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The MOA Framework and Behavioural Response

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Abstract

This paper discusses the application of a conceptual social marketing model, the MOA (motivation, opportunity and ability) framework, in the context of an environmental management case study relating to land management. The main objectives involved examination of the relationships between the MOA constructs and the relationships between these constructs and socially desirable behaviour. Structural Equation Modelling was chosen to examine the relationships in data collected from a telephone survey. The results from the analysis of the data revealed that the relationships between the MOA components could be used to explain changes in durable socially desirable behaviour. In particular, intrinsic motivation is more likely than extrinsic motivation to produce a durable socially desirable behaviour change.

The MOA Framework and Behaviour

This paper discusses the application of a conceptual social marketing model, the MOA (motivation, opportunity and ability) framework (Rothschild, 1999), in the context of an environmental management case study relating to land management. Environmental management often involves widespread social issues, where agencies are effectively utilising social marketing strategies for public policy development and implementation (Kotler, Roberto, & Lee, 2002). In these cases individual landholders have a deciding role in whether or not environmental policies are effectively implemented (Allan & Curtis, 2003). As many have realised the enormity of the land degradation problem, considerable public funds have been allocated to this cause. These resources must be utilised in a manner that produces more effective results that is directed to those who are most responsive and will both adopt and maintain the appropriate socially desirable behaviour. Program managers require an understanding of the behavioural component in environmental management programs to enable more effective and efficient methods of planning, implementing and monitoring interventions. Although there have been references to the application of social change models to guide interventions there are relatively few models that are widely accepted (Lefebvre, 2001).

Motivation is an integral component of the MOA framework and the study of motivation has direct relevance and application in current social change research (Reeve, 2001). Motivation is a complex concept and the level of motivation and the type of motivation involved are important considerations (Petri & Govern, 2004). The following discussion will consider the intrinsic and extrinsic aspects of motivation. Extrinsic motivation can be defined as the type of motivation that is controlled by externalities that are not part of the activity or behaviour they are influencing (Petri & Govern, 2004). The use of incentives to encourage and discourage behaviour is well established in social marketing (Kotler et al., 2002). Some classic extrinsic incentives are financial rewards and the use of more psychological incentives such as guilt, the chance to impress others, such as neighbours, and social recognition in the community. However, Dwyer et al. (1993) reported that incentives and disincentives were not effective in producing the long-term socially desirable behaviour change in the targeted audiences. As highlighted by De Young (1993) extrinsic motivation is useful for an initial behaviour change...
however, the continued application of incentives or disincentives is required for an ongoing or durable behaviour change.

Intrinsic motivation is defined as enacting behaviour for its inherent satisfactions rather than for some separable external consequence (Ryan & Deci, 2000). That is, those who are intrinsically motivated are encouraged to act by the actual task itself and perform well because they enjoy the behaviour or the challenge of completing the task. With intrinsic motivation, the underlying motives for the behaviour are fully internalised by the individual (Deci & Vansteenkiste, 2004). These individuals believe that the behaviour is interesting, enjoyable, challenging and provides inherent satisfaction. But not all tasks can provide intrinsic motivation and in these situations other motivation types such as extrinsic may be more appropriate.

An individual may be motivated; however this motivation may not lead to a behaviour change if there are constraining factors such as low opportunity. In a social marketing context, opportunity occurs when the individual is not limited in their desire to act by factors in their external environment (Rothschild 1999). These aspects include information, time, financial resources and outside controls. Of these aspects, the provision of information is a particularly important part of social marketing programs. The impact of information in social marketing interventions can be increased by the use of a relevant and credible information source (Dearing et al., 1996). Opportunity can restrict the behaviour of land managers. Research has shown that time and costs of gaining access to the required resources and facilities are significant reasons for non-adoption of pro-environmental land management practices (Cary, Webb, & Barr, 2002). While ability comprises the knowledge and skill set of the individual and is related to observed environmental behaviour (Pieters et al., 1998). Although an individual may have the intention, or motivation, to behave in a socially desirable way, a specific behaviour may not occur if their ability is inadequate for the required task. Therefore inadequate skills can be a barrier to performance of pro-environmental behaviour (McKenzie-Mohr, 2000). This literature review has provided an examination of the MOA constructs, of motivation, opportunity and ability. It has identified that the motivation concept comprises a range of motivation types and these types have an important influence on behaviour adoption. Low opportunity in particular, relatively insufficient time and available funding can present a barrier to behaviour adoption. Insufficient ability, including the knowledge and skills required to undertake specific tasks, can also have a negative influence on behavioural patterns.

**Objectives**

The overall aim of this research is to provide a theoretical basis for social marketing interventions. There are three main objectives of this study: firstly, to examine the relationship between the constructs of the social marketing model, i.e., the MOA framework; namely, motivation, opportunity and ability. The second objective is to examine the relationship between the components of the MOA framework and Durable Socially Desirable (DSD) Behaviour. In this research DSD Behaviour relates to effective environmental control by land managers. Finally, the third objective is to develop a social marketing model that may be used to understand behaviour change. This research has the potential to provide a basis for policy development and implementation guidelines for a wide range of social change programs.
Methodology

A mixed method research approach was used in the study which consisted of an exploratory stage, a review of literature, a qualitative analysis and quantitative analysis (Tashakkori & Teddlie, 1998). In the exploratory stage information was gathered to guide the qualitative and quantitative stages of the research. In the qualitative stage a deeper understanding of the MOA constructs and related environmental behaviour was gained. A probability sampling technique was adopted for the quantitative stage (Malhotra, Hall, Shaw, & Oppenheim, 2006) and area sampling was used to select potential respondents (Sekaran, 2003). A telephone survey was used to gather the quantitative data. The questionnaire was examined and pre-tested by selected research colleagues, field staff and fifty land managers. The development of the scale items to measure constructs was guided by published scales. Development of the motivation scales was based on ‘The Motivation Towards the Environment Scale’ (MTES) established by Pelletier et al. (1998). The study required development of appropriate scales to measure the opportunity constructs as previously published scales were not found after an extensive review of published marketing scales (c.f. Bruner, James, & Hensel, 2001). A review of the relevant literature and the qualitative stage of study provided a basis for these scales. For ability, two measures of the construct, namely, knowledge and skills, were adapted from previous studies. The scale to assess perceived-knowledge was adapted from Ellen (1994) and for self-assessed skills from Pieters et al., (1998).

Results

A sample of 556 respondents was obtained; the results indicated a comprehensive profile of the respondents was obtained from each zone in the region and the age profile demonstrates that the vast majority were over 40 years of age with over three-quarters having managed these properties for over ten years. Data was checked for coding errors, missing data, outliers and normality of the data (Malhotra et al., 2006). This study utilised both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Tabachnick & Fidell, 2001). Exploratory factor analysis was used to extract the items that provided a reliable measure of the constructs under investigation in this study. The analysis was conducted using Maximum Likelihood estimation (ML) with Direct Oblimin rotation. Bartlett’s Test of Sphericity was significant (0.000) and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.80. The initial results of the factor analysis identified eight factors that conceptually matched the expected descriptions of the constructs discussed within the conceptual framework for this study. Two factors, intrinsic motivation and ability, were extracted as single scales; while extrinsic motivation and opportunity each comprised of three sub-scales. The internal consistencies of the extracted components were within an acceptable range (Hair et al., 2006). Further detail of this factor analysis has previously been reported (see Binney, Hall Oppenheim 2006). The goodness-of-fit statistics indicated an acceptable fit of the data (Table 1). The structural model showed that six of the structural paths were significant (0.05) as identified in Table 2.
Table 1  Fit Statistics

<table>
<thead>
<tr>
<th></th>
<th>( \chi^2 )</th>
<th>df</th>
<th>( \chi^2/\text{df} )</th>
<th>P*</th>
<th>SRMR</th>
<th>RMSEA</th>
<th>GFI</th>
<th>AGFI</th>
<th>TLI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>83.0</td>
<td>35</td>
<td>2.37</td>
<td>.02</td>
<td>.04</td>
<td>.05</td>
<td>.97</td>
<td>.95</td>
<td>.94</td>
<td>.96</td>
</tr>
</tbody>
</table>

*Probability (Bollen-Stine bootstrap)

Table 2  Standardised Estimates for the Model

<table>
<thead>
<tr>
<th>Variables</th>
<th>SRW(^1)</th>
<th>S.E.(^2)</th>
<th>C.R.(^3)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity</td>
<td>&lt;-----</td>
<td>Intrinsic Motivation</td>
<td>0.37</td>
<td>0.07</td>
</tr>
<tr>
<td>Opportunity</td>
<td>&lt;-----</td>
<td>Extrinsic Motivation</td>
<td>0.42</td>
<td>0.15</td>
</tr>
<tr>
<td>Ability</td>
<td>&lt;-----</td>
<td>Extrinsic Motivation</td>
<td>0.73</td>
<td>0.16</td>
</tr>
<tr>
<td>Ability</td>
<td>&lt;-----</td>
<td>Intrinsic Motivation</td>
<td>0.04</td>
<td>0.07</td>
</tr>
<tr>
<td>DSD Behaviour</td>
<td>&lt;-----</td>
<td>Opportunity</td>
<td>0.31</td>
<td>0.005</td>
</tr>
<tr>
<td>DSD Behaviour</td>
<td>&lt;-----</td>
<td>Ability</td>
<td>0.24</td>
<td>0.004</td>
</tr>
<tr>
<td>DSD Behaviour</td>
<td>&lt;-----</td>
<td>Extrinsic Motivation</td>
<td>-0.05</td>
<td>0.007</td>
</tr>
<tr>
<td>DSD Behaviour</td>
<td>&lt;-----</td>
<td>Intrinsic Motivation</td>
<td>0.15</td>
<td>0.002</td>
</tr>
</tbody>
</table>

SRW\(^1\) = Standardised Regression Weight. S.E.\(^2\) = Standardised Estimate C.R.\(^3\) = Critical Ratio P = Probability

These were intrinsic motivation-opportunity, extrinsic motivation-opportunity, extrinsic motivation-ability, opportunity-DSD Behaviour, ability-DSD Behaviour and intrinsic motivation-DSD Behaviour. The relationships between intrinsic motivation-ability and extrinsic motivation-DSD Behaviour were not significant. These relationships were confirmed by the low Standardised Regression Weights (SRW) and the Critical Ratios being less than two. The estimated model showed a positive covariance (0.26) between intrinsic motivation and extrinsic motivation indicating that these are related constructs. The overall covariance for the dependent variable, DSD Behaviour, was 0.21 indicating that 21% of the variance was explained by the model.

Discussion

The evaluation of the MOA constructs within the qualitative stage confirmed the relevancy and applicability of these concepts to the environmental management case study. The quantitative study adapted these constructs to measure their relationship with the dependent variable, DSD Behaviour. Intrinsic and extrinsic motivation, opportunity and ability impact on behaviour in various ways. The study has provided empirical evidence that suggests that intrinsic motivation has a ‘causal’ influence on DSD Behaviour. It was shown that intrinsic motivation is positively related to DSB Behaviour as there was a positive relationship between intrinsic motivation and DSD Behaviour. This finding agrees with previous studies (McKenzie-Mohr et al., 1995; Osbaldiston & Sheldon, 2003; Ryan, Erickson, & DeYoung, 2003; Seguin, Pelletier, & Hunsley, 1999) and it was suggested that the relationship between intrinsic motivation and durable behaviour change is a valuable area of study that deserves further investigation. This study addresses these requests in that it has provided empirical evidence of the positive relationship between intrinsic motivation and a durable behaviour change. The findings from this study support previous studies (De Young, 1993; Dwyer et al., 1993) that have found that an intervention based on extrinsic motivation is unlikely to produce a durable behaviour change. The objectives of this study were to determine whether the relationships between the
components of the MOA framework, motivation (intrinsic and extrinsic), opportunity and ability, could be empirically tested and applied as a social marketing model used to predict a change in the level of durable socially desirable behaviour (DSD Behaviour). The analysis has confirmed a relationship between the MOA components and DSD Behaviour.

**Conclusions and Implications**

This study investigated the MOA constructs and established that there is a distinction between intrinsic motivation and extrinsic motivation in behaviour change. The incorporation of both types of motivation improved the validity of the model by identifying the differing impact that each has on durable behaviour change. This study has concentrated on identifying the type of behaviour that is associated with a durable change to establish the measure for *Durable Socially Desirable Behaviour*. Durable behaviour is positively associated with intrinsic motivation. While intrinsic motivation and extrinsic motivation are related constructs and each has a causal relationship with behaviour, this process varies for each construct. The results show that each relates to behaviour via different pathways and it is this aspect that clearly separates these constructs. The need to improve the theoretical underpinnings of social marketing was highlighted by Andreasen (2003) as a deficiency exists with respect to guiding social marketing models that predict durable behavioural change as a result of social marketing programs. The findings in this study demonstrated the importance of making the distinction between intrinsic motivation and extrinsic motivation in social change programs as a durable change is more likely to be associated with intrinsic motivation. This is a significant contribution to social marketing theory as it explains both the influences of these components in the social change process and for the lower than expected success rates for interventions designed to encourage DSB Behaviour. Accordingly, these insights could be used as a basis for planning, managing, monitoring and evaluation of the social change process in environmental management programs.

There are important implications for those responsible for the management of a wide range of interventions involving the application of a social marketing approach to influence socially desirable behaviour. The findings of this study offer a response to Cary, Webb & Barr’s (2002) suggestion of a need for more definite guidelines in social and environmental change programs. The study addresses this request by providing a detailed explanation of the social change process within environmental management programs. For example, the contribution of intrinsic motivation to a durable change and the interactive relationship with adequate opportunity should be recognised in future program planning and implementation. For example, if at the planning stage the precise aspects of social change were examined for the specific application, the type of motivation currently present in the target audience could be identified. To ensure that there is a satisfactory behavioural response, specific attention would also be required to audit the opportunity and ability regimes. Program planners should ensure that there is sufficient opportunity present as this will provide a higher yield of behavioural response from the intervention. Alternatively, in the case of high extrinsic motivation, attention should be paid to both opportunity and ability for a satisfactory behavioural response from the intervention, as the response will be limited unless these essential components are addressed. Further, application of these findings would suggest that, during the management and monitoring stages of an intervention, particular attention should be paid to the relevant changes in motivation, opportunity and ability in conjunction with the customary monitoring of the behaviour changes. A major contribution of this study has been to present a comprehensive understanding of the components that can interact to produce a durable behaviour change within social marketing programs.
interventions. A better understanding of the components that are associated with a durable behaviour change within social marketing interventions represents a further contribution of this study. The model that was developed was shown to be robust in the environmental management case study however to gain wider recognition it requires further evaluation in a variety of other social marketing programs. This research has shown that the motivation-behaviour relationship is more complex than the literature suggests and provides a foundation for further research about this process.
References


