

The Edinburgh Farm Decision Making Study Elements for Consideration in Training and Policy Uptake

*A. Sutherland, J. Willock, M. McGregor, I. Deary,
B. Dent, G. Gibson, R. Grieve and O. Morgan*

Introduction

In all businesses change occurs when new knowledge or additional information is acquired. The acquisition of new knowledge or information, and incorporation of these into current practices, will facilitate a change in, or modification of, existing practices (Lindner, 1987). Behaviour, therefore, is strongly influenced by the development of knowledge and the accessibility of information. Sources of information relevant to farmers range across a wide spectrum which may include other farmers, media and press reports, accountants, commercial advisors, technical commercial advisors, shows, etc. (Ford and Babb, 1989). Without information, or the means of identifying relevant information, it is difficult to arrive at a decision or implement changes. The availability and accessibility of information is, therefore, paramount, particularly when new policies are being explored and developed, and during the period of their implementation. Training of farmers, where knowledge and information are available, together with an appreciation of the relevance of these, will have an effect on their behaviour through making them aware of new or different methods, practices, applications, or technologies.

An individual's personality is recognised as defining that individual and influencing their behaviour. The following personality traits, measured by the NEO Personality Scale (Costa and Mc Rae, 1992) can be distinguished: 1.) An extrovert, exhibiting lively, outgoing gregarious behaviour, 2.) A neurotic, displaying negative emotional behaviour. 3.) A conscientious personality is punctual, methodical, well organised. 4.) A personality open to new ideas, displays a willingness to consider and try new methods. 5.) An agreeable personality is marked by a willingness to co-operate with others. The manner in which problems are tackled is recognised by four coping styles related to personality (avoidance; distraction; emotion focused; and task oriented) (Endler and Parker, 1990). Personality and coping styles should be acknowledged if individual farmers are to benefit fully from training, and policy should recognise, and be disseminated in a manner which takes account of the importance of the impact of personality and coping styles on uptake.

Study

245 Scottish farmers, of whom 51% operated predominantly livestock farms, and 49% operated primarily arable farms, participated in the survey. The average age of the sample was 48 years (25 - 83); 86% were raised on the farm; 67% expected their child(ren) to succeed them on the farm; 32% found it necessary for the family to work on the farm; 19% had off-farm employment; 13% were involved in some form of diversification; and the gross farm margin ranged from -£5588 to £439,000. Five fundamental farming objectives, of business, environment, quality of life, status, and off-farm work were identified by factor analysis. Additionally, four basic farming behaviours, of business, environment, off-farm, and stress were obtained.

Which areas generate most information searching?

Table I shows the number of sources of information which farmers consulted for each area of decision making which was examined in the study. The table shows, in descending order, the average number of sources which were used in each decision area. The areas requiring the largest number of sources were future planning for the farm, investment decisions, financial decisions, book keeping and the future size of the farm, and marketing. By far the most active area relates to the financial side of the farm business. Marketing, seen in the context of selling the right product at the right price can also be seen within the context of a financial decision.

Is there a difference between high and low users of information?

Table 2 indicates the ranking importance between the high and the low information seekers. t-tests indicated that there was a significant difference between those who use many sources of information for every type of decision and those who use fewer sources. The most noticeable differences occurred in the area of future planning for the farm where on average seven more sources were used by the high group. This may mean that the low source users are unable to increase the farm size, as the rank ordering of the other areas are very similar, i.e. investment, financial, book keeping have the same ranking, but are 2-3 order of magnitudes larger for the high users of information.

Who is most frequently consulted?

Table 3 identifies who is consulted most frequently; it indicates that the spouse is the most likely to be consulted in all areas, followed by partners and children. Accountants are frequently sourced for book keeping decisions, with accountants and bank managers consulted in investment and financial decisions, and in future planning of the business. Agricultural advisors are consulted about the future planning of the business, while commercial representatives are consulted regarding marketing decisions. One of the significant 'others' mentioned by the farmers in this area was the auctioneer at the market who was consulted about marketing decisions.

Other Sources of Information

The study elicited the following relevant information. 88% of farmers often or frequently read the agricultural press. Agricultural advisors were consulted by 37% on a regular basis. 24% regularly discussed new farming policies with farming neighbours, and 22% discussed new farming policies with the family

The role of personality

Personality variables of conscientiousness, extroversion, openness, task oriented coping and innovation are implicated in the number of sources of information used by the farmer (Sachs and Reinhold, 1973). A structural equation model of the relationship between these variables and sources of information is shown in Figure. I and associated table. Further discussion is available in Willock et al, 1994. The farmer who reports being innovative typically displays behaviour, which indicates open mindedness, extroversion and conscientiousness. Gathering information from a range of sources is associated with openness to new ideas. A task oriented coping style is associated with a personality, which is conscientious, but it is not directly associated with innovation. From these associations it would appear that personality variables should be seriously considered in decision-making studies. This study has shown that a direct relationship between a farmer's goals and behaviour is influenced by personality. In the light of the findings it is suggested that farmers could, with advantage, be trained in small groups to re-evaluate their objectives, management styles and individual methods of assessing and coping with the business requirements. A possible means is suggested in the following section.

Training Possibilities

The foregoing indicates that trainers should have wide experience and knowledge of relevant farming systems, policies, and insight into individual differences. They should also be sensitive to the requirements of the decision maker(s). Table 2 indicates that there is little difference in the areas of information sought between high and low users of information so that the development of a common course framework could be considered. The following steps are, therefore, advocated:

1. Develop methods to make decision maker(s) enunciate their operating objectives, thereby identifying areas for specific investigation. Alternative business related behaviours can be explored, together with the incorporation of relevant national and EU policy objectives. A means of achieving this might be by the raising of awareness of farmers' long, medium, and short term planning. The feasibility of suggestions should be explored, and additional information, and information sources relevant to them, identified.
Offering personality and coping assessments, together with an interpretation of how these might affect behaviour and objectives related to their decision making, will bring awareness to the farmer and emphasise their current and potential operating styles.
2. Identify relevant sources of information, to meet the needs of the individual's objectives and behaviours. Sources of information and their accessibility must be identified in a variety of media. This will enable policy uptake and related actions to benefit from a wider interpretation and dispersion. Table 3 identifies those whom the farmer consults, and could

prove to be useful in targeting those who might be powerful sources of information for the farmer.

These steps are tentatively suggested, but it must be borne in mind that the individual's operating conditions (Size, tenure etc.) have a constraining influence on their decisions and actions. They must, therefore, be assessed and incorporated into the trainers' and decision makers' conception of the problem and any solution offered when considering training needs or programmes.

References

- Costa and McCrae (1992) Four Ways Five Factors are Basic. *J. of Personality and Individual Differences*, 13, (6), 653-665
- Coughenour, M.C. and Swanson, E. (1988) Rewards, Values and Satisfaction with Farm Work. *Rural Soc.* 53, (4), 442-459.
- Coughenour, M.C. and Tweeten, L. (1986) Quality of Life Perceptions and Farm Structure in Agricultural Change: Consequences for Southern Agriculture and Rural Communities. Molnar, J.J. (ed.) Chpt.5, 61-87 Westview Press, Boulder
- Endler, N.S. and Parker, J.D.A. (1990) Multidimensional Assessment of Coping: A Critical Evaluation. *J of Per. and Soc. Psychology.* 58, (5), 844-854.
- Ford, S.A. and Babb, E.Y. (1989) Farmers Sources and use of Information Agribusiness. 5, 465-476
- Gasson, R.(1973) Goals and Values of Farmers. *J of Agric. Econ.* 24 (3) 521-524.
- Gasson, R. and Potter, C. (1988) Conservation through Land Diversion: A Survey of Farmers' Attitudes. *J. of Agric. Econ.* 39, (3), 340-351.
- Lindner, R.K. (1987) Adoption and Diffusion of Technology: An Overview. *ACIAR Proceedings Series.* 19, 144-151
- Sachs, E. and Reinhold, G. (1973) The Farmer as an Entrepreneur Personality?. *Sociologia Ruralis.* 13, (2), 194-214.
- Sing, S. and Ray, J.J. (1980) Modernisation and Dev. among Indian Farmers. A Modern Proof of Some Old Theories. *Economic Development and Cultural Change.* 509-521
- Willock et al. (1994) Decision Making on Family Farms. *Proceeding 38th EAAE seminar,* 63-75.

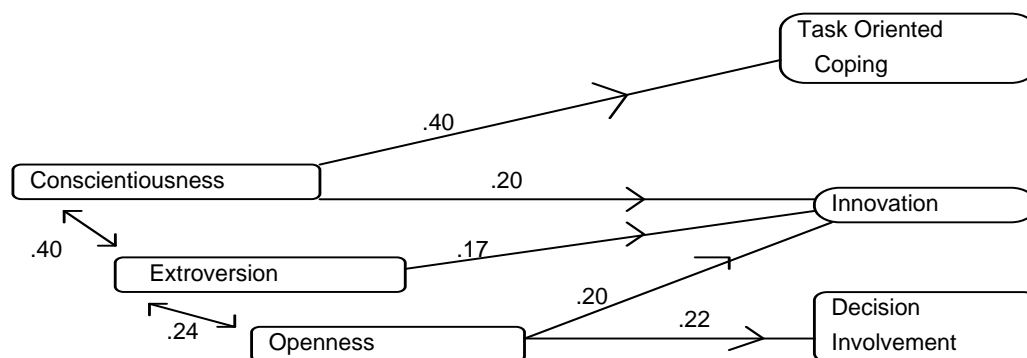


Figure 1: Structural Equation Model of Information Gathering

Associated Table to Figure 1:

Pearson r correlation among personality, coping and decision involvement and innovative measures. *p<.05, ** p<.01, p<.001

	Extroversion	Openness	Conscientiousness	Task Oriented Coping	Decision Involvement	Innovativeness
Extroversion	1					
Openness	.22**	1				
Conscientiousness	.39**	-.05	1			
Task Oriented Coping	.26**	.10	.43***	1		
Decision Involvement	.15*	.21**	.01	.01	1	
Innovativeness	.32**	.26**	.26***	.22***	.22***	1

Table 1: Rank order of decisions requiring more than one source

Sources	Mean (No sources)	Std Dev	N
future of farm	6	2.85	244
financial	5	2.23	244
investment	5	2.58	244
bookkeeping	4	1.93	244
marketing	4	2.17	244
farm size	4	2.67	244
houshold	4	2.22	244
family leisure	3	1.28	244
contracting in	2	1.93	244
contracting out	2	1.83	244
familly garden	2	1.23	244
off-farm work	2	1.37	244
diversification	2	1.53	244
day to day decisions	2	1.31	244
tot sources of information	47.29	19.42	244

Table 2: Information Seekers. Low and high users information in the various areas

HIGH USER				LOW USER			
	Mean	Std. Dev	N		Mean	Std. Dev	N
Decision area	Mean	Std. Dev	N	Decision area	Mean	Std. Dev	N
Future of the farm	8.7	2	92	Investment decisions	3.5	1.4	132
Investment decisions	7.7	1.8	110	Marketing decisions	3.6	1	120
Final decisions	3.3	1.5	110	Final decisions	3.5	1.3	134
Size of the farm	6.5	1.9	98	Book keeping	2.9	1.1	165
Household decisions	6.4	1.6	81	Household decisions	2.3	1.1	165
Book keeping	6.1	1	81	Size of the farm	2.3	1.4	148
Marketing decisions	5.4	1.4	126	Family leisure	2	0.9	171
Diversification decisions	5.2	0.7	76	Family garden	1.4	0.8	155
Contracting in	4.2	1.4	86	Future of the farm	1.4	1.7	154
Family leisure	4.2	0.4	75	Day to day decisions	1.3	0.8	169
Contracting out	4.1	1.4	103	Contracting out	1.1	0.8	143
Day to day decisions	3.6	0.8	77	Off-farm	1	0.9	189
Off-farm	3.5	0.7	57	Diversification decisio	0,82	0.9	170
Family garden	3.4	0.7	91	Contracting in	0.8	0.9	160
Total information used	63.2	14	116	Total information used	33	10.5	129

Table 3: Who is consulted ? (Units = No. of farmers)

Question	Source	Partner	Child (ren)	Bank Manager	Accountant	Agric. Advisor	Commercial Rep.	Lawyer	Employee	Others	Total
book keeping	88	45	9	6	142	5	0	1	2	3	301
contracting out	24	41	11	3	6	2	0	0	10	0	97
contracting in	29	47	17	2	7	3	0	0	13	3	121
financial investment	97	85	18	41	60	9	1	3	3	1	318
marketing	109	89	22	48	63	9	2	5	4	3	354
future planning	50	65	23	3	10	6	18	0	12	3	190
size household	105	81	36	37	42	24	1	12	12	3	353
family garden	76	73	27	21	17	15	1	6	12	2	250
leisure activities	179	15	15	11	12	16	1	1	8	2	260
off-farm work	153	15	15						50	1	234
diversification	172	9	65								246
day to day running	77	17	19								113
	86	34	19								139
	61	53	30								144
Total	1306	669	326	172	359	89	24	28	126	21	2478