



A Study on Purchase Intentions and Behaviors towards WASH products among the Irula Tribes based on the Theory of Planned Behavior

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Abstract

The tribal communities of India who form the minority in terms of population predominantly occupy the rugged hilly regions of the country. Traditional WASH practices among tribal communities in India are deeply rooted in their cultural and environmental contexts. Earlier studies have focused mainly on the general practices, ignoring their purchase intention and behavior towards the WASH products. For this study, the theory of planned behavior (TPB) to examine the effectiveness of the intentions and behaviors of tribes towards WASH products. Average Variance Extracted (AVE) and Composite Reliability (CR) was used to evaluate the strength of relationships among the constructs, and a questionnaire (completed by 66 respondents) was used to collect data. The results significantly showed that this theory of planned behavior can be applied in assessing the purchase intention and behavior among the tribal people. The study also made an attempt to introduce a novel construct to the TPB, 'Perceived Consumer Effectiveness', the results show that this construct has a significantly positive effect on Purchase intentions and behavior among the tribes. Therefore, by establishing feedback mechanisms where tribal people can voice their concerns and preferences regarding WASH products, would help them in getting their needed services accomplished. This feedback can guide further improvements and ensure the products meet the community's needs. Implement pilot programs to demonstrate the effectiveness of WASH products in improving health outcomes.

Keywords: Purchase intention, Purchase behavior, Perceived Consumer Effectiveness, Theory of Planned Behavior.

1.Introduction

Indigenous peoples are distinct social and cultural groups who share collective ancestral ties to the lands and natural resources where they live, occupy or from where they have been displaced. There is no single definition of Indigenous and Tribal people (14). Using the terms “Indigenous” and “Tribal” peoples and giving both groups the same set of rights, it offers a practical and inclusive approach for identification and recognizes self-identification as a fundamental criterion. Furthermore, the United Nations Special Rapporteur on the rights of Indigenous peoples has noted that, in several countries, for instance in the Asian region, where the vast majority of the population may be considered, there are particular groups that distinguish themselves from the broader population and fall within the scope of the international concern for indigenous people (15). These include, groups that are referred to as “tribal people”, “hill tribes”, “scheduled tribes”, and “Adivasis” or “Janajatis”, which in some countries, although not recognized as “indigenous people”, receive targeted attention in development planning, programmes and schemes (13). There are an estimated 476 million Indigenous People worldwide. Although they make up just 6 per cent of the global population, they live in Central and South America and a significant number of them are living in Australia, Europe, New Zealand, Africa, and Soviet Union. They account for about 19 percent of the extreme poor. Indigenous People’s life expectancy was up to 20 years lower than the life expectancy of non-Indigenous People worldwide (The World Bank, 2020). In India in 2001, 68 million people belonging to 227 ethnic group and comprising of 573 tribal communities derived from six racial stocks namely- Negroid, Proto- Australoid, Mongoloid, Mediterranean, West Breachy and Nordic exists in different part of the country.

These ethnic and indigenous people have played a vital role in conservation of environmental management and development process as they possess traditional knowledge which has been useful in Eco-restoration. It has been noticed that these people know how to live with harmony in nature. These tribals are living in forest since ages and have developed a kind of affinity with forests (19). Besides these enrichments there are also several environmental consequences. According to Watts and Dallbotten, 2015, Climate change was bound to have far-reaching implications on tribal societies even though they have traditionally lived in close harmony with nature. For them, climate change was an issue that disrupt their traditional ways of life and production through land degradation, agricultural shifts, changes in rainfall patterns, higher incidence of pests and diseases.

Examining all these factors let us not forget that climate change is happening in an era of increased demand of other factors as well such as water, environmental degradation, demographic change and pollution. It results in the following hazards:

- i. Rising Temperatures
- ii. More frequent and intense floods and cyclones
- iii. Irregular rainfall and droughts
- iv. Sea level rises

These hazards interact with existing threats, all of which leads to reduced availability of water and increased concentration of contaminants which paves way to the impact on WASH practices. Without access to basic services such as WASH, people are vulnerable to water shortages, disease and malnutrition. But WASH services can improve people's resilience to climate change by the following ways (5). A considerable increase in the amount spent on WASH services was seen to be a good sign of improvement in country with huge population (Union Budget, 2023-24). Apart from this the Bhaskaracharya National Institute for Space Applications and Geo-Informatics (BISAG-N) with the aim of developing and rejuvenating 75 water bodies in each district during the country's 75th year of independence was also a great initiative. Similarly, a JALDOOT app was launched on 27th September 2022 to measure the water level in a Gram Panchayat through 2-3 selected open wells twice a year (pre-monsoon and post-monsoon). Against the backdrop of these challenges such as fund utilization and inter-departmental convergence, coupled with the ever-increasing demands of a growing population, the new initiatives can help bring in innovative technologies to monitor the progress of the schemes. In case of the rural and tribal areas, "awareness" should be the priority tool of the government which would be done by means of educating them with enough knowledge on how to adopt these practices and provide subsistence products with that regard so that they are encouraged to adopt it quicker (16).

For decades, researchers have been searching for variables that influence behavior and identifying those that have the greatest impact on it (20). TPB provide more insight into the prediction of human behavior than others socio-economic theories (10) and is one of the most popular social-psychological models for understanding and predicting human behavior (17). This theory states that actual behavior can be better predicted by behavioral intention (22). The intention variable is an excellent predictor of behavior (21). Therefore, in this study, TPB was utilized for predicting the behavioral intentions of tribal community in the WASH products. In this regard the goals of this research include (i) investigating the behavioral intentions of tribal community towards participating in the WASH practices (ii) Investigating the power of TPB in explaining the behavioral intentions of tribes towards the purchase of WASH products and (iv) providing practical and beneficial policies to assist policy-makers and decision-makers in the field of effective role WASH practices among the tribal communities.

2.Review of Literature

The Theory of Planned Behaviour (3) is an extended model of Theory of Reasoned Action (2) which proposes a model of how human action is guided. It aims to understand the processes that lead to intentional behaviours. The TPB postulates that an individual's intention to act is the closest predictor of their conduct and reflects a person's willingness to engage in a certain objective behaviour. It is hypothesised that intention is a combination of three belief-based components: attitude, perceived behavioural control and subjective norms, which are analysed in this study.

2.1.1 Awareness on WASH products and Attitude of the Tribal People

For attaining a goal, knowledge helps in understanding the most appropriate way to move towards that goal (12). This theory has been mostly used in the context of communication and persuasion and explains the formation of a certain kind of attitude. Here, attitude towards purchase of WASH products plays a clear role in deciding the

adoption or purchase of the WASH associated products. Educated people among the tribes or any one among the family members who are educated will use the logical ways to analyze and make their decision due to awareness of the WASH products whereas illiterate tribes would mostly rely on the domestically available products. This will lead to difference in the adoption process of such products. In the context of present study, WASH knowledge would basically equip the customer to make a thoughtful effort while going for the purchasing of these products. The knowledge on WASH and WASH products are been hypnotized as below

H1: Awareness on WASH and Attitude of the Tribal People has positive relationship towards the WASH products

2.1.2 Attitude and Purchase Intention on WASH products

According to (1), attitude has been defined as a mental and neural state of readiness. This state of mind basically influences the response of the audience towards all objects and situations with which the audience is confronted. The attitude acts an important antecedent to the behavioral intention which is described as the degree of favorable or unfavorable evaluation of the behavior under study 16 (Ajzen, 1991). He also emphasized that positive attitude towards a particular behavior strengthens the intention to perform that behavior. To suit with present study context, the attitude towards the WASH products and the purchase intention for the products are been hypnotized as below:

H2: An attitude towards the WASH products has positive relationship with the purchase intention for the products.

2.1.3. Subjective Norm and Purchase Intention for WASH products

Subjective norm can be comprehended as the perceived social force to carry out a particular behavior (4). According to Ajzen and Fishbein (1977), subjective norm can be stated as a form of belief that individuals approve or disapprove certain behavior when undertaking and performing the same. Individuals not only perform behavior under social pressure but the subjective norm also provides them information about the appropriateness of behavior under consideration. This could also be applied the current study by means of taking how far perceived social force was able to influence the particular behavior of tribes in purchase of WASH products. Based on these discussions, it is hypothesized that:

H3a: Subjective norm has positive relation with the purchase intention for WASH products.

Triandi (1995) (6) in his study conveys that people in a collectivistic culture display values and orientations that is collectivistic in nature i.e. oriented to belongingness to a group. Social norm is an important mean of viewing the life for people under collectivistic society and they keep more emphasis on the emotional aspect of the decision making rather than on the rational cost-benefit analysis in a relationship (9). Keeping all these points together, with the context of the present study which concentrates on the attitude and subjective norms of tribes, who are live and share their cultural and other aspects of live in the form of society and thus concept of collectivistic behavior and its association with tribes are best interlinked and based on the discussion, it is hypothesized that:

H3b: Given the collectivistic nature of Tribal people, subjective norm would have stronger impact on their outlook towards WASH product and purchase intention in comparison to their attitude.

2.1.4. Perceived Behavioral Control and Purchase Intention for WASH products

Perceived Behavioral Control has its roots in Atkinson's (1964) theory of achievement motivation which emphasizes on the expectancy of success i.e. on perceived behavioral control in a given scenario. In the present study, focuses on the demonstration effect of the tribes of purchasing the WASH products in the selected study area and which is been associated with the exposure to the external world by means of private employment, where in they tend to get knowledge regarding the usage of the WASH products and this urge them to purchase and use those products within the community.

H4a: There is a positive relationship between the control on availability of the WASH products and the purchase intention towards the products.

According to Straughan and Roberts (1999) (8), an important element of perceived behavioral control, namely perceived consumer effectiveness, is the conviction that the individuals have the ability to manipulate the outcome in a positive manner as a result of their action in this regard. Perceived consumer effectiveness has significant relationship with perceived behavioral control (11). According to Roberts (1996) (7), consumers must be guided and believed to understand that the actions undertaken by them have impact on the outcome in order to motivate any sort of change in their behavior. Perceived consumer effectiveness affects the intention and behavior if the consumers sense that their behavior will not result into the intended outcome (18). Thus, it is hypothesized that: H4b: Perceived consumer effectiveness has positive relationship with purchase intention for WASH products.

2.3. Theoretical Framework

Theory of Planned Behavior (TPB) provides a useful theoretical framework for understanding the factors influencing the buying behavior of wash products among the tribal people. A theory developed by Icek Ajzen, TPB posits that individual behavior is driven by behavioral intentions, which are in turn influenced by attitudes, subjective norms, and perceived behavioral control. Conceptualization of the theoretical model is depicted in figure 1. First, in this model, Knowledge on WASH attitude, subjective norm, perceived behavioral, control on availability and perceived consumer effectiveness are exogenous variables that significantly and positively influence the tribes to purchase the WASH products. Second, when purchase intention is intermediate variable and purchase behavior is endogenous variable, the purchase intention towards the WASH products significantly and positively influences their actual purchase behavior. The exogenous variables indirectly affect the endogenous variables of purchase intention. Third, the novel factor of perceived consumer effectiveness significantly and positively influences the purchase behavior.

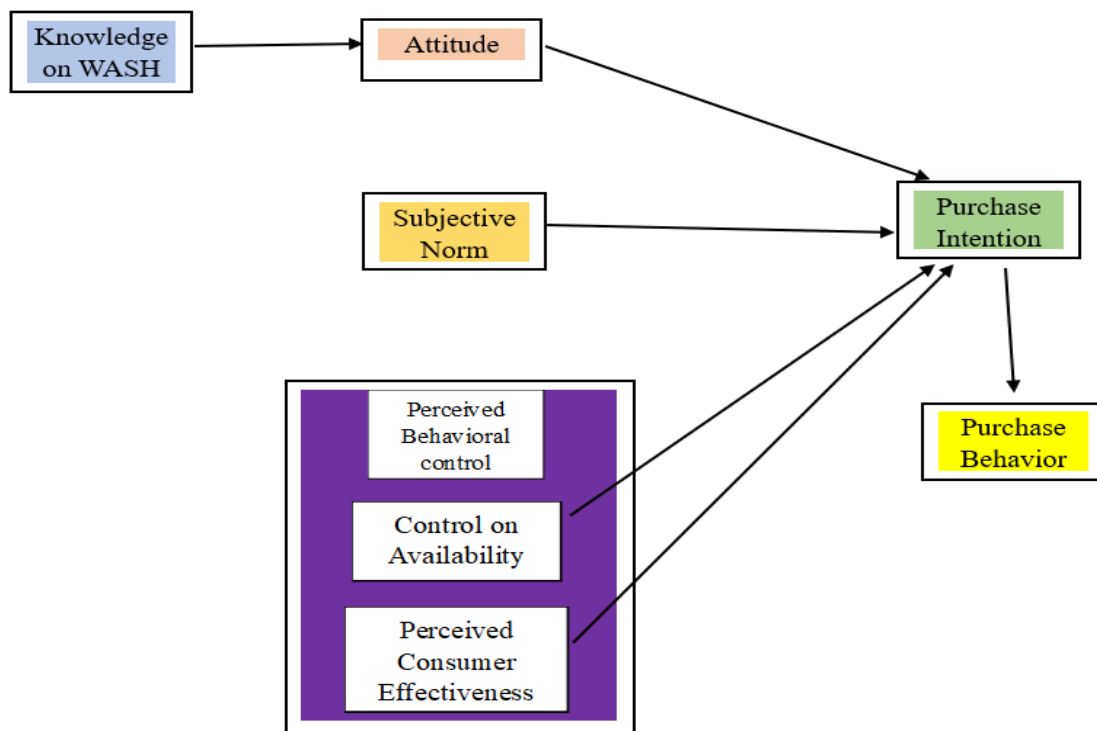


Figure 1. Conceptual model of the study

3. Methodology and Data

3.1. In-Depth Interview

Understanding the attitude of the Irula tribes towards the purchase of products involves exploring their beliefs, values and experiences related to hygiene and health. The Irula tribes, of Tamil Nadu have distinct cultural practices and socioeconomic conditions that shape their attitudes. If Irula tribes recognize that WASH products such as soaps, detergents, and disinfectants lead to better health outcome (e.g., prevention of diseases, improved personal hygiene), they are likely to develop a positive attitude toward these products.

This study employed semi-structured in-depth interview, a relatively flexible and adaptable qualitative method, in which respondents are free to express their thoughts and provide possible new ideas. The purpose of the in-depth interview was to get ready for the questionnaire survey. For example, in-depth interviews helped to find that perceived behavioral control, control on availability and perceived consumer effectiveness were important factors affecting purchase intentions. In addition, it also helped to understand the reality and background of purchase behavior and provided the basis for the explanation of the conclusions of the study.

3.2 Instruments of Measurement

There were many factors affecting the purchase behavior among the respondents, so far this study, it identified relevant factors of purchase intention in purchasing WASH products via a comprehensive literature review and interviews. The literature review helped to formulate the questionnaire design, which included measurements of the constructs (knowledge on WASH (KW), attitude (AT), subjective norm (SN), control on availability (CA), perceived consumer effectiveness (PCE), purchase intentions (PI) and purchase behaviour (PB). The questionnaire with its scales is provided in [Appendix](#). It should be noted that this case study was perceived

by a small-scale pilot study, and that validity and reliability tests have been applied for the purpose of scale purification.

3.3 Data Collection

The survey was conducted from November 2023-February 2024. On the one hand, questionnaires were surveyed in each village. In the selection of the sample households, the researcher first identified the higher and lower per cent among the number of villages. It was found that the Periyanaickenpalayam block was found to have a third highest percentage of the tribes to the total tribes of the district. In the first stage, the selected sample was collected from the Coimbatore district profile based on particular category of tribes of the district. In the second stage, the selected sample households were selected on the criterion that the particular tribes were living for many years. (93 tribes were selected randomly constituting around 5 per cent using Rao Sample Size Calculator). In stage three, sample households were selected by adopting the purposive sampling technique as not all the tribes were willing to co-operate with the researcher. Hence the investigator approached only those tribal households who were willing to co-operate and supply the needed information. Among the total Irula population of 1056, the researcher had taken 6 per cent as the study samples. Where in 66 tribal households were selected for the field survey from the selected study area.

Village wise analysis reveals that the tribal households are mostly headed by males, the percentage being 43.9 in the selected sample households. The breakdown of joint family system in India is revealed in the current study also. Most of the household follow nuclear family system in the study area. Nuclear family is practiced among 51.5 per cent of the sample respondents in the Palamalai hills. The type of housing was classified as Kutcha House and Semi-Pacca houses where in 72.7 per cent of the respondents live in Kutcha house and 27.3 per cent of the respondents reside in Semi-Pacca houses. The educational qualification of the respondents, 39.4 per cent of the respondents have received High school education and only 10.6 per cent of the respondents possess a under graduate degree, 25.8 per cent of the respondents remain illiterates among the selected samples. It was noted that the occupation pattern of the tribals is quite changing diversly from their traditional jobs of snake and rat catchers which happen to be their traditional occupation for decades. Occupation such as a labor in a private company where in from the selected sample 25.8 per cent of the sample happen to work as a private company worker, and 51.5 per cent of the respondents work as daily wage workers in the down to hill farms of Palamalai.

Table 1: Sample Demographics (N=66)

Table 1.docx

Regarding the annual income of the respondents, 40.9 per cent earn a income between Rs. 50000 and above, whereas 25.8 per cent of the respondents earn between Rs.40000 to Rs.50000. The monthly expenditure was said to be between Rs.5000 to Rs.10000 their percentage being 69.7 per cent and 21,2 per cent of the respondents spend in the range of Rs.10000 and Rs.20000. Among the expenditure on food items the major part of the income was spent on the purchase of cereals where the monthly expenditure was around Rs.250-Rs.500 with 80.3 per cent and among the expenditure on the non-food items nearly 10.6 per cent was spent for educational purposes which was considered as a good sign.

3.4. Statistical Analysis

The data were analyzed using SPSS 23 and other mathematical formulae. A measurement model was estimated using Average Variance Extracted (AVE), Composite Reliability (CR) in order to test the reliability and validity among the items and constructs.

3.4.1. Measurement Model

Cronbach's α was used to measure the reliability among items of each construct. The Cronbach's α value ranges from 0.604 to 0.873, which meets the cutoff value of 0.6 and higher. Convergent validity was assessed using the following tests: factor loading (standardized estimates), average variance extracted (AVE) and composite reliability (CR). The factor loading value of all construct ranges (0.770 to 0.967) were above the recommended level of 0.6. Composite reliability (CR) ranges from 0.829 to 0.931, which meets the suggested criterion of 0.6 and higher. The AVE of each construct (0.708 to 0.874) also meets the suggested criterion of 0.5. Table 2 details the reliability and validity results.

Table 2: Measurement model, reliability and validity.



Table 2.png

3.4.2. Hypotheses Testing

Table 2 and **Figure 1** detail the hypotheses testing. The pathways of attitude, subjective norm and perceived behavioral control to purchase intention were found to be significantly positive, which supports H1, H2, H3 and H4. The new construct of 'perceived consumer effectiveness' has a significantly positive effect on purchase intention.

4. Discussions

In the present study, the TPB model was introduced and tested which focused on knowledge on WASH, attitude, subjective norm, control on availability, perceived consumer effectiveness, purchase intension for WASH products and purchase behavior for WASH products. The results above reveal that the constructs of knowledge on WASH, attitude, subjective norm, control on availability significantly and positively influence the purchase intention, and that perceived consumer effectiveness also have a significantly positive influence upon the same.

The study results also reveal that, First, the construct of knowledge significantly and positively influences the purchase intention. Among all the variables it is the strongest predictor of intention, which indicates the level of knowledge or awareness that a person has towards the WASH products. Second, the construct attitude significantly and positively influences the purchase intention, which indicates that personal attitude is the most important determinant of an individual's behavioral intention in the context of Irula tribal community in this specific location in Tamil Nadu. In the interviews, respondents believed that increasing awareness on WASH programme and benefits of using WASH related products were important factors influencing their attitude towards purchase of WASH products. Third, the construct of subjective norm significantly and positively influences the

purchase intention. In particular, the attitude of relatives and friends is an important factor that affects their intention towards purchase of WASH products. If relatives and friends exhibit a supportive or a influential attitude, it means they would also get use to WASH products as they would hear a positive note from their friends and relatives in that matter. The government or any NGOs attitude towards spreading awareness of WASH and distribution of WASH products would on the other hand strengthen the purchase intention and behavior towards WASH products.

5. Conclusions and Recommendations

In this study, the extended TPB sociopsychological model to investigate the factors which might motive Irula tribes to purchase the WASH products for their day-to-day usage. The findings of the study show that the extended TPB model can be effective tool for measuring the impacts of six constructs (knowledge on WASH, attitude, subjective norm, control on availability, perceived behavioral control and perceived consumer effectiveness) on purchase intention of WASH products. The new construct 'perceived consumer effectiveness' had a significantly positive influence on purchase intention among the sample respondents. Firstly, the knowledge and awareness among the people should significantly get improved much better as compared to the current results of the study. Second, the TPB model posits that attitude toward a behaviour significantly influence the intention to perform that behavior. In the context of using WASH products by tribes, it was found that tribes with positive attitudes towards buying WASH products as they get attracted by others usage and benefits told by others and WASH products are more likely to intend to use them.

Third, social pressures and norms within the tribe also play a crucial role. The elders and community leaders, endorse the use of WASH products, this positively impacts the overall intention of tribe member to adopt these practices. Fourth, the control on availability, whether the WASH products are been distributed by any government agencies or NGOs since these people live in the hilly areas where there would be no adequate number of shops with WASH products. Fifth, the ease or difficulty of using WASH products a perceived by tribe members, affects their intentions. Factor such as accessibility, affordability, and knowledge about the products contribute to perceived behavioral control. Higher perceived control correlates with high intention to use WASH products. Finally, all these above-mentioned factors greatly influence the purchase intention and behavior towards the WASH products among the Irula tribes. Therefore, there is a need for proper initiatives which should focus on educating tribes about the health benefits of using WASH products. Workshops, demonstrations, and health campaigns led by trusted community members can enhance positive attitudes and knowledge.

Ensure WASH products are readily available and affordable for tribal people. Develop and promote WASH products that align with the cultural practices and preferences of the tribes. Provide training on how to use WASH products effectively. This includes proper usage techniques and importance of consistent application to achieve the desired health outcomes. Establish feedback mechanisms where tribal people can voice their concerns and preferences regarding WASH products. This feedback can guide further improvements and ensure the products meet the community's needs. Implement pilot programs to demonstrate the effectiveness of WASH products in improving health outcomes. Successful pilot programs can serve as a case study to encourage wider adoption.

Appendix A. Questionnaire Items**PART 1: Demographic characteristics**

- 1.Name
- 2.Gender: (1) Male (2) Female (3) Others
3. Age: (1) Below 18 years (2) 18-29 years (3) 30-39 years (4) 40-49 years (5) 50-59 years (6) 60 years and above
- 4.Name of the Village (1) Perukkapadhipudhur Pudhur (2) Kunjurpadhi (3) Maguli (4) Rayuthpadhi
- 5.Martial Status (1) Married (2) Unmarried (3) Others
- 6.Type of Housing (1) Kutcha House (2) Semi-Pacca House (3) Tin Sheet House (4) Tents (5) Others
- 7.Ethnicity (1) Native (2) Migrated (3) Others
- 8.Size of the Family (1) Nuclear Family (2) Joint Family (3) Above 6 members
- 9.Educational Qualification (1) Primary Education (2) High School Education (3) Higher Secondary School Education (4) Diploma Education (5) Under Graduate (6) Post Graduate (7) Professional Education (8) Uneducated (9) Others (10) None
- 10.Occupation (1) Agriculture (2) Grazing cows and goats (3) Hunting (4) Foretelling (5) Daily waged (6) Street Vendor (7) Seasonal seller (8) Private Employee (9) Government Employee (10) Others (11) None
- 11.Ownership of Land (1) Owned (2) Leased (3) Not Owned
- 12.Mode of Transportation (1) Pedestrian (2) Bicycle (3) Bullock cart (4) Two-wheeler (5) Public Transportation (6) Others
- 13.Annual Income (of individual respondent in Rs.) (1) Rs.10000 to Rs.20000 (2) Rs.20000 to Rs.30000 (3) Rs.30000 to Rs.40000 (4) Rs.40000 to Rs.50000 (5) Rs.50000 and Above (6) None
- 14.Annual Expenditure (of individual respondent in Rs.) (1) Rs.5000 to Rs.10000 (2) Rs.10000 to Rs.20000 (3) Rs.20000 and Above (4) None

PART 2: Questionnaire based on the constructs

I Knowledge	
KW-I	Do you have adequate knowledge about WASH programme?
KW-II	Is there any awareness given to you regarding WASH programme?
KW-III	Are you aware of the ways of following WASH practices and using WASH related products?
II Attitude	
AT-I	Do you personally use WASH products on your Daily Basis?
AT-II	Does someone influenced to purchase WASH products?
III Subjective Norms	Does your individual practice make difference among your surroundings?

SN-I	
SN-II	Is most of the people who are important to purchase WASH products?
IV Control on Availability CA-I	Do you get adequate access to WASH products?
CA-II	Is WASH products distributed to you through external or government agencies?
V Perceived Consumer Effectiveness PCE-I	Are you confident that by purchasing WASH products your WASH practices would change?
PCE-II	Are you confident that you will adopt sustained WASH practices?
VI Purchase Intensions PI-I	Do you believe that WASH products will bring us sustained WASH practices?
PI-II	Are you personally willing to purchase WASH products?
PI-III	
VII Purchase Behaviour PB-I	Is buying of WASH products, your independent decision?
PB-II	Are you purchasing WASH products only after knowing the importance of the WASH products?

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