UNDERSTANDING WASTE MANAGEMENT BEHAVIOUR IN PRIVATE NATURE RESERVES THROUGH THE THEORY OF PLANNED BEHAVIOUR

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ABSTRACT

Responsible waste management in protected areas is essential to ensure that these areas remain protected and that negative impacts on visitor experience are reduced. Behaviour plays an important role in establishing and implementing responsible waste management measures. This paper aims to provide insights about the Theory of Planned Behaviour and its application towards understanding waste management behaviour in private nature reserves. The Sabi Sand Wildtuin, a private nature reserve located in the Greater Kruger National Park in South Africa, was selected to explore the research aim. Surveys were used to gather data from the management authority, and the owners or managers of the commercial- and non-commercial properties in the reserve. The responses from forty participants indicated that all three stakeholder groups generally had positive attitudes towards waste management and supported the development of an integrated waste management strategy. The participants also generally expressed their intention to implement responsible waste management practices. The Pearson Chi-Square test highlighted some statistically significant associations between: intrinsic motivation and intent/willingness to participate in certain waste-related interventions; attitude (mostly related to perceiving waste management as a benefit) and support; as well as support and intent.

Key words: attitudes, intent, willingness, support, protected areas, South Africa

INTRODUCTION

Protected areas are increasingly expected to generate tourism revenue and deliver resultant community benefits, placing increased development pressure on already threatened and sensitive environments (Sandbrook et al., 2019). One specific concern with increased development within protected areas is effective waste management (Steg & Vlek, 2009; Sandham et al., 2020). The negative impacts of waste on protected areas are well-known (Przydatek, 2019), affecting conservation efforts, adjacent communities, and visitor experience (Morrison-Saunders et al., 2015; Mateer, 2020). The research by Morrison-Saunders et al. (2015), which focused on understanding expectations for responsible tourism in protected areas, indicated that visitor expectations for waste management included:

- "Effective waste management";
- Consideration of the "waste management hierarchy" and the "circular economy"; and
- Improving "awareness" of visitors around waste management issues and waste management practices.

The need to supplement the income of state-owned (public) conservation areas has been globally recognised, due to a decline in public funding aimed at conservation initiatives, as well as the lack of human resource capacity of public entities to effectively manage existing conservation estates (Kamal et al., 2015). Privately protected areas, such as private nature reserves (PNRs), are considered a key component of protected area strategies (Mitchell et al., 2018; Przydatek, 2019). When compared to protected areas in general, the defining characteristic of PNRs is the reliance on private governance.

In the waste management context, the management frameworks and measures of PNRs may differ from those of state-owned nature reserves. For state-owned protected areas, the management of waste and funding of waste management measures would be the responsibility of government. For PNRs on the other hand, multiple stakeholders may be involved in waste management. The management authority, for instance, may set goals and develop guidelines/best practices and procedures for the management of waste, whereas owners and managers of private land would be responsible for the implementation of these measures (practically and/or financially).

Within the context of waste management in PNRs, responsible waste management practices may, thus, require considerable effort and resources, along with continual commitment and often, changes in behaviour (Gilli et al., 2018). It is, therefore, important to understand the underlying factors influencing behaviour (Ghani et al., 2013; Gilli et al., 2018). In this regard the Theory of Planned Behaviour (TPB) provides an appropriate theoretical framework to better understand waste management behaviour.

The TPB, a psychological theory which was derived from the Theory of Reasoned Action in 1980, aims to predict a person's intention to engage in a specific behaviour (Gilli et al., 2018). The TPB suggests that intentions predict behaviour, and that intentions are a function of subjective norms, attitudes and perceived behavioural control (Nixon & Saphores, 2007). Research findings on waste management behaviour have challenged the traditional thinking around the TPB framework, suggesting the addition of some factors. Cecere et al. (2014) and Gilli et al. (2018) argue that attitude is strongly influenced by intrinsic and extrinsic motivation, while Ghani et al. (2013) and Razali (2020) included situational variables as a factor influencing waste-related behaviour. Chen et al. (2020) have found that support for policies or interventions is a key aspect that can have a positive effect on behavioural intention.

In the light of these findings, this study applies an amended TPB framework (Figure 1) focusing on intrinsic and extrinsic motivation, attitude, subjective norms (reciprocity), intention and support.

Although responsible waste management behaviour in protected areas is imperative from an environmental and social perspective, limited published research is available on waste-related behaviour in protected areas. This paper aims to provide insights about the TPB and its application towards understanding waste management behaviour in PNRs.

METHODS

Given the lack of research on waste management in protected areas in general, and more specifically in PNRs, a South African PNR, the Sabi Sand Wildtuin[i] (SSW) was selected as a case study to explore the research question.

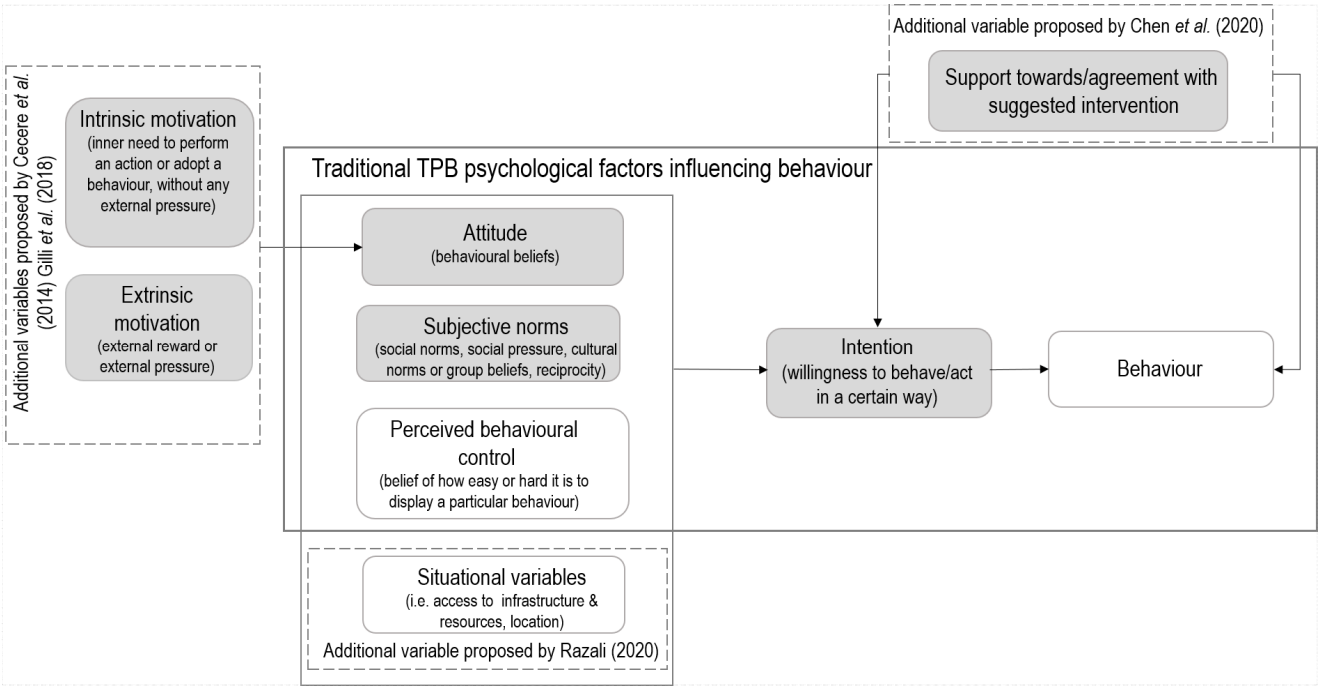

Figure 1. Adapted TPB framework informing this research (adapted from Ghani et al., 2013; Cecere et al., 2014; Gilli et al., 2018; Chen et al., 2020; and Razali, 2020). Variables included in this research are shaded in grey.

Case study design

To apply the TPB towards understanding waste-related behaviour, the case study area would preferably need to meet the following criteria:

- Have existing waste management measures, procedures or practices in place (Chen et al., 2020);
- Provide for pluralistic or divergent views from different stakeholders (Vijayabanu & Amarnath, 2013) in respect of waste-related behaviour; and
- Have an adequate number of individuals willing to participate in the research (Strydom, 2018).

The SSW, located in the Greater Kruger National Park, South Africa (Figure 2) was considered a suitable case study to provide insights about the TPB and its application towards understanding waste management behaviour in PNRs, because:

- The SSW is well-established (since 1948) and has a single management authority in the form of an association that is more than 50 years old and which employs around 300 people;
- A number of stakeholders are involved in the management (of waste) at the SSW, which provides the ideal context to explore waste-related behaviour;
- The SSW is relatively large (consisting of 49,481 hectares of land). The reserve mainly caters for the higher income and international ecotourism markets, and provides for different tourism products, with a range of activities, services, facilities and infrastructure with resultant waste management challenges; and
- Waste management has been identified as a particular priority by SSW. The management of the reserve is in the process of developing an integrated waste management strategy (IWMS). The SSW is the only PNR in South Africa to have initiated the development of an IWMS.

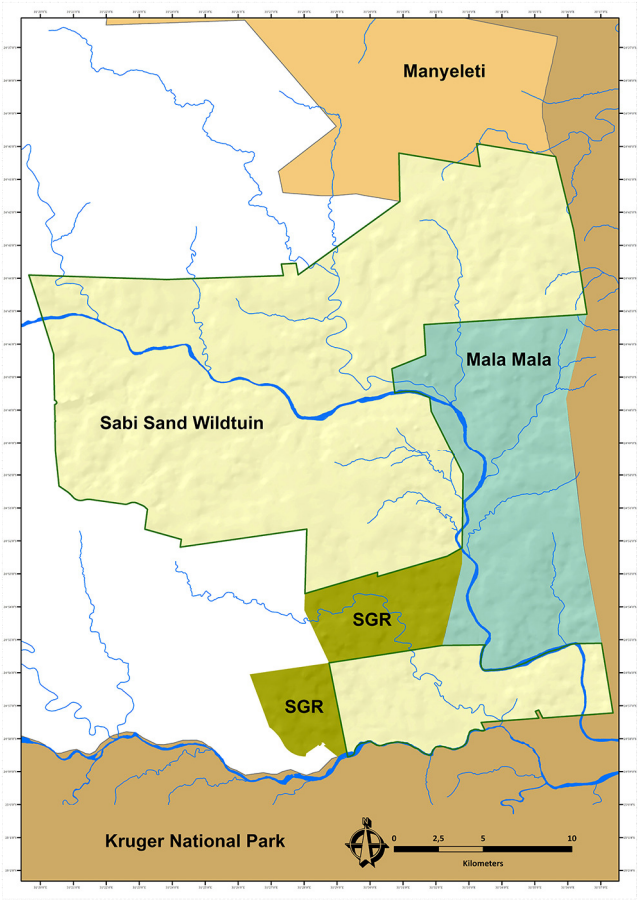

Figure 2. Sabi Sand Wildtuin (SSW) – the PNR selected as a case study for the research

Survey

Three categories of stakeholders were selected for inclusion in the research, namely: the SSW management authority; owners or managers of commercial properties (lodges); and owners of non-commercial properties. Although visitors' behaviour plays an important part in responsible tourism and related waste management, visitors were not included in the scope of this research[ii] and is an interesting area for future research.

Surveys, in the form of structured questionnaires (see Supplementary Online Material Table 1), were used to gather data regarding their responses related to:

- Attitudes and subjective norms towards waste management (A1 to A7);
- Support towards the development and implementation of a coordinated waste management strategy (S1); and
- Intention (or level of willingness) to implement certain (future) waste management practices (I1 to I9).

No pre-designed statements or questions exist to explore waste-related behaviour in PNRs, or any other protected areas. The works of Ghani et al. (2013), Gilli et al. (2018) and Razali et al. (2020) mainly focus on household behaviour towards waste management, and were adapted for the purposes of this research.

Ordinal scales were used to measure the level of agreement, support and intention of respondents relating to these statements. Statements related to intention/willingness were not posed to the management authority, since they have already communicated their commitment and intention as part of their waste management strategy development

process. Reasons for agreement or disagreement with the statements posed were not investigated and form part of future follow-up research.

The survey was administered electronically to 65 potential participants during a response window of 30 days (February to March 2020). Responses were received from a total of 40 participants (62% response rate) that included:

- Eleven (11) members of the Executive Committee of the management authority (100% response rate);
- Representatives from fifteen (15) of the commercial properties (63% response rate from a total of 24 commercial properties); and
- Representatives from fourteen (14) non-commercial properties (47% response rate from a total of 30 non -commercial properties).

The IBM SPSS software package was used to analyse the data (IBM, 2021). The frequency of responses (expressed as percentage per ordinal scale ranking) related to the attitude- (A), support- (S) and intent- (I) statements were calculated per stakeholder category (Supplementary online material – Table 2). The mean ordinal scale ranking was also calculated for each of the statements per stakeholder category. Cross-tabulation (also referred to as contingency tables) was used to determine whether any associations exist between the different TPB factors (i.e. whether associations exist between attitude (A) and support (S); attitude (A) and intent (I); or support (S) and intent (I)). Ordinal scale ratings related to A1, A2, A3, A5, A6[iii], S1 and I1 to I9 were included in the cross-tabulations. Pearson's Chi-Square test (X2), with 2-sided p-values, was used to determine whether associations between TPB factors (individual statements) were statistically significant (if $p<0.05$). The Chi-Square test only assesses associations between categorical variables and cannot provide any inferences about causation (IBM, 2021).

RESULTS AND DISCUSSION

Attitude and subjective norms towards responsible waste management

Responses related to intrinsic motivation, subjective norms and extrinsic motivation are discussed below.

Intrinsic motivation/inner beliefs (Statements A1, A2 and A3)

Intrinsic motivation may be based on factors such as care for other's well-being or altruism, moral norm, and ethical orientation (Gilli et al., 2013). Statements related to beliefs and intrinsic factors (Statements A1 to A3, for detailed wording see Supplementary Online Material Table 2) generally scored well for all three stakeholder categories.

The majority of respondents from the management authority, commercial and non-commercial properties either strongly agreed or agreed that waste management is an essential part of environmental management (A1) and that waste management should form an integral part of the reserve's activities (A2).

The value or benefit of sound waste management practices as a benefit for all properties (A3) was accepted by the management authority and commercial properties, while the majority of respondents from non-commercial properties did not support this view. This may be due to the fact that respondents representing non-commercial properties regard sound waste management practices to be of greater value or benefit to commercial properties (than to themselves) due to indirect benefits accruing to commercial properties, such as marketing and reputation, which would not necessarily be applicable to non-commercial activities.

Subjective norms (reciprocity) (Statement A4)

Reciprocity refers to attitudes towards waste management based on perceived social norms and reputational concerns. Statement A4 required the management authority and commercial properties to reflect on their level of agreement with the statement: "Sound waste management practices are expected by our guests". Existing literature shows that sound waste management is one of the main expectations of visitors to protected areas (Morrison-Saunders et al., 2019; Mateer, 2020).

All of the respondents from the management authority and 80 per cent of the commercial property (lodges) respondents either strongly agreed or agreed that sound waste management practices are expected by the reserve's guests (A4), highlighting the important role that reciprocity may play in waste-related attitudes. It is significant to note that although the majority of respondents agreed that sound waste management practices are expected by their guests (A4), most of these respondents did not believe that waste management considerations should outweigh the convenience and ecotourism experience of their guests (A7).

Extrinsic motivation (Statements A5, A6 and A7)

Extrinsic factors influencing attitudes towards waste management may include factors such as incentives or disincentives, cost, effort, as well as recognition and reward from external sources. For this research, extrinsic considerations focused on the contribution of sound waste management towards the image and brand of the PNR (A5), as well as negative aspects such as cost and effort (A6), and perceived inconvenience caused to guests (A7).

Respondents from the management authority and commercial properties mostly strongly agreed that sound waste management could improve the image of the SSW and marketing of the SSW brand (A5). Respondents from non-commercial properties had diverging opinions, with 38 per cent of respondents feeling neutral or disagreeing with the statement. This may be due to the largely non-commercial nature of their activities, where marketing and the image of the PNR may be less important.

Cost and effort related to the implementation of waste management measures are frequently mentioned as a factor negatively influencing attitudes and participation in waste management practices (Moh & Manaf, 2017). Respondents were asked to indicate their level of agreement with statement A6: "The cost and effort associated with sound waste management do not outweigh the benefit". In this instance, it was the respondents from the non-commercial properties who tended to be more in agreement with this statement, than the more neutral management authority and commercial property respondents. This response may be due to the higher costs and more effort required for waste management for the management authority and commercial properties when compared to the smaller, less complex nature of non-commercial properties and their required waste-related practices.

Lastly, respondents from the management authority and commercial properties were asked to consider whether sound waste management considerations are more important than convenience and the ecotourism experience of their guests (A7). Approximately 55 per cent of the respondents from the management authority and 80 per cent of respondents from commercial properties either strongly disagreed or disagreed with this statement, indicating that the convenience and positive ecotourism experiences of their guests play an important role in waste management considerations. SSW is a world-renowned reserve, which caters for the international market. It is not surprising that positive ecotourism experiences of guests play an important role in their waste management considerations.

Support towards the development of an integrated waste management strategy (IWMS) (Statement S1)

Following Chen et al. (2020), support for policies or interventions is a key aspect that can have a positive effect on behavioural intention. All of the respondents from the management authority and the majority of respondents from commercial properties (87 per cent) indicated that they fully support the development of an IWMS. Responses from the non-commercial property participants also indicated that the majority of participants (76 per cent) fully or partially supported the development of the IWMS. Two respondents (14 per cent) were neutral, and one respondent (7 per cent) indicated that he/she did not support the development of an IWMS. It was found that some of the respondents from non-commercial properties regarded waste management as having limited benefits for them (related to their responses to A3 above), which could explain the reason for the lower level of support from this stakeholder category.

Intention towards implementing waste management practices (Statements I1 to I9)

The majority of commercial and non-commercial property participants reported a relatively strong intention (willingness) to implement the suggested waste management practices (I1 to I9). Statements related to intention/willingness were not posed to the management authority.

Statements I1, I4, I7, I8 and I9 scored relatively highly, with between 47 and 87 per cent of commercial properties indicating that they are willing to implement these measures. Commercial property respondents reacted less enthusiastically to statements I2, I5 and I6, where they indicated willingness "under certain circumstances". Statements I5 and I6, requiring some kind of intervention to or restriction of guests' waste-related activities, may be linked to statement A7, where none of the commercial property respondents agreed with the statement, implying that sound waste management considerations are less important than convenience and ecotourism experience of their guests. This highlights the importance of finding solutions for waste-related issues that are deemed to be acceptable and relatively convenient to guests, or that require limited guest intervention.

Sabi Sand Wildtuin Reserve © Sabi Sand Wildtuin Pfunanani Trust

When comparing mean scores for intent/willingness statements, participants from commercial properties generally reported higher levels of willingness to engage in certain waste management practices than participants from non-commercial properties. The exceptions were statements I5 ("require visitors or occupants to participate in waste separation at source") and I6 ("restrict the disposal of certain waste streams at the PNR"). The more "willing" nature of the non-commercial property respondents (with reference to I5 and I6), may be related to the non-commercial nature of their activities, where the practices suggested in I5 and I6 will not require commercial guest interventions. Owners of non-commercial properties largely use their properties for private purposes. Controlling or influencing the practices of these non-commercial property occupants may be perceived as requiring less effort and impacting less negatively on ecotourism experience, when compared to the more complex guest relationships and interventions required from commercial properties.

The majority of participants from non-commercial properties indicated that they were willing to implement measures related to statements I1, I5, I6 and I7, and were neutral towards statements I3 and I8. They were, however, largely unwilling to: "Allocate human resources towards waste management" (I2) and to "Replace non-recyclable materials, with recyclable materials" (I4).

Associations between attitude and subjective norms, support and intention

Cross-tabulation (also referred to as contingency tables) was used to determine whether any associations exist between the different TPB factors (i.e, whether associations exist between attitude (A) and support (S); attitude (A) and intent (I); or support (S) and intent (I)). Responses to A1, A2, A3, A5, A6, S1 and I1 to I9 were included in the cross-tabulations. Pearson's Chi-Square test (X2), with 2-sided p-values, was used to determine whether associations between TPB factors (individual statements) were statistically significant (if $p<0.05$).

The TPB framework suggests that relationships or associations exist between the different factors (or constructs) influencing behaviour (Ghani et al., 2013; Cecere et al., 2014; Gilli et al., 2018; Chen et al., 2020; Razali, 2020). Table 1 indicates that the associations between the different TPB statements included in this research were generally not statistically significant.

Association (Pearson's Chi Square)		A1	A2	A3	A5	A6	S1
S1	χ^2	0.960	5.886	18.733	45.217	11.759	
	p	0.987	0.751	0.028	0.000	0.465	
I1	χ^2	29.703	32.518	8.815	19.136	8.783	10.705
	p	0.000	0.000	0.455	0.085	0.721	0.297
I2	χ^2	5.053	12.244	17.728	14.048	11.683	10.930
	p	0.537	0.200	0.038	0.298	0.471	0.281
I3	χ^2	8.117	11.406	15.393	9.888	22.871	17.560
	p	0.230	0.249	0.081	0.626	0.029	0.041
I4	χ^2	3.435	7.934	8.621	6.632	9.794	18.874
	p	0.753	0.541	0.473	0.881	0.634	0.026
I5	χ^2	12.287	10.999	7.431	9.729	17.575	12.143
	p	0.056	0.276	0.592	0.640	0.129	0.205
I6	χ^2	4.817	5.522	5.890	7.266	8.770	7.676
	p	0.567	0.787	0.751	0.840	0.722	0.567
I7	χ^2	15.423	17.745	12.295	24.296	12.468	22.111
	p	0.017	0.038	0.197	0.019	0.409	0.009
I8	χ^2	12.625	16.594	15.275	8.882	25.458	5.430
	p	0.049	0.050	0.084	0.713	0.013	0.795
I9	χ^2	11.643	18.926	19.201	14.078	18.150	5.566
	p	0.070	0.026	0.024	0.296	0.111	0.782

Table 1: Associations between different TPB factors indicated by means of Pearson's Chi-Square (X^2) and p-values

Statistically significant associations (which are highlighted in grey), however, exist between:

- A1 and A2 (intrinsic motivation statements), and I1, I7, I8 and I9. This indicated that respondents agreeing with the statements "Waste management is an essential part of sound and sustainable environmental management (A1)" and "Waste management should form an integral part of the reserve's activities (A2)" (i.e. having positive intrinsic motivation) were willing to participate in the interventions suggested in I1 (implement activities outlined in the reserve's IWMS), I7 (acquire waste-related infrastructure), I8 (participate in awareness and education) and I9 (support local community involvement in waste management).
- A3 (intrinsic motivation statement) and A5 (extrinsic motivation), and S1. These were the only attitude statements which showed an association with S1 (supporting the implementation of the IWMS). This means that respondents agreeing with the statements "Sound waste management is for the benefit of all (commercial and non-commercial) properties" (A3) and "Sound waste management can improve the image of the PNR and marketing of the PNR's brand" (A5) were more likely to support the development of an IWMS. Statements A3 and A5 relate to benefits and improving the image/brand of the reserve, as a result of sound waste management. The association between A3 and A5, and S1 may indicate that respondents who regard sound waste management as having some form of benefit, may be more inclined to support the development of the IWMS. The opposite may also be true – that respondents who do not regard sound waste management as having any benefits, would not support the development of the IWMS.
- S1 (support), and I3, I4 and I7. These associations indicated that respondents who were likely to support the development of the IWMS, would also be willing to "avoid the purchasing of non-recyclable materials" (I3), "replace non-recyclables with recyclable materials" (I4) and "acquire waste related infrastructure" (I7). All of these actions relate to the waste management hierarchy where waste should be avoided, minimised, re-used, recycled and recovered; and where disposal should be the last resort. The association between support and these intent/willingness statements may indicate the willingness of respondents (who are supportive of the IWMS development) to implement measures to achieve the waste management hierarchy.

Community-based recycling projects by the Sabi Sand Pfunanani Trust © Sabi Sand Wildtuin Pfunanani Trust

The interrelated nature of the TPB factors discussed above emphasises the potential role that these variables may play to influence behaviour towards responsible waste management, as suggested by the TPB framework.

CONCLUSIONS

The paper aims to provide insights about the Theory of Planned Behaviour (TPB) and its application towards understanding waste management behaviour in private nature reserves (PNRs) using Sabi Sand Wildtuin (SSW) as a case study. In particular, the research evaluated the attitudes, support and intention of different PNR stakeholder categories towards responsible waste management.

The majority of respondents from all three stakeholder categories reported positive attitudes towards waste management, supported the development of an IWMS, and were largely willing to participate in waste management practices. However, non-commercial properties indicated their reluctance towards allocating human resources and avoiding the purchasing of non-recyclable materials, while commercial property respondents were sensitive towards inconveniencing

their guests or influencing the visitors' ecotourism experience. These experiences and expectations in PNRs with a strong commercial/tourism component need to be balanced against the implications of waste management requirements. Both stakeholder categories strongly supported community involvement in waste-related projects, as well as the acquisition of waste separation bins in pursuit of recycling. Differences in stakeholder category attitude/opinion, support and willingness need to be taken into consideration during the implementation of the IWMS, since divergent views may influence buy-in of the different stakeholders, as well as the actual implementation of and compliance to measures stipulated in the IWMS.

The Pearson's Chi-Square test highlighted some statistically significant associations between: intrinsic motivation and intent/willingness to participate in certain waste-related interventions; attitude (mostly related to perceiving waste management as a benefit) and support; as well as support and intent. This emphasises the potential role that these variables play to ultimately influence behaviour towards responsible waste management. The following is, therefore, recommended:

- Since intrinsic factors are more difficult to change, a focus on extrinsic factors are suggested to change attitudes, and ultimately behaviour. Examples may include interventions related to address the cost and effort of waste management, where inexpensive and convenient alternatives need to be considered.
- The role of external incentives and external recognition for sound waste management practices should be optimised. This may include improving brand image, marketing value and international recognition to appeal to eco-conscious tourists.
- Creating awareness amongst the stakeholder categories on the benefits of responsible waste management is an important aspect as it may increase support/buy-in, and change waste-related attitudes and behaviour. This may be achieved through stakeholder communication on legal compliance, local community benefits, financial benefits, as well as environmental benefits.
- The role of education and awareness in waste management behaviour should be taken into consideration. Research by Strydom (2018) on recycling behaviour in South Africa, suggests that the level of education and awareness, as well as the perceived success of existing programmes or practices, have a significant influence on behaviour. Including these aspects in future research may be useful.

In-depth interviews with the stakeholder categories to further understand the reasons behind these results could provide the basis for future research. Furthermore, research into visitors' behaviour in the context of responsible waste management in protected areas is also recommended to gain further insights.

By progressively improving our understanding of waste management behaviour in PNRs, better management and conservation of these protected areas could be achieved.

ENDNOTES

[1]Sabi Sand Wildtuin is the official name of the private nature reserve. Wildtuin is an Afrikaans word that can be translated as "Game Reserve".

[2]Data on visitors' perceptions were not available at the time of the research because of travel restrictions due to the COVID-19 pandemic. Visitors' perceptions on waste management as it relates to the TPB is an area for future research.

[3]Statements A4 and A7 were omitted from the cross-tabulations, since these statements were not posed to all stakeholder groups.

SUPPLEMENTARY ONLINE MATERIAL

Table 1. Survey statements related to attitude, support and intent towards responsible waste management

Table 2. Frequency of responses (expressed as percentage per ordinal scale ranking) and mean ordinal scores per statement for each of the three stakeholder categories

ACKNOWLEDGEMENTS

The authors acknowledge the contributions of the Sabi Sand Wildtuin and Sabi Sand Pfunanani Trust towards this research. The participation of the various stakeholders, namely the SSW management authority, owners/managers of lodges and owners/managers of non-commercial properties are acknowledged and highly appreciated.

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RESUMEN

La gestión responsable de los residuos en las áreas protegidas es fundamental para garantizar que estas áreas permanezcan protegidas y que se reduzcan los impactos negativos en la experiencia de los visitantes. El comportamiento desempeña un papel importante a la hora de establecer y aplicar medidas para la gestión responsable de los residuos. El objetivo de este artículo es proporcionar información sobre la Teoría del comportamiento planificado y su aplicación para comprender el comportamiento de la gestión de residuos en las reservas naturales privadas. Para explorar el objetivo de la investigación se seleccionó la reserva natural privada Sabi Sand Wildtuin, situada en el Gran Parque Nacional Kruger de Sudáfrica. Se utilizaron encuestas para recopilar información del órgano de gestión y de los propietarios o administradores de las propiedades comerciales y no comerciales en la reserva. Las respuestas de cuarenta participantes indicaron que los tres grupos de interesados tenían, en términos generales, actitudes positivas hacia la gestión de residuos y apoyaban el desarrollo de una estrategia para la gestión integrada de los residuos. Los participantes también expresaron su intención de implementar prácticas responsables de gestión de residuos. La correlación de Pearson de chi cuadrado puso de manifiesto algunas asociaciones estadísticamente significativas entre la motivación intrínseca y la intención/ voluntad de participar en determinadas intervenciones relacionadas con los residuos; la actitud (mayormente relacionada con la percepción de la gestión de residuos como un beneficio) y el apoyo; así como la intencionalidad y el apoyo.

RÉSUMÉ

Une gestion responsable des déchets dans les aires protégées est essentielle pour assurer la protection de ces zones et réduire les impacts négatifs sur l'expérience des visiteurs. Le comportement humain joue un rôle important dans l'établissement et la mise en œuvre des mesures de gestion responsable des déchets. Cet article vise à fournir des informations concernant la Théorie du Comportement Planifié et comment son application peut contribuer à mieux comprendre le comportement humain face aux défis de gestion des déchets dans les réserves naturelles privées. Le Sabi Sand Wildtuin, une réserve naturelle privée située dans le parc national du Grand Kruger en Afrique du Sud, a été sélectionné pour servir de support à cette recherche. Des enquêtes ont permis de recueillir des données auprès de l'autorité de gestion ainsi que des propriétaires ou gestionnaires de propriétés commerciales et non commerciales de la réserve. Les réponses de quarante participants ont indiqué que ces trois groupes d'intervenants affichent en général des attitudes positives à l'égard de la gestion des déchets et soutiennent l'élaboration d'une stratégie intégrée de gestion des déchets. Les participants ont aussi généralement exprimé leur intention de mettre en place des pratiques de gestion responsable des déchets. Le test du Chi Carré de Pearson a mis en évidence certaines associations statistiquement significatives : entre la motivation intrinsèque et l'intention/la volonté de participer à certaines interventions liées aux déchets; entre l'attitude (principalement liée à la perception de la gestion des déchets comme un avantage) et le soutien; et entre le soutien et l'intention.