The use of the Nominal Group Technique for eliciting opinion for policy evaluation

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Abstract - **Nominal Group Technique (NGT) is a structured process for gathering knowledge from groups. The NGT has proven particularly effective and efficient for assessments of organic farming and other agri-environmental policies. These assessments typically consider impacts on a wide range of often conflicting objectives including economic, social and environmental objectives; often in situations were an incomplete knowledge base prevents an evidence–based assessment. The NGT process acquires knowledge in a manner that enhances group dynamics and limits the effect of dominant individuals. This paper presents an application of the NGT for assessing organic farming support schemes in Wales. This application was implemented using a computer-based Group Decision Support System which was constructed from common business software applications.[1]**

INTRODUCTION

This paper presents an application of the Nominal Group Techniques (NGT) for acquiring knowledge required for an evaluation of Welsh Organic Farming Scheme and the Tir Gofal agri-environment scheme. This process was used to assess the scheme against a set of agri-environmental and social economic criteria. NGT was chosen because of the limited availability of evidential data regarding the performance of these schemes against the criteria set.

BACKGROUND TO THE NOMINAL GROUP TECHNIQUE

In the Welsh evaluation, the information was elicited for a group of experts using the NGT in expert panel workshops using a group decision support system (GDSS).

NGT, also known as 'estimate-talk-estimate', uses the same basic structure as the Delphi method applied in a group situation. Estimates are taken anonymously and presented to the group for discussion and estimates are retaken and represented. The process involves the following steps (Delbecq *et al* 1975):

1. Silent and individual (nominal) generation of ideas in writing.
2. Presentation of a brief summary of all ideas, and round-robin feedback on ideas.
3. Discussion of each recorded idea for clarification and evaluation
4. Individual voting on the reactive priority of the ideas by rank-order or rating judgements - the group's final decision is based on the aggregation of the evaluations.

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The workshop in Wales used a computer based GDSS to aid the NGT process. This system allowed the experts to privately record their opinion regarding the performance of a policy measure against and criterion, the system then aggregated the opinion of all the experts and presented these to the whole group. Areas where there was a divergent opinion amongst the experts were highlighted automatically by the system. In the Welsh case studies divergent opinion was defined as more than one point of difference on a seven-point scale. These areas where then discussed, starting with experts stating their assumptions in making the assessment. When the assumptions differed a common set of assumptions was discussed and agreed upon. The differences in the evaluations were then discussed focusing on points differing opinion regarding impacts of the policy measures concerning the individual criteria. After the discussions were completed a second private evaluation was undertaken. In cases were there was still a difference of opinion amongst the experts a second round of discussions was undertaken followed by a third round of evaluations. If there was still divergent opinion after the third round of evaluations it was assumed that opinion was stable and would not change. In these cases the divergent opinion was accepted and particular attention was placed on the related discussions in the analysis. In addition to the evaluation of performance the experts were asked to make a self-assessed evaluation of their expertise and knowledge level in making the assessments. Their expertise was rated on a five-scale, one indicting unfamiliar with the subject and five indicating a high level of understanding as defined by Loveridge (2001). The output of the workshops was a range of evaluations and an associated assessment of expertise.

THE EVALUATION OF THE TWO SCHEMES IN WALES

Two schemes considered in the Welsh case study were:

- Tir Gofal, the Welsh agri-environment scheme
- Organic Farming Scheme

These schemes were evaluated relative to current best conventional practice against a set of 24 criteria, namely:

1. Capital investment on-farm
2. Diversification of farm enterprises
3. Fragmentation and other farm structure issues
4. Farm income
5. Uptake of regulated production systems
6. Biodiversity impacts
7. Control of Greenhouse gases
8. Control of pollutants

9. Forestry
10. Landscape impacts
11. Natural resource conservation
12. Energy use
13. GM traceability
14. Animal welfare
15. Employment
16. Food quality and safety
17. Agricultural demographic
18. Public Health impacts
19. Occupational health
20. Knowledge and skills development
21. Rural community well-being
22. Social justice and equality
23. Rural infrastructure (incl. transport, housing)
24. Local consumption

In evaluation options against these criteria the experts were asked to consider current best conventional practice as a baseline. The evaluations comprised of a score on a seven-point scale from +3 to −3. A score of +3 indicated substantially better performance than current practice, 0 indicated no difference and −3 substantially poorer performance than current practice. The 'with or without principle' was used to aid these evaluations, the experts were asked to consider a situation without the scheme and then again with the scheme. If the situation with the scheme improved regarding a specific criterion a positive evaluation was allocated, if the situation deteriorated a negative evaluation. The magnitude of the change determined the magnitude of the evaluation.

RESULTS OF THE EVALUATION IN WALES

The evaluations were then aggregated to create a measure of the overall performance of the schemes. The aggregation was completed using an unweighted summation a Multi-Criteria Analysis technique. This analysis was used to produce a measure of performance against all the criteria and the economic, social and environment criteria separately. Each performance measure was defined by the mean value and the fifth and ninety-fifth variations in possible performance.

The first observations from the evaluations of Tir Gofal and the Organic Farming Scheme in Wales were that considering the aggregated performance against all the criteria the Organic Farming Scheme out performs Tir Gofal. The situation is the same when considering the aggregated performance of only the environmental and social groups of criteria. Considering the economic group of criteria the situation is less clear. Organic Farming Scheme out performs Tir Gofal considering the mean values but there is a high degree of overlap considering the range of possible values.

The strengths of the Organic Farming Scheme are related to the criteria:
- GM trace-ability
- Uptake of regulated production systems
- Control of pollutants
- Natural resource conservation
- Diversification of farm practice and products
- Farm income
- Food quality and safety
- Biodiversity impacts

- Skills and Knowledge development
- Occupational health impacts

The strengths of Tir Gofal are in:
- Landscape impacts
- Capital investment on-farm
- Biodiversity impacts
- Farm income

It is likely that the Organic Farming Scheme will outperform Tir Gofal considering the economic criteria but these findings were inconclusive. However, the Welsh Organic Farming Scheme performs strongly compared to Tir Gofal considering the all the criteria together and the social and environmental group separately.

CONCLUSIONS

The use expert judgement-based can be used as an alternative to evidence-based review. Great care must with panellist recruitment to ensure expertise coverage of all the criteria. Knowledge and expertise gaps were noticeable in some areas, especially when assessing the social criteria. These were the same criteria for which evidential data was not available.

It is unclear whether a true consensus was achieved or panellists complied with a perceived group view to complete the process or please the facilitator. This could be assessed by a series of follow-up questionnaires asking the panellist to repeat the assessments. These would then be compared with the early and final assessments from the NGT workshop. If these new assessments were more similar to the first NGT assessment than to the final NGT assessment it could be concluded that the NGT failed to achieve a true consensus.

This study has highlighted some of the issues related to such evaluations and the benefits of these schemes. The main issue is identified is the need to collect a wider range of data regarding the impact of rural development and agri-environment policy on the wide range of objectives they seek to address.

REFERENCES

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