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**LIKELIHOOD OF SUCCESSION AND FARMERS'
ATTITUDES: EVIDENCE FROM A SURVEY IN GERMANY,
THE UNITED KINGDOM AND PORTUGAL**

Miguel Sottomayor
Universidade Católica Portuguesa (Porto)

Richard Tranter
University of Reading

Leonardo Costa
Universidade Católica Portuguesa (Porto)

Likelihood of Succession and Farmers' Attitudes: Evidence from a Survey in Germany, the United Kingdom and Portugal

By

Sottomayor¹, Miguel, Tranter², Richard and Leonardo Costa³

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Abstract

The likelihood of succession in the family farm is referred to in the literature as an influential variable for several family farm management decisions. In this paper, we investigate this relationship for a selection of farm management variables, such as the timing of farmer's retirement, the willingness of farmers to change the current mix of activities, their readiness to adopt new farm activities, and aim their readiness to intensify production. The categorical data analyzed, mostly Likert scales, comes from a mail survey carried out in 2002 to a sample of German, British and Portuguese farmers, amounting to approximately 4500 valid responses. Statistical association between the variables was studied computing the Chi2 statistic and testing the null hypothesis of no association between pairs of variables.

The main conclusions were that the likelihood of succession was positively related to the length of active farmers' live, to the farmer's adoption of new activities (only for the Portuguese respondents), and to farmer's willingness to intensify production. It was also found that the likelihood of succession was negatively related to the intention of leaving farmland idle. On the other hand, no empirical evidence was found of a statistical significant relationship between likelihood of succession and readiness to change the mix of farm activities.

¹ Faculty of Economics and Management, The Portuguese Catholic University (corresponding author - msottomayor@porto.ucp.pt)

² Centre for Agricultural Strategy, The University of Reading, UK

³ Faculty of Economics and Management, The Portuguese Catholic University

Introduction

A large proportion of farms in Europe are run as family businesses and, for those farms, succession from within the family is traditionally the first choice. This is connected to the very nature of family farming, where the time span for productive or investment decision-making, for example, is often inter-generational, rather than intra-generational. In this connection, some authors argue, and give evidence, that for many family farms the main objective of farming is less profit maximisation than assuring farm succession and the economic survival of the farm, and as a livelihood, across generations (Gasson and Errington, 1993).

In contrast, however, some also argue that not all family farm managers look for a successor amongst their children, as some farmers in more depressed and isolated agricultural regions would rather a different and less hard livelihood for their descendents out of the agricultural sector. Quoting one such author (Fennell 1981), “The literature suggests that there is clear evidence that many farmers do not want any of the family to succeed them”, according to Gasson and Errington (1993). This is so “often because they do not want their children to have the same struggle as themselves on small marginal farms where the standard of living is falling behind that of the rest of society”. Nevertheless, this last point is less argued in the literature and, to our knowledge, there is not much evidence to support it.

Accepting that most farmers would welcome a successor within their family, we would expect that, for such farmers, the perceived likelihood of having a successor influences a number of attitudes and decisions concerning the future of the farm business and the future of the farmer himself. Some of these influences are also referred to in the literature, sometimes in normative terms only, but also in positive and evidence-supported terms. Concerning the latter, evidence is given, just to give a few examples, that: the more likely is the farmer to have a successor, the more land is acquired (Hine and Houston 1973; Harrison 1981; Hutson 1987); the more borrowings to finance on-farm investment is demanded (Marsden *et al.* 1989); and the more milk

quota is purchased (Burrell 1989). In the same line, Potter and Lobley (1992) argue, based on survey evidence, that the less likely is succession to happen the more willing is the farmer to take up extensification schemes. Quoting Gasson and Errington (1993), “without their [children’s] interest and involvement, there may be little to drive an ageing couple into expansion”.

In addition, some authors contend that the less likely a successor is, the more risk averse is the farmer, because, as he grows older, and has no or unlikely prospect of a successor, he has no incentive to expand or adopt risky productive decisions that might endanger the financial stability and (or) add to the farmer’s workload. Quoting Gasson and Errington (1993) in this line of reasoning, “the presence or absence of a successor may have more influence upon business objectives and farm performance than the farmer’s age. A farmer with a successor has a ‘generational stake’ in that successor which provides a constant incentive for forward planning and expansion. A farmer without a successor has none, and in old age may begin to run down the business and consume capital, if only to reduce workload.”

On the other hand, there is also evidence that such influence of the likelihood of succession on farmers’ attitudes and behaviour varies (increases) with farm scale and with the degree of farm specialization (Glauben *et al.* 2002).

Summarizing, the literature suggests, despite a certain lack of evidence based on extensive surveys, and comparisons across countries, that the likelihood of a successor changes the attitude and behaviour of the farm manager, making him (1) more prone to intensify the farm activities, (2) more inclined to invest in the farm, and (3) less risk adverse, for example, more willing to adopt new activities. Furthermore, the degree of such influence increases with farm scale.

Research Question

Despite the discussion in the literature on the importance of the existence of a successor on most European farmers’ behaviour, the amount of evidence on this is relatively scarce, and generally, not based on evidence from large surveys comparing farmers across culturally and economically

contrasting countries. But, such a survey was carried out between October 2001 and February 2002, with the main purpose of studying farmers' attitudes towards a particular reform proposal of the European agricultural policy, involving decoupling of direct payments to farmers (Daubjerg 2005). This survey provided, indirectly and largely unintentionally, an opportunity to partly fill this gap as, contained amongst other questions, was a question posed to farmers on the likelihood of having identified their successor, together with questions on their intentions concerning the future of their own farm business. Therefore, this questioning structure made possible the study of the likelihood of succession, as an explanatory variable, to a number of attitude measurements concerning farm management, as dependent variables. These were: (1) timing of retirement or of leaving active farming; (2) willingness to change; or, (3) to innovate their activities mix; (4) willingness to intensify production; and, (5) intention or not to leave their farmland idle.

Evidence

The data used for the analysis in this paper comes from a survey of farmers in Germany, the United Kingdom (UK) and Portugal carried out from late 2001 to early 2002. In each country, 4500 farmers were sampled. In Germany they were drawn from the official Pension Records database, in the UK from the Yellow Pages telephone directory and in Portugal from the list of the Government's Office of National Statistics.

The response rates were, for Germany, the UK and Portugal, 36.8%, 40.2%, and 33.4%, respectively. Responses were checked out for bias, comparing the sample of respondents with the known overall national patterns, and it was concluded that smaller farm businesses might have been under-represented in the responses from both the UK and Portugal. However, comparing early to late respondents for non-response bias, very few statistically significant differences were found. The survey included, amongst others, questions on the likelihood of succession on attitude towards farm management, the ones that are the main concern of this

paper, and which are presented next. First, and subsequently to general questions on the farm structure and on the farmer profiles, the following question on the likelihood of having a successor was set, to be answered using a five-point Likert scale:

(1) "Have you identified a successor?" (1-Definitely, 2-Very Likely, 3-Possibly, 4-Unlikely, and 5-Definitely Not)

Second, questions on farmers' intentions on the future of their own farms and occupation, the dependent variables, were asked, under two future scenarios. The first scenario proposed to them was the hypothetical situation of decoupled direct payments existing. For the first scenario, the questions dealt with in this paper were the ones concerning farmers' plans for the farm and for their own professional situation in a future ten year time span. For the second scenario, a horizon without productive restrictions for the direct payments entitlement except keeping the land in good productive conditions, the questions posed referred to whether they would change their current mix of farming activities, whether they would adopt new farming activities, and whether they would intensify their current level of production. Next, we present the actual questions posed under each of the two scenarios.

Questions on intentions under the first scenario (Agenda 2000 direct payments, the current situation at the time):

(2) "Do you think you will be farming in ten years time? Yes or no?"

(3) (If no to question 2) What will be your likely situation in ten years? (a) Having retired at the normal age, (b) having taken early retirement, or (c) having taken up other employment?"

(4) (If no to question 2) What will happen to the land you currently farm? (1) Sold, (2) give up the tenancy, (3) passed to successor, (4) rented out, or (5) abandoned the land?"

Finally, for the second scenario posed (direct payment decoupled from land use), the following questions were also asked:

(5) *Would you change your mix of activities?(Yes or no?)*

(6) *Would you adopt new activities? (Yes or no?)⁴*

(7) *Would you leave any of your land idle? (Yes or no?)⁵*

(8) *Would you intensify production? (Yes or no?)⁶*

Sample of Respondents

Respondents and their respective farms are next briefly described on age and educational level attained, and also on farmed area and on the farm's main productive orientation. Concerning farmers' age, (Table 1) farmers 50 years old or older predominate, accounting for around 60% of the sample in the UK, and 75% of the samples in Germany and Portugal.

⁴ For this question the respondents were actually asked to choose out of twelve activity categories (including a open category "other, specify") the ones that they would start from scratch; for the purposes of this paper to any respondent indicating at least one activity as "new" was assigned a "yes" to question 6.

⁵ This question was posed as a five-point Likert scale (none - less than half - around half - more than half - all); for the purposes of this paper all the answers except "none" were considered a "Yes" to question 7.

⁶ This question was posed as a five-point Likert scale (greatly decrease - decrease – remain unchanged - increase – greatly increase); for the purposes of this paper all the answers "increase" or "greatly increase" were considered a "yes" to question 8.

Table 1 - Age of Farmer (% of respondents)

Age	Germany (n=1201)	UK (n=1685)	Portugal (n=1283)
< 50	23.6	40.4	24.9
50 & over	76.4	59.6	75.1

The educational level attained (Table 2) was highest amongst German respondents, as some 25% had 20 or more years of full-time education followed by the UK respondents, with around 19% with this educational level, and with the Portuguese respondents with the lowest attainment of this educational level, with less than 10% accomplishing 20 years of full-time education.

Table 2 – Farmer’s Age at Leaving Full-Time Education (% of respondents)

Educational Attainment	Germany (n=1157)	UK (n=1674)	Portugal (n=1184)
< 20	74.8	81.5	90.3
20 +	25.2	18.5	9.7

Looking at the farmed area of respondents (Table 3), the structure of the sample varies considerably across the three countries, with most of the Portuguese respondents, nearly 88%, being small holders or tenants of less than 25 ha of farmed area. This group is also important amongst German respondents, representing slightly more than 50% of the German respondents. On the other hand, for the UK 50% farmed 100 or more ha of land each.

Table 3 - Farmed Area (% of respondents)

Farmed Area	Germany (n=1209)	UK (n=1674)	Portugal (n=1076)
< 25 ha	50.7	7.0	87.2
25-50 ha	17.3	14.4	5.8
50-75 ha	10.6	15.4	2.3
75-100 ha	5.7	13.1	0.9
>= 100ha	15.7	50.0	3.8

Finally, concerning respondents' main type of farming, the profile is similar in Germany to the UK, with most farmers mainly oriented to livestock or to mixed livestock and cropping. Few had cropping as their main orientation, as only 18% of respondents in the UK and as few as 8% in Germany had this type of farming while, in Portugal, more than half the respondents had cropping as their main productive orientation.

Table 4 - Type of Farming (percentage of respondents)

	Germany (n=1124)	UK (n=1643)	Portugal (n=1176)
Mainly livestock	51.4	51.9	22.2
Mainly cropping	8.3	18.0	58.3
Mixed	40.3	30.1	19.5

Findings

Next, we present and discuss findings concerning, first, the farmers' overall perception on the likelihood of having identified a successor, the explanatory variable for this study and, then, the association of this variable to the attitudinal variables included in the study and referred to above. A null hypothesis of 'no association' was set and tested by means of the Chi² statistic,

suitable for such categorical data, and a probability threshold for rejecting the null hypothesis of ‘no association’ was set at 5%.

Comparing all possible pairs of the three countries on answers to the likelihood of succession for the full Likert scale (upper part of Table 5), and using the Chi² statistic for testing the null hypothesis of no differences, the null hypothesis is rejected for all country comparisons (at the 1% level). However, the Chi² statistic is the highest when comparing Germany to Portugal (Chi² = 203.5), and the lowest when comparing the UK to Portugal (Chi² = 42.8). This is also consistent with the result after amalgamating the original Likert scale into two single categories (lower part of Table 5), namely, “a successor is, at least, possible” and “unlikely or definitely not a successor”, where not only the differences are statistically significant for all country comparisons, but also the Portuguese and UK respondents are closer than any of these countries to Germany concerning respondents likelihood of succession. Just looking at the proportions, in Germany slightly more than half the respondents said they did not have a successor or the successor was unlikely, while in Portugal, this figure was lower (44%) and, in the UK (39%) the lowest percentage observed.

Table 5 – Farmers’ overall perception on the likelihood of a successor on their own farm

Likelihood of Succession:	Germany (n=1209)	UK (n=1705)	Portugal (n=1373)
“Definitely” (1)	16.2%	22.5%	14.7%
“Very likely” (2)	13.3%	13.4%	17.8%
“Possibly” (3)	20.3%	24.9%	23.8%
“Unlikely” (4)	10.3%	20.6%	25.6%
“Definitely not” (5)	39.9%	18.6%	18.0%
	100.0%	100.0%	100.0%
A Successor at least possible (6=1+2+3)	49.8%	60.8%	56.3%
Unlikely or Definitely not a successor (7=4+5)	50.2%	39.2%	43.6%

For the influence of the likelihood of succession from the attitudinal variables, and starting with farmers' expectations of being an active farmer in ten years time (Table 6), the results show that respondents in Germany and Portugal expecting a successor are less likely to be active in farming in ten years time than respondents without or with an unlikely successor. For these two countries, the association was statistically significant at the 1% level (χ^2 for one degree of freedom, respectively 30.2 and 27.2). In Germany, the percentage of respondents without a successor and expecting to end active farming before ten years was 47%, but the equivalent figure was only 41% for respondents with a successor. In Portugal, the difference was even higher, with 62% of respondents without successor expecting to end up active farming in ten years, and only 52% expecting to be doing this among the ones with a successor. On the other hand, the same statistical relationship was not found at all in the UK, where the proportion of respondents expecting to end up farming in ten years was 69%, irrespective of the likelihood of succession.

Table 6 - Farmers stating they would not be in farming in 10 years time (percentage of respondents)

Likelihood of Succession	Germany	UK	Portugal
Successor possible or certain	41.0	69.0	52.1
Unlikely or no successor	46.6	69.3	62.2
<i>n</i>	1190	1679	1350
<i>Chi</i> ²	30.24	0.01	27.17
<i>df</i>	1		
<i>Sign.</i>	0.00	0.91	0.00

As said earlier, for respondents stating they would not be in farming in ten years time, two further questions were posed. First, what would be their occupation after leaving farming (Table 7). Second, what they would do to their current farmed land (Table 8).

Concerning future occupation, again, a statistical association to the likelihood of succession was found for German and Portuguese respondents, but not in the UK. In Germany and Portugal, compared to respondents without a successor, respondents with a successor would retire earlier (at the normal age) and would also be less likely to take up other employment. Also, the German respondents with a successor identified would be more likely to anticipate retirement (earlier than the normal age).

Concerning the destination of their current farmed land (Table 8), not surprisingly the differences between farmers with and without succession are very important⁷, first of all, because passing the land to a successor was simple or a very unlikely option for the second group.

Accordingly the proportion of farmers with a successor passing the farm to the successor were 69%, 79%, and 76%, in Germany, the UK, and in Portugal, and for farmers without (or with an unlikely) successor, these figures were only 5%, 3%, and 14%, respectively.

Table 7 - Future occupation of farmers expecting to leave farming in ten years (percentage)

Ways out of farming (farmer's occupation)	Germany		UK		Portugal	
	Successor possible or certain	Unlikely or no successor	Successor possible or certain	Unlikely or no successor	Successor possible or certain	Unlikely or no successor
Retirement at the normal age	60.0	37.9	77.3	78.2	57.5	48.0
Early retirement	12.1	9.1	14.7	11.7	5.2	5.9
Taking other employment	27.9	53.0	8.0	10.1	37.3	46.1
n	397		564		648	
Chi ²	25.16		2.28		5.94	
df	2					
Sign.	0.00		0.32		0.05	

Naturally, without a successor, the eventual farm land destination would have to be 'sold' or 'rented out', or, for tenant farmers, simply giving up the tenancy. As expected, all these categories are increased in their importance for farmers without a successor. For the last option,

⁷ Chi² statistic associated to a probability of less than 0.1% for the three countries.

the decision to abandon the farm land, in the case of owned land, the proportion of farmers without a successor choosing it was considerable in Portugal, where more than half the respondents indicated that, as their option, it was also relatively high in Germany, with 11% of farmers without a successor saying so, and also visible in the UK, with 4% of the farmers without successor stating the same. Also, compared to farmers with a successor, the proportion of farmers without a successor stating they would abandon their farmed land was four times higher for Germany and Portugal and seven times higher in the UK.

Finally, association between the likelihood of succession and farmers' attitudes concerning (1) openness to changes on the mix of activities, (2) openness to the adoption of new farm activities, or (3) openness to the intensification of farm production are assessed next. Also, (4) the intention of idling at least some of the farm land as a result of the new decoupled direct payments is also assessed.

Table 8 - Disposal of farmland, for farmers expecting to leave farming within ten years (percentage)

Ways out of farming (disposal of land)	Germany		UK		Portugal	
	Successor possible or certain	Unlikely or no successor	Successor possible or certain	Unlikely or no successor	Successor possible or certain	Unlikely or no successor
Selling the farm	1.3	6.8	3.7	40.1	1.9	7.2
Gave up the tenancy	22.6	56.8	3.5	23.4	4.6	19.1
Passing farm to a sucessor	69.2	5.4	79.1	2.6	76.4	14.4
Renting out the farm	4.4	20.3	13.2	30.3	4.2	8.1
Abandoning land	2.5	10.8	0.5	3.6	12.7	51.3
n	381		705		495	
Chi2	175.09		427.00		193.35	
df	4		4		4	
Sign	0.00		0.00		0.00	

For the willingness to change the mix of activities, none of the differences between farmers with, and without, succession (Table 9) were found to be statistically significant (at the 5% level). For

the Portuguese sample, however, the differences were nearly significant as the probability for the Chi² statistic was 7%, with percentages of farmers in this country willing to change their mix of activities of 35% and 30%, respectively for respondents with and without successor. For the other two countries, there were also differences between the two groups in the same direction, but these were very small differences and far from being statistically significant.

Table 9 – Likelihood of succession v. changes to the mix of farm activities

Future Decision Intentions under the Decoupling Scenario	“Would alter mix of farm activities” (%)		Statistics		
	Successor possible or certain	Unlikely or no successor	n	df	Chi ² (sign)
Germany	33.8	32.1	1174	2	0.55
UK	31.0	30.7	1679		0.91
Portugal	34.5	29.6	1227		0.07

For the adoption of new farm activities, the differences between farmers with and without succession (Table 10) were found to be statistically significant (at the 5% level) only for the Portuguese sample, with the percentages of farmers in that country willing to adopt new activities of around 14% and 10%, being respectively for respondents with and without a successor. No statistically significant differences were found for respondents in the other two countries for this particular variable.

Table 10 – Likelihood of succession v. adoption of new farm activities

Future Decision Intentions under the Decoupling Scenario	“Would adopt new farm activities” (%)		Statistics		
	Successor possible or certain	Unlikely or no successor	n	df	Chi ² (sign)
Germany	9.3	7.6	1174	2	0.31
UK	6.2	8.1	1679		0.14
Portugal	13.9	10.2	1227		0.05

For the intensification of farm production, the differences between farmers with and without succession (Table 11) were found to be statistically significant only for the UK and for the Portuguese samples, with percentages of farmers willing to intensify production of 23% and 16% in the UK, and of 24% and 18% in Portugal, respectively for respondents with and without a successor. No statistically significant differences were found for respondents from Germany, where the percentage willing to intensify production under the new agricultural policies were exactly the same, 3.6%, for both groups of respondents.

Table 11 – Likelihood of succession v. farm production intensification

Future Decision Intentions under the Decoupling Scenario	“Would intensify production” (%)		Statistics		
	Successor possible or certain	Unlikely or no successor	n	df	Chi ² (sign)
Germany	3.7	3.7	1083	2	0.99
UK	22.6	15.5	1608		0.00
Portugal	23.7	18.2	986		0.04

Finally, concerning the farmers’ intention of idling at least some land under the decoupled payments scenario, the differences between respondents with and without succession (Table 12) were statistically significant and in the same direction for all countries. That is, respondents without succession were in all countries more likely to idle at least some of the farm land after the proposed policy changes.

For the two groups (with and without succession), the percentage of respondents intending to idle at least some farm land were 38% and 80% for Germany, a very considerable difference, 17% and 25% for the UK, and 44% and 53% for Portugal.

Table 12 – Likelihood of succession v. leaving farm land idle

Future Decision Intentions under the Decoupling Scenario	“Would leave idle at least some land” (%)		Statistics		
	Successor possible or certain	Unlikely or no successor	n	df	Chi ² (sign)
Germany	38.2	79.7	846	2	0.00
UK	17.3	24.8	1613		0.00
Portugal	44.4	53.4	1030		0.01

Conclusions

Going back to the initial research question on how the likelihood of having a successor might influence attitudes and behaviour of farmers, the data dealt with in this study gives evidence favouring this relationship for some of the expected consequences, but not for others.

We would expect that farmers with an identified or likely successor would be less likely to be retired or out of farming in ten years time. This was the case for respondents both in Germany and Portugal, but not confirmed by the data from the UK. For farmers expecting to leave farming in ten years time, we would also expect a larger proportion of them taking retirement at the normal age (not postponing retirement) or to have taken up other employment. Again, this was confirmed for Germany and Portugal, but there is no evidence confirming this for the UK.

Also we predicted that under lessened agricultural policy restrictions, farmers with a certain or likely successor, when compared to the ones without a successor, would be more flexible about changing their mix of farm activities, more prone to adopt new farm activities and more willing to intensify production. Concerning flexibility, data did not confirm the prediction. For the readiness to adopt new activities, only data for Portugal confirmed the prediction. For the intensification of production, the prediction was confirmed for the UK and Portugal only, but not for Germany.

Finally, we also expected that the absence, or the unlikelihood, of a successor would make it more likely for farmers to abandon or leave some of their farm land idle. This was solidly confirmed by data for all the three countries surveyed.

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