

Part II: Strategy for Action

This section of the report outlines a set of proposals for taking forward the work of AQMeN in a way that is intended to meet the needs of the social science community in Scotland, taking into account the results of the various consultation exercises, the objectives of the Network to build capacity in quantitative methods as outlined in the original proposal, and the resources available to the Network.

In developing these proposals, consideration has been given to the amount of resource required for undertaking each type of activity. One-to-one consultancy and training courses are resource intensive and, therefore, these will be considered primarily for intermediate or advanced quantitative methods. Online training materials such as guidance notes and information links to materials produced by other institutions are expected to be less time-consuming to develop, but can be made more widely available to Network members, so these might cover a wider range of methods, including more basic forms of analysis. The development of eLearning courses has been considered as a possible means of delivering training; although, it would not be possible to develop these with the currently available resources. It is proposed, however, that AQMeN consider seeking further funding to develop such resources.

4.1 Training courses

A range of practical, hands-on training events/master classes will be developed to target those intermediate or advanced level quantitative methods that were identified as the highest priorities for training amongst the Scottish social science community. Each training event will be preceded by a colloquium/seminar presentation that demonstrates at least one illustrated example of the particular method. Training events will be developed on the following topics:-

- Multilevel modelling
- Regression techniques using non-normally distributed data
- Longitudinal modelling (covering a variety of techniques)
- Grouping analysis methods

- Structural equation modelling
- Geographically weighted regression / GIS
- Handling missing data
- Overview of intermediate and advanced quantitative methods

Each training event will be led by a small team of training coordinators, to include one or more funded collaborators. The training co-ordinators will take the lead in designing the event, identifying speakers and will liaise with AQMeN's core team in identifying a suitable venue. Administrative assistance for events will be provided by the core team. This will include developing marketing and publicity materials, making all necessary practical arrangements and designing and conducting evaluation.

Detailed information will be provided on the content of each course and investigations will be made to identify the pre-requisite level of quantitative training required by delegates. Where necessary the AQMeN team will survey Network members to identify the level and type of pre-requisite training required and information will be given on how sufficient skills can be obtained for those who require to further their knowledge before attending the course. Courses will include details of the theory behind each method, practical training in how to apply the method to data, and guidance on how to interpret and explain the output. A training strategy is being developed to provide guidelines for the organisation and design of events.

The software package for courses will be chosen to suit each course topic, taking into account the software capabilities, cost, usability and popularity. Knowledge of specific packages will not necessarily be a pre-requisite as advanced training may be provided for delegates with no experience of the package used. Hands-on sessions will be included in each course and feedback will be obtained from delegates to assess whether these have provided added value.

Following each training event, course materials will be made available via the Network website (subject to appropriate permissions being available). These will include slides from the event with accompanying audio presentations, and details of practical sessions with model answers. Guidance to all the course materials will be provided allowing them to be used more readily by those who did not attend the

course. Participants will be entitled to contact the trainers for a period of up to one month after the course to ask for more information, or to clarify particular points.

Courses will last for 1 - 3 days, although the exact duration will be set to ensure sufficient material is covered. The location for training courses will be decided taking into account the location of speakers and the preferences of Network members.

4.2 Guidance notes and online resources

It is proposed that a set of guidance notes with worked examples be developed for each topic where a training course is proposed (Section 4.1). The guidance notes will include step-by-step examples from a variety of disciplines and using alternative software packages. Additionally guidance notes will be developed for topics which do not fall within AQMeN's remit for raising capacity in intermediate or advanced methods. For example, while training in software (particularly SPSS) was a high priority for members, it did not fit with AQMeN's primary remit and therefore guidance notes will be made available rather than taught courses. Guidance notes will be produced for the following topics in addition to those where there will be taught courses:-

- Overview of quantitative methods including recommended textbooks
- Overview of software packages
- Overview of Scottish datasets and Scottish components of UK datasets, including access information and meta data
- Step by step guidance to carrying out data analysis
- Bayesian methods
- Event history analysis
- Panel analysis
- Mixed methods

AQMeN will also encourage members to contribute guidance notes in areas where they have carried out research.

Maximum use will be made of resources of all types already developed in other institutions to supplement those provided by AQMeN. AQMeN will spend time identifying such resources and deciding if they are of sufficient quality, in which case they will provide a link with descriptions of what is available. Material in the following categories covering all levels of quantitative methods, software and datasets will be included:-

- Taught courses
- eLearning materials
- Guidance notes and other online learning materials
- Datasets

Members of the Executive Committee are asked to identify areas where they may be able to provide or contribute to guidance notes, including sharing already existing materials from their own institutions, and to suggest resources available in other institutions.

4.3 Consultancy service

It is proposed that AQMeN establish a high quality consultancy service providing one-to-one advice. At this stage it is impossible to know how popular this service is likely to be, and we must assume that there may be insufficient resource to meet all requests for advice. Therefore, it will be essential to monitor requests for advice and ensure that a balance is struck so as to ensure this service does not detract from other Network activities. The following procedure is proposed:-

- People requiring advice will follow instructions on the website to determine whether the online guidance and resources are sufficient to answer their questions. If not they will submit a request for advice via the website.
- Requests for advice or support will be directed to the Senior Statistician in the first instance. She will make an initial assessment as to the level of support or

advice required, and consider whether identify existing resources are suitable (for example, using the extensive list of links and materials on the website).

- If existing resources are not sufficient or appropriate, the Senior Statistician will either answer the query herself or attempt to identify one or more appropriate members of the Network to whom the query may be directed.
- Where it is not possible to identify someone suitable, the Senior Statistician will refer the matter to the funded collaborator at the same University so that this person can work with their colleague to find a solution to the problem. Where the person making the request is not a member of a University with a funded partner, or is a non-academic, an alternative solution will be sought.

Funded collaborators are asked to ensure that their biographies are up to date, so that members can contact them if necessary, and agree to respond to requests for advice or assistance.

4.4 Communication

Communication with members will include issuing regular email bulletins, the publication of a quarterly newsletter, regularly updating the AQMeN website and providing updates via a social networking website (Twitter). Additionally an email list (eg via JISC) and an online forum will be made available.

4.5 Core AQMeN activities

Members of AQMeN's core team will continue to carry out awareness seminars, provide assistance with organising and marketing events, carry out ongoing evaluation of AQMeN events and services, develop and manage a training strategy, manage the Network website and undertake monthly management meetings (with Lindsay Paterson).

4.6 Local activities

AQMeN collaborators have already been working to establish local networks and to develop activities aimed at meeting the needs/interests of colleagues within their own University. It is proposed that they take these network development plans forward in a number of ways:

- Staff in social sciences will be encouraged to offer summer projects to undergraduates in mathematics or statistics and look for opportunities for joint studentships with mathematics or statistics departments.
- Create a register of local expertise and quantitative methods teaching.
- Set up internal inter-disciplinary email lists of people with an interest in AQMeN.
- Organise local seminars with presentations on quantitative method applications to attract people from all social science disciplines.
- Consider opportunities for developing an MSc course in social statistics.

4.7 Impact

It is imperative that the work of AQMeN is evaluated and that some objective measures of impact are developed. The AQMeN core team will be responsible for developing a set of performance indicators and regularly evaluating the success of its various activities. However, it is also proposed that funded collaborators provide a 6-monthly report on the nature of their activities and including details of any impact that they have had on academic colleagues or non-academic contacts. One way to measure impact may be to carry out particular 'case studies' i.e. to monitor the activities and chart the progress of selected members of AQMeN over the funding period. Non-academic members of the EC are asked to contribute to this impact evaluation by determining the effect of AQMeN events on their colleagues and contacts.

4.8 Summary of proposals

The following table summarises the key areas of activity that are proposed over the next 2-3 years.

Activity	Topic	Timescale
Training courses	Multilevel modelling	2010
	Regression techniques	2010
	Longitudinal modelling	2010
	Grouping analysis methods	2011/20212
	Structural equation modelling	2011/20212
	Geographically wted regression/ GIS	2011/20212
	Handling missing data	2011/20212
	Overview intermediate/advanced methods	2011/20212
	PhD training event 1	2010
	PhD training event 2	2011
Guidance notes	Taught course topics	2010-2012
	Overview of quantitative methods	2010/2011
	Overview of software packages	2010/2011
	Overview of Scottish datasets	2010/2011
	Steps involved in basic analysis	2010/2011
	Bayesian methods	2010/2011
	Panel analysis	2010/2011
	Event history analysis	2010/2011
	Mixed methods	2010/2011
	Guidance notes using research examples	2010/2011
Teaching materials	Generic teaching modules	2011
	Teaching datasets	2011
Consultancy service	One-to-one advice	Ongoing
	Register of members willing to provide advice	2010
	Guidance for using online materials in place of advice	2010
Materials from other institutions	Taught courses, eLearning materials, online learning materials, datasets	2010
Communication	Bulletins by email	Ongoing
	Quarterly newsletter	Ongoing
	Social networking websites	Ongoing
	Email list and online forum	Ongoing
Core Network activities	Awareness seminars	Ongoing
	Monthly management meetings	Ongoing
	Event organisation	Ongoing
	Website management	Ongoing
	Training strategy	2010
Local activities	Register of local information Undergraduate projects for mathematics or statistics students Internal inter-disciplinary email list Local seminars Possible MSc in social statistics	Ongoing
Impact	Develop performance indicators	Ongoing
	Evaluation of events and services	Ongoing
	6 monthly report, monitor progress of chosen network members	Ongoing