



Attitude and Behavioral Intention towards Reducing Carbon Footprints in the Environment: an Empirical Study of Fiji

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Abstract: Global warming is a worldwide issue but it is mostly developing countries like Fiji and other island nations such as Kiribati that are being affected. While citizens of most economies do not have a say in legislations and policies of their countries towards reducing emissions, the only realistic way of having a say can be done through their behaviour towards reducing carbon footprints. This study seeks to study attitudes of educated Fijians towards environmental issues, particularly issues brought by tourism and Fijians intentional behaviour in reducing these impacts by minimising their carbon footprints. It concludes that tourism is not regarded as a high impact environmental issue owing to Fijians either lack of awareness or an intentional lack of awareness. Awareness campaigns in Fiji are generic in nature, as most mentioned behaviours were unspecific meaning most Fijians know what to do but do not know how.

Keywords: Attitudes, Behaviour, Sustainability, Environment, Carbon footprints, Awareness

1. Introduction

Carbon emissions in Fiji are mostly by liquid fuel (88.09% of total emissions) and solid fuel (5.11% of total emissions) in year 2013 (World Bank, 2013). Carbon emissions are mostly due to activities by individuals through the use of liquid fuels in cars. Carbon emissions, therefore, can be reduced by changing attitudes and behavior of individuals towards the environment they are living in. On individual level, attitudes shape behavior as stated by cognitive consistency theory which means that person's behavior is mostly consistent to that of his attitudes. In this paper, we study the attitudes of Fijians towards environmental issues based on impacts and their behavioral intentions toward reducing carbon footprints. A recent report on Fiji's Tourism Development Plan states that for conservation of biodiversity to be fully appreciated and actively pursued at national and regional level, WWF should support efforts to mainstream conservation into national and sectoral plans, policies and programs. The Strategic Environment Assessment (SEA) of Fiji's Tourism Development Plan also exemplifies this approach. The objective of the SEA is to assess the environmental and sustainable development impacts of the plan to enable the Ministry of Tourism and its partners to make

future plans sustainable. The SEA indicated a major need for the present policy to be reviewed in order to protect Fiji's environment and people. There were concerns about Fijians benefiting economically from tourism (WWF). Thus, the main aim of this study is to understand the attitudes of Fijians towards environment issues and to analyze the issues of these attitudes and how they can be curbed to reduce individual carbon footprint. Attitudes towards Tourism as an environmental issue also add relevancy to this study as it is the major foreign exchange earner for Fiji. The report above indicates that the tourism development plan could have detrimental effect on the Fijian environment and its people, therefore, serving the purpose of this study which is to evaluate and understand attitudes towards issues which can be reduced on individual levels. This is necessary because every Fijian does not have a say on whether to review the development policy but with understanding attitudes and curbing behaviors, they can contribute towards a more sustainable Fiji regardless of the development policies.

2. Literature

Ajzen's (1985) Theory of Planned Behavior states that attitudes toward behavior, subjective norms and behavioral control collectively shape an individual's behavioral intention and behavior. This theory works best where situation-specific cognition influences specific behavior (Bamber, 2003). Policies often have little impact on consumer behavior without education and enforcement. Anti-littering campaigns work because individuals can see the direct link between littering behavior and visual environment impact yet, campaigns like 'Live greener by reducing carbon emissions' are unlikely to succeed owing to the call to be too amorphous (McKercher and Prideaux, 2011). Staatset al., (2004) state that voluntary pro-environment behavior change should target small number of specific behaviors where cause and effect can be seen. Many researchers (Anable, Lane & Kelay, 2006; Ester, Simoes, & Vinken, 2004; Kollmuss, & Agyeman, 2002) acknowledge the existence of a gap between awareness and actions. A few studies have shown that more informed individuals feel less personally responsible and less concerned about global warming than less informed individuals (Kellstedt, Zharan, & Vedlitz, 2008). McKercher and Prideaux (2011) review that information overload and choice overload might be another cause of this gap as consumers get bombarded by so many messages about environment issues from diverse range of sources of incomplete or conflicting information that puts them in a state where they do not know where or how they should act. Situations like these may lead to 'Green fatigue' (Greenberg, 2008) where enthusiasm for change falls over time.

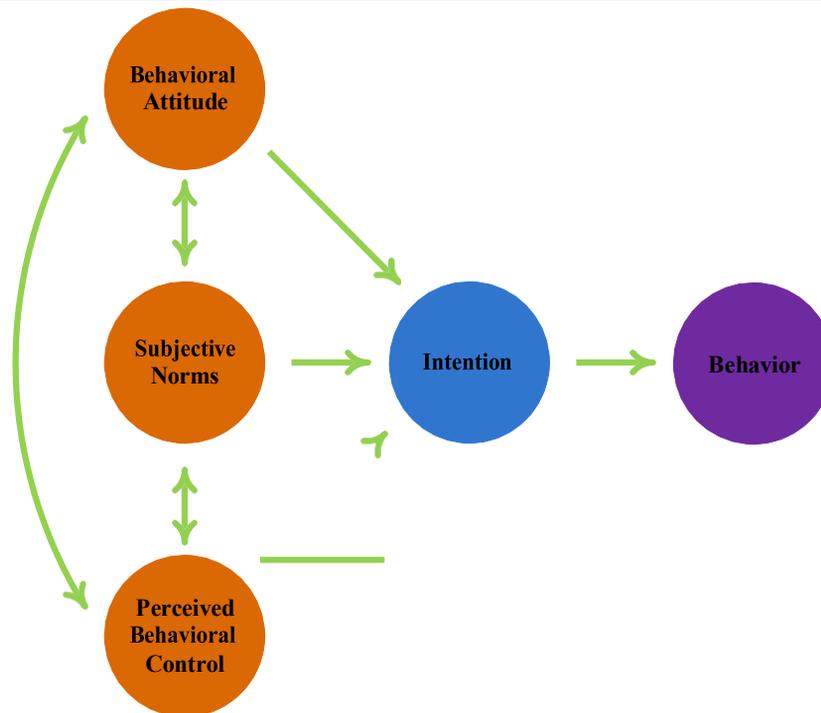


Figure 2-1 Theory of Planned Behavior

Source: Icek Ajzen (1985)

The review of the literature helps us construct the objectives of this study. The first objective was to study the attitude of educated Fijians towards different environment issues including Tourism. Tourism acts as a key part of this study as it is the major foreign exchange earner for Fiji. WWF, in its report, warns Fiji of 'irreversible environmental damage and tension between tourist developers, landowners and local communities' and questions Fiji's further tourism expansion plan. Therefore, studying individual attitudes towards tourism as a part of environment issue shows the level of awareness on the negative impacts of tourism in Fiji. The second objective of this study is to categorize behavioral intentions of individuals into Specific and Generic so as to understand if awareness campaigns in Fiji are generic or specific in nature. The theory of planned behavior is used to evaluate Fijians attitudes towards environmental issues in Fiji and their behavioral intentions in reducing their carbon footprints.

3. Method

This study focuses on attitudes of Fijians, especially, teachers and high school students towards reducing their carbon footprints. Teachers, senior high school students and advanced degree holders in private sector were selected for this study. These specific groups were selected in order to measure attitude and behaviors of the educated population in Fiji. This was also done to measure the awareness and information on sustainability that are instilled through Fiji's education system both in schools and universities. High school students were selected to present the attitudes of the future generation towards reducing carbon footprints as they will be most affected by the future impacts of current emissions and existing environment issues.

Teachers at respective schools were contacted and they were asked to specify the likely number of participants including fellow teachers and students. Approximately, 300 questionnaires were distributed among teachers of primary schools and teachers and senior students of high schools in Fiji. 232 completed questionnaires were received with a response rate of 77.33%. A popular Facebook page in Fiji with 17,644 Likes was approached to share online survey link and its members were asked to complete the questionnaire. The questionnaire link got 6 likes and no comments while all their other posts have an average of a 100 Likes. Online surveys have issues such as low response rates which can lead to biased results. (Schonlau, 2002 and Couper and 2000, Fricker and Groves, 1989).

The first part of the questionnaire focuses on gender, age, occupation and education level while the second part focuses on individual attitude towards 21 environmental issues in terms of their impact level to Fiji. The third part focuses on existing behavior and change in behavior towards minimizing individual carbon footprints. Responses of second and third parts were adopted from content analysis of Mc Kerchera and Prideaux (2011). In addition, respondents were given freedom to add both environmental issues and behaviors that were not listed. Respondents were urged to be as honest as possible for the credibility of the research. An honest effort was made to ensure the credibility of this study but limitations persist based on the methodology of this paper. Descriptive statistics of mean and standard deviation were used to rank the issues in the study which were then compared with analyzed issues from the study conducted by Mc Kerchera and Prideaux (2011).

4. Findings

The attitudes toward local environment impact and behavior to reduce these impacts are listed by mean score of all responses from the highest to the lowest. In the study, 58.3% of all respondents were female and most respondents (23.3%) between the ages of 21 to 25, majority being degree holders (42.7%) followed by diploma holders (23.7%) and secondary school seniors (18.5%). More than half (55.4%) of all respondents were employed in the public sector.

4.1 Attitudes towards environmental issues

Table 1 show littering to be identified as the biggest issue with the most impact on the environment. Yet, there are no new environment issues stated by any respondents. The study by Mckercher and Prideaux (2011) is used to compare the results of this study from here on as their study identified Air Pollution as most important environment issue in over 22 different economies. The top five environment issues with the most impact in Fiji were identified as Littering (4.12), Climate Change (3.88), Deforestation (3.82), Pollution (3.81) and Global Warming (3.79).

Rank	Environment Issues	N	Mean	SD	McKercher & Prideaux Rank of Issues.
1	Littering	232	4.11638	0.9018	9
2	Climate Change	231	3.88312	0.97322	14
3	Deforestation	231	3.82251	1.0294	18
4	Pollution (unspecified)	230	3.81304	1.08777	2
5	Global Warming	232	3.79741	0.97474	5
6	Emissions from Transport	231	3.79654	1.01175	6
7	Energy Overuse (Electricity)	231	3.73593	1.03607	16
8	Water Pollution	231	3.73593	0.94844	8
9	Water Wastage	231	3.64935	0.99695	12
10	CO2 Emissions	229	3.64629	1.10094	20
11	Air Pollution	230	3.63478	0.94227	1
12	Inadequate waste recycling	230	3.56087	1.07502	3
13	Waste production/ Waste management	230	3.54348	0.99577	4
14	Extreme Weather	230	3.42174	1.08199	10
15	Noise Pollution	232	3.34052	1.06519	11
16	Dependence on cars	231	3.30303	1.1773	19
17	Traffic Congestion	232	3.18103	1.12122	7
18	Tourism	231	2.77056	1.31685	20
19	Over Development	232	2.6681	1.07196	13
20	Overpopulation	232	2.65517	1.24214	17
21	Air Transport	229	2.56769	1.10462	76

Table 4-1 Attitudes Table 1. Attitudes toward Environment Issues based on Impact level

Source: Author's Calculations

There were only two common issues out of top five between the two studies; they are Pollution (unspecified) and Global Warming. The six lowest ranked issues in Fiji were Noise Pollution (3.34), Dependence on cars (3.03), Traffic Congestion (3.18), Traffic Congestion (3.18), Tourism (2.77), Over Development (2.67), Overpopulation (2.66) and Air Transport (2.57). There were four common issues from last six issues in both studies which were, Dependence on cars, Tourism, Overpopulation and Air Transport. Mc Kercher and Prideaux (2011) study state that tourism ranked as an important issue in popular tourism destinations such as Hawaii (ranked 1st/2nd), Jerusalem (ranked 1st), Great Barrier Reef area of Australia (ranked 6th) and Florida (ranked 9th). Tourism raise serious concern as an environment issue in the attitude of Fijians towards it and it is ranked 18th environmental issue in this study. Fiji is a popular tourism destination and majority of its foreign currency is earned through the tourism industry. Thus, Fiji has ongoing plans to expand its Tourism industry. Koya F. (Fiji's current Tourism Minister) used few examples of projects like Yatule Beach Resort refurbishment, Pearl Resort Marina development, Vunabaka project, Kokomo Resort in Yaukuve, Nawi Bay Resort and Momi Bay Resort and stated ,These projects will add at least 1000 new rooms to the current room inventory, and this augurs well with the forecasted 6 per cent to 7 per cent growth of in-bound passengers by Airports Fiji Limited,' (quoted in Pratibha, 2014).

4.2 Behavioral Intentions

Rank	Behavioral Intentions	N	Mean	SD	McKercher & Prideaux Rank of Actions Taken
1	Save electricity/ Energy	231	1.93	.254	3
2	Turn-off Lights	231	1.90	.300	5
3	Save water	231	1.85	.359	4
4	Litter less	231	1.82	.387	16
5	Turn-off electric appliances	231	1.78	.416	14
6	Recycle	231	1.73	.446	1
7	Reduce waste	231	1.70	.459	17
8	Live more green/ Become more	231	1.64	.481	15
9	Walk more	230	1.59	.493	2
10	Use less paper	231	1.54	.499	7
11	Use fewer plastic bags	231	1.52	.501	6
12	Turn air conditioner down	231	1.50	.501	12
13	Separate garbage (recyclable &	231	1.44	.498	8
14	Buy / Use fewer plastic bottles	231	1.43	.497	13
15	Buy organic food	231	1.36	.481	9
16	Drive less (lesser emissions)	231	1.35	.477	10
17	I have changed but can't explain	231	1.29	.457	11

Table4-2 Behavioral Intentions in order of mentions.

Source: Author's Calculations

As shown in Table 4-2, there were no new behaviors mentioned by any of the respondents. Saving electricity/energy was the most mentioned behavior towards reducing respective carbon footprints in Fiji while Mckercher and Prideaux (2011) study identified Recycling as the most common behavior. The 5 most mentioned behavior changes in Fiji were saving electricity (1.93), Turning off lights (1.90), saving water (1.85), littering less (1.82) and turning off electric appliances (1.78). There were three common behaviors in the five most mentioned behaviors between the two studies and these were saving electricity, turning off lights and saving water. The three least mentioned behaviors were buying organic food, driving less and I have changed but can't explain how. In this study, behaviors are classified into two categories of Specific behavior and Generic behavior to identify as literature suggests that specificity and accuracy of knowledge is the key for change.

Specific behavior	Generic behavior
Turn-off Lights	Save electricity/ Energy
Turn-off electric appliances	Save water
Walk more	Litter Less
Drive less	Recycle
Turn air conditioner down	Reduce waste
Buy/Use fewer plastic bottles	Live more green/ Become more aware
	Use less Paper
	Use fewer plastic bags
	Separate garbage
	Buy organic food
	I have changed but can't explain how

Table 4-3 Behavior categorizes into Specific and Non-specific

Source: Author's Calculations

Table 4-3 shows how 17 mentioned behaviors classified into specific and generic behaviors. Only 35% (6 of 17) of all mentioned behaviors are Specific behaviors. A closer look at the two categories clearly shows that each specific behavior directly leads to reduction of carbon footprints in specific ways while generic behaviors are too vague and with such behavioral intentions it is difficult for individuals to act since they know what to do but they do not how to do it. Based on the theory of planned behavior, attitudes influence behavior therefore each specific behavior leads to actual reduction of carbon footprint.

5. Conclusions

This study had two objectives, the first being individuals attitude towards environmental issues particularly tourism. Tourism was ranked highly as it had severe environmental impacts in popular tourist destinations such as Hawaii, Jerusalem, Great Barrier Reef area of Australia and Florida (Mckercher and Prideaux, 2011) but this study shows that Fijians do not consider tourism as a high impact issue. Tourism as an environment issue was ranked 18th out of 21 issues according to the result of our study. Fiji's economic dependence on Tourism should project a critical attitude from individuals. The reasons to this low regard of Tourism as an environment issue can be attributed to two facets of awareness. The first being lack of awareness and secondly, an intentional lack of awareness because of development plans of the industry and to keep Fijians in the dark. It can be argued that awareness may exist without any changes in attitude but is very unlikely based on the figures of this study. This issue basically gives way for future research. The second objective was to categorize behavioral intentions into specific and generic which shows us that there are only 35% of specific behaviors out of all mentioned behaviors. This shows us that awareness campaigns in Fiji are generic in nature which means that authorities and campaigners need to target small number of specific behaviors where cause and effect can both be seen. To conclude, Fiji needs to significantly raise the bar in its awareness campaigns about the negative impacts of Tourism as citizens need to/have the right to know its negative impacts. Fiji also needs to move away from its generic form of awareness to specific issue

awareness to create a realistic positive change in behavior of its people. These two conclusions of this study play a vital role for the Sustainable Future of all Fijians and Fiji as a whole.

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Appendix: Questionnaire

Name : _____ (optional)

Location : _____ (Area / Town / City)

Gender: (Please tick ✓)

Male

Female

Age: (Please tick ✓)

15 – 20

21 – 25

26 – 30

31 – 35

36 – 40

41 – 45

46 – 50

50 – 55

56 – 60

61 – 65

65 +

Occupation: (Please tick ✓)

Student

Private-sector

Public sector

other

Education Level: (Please tick ✓)

None

Primary

Secondary

Certificate

Diploma

Degree

Masters

PhD

1. Please rank (1 to 5) the issues you feel have a negative impact on the environment in your community and Fiji? (Feel free to enter other issues at the bottom space if an issue is not listed)

Key:

Impact Level	Meaning
1	No Impact
2	Very Little Impact
3	Little Impact
4	High Impact
5	Very High Impact

Community Issues	Impact	Community Issues	Impact
Air Pollution		Pollution (unspecified)	
Inadequate waste recycling		Waste production/Waste	
Global warming		Emissions from cars, trucks &	
Traffic congestion		Water pollution	
Littering		Extreme Weather	
Noise Pollution		Water wastage	
Over development		Climate Change	
Over-population		Energy overuse (Electricity)	
Dependence on cars		Deforestation	
Tourism		emissions	
		Air transport	

2. “We all have impact on the environment, like amount of water we use, amount of electricity we use, amount of garbage we produce and so on.” Therefore, in the last 3-5 years, how have you changed your behavior in order to minimize your impact on the environment? (Please tick / if you agree with the listed actions. Do not tick if have not changed your behavior in the listed ways)

Actions Taken	Response	Actions Taken	Response
Recycle (in general)		Walk more (save fuel, lesser	
Save electricity/ energy		Save water	
Turn-off lights		Use fewer plastic bags	
Use less paper		Separate garbage (recyclable &	
Buy organic food		Drive less (lesser emissions)	
I have changed but I can't		Turn air conditioner down	
Buy/use fewer plastic bottles		Turn off electric appliances	
Live more green / become		Litter less	
Reduce waste			