The adoption and diffusion outcome prediction tool

Adoption report for:

Feed ration Planner - Final seminar Scotland

Report Authors:

Laurence Depuille

3/07/2024

For more information about ADOPT contact adopt@csiro.au

Project Details

MODEL

Standard agriculture

YOUR INNOVATION

Feed ration planner

YOUR POPULATION

meat sheep, dairy sheep, dairy goat

Adoption Level

TIME TO NEAR-PEAK ADOPTION LEVEL
(years)

PEAK ADOPTION LEVEL
(percent %)

Predicted adoption levels

IN 5 YEARS FROM START	IN 10 YEARS FROM START	TIME TO 50% OF PEAK ADOPTION (years)

NOTES: The predictions of Peak Adoption Level and Time to Peak Adoption Level are numeric outputs that are provided to assist with insight and understanding and like any forecasts should be used with caution. Time to Near Peak Adoption represents the time to 99% of the maximum predicted adoption level.

Adoption level S-Curve

The following chart shows how the level of adoption in the relevant population of farmers changes over time.

Yearly Adoption Levels

Year	Adoption %
1	2
2	7
3	18
4	32
5	47
6	60
7	70
8	77
9	81
10	84
11	86

(Peak Adoption)

Changing the adoption levels

Many of the factors can be changed by activities such as extension. Based on the data entered, the ADOPT model suggests that changing the following factors would have the biggest effect on adoption.

Changing the peak adoption level

MOST SENSITIVE QUESTION	YOUR RESPONSE
19 Environmental costs & benefits To what extent would the use of the innovation have net environmental benefits or costs?	Moderate environmental advantage

STEP UP RESPONSE	STEP DOWN RESPONSE
Large environmental advantage	Small environmental advantage

Changing the time to peak adoption level

MOST SENSITIVE QUESTION	YOUR RESPONSE
12 Relevant existing skills & knowledge What proportion of the target population will need to develop substantial new skills and knowledge to use the innovation?	A majority will need new skills and knowledge

STEP UP RESPONSE	STEP DOWN RESPONSE
About half will need new skills and knowledge	Almost all need new skills and knowledge

Sensitivity Analysis

The following charts show the effects on Peak Adoption Level and Time to Peak Adoption of single step changes up and down for all questions.

Peak level, sensitivity analysis

Time to peak, sensitivity analysis

S-Curve Sensitivity

The following chart shows how the S-Curve is predicted to change when a single step change is made to the most sensitive question(s) with respect to Peak Adoption Level

The following chart shows how the S-Curve is predicted to change when a single step change is made to the most sensitive question(s) with respect to Time to Near Peak Adoption.

Responses

Question	Response	Reasoning
Relative Advantage for the Population		
1. Profit orientation	About half have maximising profit as a strong motivation	
2. Environmental orientation	About half have protection of the environment as a strong motivation	
3. Risk orientation	About half have risk minimisation as a strong motivation	
4. Enterprise scale	A majority of the target farms have a major enterprise that could benefit	
5. Management horizon	About half have a long-term management horizon	
6. Short term constraints	Almost none currently have a severe short-term financial constraint	
Learnability Characteristics of the Innovation		
7. Trialable	Easily trialable	
8. Innovation complexity	Moderately difficult to evaluate effects of use due to complexity	
9. Observability	Moderately observable	
Learnability of Population		
10. Advisory support	About half use a relevant advisor	
11. Group involvement	A minority are involved with a group that discusses farming	
12. Relevant existing skills & knowledge	A majority will need new skills and knowledge	
13. Innovation awareness	About half are aware that it has been used or trialed in their district	

Relative Advantage of the Innovation	
14. Relative upfront cost of the project	No initial investment required
15. Reversibility of the innovation	Very easily reversed
16. Profit benefit in years that it is used	No profit advantage or disadvantage in years that it is used
17. Future profit benefit	Moderate profit advantage in the future
18. Time until any future profit benefits are likely to be realised	1 - 2 years
19. Environmental costs & benefits	Moderate environmental advantage
20. Time to environmental benefit	1 - 2 years
21. Risk exposure	No increase in risk
22. Ease and convenience	Moderate increase in ease and convenience

ADOPT can be cited as: Kuehne G, Llewellyn R, Pannell D, Wilkinson R, Dolling P, Ouzman J, Ewing M (2017) Predicting farmer uptake of new agricultural practices: A tool for research, extension and policy, Agricultural Systems 156:115-125 https://doi.org/10.1016/j.agsy.2017.06.007