Non-compliance in national parks: An extension of the theory of planned behaviour model with pro-environmental values

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Edmund Goh [a, *], Brent Ritchie [b], Jie Wang [b]

[a] Blue Mountains International Hotel Management School, Torrens University Australia, 1 Chambers Road, Leura, NSW 2780, Australia
[b] School of Business, Tourism Cluster University of Queensland, Australia, Brisbane, QLD 4072, Australia

HIGHLIGHTS

- Subjective norm was the strongest predictor of visitor non-compliant behaviour at national parks
- Perceived behavioural control and pro-environmental values were not significant.
- The proposed extended TPB model had a marginal relationship between pro-environmental values and behavioural intentions.
- The role of pro-environmental values was more suitable for predicting general environmental worldviews.
- The Theory of Planned Behaviour was more suitable for predicting specific behavioural intentions.

ARTICLE INFO

ABSTRACT

Non-compliance at national parks is a major problem around the world. This study focused on visitors' intentions to venture off-trail at the Blue Mountains National Park, Australia (BMNP). An extension of the theory of planned behaviour (TPB) with the new ecological paradigm of pro-environmental values (NEP) was developed and tested to understand visitors' off-trail intentions. We surveyed 325 BMNP visitors through convenience sampling. Subjective norm was the strongest predictor followed by attitudes. The role of perceived behavioural control was not significant. The proposed extended TPB model had a marginal relationship between pro-environmental values and intentions using regression analysis. The overall study results suggested that the role of pro-environmental values is more suitable for predicting general environmental worldviews as compared to the TPB being more suitable for predicting specific behavioural intentions.

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1. Introduction

A key problem faced by management at national parks is the non-compliant behaviour of visitors who violate protective regulations such as walking off-trail and, in doing so; place themselves and others at risk (Randale & Hoye, 2016). Despite the danger element of injuries and death, many visitors still venture off-trail at national parks. Why do visitors non-comply and venture off-trail? What are the important determinants of visitors' non-compliance intentions? Although past studies have attempted to investigate this problematic behaviour, they tend to adopt a qualitative and observational approach rather than quantifying important non-compliant determinants. More importantly, majority of these studies did not use a theoretical framework to generate their motivational items (Brown, Ham, & Hughes, 2010), which restricts meaningful associations in trying to understand behavioural intentions (Goh, 2009; 2011).

2. Literature review

The term 'non-compliant behaviour' can be described as decisions to not comply with protective recommendations, which are calculated actions taken in expectation of some outcome or reward associated with non-compliance. The literature on non-compliance uncovered various reasons that can be categorized into the theory of planned behaviour (TPB) framework of attitudes such as relaxed mentality for authority, social influences from other visitors, and perceived difficulties to comply due to external factors such as lack

* Corresponding author.
E-mail addresses: edmund.goh@bluemountains.edu.au (E. Goh), b.ritchie@uq.edu.au (B. Ritchie), j.wang@uq.edu.au (J. Wang).
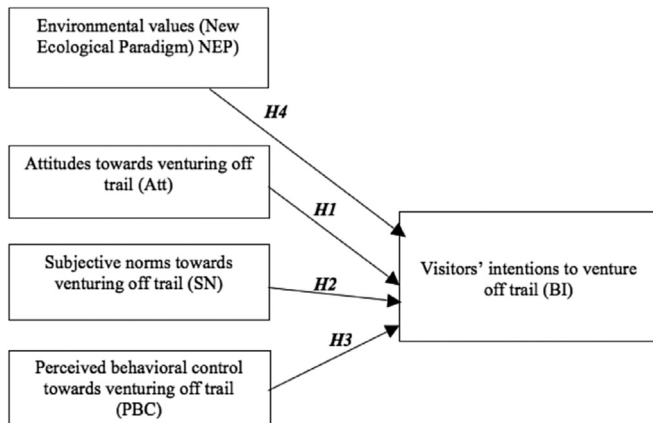
Fig. 1. Proposed extended theory of planned behaviour model.

of signage comprehension.

The theory of planned behaviour (TPB) is a rational decision making model using three key independent variables to predict behavioural intentions: 1) people's attitudes (Att) towards a particular behaviour; 2) perception of others' influence (subjective norm – SN) as to whether they would approve or disapprove of the performance of a particular behaviour; and 3) perceived behavioural control (PBC) of an individual's perceived ease or difficulty in performing a particular behaviour. These three key determinants can be useful for understanding non-compliant behavioural intentions. However, the generic TPB model does not take pro-environmental values into account when understanding intentions or actual behaviours even though personal values may be considered as background factors (Ajzen, 2005). This omission is somewhat problematic as the current literature has argued strongly that environmental values is an important part of our decision making process and influences our behaviour towards a situation that concerns environmental issues (Bramwell & Lane, 2013; Dunlap, Van Liere, Mertig, & Jones, 2000). However, no research has examined the connection and possibility of pro-environmental values in the prediction of non-compliant behaviour at national parks. Therefore, a construct of pro-environmental value (NEP) was added to extend the TPB model in this study (See Fig. 1) with the proposed four hypotheses:

Hypothesis 1. *Visitors' attitude (Att) towards venturing off-trail is positively associated with their venturing off-trail behavioural intentions.*

Hypothesis 2. *Visitors' subjective norm (SN) towards venturing off-trail is positively associated with their venturing off-trail behavioural intentions.*

Hypothesis 3. *Visitors' perceived behavioural control (PBC) towards venturing off-trail is positively associated with their venturing off-trail behavioural intentions.*

Hypothesis 4. *Visitors' pro-environmental values (NEP) is positively associated with their venturing off-trail behavioural intentions.*

3. Method

An empirical study using convenice sampling (n = 325) was conducted at Blue Mountains National Park (BMNP) located about 100 km from Sydney, New South Wales (NSW) to test the proposed TPB extension model and hypotheses. A group of trained researchers were stationed at the entrance of Echo Point Trailhead at BMNP and a self-administered questionnaire was distributed to them for completion in our on-site booth.

4. Results and discussion

All constructs revealed reliability of alpha between 0.769 and 0.904, indicating strong reliability of the motivational items (Nunnally & Bernstein, 1994). Multiple regressions were conducted to test the hypotheses to determine the relationships between TPB independent variables, pro-environmental values and the prediction power (Hair, Anderson, Tatham, & Black, 2009).

In terms of predictive power of off-trail behavioural intentions, all three independent measures (Att, SN, and PBC) together explained 14.8 percent (R^2) ($p < 0.01$) of the variance in BI towards venturing off-trail behaviour (See Table 1). Examination of Att ($\hat{a} = 0.180$, $p < 0.01$) and SN ($\hat{a} = 0.212$, $p < 0.01$) revealed significant â weights. However, PBC ($\hat{a} = 0.082$) did not contribute significantly in the prediction. These results indicate that SN was the strongest predictor of non-compliant behavioural intentions.

The regression model supported H1 and H2, but the inclusion of PBC to predict venturing off-trail behavioural intentions did not prove useful. This suggested that the non-compliant behaviour of venturing off-trail was a volitional behaviour within the control of visitors. Therefore, do not reject H1 and H2. Reject H3. With regards to H4, the proposed TPB extension NEP variable did not contribute to the prediction of behavioural intentions significantly ($\hat{a} = 0.001$) (See Table 1). This suggested that although BMNP visitors had strong pro-environmental values, they did not associate their NEP general values with venturing off-trail. In other words, the act of venturing off-trail at BMNP was not seen as a violation of their pro-environmental values. Therefore, H4 is to be rejected.

5. Discussion and conclusion

This study demonstrated the usefulness of the Theory of Planned Behaviour (TPB) in explaining and predicting visitors' behavioural intentions towards engaging in non-compliant behaviour of walking off-trail at BMNP. Results in the present study supported H1 about attitudes towards off-trail walking displayed similar trends to those in past TPB studies. The role of subjective norm was seen as a key determinant of off-trail behaviour, and can be linked to social norm violations. This suggests that respondents were significantly influenced by their important reference groups in going off-trail and expectations were generated from important others to go off-trail. This is consistent with past studies reporting social groups such as other visitors to have an influencing effect on others to engage in off-trail behaviour. With regards to PBC, it was not significant in predicting behavioural intentions.

A major contribution of this research is the discovery of the limited linkage between visitors' pro-environmental values (NEP) towards the general environment and their attitudes towards venturing off-trail at BMNP. Due to the general nature of values, results in this study reveal that pro-environmental values were not useful in the prediction of off-trail walking, as visitors did not see