown in Table 10 indicating that H4 is supported.

Table 10. Regression model for internal variables influencing attitude towards the behavior

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.654	.297		15.658	.000
	Internal Problem Recognition	-.072	.034	-.092	-2.098	.036
	Internal Constraint Recognition	-.035	.032	-.054	-1.098	.273
	Internal Level of Involvement #1	.154	.034	.234	4.558	.000
	Internal Level of Involvement #2	.162	.033	.234	4.944	.000

a. Dependent Variable: Attitude towards the behavior

H5 was regarding one of the basic tenets of the theory of reasoned action. It stated that subjective norm regarding behavior influences behavioral intention. To test this hypothesis, linear regression analysis was conducted. Behavioral intention, the dependent variable, was regressed on the measure of subjective norm regarding behavior. Findings indicate that 18.1% of the variance of behavioral intention was due to subjective norm regarding behavior,  $R^2=.187$ ,  $Adj. R^2=.181$ ,  $F(3, 447)=34.133$ ,  $p=.000$ . The three items used to measure subjective norm were used as single items and they each contributed to the unique item variance. The results indicated that the items that produced the strongest influences on attitude towards the behavior were, “my neighbors do not want to use

reclaimed water” and “I would use reclaimed water if my neighbors did,”  $\beta=.191$ ,  $t(448)=4.414, p=.000$  and  $\beta=.354, t(448)=47.168, p=.000$ . These results indicate that H5 is supported and are shown in Table 11.

Table 11. Regression model for subjective norm influencing behavioral intention

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.390	.214		20.504	.000
	Subjective Norm - My neighbors do not want to use reclaimed water.	.161	.036	.191	4.414	.000
	Subjective Norm - I would use reclaimed water if my neighbors did.	.223	.031	.354	7.168	.000
	Subjective Norm - I would use reclaimed water if my friends and/or family thought I should.	.007	.033	.010	.213	.832

a. Dependent Variable: Behavioral Intention

H6 was also regarding one of the basic tenets of the theory of reasoned action. It stated that attitude toward behavior influences behavioral intention. To test this hypothesis, linear regression analysis was conducted. Behavioral intention, once again the dependent variable, was regressed on the measure of attitude towards behavior. The item used for behavioral intention was, “I would use reclaimed water if it were available to me.” Findings indicate that 21.8% of the variance of behavioral intention was due to

attitude towards the behavior, which was the highest percentage yet,  $R^2=.220$ , Adj.  $R^2=.218$ ,  $F(1, 452)=127.128$ ,  $p=.000$ . The items that were used to measure attitude towards the behavior were correlated into one construct,  $\beta=.469$ ,  $t(452)=11.275$ ,  $p=.000$ . These results indicate that H6 is supported. These results also indicate that P6.1 is also supported. P6.1 stated that attitude toward behavior will have a stronger influence on behavioral intention than subjective norm. This is supported based on the Adj.  $R^2$  values,  $.218 > .181$ .

### *Testing for Research Questions*

RQ1 was, will media influence have an effect on the public's intention to seek out or process information? To test this research question, two linear regression analyses were conducted. First, intention to seek out information was used as the dependent variable. It was regressed on the measure of media influence. There were 2 items used for media influence (seen below in Table 13). Media influence did not have enough influence on the public's intention to seek out information to be significant,  $R^2=.006$ , Adj.  $R^2=.003$ ,  $F(1, 407)=2.382$ ,  $p=.124$ .

Second, intention to process information was used as the dependent variable. It was regressed on the measure of media influence. Findings indicate that 2.3% of the variance of the public's intention to process information was due to media influence,  $R^2=.028$ , Adj.  $R^2=.023$ ,  $F(2, 405)=5.866$ ,  $p=.003$ . The results indicated that the item that produced the strongest influence on intention to process information was, "the media influences my perception of reclaimed water,"  $\beta=.114$ ,  $t(406)=2.195$ ,  $p=.029$ . These



results indicate that the answer to RQ1 is yes; whereas media influence does not have an effect on the public’s intention to seek out information it does has an effect on the public’s intention to process information.

Table 12. Regression model for media influence affecting intention to seek out information

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.994	.248		16.125	.000
	MEDINF 10) My knowledge of reclaimed water comes from the media.	.084	.048	.090	1.731	.084
	MEDINF 22) The media influences my perception of reclaimed water.	.106	.048	.114	2.195	.029

a. Dependent Variable: Intention to seek out information.

RQ2 was, which motivation will have the strongest influence on people’s intentions to use reclaimed water? To test this research question, a linear regression analysis was conducted. Behavioral intention, the dependent variable, was regressed on the measures of the motivations to use reclaimed water. Findings indicate that 28.2% of the variance of the public’s intention to process information was due to motivations to use reclaimed water,  $R^2=.291$ ,  $Adj. R^2=.282$ ,  $F(5, 397)=32.633$ ,  $p=.000$ . The results indicated that the item that produced the strongest influence on behavioral intention was, “I believe that the conservation of Florida’s groundwater is an important motivation to

use reclaimed water,”  $\beta=.340$ ,  $t(401)=7.370$ ,  $p=.000$ . These results indicate that the answer to RQ2 is the conservation of Florida’s groundwater, those results and the others are shown in Table 13.

Table 13. Regression model for motivations influencing behavioral intention

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.778	.362		4.912	.000
	MOTIVE 4) I believe that the conservation of Florida's groundwater is an important motivation to use reclaimed water.	.401	.054	.340	7.370	.000
	MOTIVE 6) I believe that an important reason for me to use reclaimed water is fewer water restrictions.	.082	.031	.124	2.620	.009
	MOTIVE 8) I believe that it is important to use reclaimed water because it has more nutrients	-.039	.034	-.051	-1.134	.257
	MOTIVE 16) I believe that it is important to use reclaimed water because it preserves the environment.	.173	.042	.196	4.112	.000
	MOTIVE 21) I believe that it is important to use reclaimed water because it saves me money.	.085	.034	.120	2.521	.012

a. Dependent Variable: Behavioral Intention.

The next section is the discussion chapter, which provides an overview of the findings of this study, as well its significance and limitations. The significance of this study on strategic communications theory and practice will be emphasized. Finally, the conclusion section suggests directions for future research.

## Chapter Five

### Discussion

This study sought to advance the situational theory of publics by contributing to the limited amount of research that has examined the external and internal dimensions of the three independent variables of the theory. The purpose of this study was to better understand public perceptions of water reuse initiatives. This study also attempted to extend the situational theory of publics through the theory of reasoned action, by adding the dimensions of subjective norm regarding behavior, attitude towards the behavior, and behavioral intention to the situational theory of publics. To accomplish these objectives, six hypotheses, one proposition, and three research questions were tested.

H1, which stated that problem recognition, level of involvement, and constraint recognition predict intention to seek out information, was supported by the results of this study. This finding supports one of the basic tenets of the situational theory of publics, with the exception that this study tested intention to seek out information instead of actual information seeking behavior. These results indicate that the situational theory of publics provides a valuable framework for this research, which adds validity to the overall results of the study. The item measuring internal level of involvement was found to be the strongest predictor of the intention to seek out information. This finding adds further validity to the situational theory of publics because the literature reviewed for this research found level of involvement to be the strongest predictor of information seeking behavior (Aldoory & Sha, 2007).

H2 stated that problem recognition, level of involvement, and constraint recognition predict intention to process information. This was also supported by the results of this study. This finding supports the other basic tenet of the situational theory of publics, except intention to process information was tested in the place of actual information processing behavior. An item measuring external constraint recognition was found to be the strongest predictor of the intention to process information.

H3 stated that external problem recognition, level of involvement, and constraint recognition influence subjective norm regarding behavior. This hypothesis was supported by the findings of this study. Specifically, external constraint recognition had the strongest influence on subjective norm regarding behavior. H4, which stated that internal problem recognition, level of involvement, and constraint recognition influence attitude toward the behavior, was supported by the findings of this study. Internal level of involvement had the strongest influence of attitude toward the behavior. The findings that support H3 and H4 help extend the situational theory of publics by showing how the theory can connect to the variables in the theory of reasoned action.

H5 and H6 were regarding the basic tenets of the theory of reasoned action. H5 stated that subjective norm regarding behavior influences behavioral intention. H6 stated that attitude toward behavior influences behavioral intention. Both of these hypotheses were supported by the findings of this study. These results indicate that the theory of reasoned action provides a valuable framework for this research, which adds validity to the overall results of the study. The results indicated that the items that produced the strongest influences on attitude towards the behavior were, “my neighbors do not want to use reclaimed water” and “I would use reclaimed water if my neighbors did.” P6.1, which

stated that attitude toward behavior will have a stronger influence on behavioral intention than subjective norm, was also supported by the findings of this study.

This study also aimed to determine if the variable media influence should be included as an additional independent variable of the situational theory of publics. RQ1 was, will media influence have an effect on the public's intention to seek out or process information? The findings of this study showed that media influence does not have an effect on the public's intention to seek out information, but does have an effect on the public's intention to process information. The results indicated that the item that produced the strongest influence on the public's intention to process information was, "the media influences my perception of reclaimed water." This item measured exactly what the definition of media influence was for this study.

RQ2 was, which motivation will have the strongest influence on people's intentions to use reclaimed water? The results indicated that the motivation item that produced the strongest influence on behavioral intention was, "I believe that the conservation of Florida's groundwater is an important motivation to use reclaimed water." This finding is most valuable to practitioners or communities who are trying to implement water reuse initiatives because this motivation can be used in their messages when communicating to the public.

When it came to reclaimed water, the respondents felt that they had low involvement, low problem recognition, and high constraint recognition. Although respondents said they would seek out information on reclaimed water, they were more likely to process information on reclaimed water.

Other results of this research addressed which sources of media the public currently uses for environmental issues and would like to use to seek information about reclaimed water. The three top sources were television, newspaper, and Internet. The people the respondents would trust the most to give them information on reclaimed water were scientists, professors/researchers, and engineers. An important result of this study for this population was that a large number of people in Hillsborough County do not have access to reclaimed water. A large majority of the respondents for this study said that they plan to use reclaimed water in the future and would use it if it were available to them.

#### *Limitations*

The first limitation to this study is the 15% response rate. Dillman argues that you can get a good response rate of up to 60% by following a five-stage method (as cited in Stacks, 2002). Four of the steps out of Dillman's five-step contact method were used in this study, which were: mail a survey packet with a detailed cover letter explaining the research, mail a thank-you card about a week after the questionnaire (which also serves as a reminder card if they have not completed it yet), send a replacement survey packet when needed, and make a final contact with respondent after the replacement packet has been sent (Stacks, 2002). The only one that was not used was the pre-notification letter, due to cost. Although Babbie (1990) states that a 50% response rate is adequate, Stacks (2002) states that for a mail survey an acceptable response rate may be as low 10%. In addition, this study's validity is maintained by its large number of respondents and its consistency with past research (Werder, 2005).

The next limitation in this study was the amount of single item measures that were used. Due to length of the questionnaire, many of the variables were only measured with a single item. Also, some of the variables had to be measured with a single item after finding that the Cronbach's alpha was not high enough for the multi-item measures.

Although all of the hypotheses were supported, the influence or effect sizes for many of the hypotheses can be considered low which is another limitation. The last limitation is the moderate level internal reliability of two of the items that are included in the theory of reasoned action. This could be due to this study being a pilot and not having previous survey items to refer to when creating the items for the survey. In the future, research should focus on more valid and reliable multi-item scales for measuring these variables to provide a more accurate assessment of their influences and/or predictions.

Despite these limitations, this study contributes to a unique body of research on the internal and external variables of the situational theory of publics. Also, there has not been any research on extending the situational theory of publics by using the theory of reasoned action. The results of this study constitute an important preliminary step in extending the situational theory of publics by adding variables from the theory of reasoned action.

### *Conclusions*

This study contributed to public relations/strategic communication theory development in several different ways. First, the findings of this study support the basic premise of the situational theory of publics. Previous research states that level of involvement increases information seeking, but has less of an effect on information processing. The results of this study were in line with the previous statement. Level of



involvement had the strongest effect on the intent to seek out information. J. E. Grunig (1997) stated this differently by saying that “people seldom seek out information about situations that do not involve them” (p. 11). When it came to the intent to process information, constraint recognition had the strongest effect. This could be because the public believes they have no reason to process information about a situation they feel constrained to do anything about. Overall, J. E. Grunig’s (1989a, 1997) situational theory of publics should be considered a powerful tool in predicting communication behavior (behavioral intent in this study) and should continue to be pursued and refined by scholars for use by strategic communication practitioners.

The inclusion of media influence as a predictor of the intention to seek out and process information was also researched in this study. The findings indicate that while media influence does have an effect on the intention to process information, it does not have an effect on the intention to seek out information. This finding shows that there is partial support for the inclusion of media influence as an independent variable of the situational theory of publics. There is a need for further research to be done with the variable media influence to determine if it should be added to the theory as an independent variable.

The findings of this study also contribute to the extension of the situational theory of publics through the inclusion of some of the variables used in the theory of reasoned action – subjective norm, attitude towards behavior, and behavioral intention. The findings indicate that the internal and external independent variables of the situational theory of publics did, in fact, have an influence on attitude towards the behavior and subjective norm. External constraint recognition had the strongest influence on subjective

norm and internal level of involvement had the strongest influence on attitude towards behavior. These findings shows that extending the situational theory of publics through the inclusion of the theory of reasoned action is something that is worth further exploration. The reason that extending the situational theory of publics through the theory of reasoned action can be so valuable is because it is meant to ultimately determine a person's behavior. By basically combining the two theories, communication behavior and actual behavior can be determined from the same theory.

The predictions for the theory of reasoned action were supported by the findings of this study. Both attitude towards behavior and subjective norm regarding behavior had a direct influence on behavioral intention. The importance of attitude towards behavior to the prediction of behavioral intention was found to be more significant than subjective norm regarding behavior.

The main premise of the theory of reasoned action is that the best predictor of behavior is behavioral intention. Although this study stopped short of examining actual behavior due to the type of research that was done, it was successful in measuring behavioral intention. The next step would be to make an attempt at studying actual behavior with this theoretical combination of the situational theory of publics and the theory of reasoned action. Overall, the results of this research suggest that the situational theory of publics and the theory of reasoned action are very compatible together and can be combined in research to ultimately determine a public's communication behavior and actual behavior within the same study.

Findings of this study are not only valuable in theory, but also in practice. First, the findings are of value to STEM researchers because they will be significantly more

successful at obtaining research funding, transferring research results, and affecting policy once they are aware of the public's perceptions, beliefs and attitudes and cognizant of the public's perceived risks of science. Also, STEM researchers can use these findings to become proactive in communicating strategically with involved communities. The findings of this study have become of even more value to STEM researchers than originally projected because respondents felt they can trust information on reclaimed water coming from scientists, researchers, and engineers the most.

Communities that are trying to implement water reuse initiatives can use these findings to aid in the development of effective strategies for communicating with publics about water reuse programs. With these results practitioners will now know what effect communications about a situation might have. These results explain and predict the public's communication behavior. By understanding audience segmentation practitioners can improve the design and targeting of their messages. Also, by knowing what the public considers to be a strong motivation for them to use reclaimed water, communities can put forth communication efforts that include that motivation in their message.

Practitioners will have a much better chance at developing an effective campaign if they focus their efforts on altering the design of their message to specifically reach each intended audience. By using the situational theory of publics in research, practitioners can easily segment their audience and determine what message and medium to use to reach each audience. When practitioners are dealing with an environmental issue such as reclaimed water use, they would have a distinct advantage if they knew when and how they should communicate with their publics.

### *Future Research*

Specific to Hillsborough county, practitioners looking to implement water reuse initiatives should focus their future research on two components of reclaimed water use: education and access. Education seeks to increase reclaimed water knowledge amongst Hillsborough County residents. This includes the publics' acceptance of reclaimed water use, benefits associated with reclaimed water use and the proper utilization of reclaimed water use. Access refers to the capability of Hillsborough County residents to have the resources available to them to access reclaimed water. This includes the geospatial map of reclaimed water access in Hillsborough County, costs of reclaimed water use and infrastructure challenges to broaden access.

The first area, theoretically, where there should be future research involving this study is in the area of the conception of a *public*. As Hallahan (2000) stated, "one of the most conceptually troublesome notions in contemporary public relations is the idea of a public" (p. 500). Although the concept of a *public* has been improved and somewhat redefined, we are still relying on Dewey's conceptualization for its use in the situational theory of publics. This may be considered problematic because of the lack of resemblance to the original concept as it is used in contemporary public relations research. As public relations becomes more strategic, it only makes sense to both public relations scholars and practitioners for an evolution/permutation in the conception of a *public* to take place (Kruckeberg, 2009).

The next area where future research would be beneficial would be conducting research using an experimental design to operationalize actual communication behavior and behavior. Both the situational theory of publics and the theory of reasoned action ultimately reach either actual communication behavior or behavior, but conducting a quantitative mail survey there is no way to operationalize behavior only behavioral intention.

Another area where future research would be valuable is with the variables of the situational theory of publics. While the inclusion of media influence was significant in this study and has also been used in previous studies, more research should be conducted to further explicate its value. This is because there was only partial support for the inclusion of media influence as an independent variable in the theory. Media influence was only found to affect the intention to process information.

The last area of future research for this study would be replication because this study is being framed as a pilot study. This study was exploratory research because the context is very new. There has not been enough previous research done on internal and external variables of the situational theory of publics and there has not been any previous research done on combining the situational theory of publics and the theory of reasoned action. Therefore, there were many lessons that were learned through this first study and several changes would be made to the wording of items and length of the questionnaire. Also, there were many things that need to be retested.

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Appendix A  
Cover Letter



July 16, 2009

Dear Hillsborough County Resident,

As a graduate student at the University of South Florida, I am currently working on a University-funded research project to learn more about water reuse in the Tampa Bay area. I am writing to ask for your help with research that investigates resident perceptions of reclaimed water and its uses.

You have been chosen as part of a carefully selected sample of individuals who are being asked to participate in this survey. As a resident of Hillsborough County, you can provide unique information about your attitudes toward reclaimed water. From this questionnaire, we also aim to better advise local officials about your opinions on the subject.

The enclosed questionnaire will only take about 10 minutes to complete, and your responses will remain completely confidential. Your name will never be connected to your response in any way. Please read the informed consent statement below for information on your rights as a participant in this study.

Your input is vital to my research. This study will not only add to my educational experience, but will be used to consult with Hillsborough County officials about resident opinions of reclaimed water use. Please take a few minutes to contribute to this research by completing the questionnaire and returning it in the enclosed prepaid return envelope. Thank you, in advance, for helping with this important study.

Sincerely,

A handwritten signature in cursive script that reads "Jessica Voss".

Jessica Voss, Graduate Research Assistant  
Strategic Communication Management Program, School of Mass Communications  
University of South Florida

**Informed consent statement:** This research is being conducted under the supervision of Dr. Kelly Page Werder, USF School of Mass Communications, 4202 East Fowler Ave, CIS1040, Tampa, FL 33620; (813) 974-6790. Your responses will remain confidential to the extent provided by law. You do not have to answer any questions you do not wish to answer, and you have the right to withdraw consent at any time without consequence. There are no anticipated risks associated with your participation in this research and you will receive no compensation for your participation. If you have any questions concerning the procedures used in this study, you may contact me at the e-mail address [jlvooss@mail.usf.edu](mailto:jlvooss@mail.usf.edu). Questions or concerns about your rights as a participant can be directed to the University of South Florida Institutional Review Board, 12901 Bruce B. Downs Blvd., MDC35, Tampa, FL 33612.

Appendix B  
Survey Instrument

## RESIDENTIAL WATER REUSE QUESTIONNAIRE

Thank you for taking a few minutes from your day to complete this brief questionnaire about reclaimed water use in Hillsborough County.

When we refer to **reclaimed water** below we are referring to non-potable reclaimed water, or in other words, water that is not of drinking quality, but which may still be used for many other purposes including lawn maintenance and car washing, depending on its quality.

Using the scale below, please indicate your level of agreement with the following statements by writing the appropriate number in the blank provided.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
Strongly Disagree	Disagree	Slightly Disagree	Undecided	Slightly Agree	Agree	Strongly Agree

- \_\_\_ 1) I am informed about reclaimed water.
- \_\_\_ 2) I do not think the use of reclaimed water in Hillsborough County is a problem.
- \_\_\_ 3) I am involved with reclaimed water use in Hillsborough County.
- \_\_\_ 4) I believe that the conservation of Florida's groundwater is an important motivation to use reclaimed water.
- \_\_\_ 5) I would use reclaimed water if it were available to me.
- \_\_\_ 6) I believe that an important reason for me to use reclaimed water is fewer water restrictions.
- \_\_\_ 7) I do not understand issues related to reclaimed water use in Hillsborough County.
- \_\_\_ 8) I believe that it is important to use reclaimed water because it has more nutrients.
- \_\_\_ 9) There are obstacles that prevent me from using reclaimed water.
- \_\_\_ 10) My knowledge of reclaimed water comes from the media.
- \_\_\_ 11) I never plan to use reclaimed water for any use.
- \_\_\_ 12) My neighbors do not want to use reclaimed water.
- \_\_\_ 13) I don't believe anything the media tells me about reclaimed water.
- \_\_\_ 14) I believe that there is a problem with the use of reclaimed water in Hillsborough County.
- \_\_\_ 15) I have no involvement with reclaimed water use.
- \_\_\_ 16) I believe that it is important to use reclaimed water because it preserves the environment.
- \_\_\_ 17) I plan to seek information about using reclaimed water.
- \_\_\_ 18) I would use reclaimed water if my neighbors did.
- \_\_\_ 19) I do not have the ability to influence decisions about the use of reclaimed water in Hillsborough County.

- \_\_\_20) I recognize that there is a serious problem with reclaimed water use in Hillsborough County.
- \_\_\_21) I believe that it is important to use reclaimed water because it saves me money.
- \_\_\_22) The media influences my perception of reclaimed water.
- \_\_\_23) I will pay attention to information on reclaimed water that is given to me, but will not actively seek it out.
- \_\_\_24) I would use reclaimed water if my friends and/or family thought I should.
- \_\_\_25) I have strong opinions about reclaimed water use.
- \_\_\_26) I frequently use reclaimed water.

**Please complete the following statement by circling the number that best describes your opinion. Please be sure to answer all items, and only circle one number on a single scale.**

**My attitude towards reclaimed water is:**

- 27) negative : 1 : 2 : 3 : 4 : 5 : 6 : 7 : positive
- 28) bad : 1 : 2 : 3 : 4 : 5 : 6 : 7 : good
- 29) unfavorable : 1 : 2 : 3 : 4 : 5 : 6 : 7 : favorable
- 30) unhealthy : 1 : 2 : 3 : 4 : 5 : 6 : 7 : healthy

**Please circle the number that best describes the frequency with which you use the following sources to gather information on current environmental issues.**

- 31) Film: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently
- 32) Newspaper: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently
- 33) Brochure: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently
- 34) Internet: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently
- 35) Radio: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently
- 36) Magazine: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently
- 37) Newsletter: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently
- 38) Television: never : 1 : 2 : 3 : 4 : 5 : 6 : 7 : very frequently

**Please circle the number that best describes how likely you are to use the following forms of communication to seek information about reclaimed water.**

- 39) Television: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely
- 40) Film: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely
- 41) Newspaper: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely
- 42) Brochure: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely
- 43) Internet: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely
- 44) Radio: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely

- 45) Magazine: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely  
 46) Newsletter: extremely unlikely : 1 : 2 : 3 : 4 : 5 : 6 : 7 : extremely likely

**Please circle the number that best describes how trustworthy you find the following sources on the topic of reclaimed water.**

- 47) A family member: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 48) A professor/university researcher: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 49) A friend: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 50) A medical professional: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 51) An engineer: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 52) A scientist: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 53) The media: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 54) A non-profit organization: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 55) An independent expert: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy  
 56) Hillsborough County official: very untrustworthy: 1 : 2 : 3 : 4 : 5 : 6 : 7 : very trustworthy

**For the following questions please check the option that best applies to you.**

57) Sex:

- Male  Female

58) Age:

- 18-29  30-39  
 40-49  50-64  
 65 and older

59) Race:

- Caucasian  Hispanic  
 African-American  Asian  
 American Indian  Other  
 Pacific Islander

60) Total household annual income, including all earners in your household:

- Less than \$10,000  \$10,000 to \$24,999  
 \$25,000 to \$34,999  \$35,000 to \$49,999  
 \$50,000 to \$74,999  \$75,000 to \$99,999  
 \$100,000 to \$149,999  \$150,000 or more

61) Marital status:

- Single  Married  
 Divorced  Separated

Widowed       Other

**62) Residential status:**

Rent                       Lease  
 Sublease                 Other  
 Own

**63) Highest level of education you have completed:**

Some high school or less     High school degree  
 Some college                       College degree  
 Some postgraduate               Postgraduate degree  
 Trade/technical/vocational training

**64) Type of dwelling:**

House                               Condo  
 Townhouse                       Apartment  
 Mobile home                       Other

**65) Source of water for lawn irrigation:**

A surface water body               A private well  
 The water company                 Other  
 I don't water my lawn

**66) Do you have access to reclaimed water?**

Yes     No  
 Not sure

**67) Do you have a child / children?**

Yes     No

**68) Do you have a pet(s) that goes outdoors?**

Yes     No

**69) Zip Code \_\_\_\_\_**

**Thank you again for your cooperation! It is very much appreciated.**

**Directions: Please fold the completed questionnaire and enclose it in the prepaid return envelope provided. Please return the questionnaire as soon as possible.**

Appendix C  
Postcard Reminder

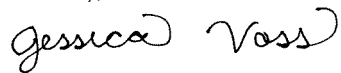


Two weeks ago a questionnaire seeking your perceptions of reclaimed water was mailed to you. You were selected as part of a carefully chosen sample of Hillsborough County residents to provide us with unique information about your attitudes toward reclaimed water.

If you have already completed and returned the questionnaire, please accept my sincere thanks. If not, please do so today. I am especially grateful for your help. It is only by asking residents like you to share your perceptions that we will be able to add to our educational experience and consult with Hillsborough County officials about resident's opinions of reclaimed water use.

If you did not receive a questionnaire, or if it was misplaced, please email me at [jlvoss@mail.usf.edu](mailto:jlvoss@mail.usf.edu) and I will send you a another one.

Sincerely,

A handwritten signature in cursive script that reads "Jessica Voss". The signature is written in black ink and is positioned above the typed name.

Jessica Voss, Graduate Research Assistant  
Strategic Communication Management Program, School of Mass Communications  
University of South Florida