Determinants of organic farming conversion

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DETERMINANTS OF ORGANIC FARMING CONVERSION

Abstract:

In this paper the behavioural change framework of Ajzen and Fishbein is used to explore whether attitudes towards organic farming, the perceived social pressure of the environment and the perceived feasibility of organic farming standards on the farm determine the willingness of farmers to convert to organic farming methods. These variables together with the business and personal objectives and the organic farming information seeking behaviour of the farmer were used in an ordinal regression procedure to predict the intended organic farming conversion behaviour of conventional farmers.

Keywords: organic farming (Q01), firm behaviour (Q21)

Introduction

Modern high-input agriculture has produced great increases in crop yields but social and environmental costs have been high. Over the past decades sustainability becomes more and more a guiding principle in agriculture. In this context organic farming became recognised by farmers, policymakers and consumers as one of the possibilities for the farmer to farm in a more sustainable way.

As in most European countries, organic farming in Belgium broke through in the nineties when public interest in and political recognition of organic farming increased and different measures were taken to promote conversion. In the beginning, these measures were relatively successful and resulted in an increasing number of farmers converting to organic farming. More recently the development of the organic sector in Belgium stagnated and with 1.72% of the agricultural area organic in 2003, the share of the organic production in Belgium stays below the European average of about 3% (NIS, 2005; Organic-Europe, 2005 and Biologica, 2005). Although differences in institutional and market environment between European countries definitely have a direct impact on this development (Michelsen, 2001 and Lynggaard, 2001), the growth of organic farming in each country is based on the cumulative impact of individual farmers' willingness regarding conversion in a same institutional environment. This willingness to convert is low in Belgium and at the moment each year less conventional farmers make a choice in favour of certified organic farming methods.

The aim of this research is to identify the nature of barriers to conversion and in particular to examine key differences between those who have made the conversion and those who have not. In this context conversion to organic farming is seen as an individual decision problem where the individual farmer decides to change his existing farming practice and accept the organic production standards. Conversion to organic farming is in this way compared to the adoption of a 'new' idea or innovation on the farm (Padel, 2001) and related to the concept of how choices are made by people (Ajzen, 1989 and Ajzen & Fishbein, 1977).

Innovation/Adoption models

The prediction of adoption and diffusion of innovations is extensively studied by rural sociologists and agricultural economists. A wide range of factors are investigated influencing the adoption decision of a farmer and explaining the heterogeneity between individuals.

Different approaches can be distinguished in explaining why individuals do not adopt innovations at the same time. A first perspective focuses on information disequilibrium between persons. Information gathering reduces the farmer's uncertainty about the innovation. As information is generated in the process of innovation implementation and spreads gradually among the potential adopters, the number of adopters will increase. Individual's differences in adoption rate are explained by differences in information gathering behaviour and interpretation of the information. A second approach in explaining differences in innovation adoption is of a decision theoretic view. At a certain

moment in time differences in adoption benefits between potential adopters explain the variation in individual innovation decision. These differences in benefits can vary among potential adopters due to differences in farm characteristics and personal characteristics. Diffusion of the innovation over time comes when either the characteristics of the adopter or the benefits of adoption change over time (Diederen et al., 2003). An other useful perspective is the more social behavioural approach. Fishbein and Ajzen (1980) postulated in their theory of planned behaviour that a person's intention to perform behaviour is determined by three major sources: attitude toward the behaviour, the social pressure and the perceived behavioural control.

Because conversion to organic farming methods implies a complete revision of the farmers' farm organisation, the benefits of organic farming must exceed the benefits of the actual practice or production system. Choice is seen as a process of comparing and selecting among the benefits associated with each alternative. Often these benefits are restricted to economic gains but also social benefits as convenience, satisfaction can play an important role (Pampel & Van Ess, 1977 and Marsh, 1998). Especially on family farms where the farmer at the same time is owner, head of the farm and provides most of the labour, other than pure economic benefits must be considered (MacRae et al.,1990). Motivations behind adopting conservation technologies (and organic farming) are likely tied to recognition of the complex impact of conventional farming on the environment and society. This involves deeply held values but also does not exclude profit-making motives (Nowak, 1987). Depending on the characteristics of the innovation, the innovation will be evaluated positive or negative. More than an objective evaluation of the innovation's characteristics that contribute to the relative advantage of the innovation, the perception of these characteristics determine the attitude of the decision maker towards the innovation (Rogers, 1995). This perception can be different for each individual and influenced by personal characteristics of the farmer (Rogers, 1995, De Souza et al., 1999, Ajzen & Fishbein, 1977 and Burton et al., 1999). Although a positive attitude does not assure the farmer will behave in accordance with this attitude, a positive attitude towards the innovation is seen as an important step in one's intention to conduct behaviour (Ajzen, 1989, Ajzen & Fishbein, 1977, 1980; Eikebrokk & Sørebø, 1998, Clearfield & Osgood, 1986).

On the other hand, an innovation may have superior characteristics compared to existing practices but when translated to the real farm situation and after calculating economic farm benefits, it may be difficult to imply. Current structural characteristics of the farm may delay or prevent the adoption of an innovation. Ajzen and Fishbein (1977) defined this as the perceived ease or difficulty a behaviour can be performed.

According to Ajzen (1989) and Roger (1995) there appears to be a general agreement that most of behaviour is goal directed. Underlying this assumption is that farmers will take rational decisions and farmers are willing to change or innovate in order to achieve these goals.

However, farmers do not always behave according to their attitudes and on first sight non-rational decisions are taken. These non-rational decisions of the farmers are often related to the social environment of the farmers. Perceived negative attitudes of the social environment towards the adoption of an innovation may hamper the individual intention to adopt (Rogers, 1995 and Ajzen & Frishbein, 1977), making sometimes farmers more not willing to innovate rather than not able to innovate (Oliver,1997).

Outline of the paper

Although there is an implicit recognition that many factors can influence decision making and different variables interact and influence each other, there are only few models available that organise this knowledge in a specific context in which innovative behaviour and changes can be explained. Based on the context of behavioural change of Ajzen and Fishbein (1980) this paper seeks to explore whether attitudes towards organic farming, the perceived attitude of the social environment towards organic farming (or social pressure) and the perceived feasibility of organic farming standards on the farm determine the willingness of the farmer to convert to organic farming methods. Differences in business and personal objectives between organic and conventional farmers are investigated and used together with the organic farming information seeking behaviour to explain the intention of conventional farmers to convert to organic farming.

Determinants of conversion

Inquiry

The data for the research were obtained from two different inquiries: one from a sample of 93 Belgian organic farmers and one from a sample of 190 Belgian farmers who, as far as could be ascertained, not made the conversion to organic farming. In each group the selection of farmers was restricted to full-time farmers, oriented towards dairy farming, cattle rearing and fattening, arable crops or vegetable production. These farm types were considered as having a realistic potential to conversion to organic farming.

Organic farmers were selected from a list of certified farmers obtained from the two official certification organisations in Belgium, BLIK and ECOCERT. Because the knowledge about the organic population in Belgium was restricted, it was not possible to obtain a random stratified sample and an equal sample size was taken for each farm type. Half of the farmers were situated in the Walloon Provinces and half of them in the Flemish and German speaking region of Belguim. For the selection of a sample of conventional farmers, a random stratified sample was taken from the farm accountancy data network of the Centre of Agricultural Economics taken into account the economic dimension of the farm (measured in 'standard gross margin'), the agricultural region and farm type.

During personal interviews data were gathered on beliefs about organic farming, farm and personal objectives of the farmer, the feasibility of organic production standard, the perceived attitude of different actors in the social environment and the use of information sources.

Perceived attitude towards organic farming

Respondents' attitudes to organic farming, in each sample group, were investigated by means of a series of general statements about organic production (for example Gillespie, 2001). On a Likkert scale from -2 to 2, (-2= strongly disagree and 2 = strongly agree) the farmers were asked how much they agreed with the different statements about organic farming. As organic farming fits into sustainable production, the opinion was asked about beliefs of the contribution of organic farming to environmental benefits, the economic viability and the social responsibility of organic farming. Some recoding was performed so that a higher score on each scale indicates a more pro-organic farming attitude. To define an attitude towards organic farming-index, the answers were rescaled from 1 to 5 and a high score reflects a positive attitude (van der Pligt and de Vries, 1995). For each respondent the scores for the statements were summed and the total score was used as a measure of the global attitude towards organic farming. This means that at each belief considered in the attitude construct, was given an equal weight. Subscores were calculated in order to measure differences in attitude towards social, economic and ecological aspects of organic farming.

Originally 20 statements about organic farming were constructed to test the attitude of farmers towards organic farming, finally 16 statements are restrained. Four statements were rejected because their scores were highly correlated to the farm type. A Cronbachs alpha index about 0.908 suggests that there is a high degree of intercorrelation among all the statements, meaning that the statements measure the same underlying construct and belong to only one common factor.

Table 1 shows the average sample scores for the different statements about organic farming of conventional and organic farmers. Organic farmers gave on average significant higher score to the different statements about organic farming than conventional farmers, proving their higher positive attitude towards organic farming. However, not all the organic farmers scored the different statements as high as could be expected. Plotting organic farming attitude scores of organic and conventional farmers clearly demonstrates that also between organic farmers, differences in attitude towards organic farming exists. A small group of organic (13% of the organic farmers interviewed) farmers seems to have, according to the calculated total organic farming attitude score, a relative neutral attitude towards organic farming. This is mainly due to the relative neutral scores they gave to the different organic farming statements and means that these organic farmers did not want to express themself in favour of organic farming. A small investigation revealed that these organic farmers relatively recently converted to organic farming and mentioned economical reasons as one of their most important

motivations. Most of them are not convinced about the possibilities of organic farming as the only farming system but saw economic possibilities in organic farming on their own farm.

Table 1: Average sample score for different statements about organic farming of conventional and organic farmers (standard deviations in parentheses).

Attitude statements	**Conventional farmers**	**Organic farmers**	**p-value.**
Social statements			
Organic farming gives a positive image to a farm	3.01 (0.83)	4.53 (1.00)	0.00
Organic farming improves animal welfare	3.15 (0.73)	4.28 (1.12)	0.00
Organic farmers lives more in harmony with nature	3.32 (1.47)	4.52 (0.96)	0.00
Organic farming improves animal health	2.84 (0.77)	4.19 (1.09)	0.00
Organic products are healthier	3.06 (0.84)	4.68 (0.76)	0.00
Organic farming can assure world food production	1.59 (1.01)	3.51 (1.61)	0.00
Organic farming gives more job satisfaction	2.94 (0.68)	4.41 (1.01)	0.00
Organic farming is positive evolution	2.82 (1.42)	4.18 (1.24)	0.00
Organic farming is farming of the future	2.74 (1.32)	4.04 (1.37)	0.00
Subscore social attitude towards organic farming	2.81 (0.56)	4.27 (0.72)	0.00
Ecological statements			
Organic farming reduces mineral output to the environment	3.53 (0.80)	4.63 (0.84)	0.00
The use of chemical inputs is negative for health of people and animals	2.97 (1.45)	4.67 (0.80)	0.00
The use of chemical inputs is negative for the environment	3.07 (1.37)	4.67 (0.79)	0.00
Organic farming can improve soil fertility and soil structure	2.86 (1.00)	4.48 (0.98)	0.00
The use of biotechnology can not be allowed in agriculture	3.36 (1.35)	4.60 (1.01)	0.00
Subscore ecological attitude towards organic farming	3.09 (0.72)	4.61 (0.61)	0.00
Economic statements			
The organic price premium is high enough to cover higher production costs	2.23 (1.25)	3.30 (1.49)	0.00
Organic farming can assure the future of a farm	2.74 (1.31)	4.04 (1.37)	0.00
Organic farming can improve income on a farm	2.29 (0.56)	3.29 (0.60)	0.00
Subscore economic attitude towards organic farming	2.22 (0.71)	3.58 (0.78)	0.00
Total score attitude towards organic farming	2.82 (0.52)	4.30 (0.61)	0.00

Calculation of the Cronbachs alpha index for the organic farming subscores demonstrates values of 0.877, 0.774 and 0.603 for respectively the statements related to social, ecological and economic aspects of organic farming. Since only values of 0.65 or more can be accepted, the lower index for the economic attitude towards organic farming statements indicates that there is no complete agreement on the economic benefits of organic farming. Especially for the statement ‘the price of organic products is high enough to cover higher production costs’, there is some disagreement between the organic farmers. About 30% of the organic farmers do not agree with this statement. Also most of the conventional farmers do not believe in economic possibilities for organic farming. More than half of the conventional farmers agree with the ecological benefits of organic farming.

Perceived social pressure

As we conceptualise that the actors of the environment in which the farm operates influence the farmer's decisions, we defined perceived social pressure as the perceived attitude towards organic farming of different actors in the social environment of the farmer. Their perceived attitude was estimated by asking the respondents how they estimate the attitude towards organic farming of their commercial agents, veterinary, finance company, partner and colleagues: negative, neutral or positive. These actors of the farmer's social environment are considered as having an important influence on decision making. To reduce the different attitudes to one perceived attitude towards organic farming of the respondent's social environment the scores were summed and divided by the number of actors taken into account. For example for farms without animals, there was no score for the attitude of the veterinary.

The results in table 2 show that, at the moment of their conversion, organic farmers scored the attitude towards organic farming of their social environment significantly more positive than their conventional colleagues. Except for the colleagues and the finance company, all the differences between organic and conventional farmers were significant. Especially a positive attitude of the consumers, partner, family, parents and friends seemed to be important for organic farmers. For these actors the scores given by the organic farmers were clearly positive (>2). The attitude of colleague farmers was estimated relatively low by conventional as well as by organic farmers. The index, however, does not say anything about how important the different actors are in the decision process of the farmer.

Table 2: Average sample score for perceived attitude towards organic farming of different actors in the social environment (standard deviations in parentheses).

Actor in the social environment	**Conventional farmers**	**Organic farmers**	**p-value**
Colleagues	1.64 (0.57)	1.79 (0.75)	0.066
Partner	1,77 (0.54)	2.80 (0.45)	0.000
Consumers	-	2.40 (0.66)	-
Commercial agents	1.66 (0.53)	1.88 (0.57)	0.001
Veterinary	1.65 (0.55)	1.93 (0.57)	0.000
Bookkeeper	-	2.01 (0.50)	-
successor	1.86 (0.40)	-	-
Finance company	1.92 (0.37)	1.96 (0.46)	0.425
Family/ Parents/Friends	1.43 (0.79)	2.43 (0.70)	0.000
Perceived social pressure	1.75 (0.29)	2.26 (0.28)	0.000

Perceived ease of conversion

The perceived ease of conversion is an index to define the perceived ease or difficulty of performing the conversion. Farmers converting to organic farming methods have to meet certain production standards. These standards are mainly related to the use of chemicals in the production and animal welfare. The organic production standards used to calculate the perceived ease of conversion index are:

- Organic farmers can not use synthetic fertilizers and pesticides.
- No routine dosing with antibiotics are allowed
- Livestock density is restricted to 2 LU/ha.
- For welfare reasons the animals must have enough space to express their natural behaviour
- Livestock should be fed 100% organically grown feed.
- Breeding systems are based on breeds that give birth naturally.

The conventional respondents were asked on a Likkert scale from 1 to 5, (1= strongly not feasible and 5 = strongly feasible) to estimate the feasibility of the different production standards on their farm. The global perceived feasibility of organic production standards was calculated by summing the scores for the individual standards and dividing the total score by the number of organic production standards taken into account. This means for example that when livestock was absent on the farm only the first two organic production standards for plant production were taken into account. The perceived feasibility of conversion was only calculated for the conventional farmers. For the organic farmers there is stated that, at the moment of their conversion, they believed the different production standards of organic farming could be reached.

Table 3 shows that the feasibility of organic production standards on the own farm is scored relatively low. Only some structural adaptations related to the sheltering of livestock seems feasible for more than half of the conventional farmers. Working without synthetic fertilizers and pesticides and no preventive drugs use is according to most of the farmers very difficult and not realistic. The index, however, only gives the perception of the farmers and says nothing about the real feasibility of the organic production standards on the farm.

Table 3: Average sample score of the feasibility of different organic production standards on conventional farms. A score of 3 or more means that the production standard is feasible on the farm. (standard deviations in parentheses).

Organic production standard	**Mean score**	**% of farmers score > 3**
Working without use of synthetic fertilizers	2.07 (1.20)	28%
Working without use of synthetic pesticides	1.84 (1.01)	17%
Organic production standards for plant production	**1.95 (0.98)**	**23%**
Livestock density is restricted to 2 LU/ha.*	2.59 (1.40)	48%
Minimum surface for outdoor exercise for animals*	3.03 (1.43)	61%
Minimum surface for indoor housing of animals*	2.82 (1.44)	51%
Ample dry bedding strewn with litter material provided in rest area of animals*	3.36 (1.43)	71%
Livestock should be fed 100% organically grown feed.*	2.32 (1.27)	41%
Animal-health management mainly based on prevention*	2.14 (1.23)	23%
Breeding systems based on breeds that give birth naturally.*	2.66 (1.60)	46%
Organic production standards for animal production*	**2.72 (0.81)**	**42%**
Total score of feasibility of organic production standards	**2.25 (0.84)**	**20%**

* only for farms with livestock

Personal and business objectives

Till recently the development of agriculture was mainly directed to intensification, increasing productivity and cost reduction. These objectives are not in line with organic farming methods, where extensive production methods are used, productivity often decreases and the farmer has sometimes to face higher production costs. On the other hand, more and more farmers become aware of the negative effects of the high-input, high-productive production method on the environment. They seek to more sustainable production methods and try to reduce the impact of their farming system on the environment. Such objectives may be a first step to organic production methods.

Data on personal and business goals were obtained by asking the respondents to rate the importance they attach to several personal and business objectives on a 7 point Likkert-type scale. A first step in the analysis consisted of reducing the data on personal and business objectives to a limited

number of principal components, reflecting the main objectives of the farmers. These principal components could be used as independent variables in the analysis. The respondents could also indicate three objectives that would be of the most importance in their decision process. With this information, for each of the components a new variable was created. When an objective of the component was mentioned as important, the corresponding variable was set 1. When no objectives of the component were mentioned, the corresponding variable for that component was set 0.

Results in table 4 shows that conventional farmers give significant more attention to productivity, risk and cost reduction than organic farmers. A high income and doing better than colleague farmers are more often stated as important. Organic farmers on the other hand, give more importance to business goals as flexibility, the quality of production and the reduction of impact on the environment. Personal objectives as farming as a way of live, personal satisfaction and independency and interests outside agriculture are given higher scores by organic farmers. A healthy financial situation on the farm is as important for organic as for conventional farmers.

Table 4: Average scores given by conventional and organic farmers at personal and business objectives (standard deviation between brackets)(negative value means not important)

	Conventional	**Organic**	**p-value**
Personal objectives			
Farming as a way of live	-0.09 (1.07)	0.19 (0.77)	0.026
Interests outside agriculture	-0.08 (1.03)	0.28 (0.86)	0.005
Personal satisfaction	-0.13 (1.10)	0.66 (1.10)	0.001
Business objectives			
Productivity, reduction of risks and costs	0.14 (0.79)	-0.48 (1.33)	0.000
Doing better than others and Income	0.19 (0.86)	-0.70 (1.07)	0.000
Flexibility	-0.20 (0.94)	0.36 (1.10)	0.000
Quality and environment	-0.22 (1.00)	0.63 (0.66)	0.000
Financial equilibrium	-0.05 (0.97)	0.10 (1.05)	0.266

Information seeking behaviour

Information is an important aspect in the decision-making process. The search for information makes the decision-maker common with the new idea and helps him to evaluate in an objective way whether he will be better of worse off by adoption.

To investigate the use of information related to organic farming by conventional farmers, the respondents were asked how often they read articles in journals, use government information, go to information days and special meetings about organic farming and how many times they already have visited an organic farm. A principal component analysis was used to reduce the information to a limited number of principal components. A first component reflects the intension of information, going from farmers who never make use of any kind of information about organic farming to farmers who make use of different kinds of information sources on a regularly base. A second component reflects the kind of information sources that is used, going from farmers who only read information in journals to farmers who collect information in a more active way and also attend demonstration days and visit organic farms.

In general conventional farmers hardly make use of information about organic farming. About 16% of the conventional farmer says they never pay attention to any kind of information about organic farming. Information from journals and newspapers is the only information source that is regularly used by conventional farmers (40% of the farmers).

Farmers' organic farming conversion intention

The intention of conventional farmers towards conversion was measured by asking the farmers if they intend to convert to organic farming between the moment of the interview and 10 years. This was measured on a scale from one 'I will absolutely not convert' to five 'I will certainly convert'. Since only few farmers (5 out of 190 farmers or 3%) mentioned an intention to convert, the two highest categories were taken together. At the moment of the inquiry, the percentage of 3% was a realistic number corresponding with the observed number of farmers converting to organic production methods at that moment. The intention of the farmer to convert, was used in the analysis as dependent variable, ordinal in scale because the difference in intention between people saying they will 'maybe convert' and 'probably convert' can not be considered as being the same as the difference in intention between people saying they will 'absolutely not convert' and those who say they will 'probably not convert'.

Table 5 shows an overview of the descriptive statistics of the different variables assumed to influence the intention of conversion to organic farming. For the personal and business goals the created nominal variables, reflecting the importance of the objective in the decision process, were taken into account (see table 6).

Table 5: Descriptive statistics of the variables used to predict the intention of conversion

Intention to conversion	**Absolutely not**	**Probably not**	**Maybe**	**Probably**	**Organic**	**p-value**
Attitude towards organic farming	2.59 (0.50)	2.81 (0.42)	3.04 (0.43)	3.31 (0.46)	4.02 (0.58)	0.000
Perceived social pressure	1.64 (0.29)	1.76 (0.28)	1.89 (0.25)	1.89 (0.19)	2.26 (0.29)	0.000
Perceived feasibility of organic farming	1.96 (0.71)	2.19 (0.76)	2.60 (0.79)	3.99 (0.58)	-	0.000
Intension of information search about organic farming	-0.37 (0.62)	0.16 (1.13)	0.36 (1.08)	1.17 (1.78)	-	0.000
Sources of information about organic farming	0.13 (0.68)	-0.08 (1.05)	-0.068 (1.42)	0.42 (1.44)	-	0.443

It was assumed that these were of more importance in the intention than the continue variables. Significant differences exist for most of the intention categories. Only for personal and business goals such as farming as a way of life, interest outside agriculture and personal satisfaction and the variable related to the kind of information source used, no significant difference could be found. The lower the intention to conversion, the more the farmer perceived that organic farming standards are not feasible on their farm and the more the farmer has a negative attitude towards organic farming. Duncan procedure reveals that the differences between the attitude towards organic farming are only significant between farmers absolutely not willing to convert and farmers who not exclude organic farming conversion (maybe, probably). Farmers who will probably not convert to organic farming make significant less use of information about organic farming than farmers who will maybe convert to organic farming. The perceived attitude of the social environment is estimated low especially by farmers who will absolutely not convert to organic farming.

Table 6: Percentages of farmers mentioning personal and business objectives as important in the decision process.

	Absolutely not	Probably not	Maybe	Probably	Organic	p-value
Farming as a way of live	58%	41%	30%	60%	63%	0.557
Interests outside agriculture	37%	32%	28%	40%	47%	0.344
Personal satisfaction	71%	73%	72%	80%	74%	0.979
Productivity, risks and costs reduction	71%	72%	70%	60%	42%	0.000
Doing better than others and Income	49%	38%	51%	20%	19%	0.000
Flexibility	10%	16%	9%	20%	65%	0.000
Quality and environment	53%	54%	72%	100%	93%	0.000
Financial equilibrium	65%	70%	61%	40%	44%	0.006

Calculating bivariate correlation coefficients showed that the created continuous variables are not completely independent of each other. Since the correlation coefficients are relatively low and the purpose of the model is only predicting and forecasting the influence of different variables, however, an ordinal regression procedure could be used to investigate the relation between the intention of conversion and the theoretical determined variables. In the analysis only the conventional farmers were analysed because feasibility of organic farming on the farm was not measured for organic farmers.

Table 7: Ordinal regression results for prediction of intention of conversion

Variable		Coefficient	Std Error	Wald	Sig.
Constant	Absolutely not	4.602	0.928	24.596	0.000
	Probably not	6.069	0.969	39.201	0.000
	Maybe	8.720	1.082	64.935	0.000
	Certainly				
Location	Feasibility	0.486	0.130	13.861	0.000
	Social pressure	0.961	0.406	5.609	0.018
	Attitude	0.764	0.239	10.248	0.001
	Productivity, risks and costs reduction (=0)	-0.304	0.252	1.450	0.228
	Productivity, risks and costs reduction (=1)	0			
	Doing better than others and Income (=0)	0.220	0.334	0.432	0.511
	Doing better than others and Income (=1)	0			
	Flexibility (=0)	-0.198	0.229	0.751	0.386
	Flexibility (=1)	0			
	Quality and environment (=0)	-0.579	0.230	6.349	0.012
	Quality and environment (=1)	0			
	Financial equilibrium (=0)	-0.191	0.215	0.787	0.375
	Financial equilibrium (=1)	0			
	Intension of information search	0.439	0.097	20.386	0.000

Goodness of fit criteria

Log-likelihood	-183.737
Restricted (slopes=0) Log-likelihood	-221.628
Chi-squared	75.982
Significance level	0.000
Degrees of freedom	9
Pseudo R^2	0.330

The results of the ordinal regression analysis (SPSS++, using negative log –log function) in table 7 confirm that the specified variables reflecting the farmer's attitude, the social pressure and feasibility of conversion contribute significantly ($p<0.05$) to the prediction of intent conversion behaviour. All the variables have a positive impact on the farmer's intention to convert. A farmer, who does not put quality and environment as an important objective in his decision process, will have a lower intention to conversion. The more the farmer seeks for information about organic farming, the higher his intention to convert. It is, however, unclear whether the farmer searches for information because he has a higher intention to convert or whether he has a higher intention because he is better informed. The Cox and Snell's r-squared measure, summarizing the proportion of variance in the dependent variable associated with the independent variables, of 0.33 is respectable but leaves a remarkable part of the variance still unexplained and it will probably be worth the effort to revise the model to try to make better predictions.

Using the model to predict the intention of conversion category, the results in table 8 show that the model seems to be doing well at least for the categories where the observations are high such as the category of 'absolutely not', 'probably not' and 'maybe'. Since only 5 observations were available for the 'probably' category, most of the cases were categorized in the 'maybe' category. Only one case was classified in the category 'probably not'. The model further classifies 73% of the category 'absolutely not' cases and 41% of the 'probably not'cases correctly. In addition, cases in category 'absolutely not' are more likely classified in the category 'probably not' and the other way around. The cases in category 'maybe' were more likely classified in the category 'probably not'. This distribution is acceptable because the observed intention categories are based on self declared intention categories.

Table 8: Predicted members of the ordinal regression model

	Predicted category			
Actual category	Absolutely not	Probably not	Maybe	Total
Absolutely not	54	20	0	74
Probably not	32	28	8	68
Maybe	7	22	14	43
Probably	0	1	4	5
Total	93	71	26	190

Conclusion

In correspondence with the theory of behavioural change, organic and conventional farmers clearly differ in their attitude towards organic farming, their perceived social pressure and their perceived behavioural control to perform the behaviour. Especially the economic possibilities of organic farming are estimated very low by conventional farmers. Conventional farmers experience the attitude towards organic farming of their social environment as more negative than their organic colleague farmers. But also organic farmers often experience the attitude of their social environment as being negative. Since in Belgium, farms are mostly family businesses, where farm and family life are closely related, it seems to be important that the partner and family of the farmer have a positive

attitude towards organic farming before the conversion is made. The transfer of farms from parent to child also explains the importance of the attitude of parents towards organic farming.

A drawback of the calculated indexes is that the amount of importance the respondents give to the different statements is not taken into account. It is possible that organic farmers are less influenced by their environment than the conventional farmers or that they are influenced by different actors. Also in the attitude index social, economic and ecological statements were given the same weight. It can be expected that organic and conventional farmers give different importance to the different aspect of agriculture.

The estimated ordinal regression model shows that attitude towards organic farming, perceived attitude of the social environment and perceived feasibility of the organic production standards can be used to predict the intention of conventional farmers to convert to organic farming methods. Quality and environmental oriented farmers are more likely to convert to organic farming than farmers who do not put this objective as important in their decision process. The effect of the organic farming information seeking behaviour may reflect that the better farmers are informed about organic farming, the faster they convert to organic farming. But, it would be interesting to further investigate whether farmers seek information because they want to convert or they convert because they have more information. The current lack of interest in information about organic farming significantly helps to explain why conventional farmers do not intend to convert. Further research is necessary to reveal the reason why conventional farmers do not use the available information. Maybe the available information about organic farming does not reach the conventional farmers because they use different information sources.

Further research will be done to improve the model with extra explaining factors and to reveal the underlying factors of attitude, social pressure and perceived behavioural control.

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