

Beyond income: what factors contribute to farmer's job satisfaction. Empirical study

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Abstract: The objective of this study was to evaluate the diversity of farmers according to their professional objectives and to determine the factors, other than income, that contribute to farmers' job satisfaction. A questionnaire and interviews were used to collect data. Mixed socio-economic research methods were employed to analyze the collected data. Multiple factor analysis and an ordinal logistic regression model were used to analyze the collected data. The results of the analysis showed that there was a positive correlation at a statistically significant level between the use of digital tools, the presence of a potential successor and the level of achievement of its objective and the farmer's job satisfaction. On the other hand, specialization, the number of years of working on the farm, off-farm work and the presentation of economic objectives as a primary professional objective of the farmer, are statistically significant and negatively correlated with the level of job satisfaction of farmers.

Keywords: job satisfaction, professional goals, socio-economic, ordinal regression.

Introduction

A prerequisite for farmers to achieve high economic, social and environmental performance often requires a change in current agricultural practices and an evolution of their profession, consisting of the adoption of environmental and technical innovations (Gao *et al.*, 2018; Jeanneaux, 2018) and the repositioning of businesses to meet the needs of societal demand (quality product, health, animal welfare ...). The response to these challenges faced in a difficult economic context (lower prices, lower yields, etc.), leads to unstable farm households as a result of reduced net disposable income which is claimed to be significantly lower than that of other households in Europe (De Farhan *et al.*, 2017).

However, because of the growing complexity of agriculture and the diversification of farm activities, the definition of farmers' income and its measurement have become less straightforward (Poppe, 2019). Indeed, Berkeley (2018) presented two different approaches; a first approach is to consider income as the reward of a productive agricultural activity. A second approach is to consider income as a personal reward (from farm and off-farm sources); whereby farmers have ownership of the flow of resources and choose how income is spent or saved. This vision includes the diversification of activities (tourism, energy, anaerobic digestion, non- operating activities, etc.) (De Mey *et al.*, 2016), generating additional income to increase or at least secure their incomes, and reduce the risks of variability of agricultural income (Mishra *et al.*, 2002; Mullan, 2019).

This instability of agricultural income jeopardizes the sustainability of agriculture and the competitiveness of food industries (Chartier, 2015). Through several measures (price support, direct payments, export subsidies, investment aids, payment mechanisms for ecosystem services...), agricultural policies have had a significant impact on farmers' incomes (Dell'Aquila *et al.*, 2012; Severini *et al.*, 2018; Olivier *et al.*, 2017; Kumar *et al.*, 2019).



Similarly, professional agricultural organizations (agricultural cooperatives, chambers of agriculture, etc.) have set themselves the goal of guiding farmers in farm management by working on various levels: the structural determinants of farmers' income (structure, productivity, farm orientation, etc.), the development of human capital and managerial skills of farmers, or risk management (Latruffe, 2010). In this context and despite a diversity of institutional instruments (Bardaji *et al.*, 2016), supporting

farmers in achieving their job satisfaction remains a challenge due to the diversity of farmers: they have different objectives and employ different methods to achieve these objectives (Bakan and Buyukbese, 2013; Contzen, 2019). Indeed, some farmers seek to maximize profit, technical optimization and increased productivity (Ji *et al.*, 2019; Hennessy, 2019). Others achieve job satisfaction through personal appreciation of the quality of work and its recognition by others, which is ultimately reflected in the resulting lifestyle, especially among the self-employed (quality of life in rural areas, autonomy and independence, enrollment in peer communities) (Allanson and Hubbard, 1999; Jimenez, 2018).

The concept of job satisfaction is thus based on the possible gap between the goals and results that the individual sets for himself and the objectives and results expected by the company (Arthur *et al.*, 2005; Guan *et al.*, 2018). In the independent professions, the evaluation of professional success is essentially based on the management of the risk inherent in the activity and the link between professional and personal life of the self-employed (Duperray, 2012).

Numerous studies show that self-employed people are more satisfied with their professional situation than employees, both in terms of professional recognition and work-life balance, or more generally of their satisfaction "in life. (Jensen *et al.*, 2017; Millán *et al.*, 2013). Income, the ability to express one's creativity and taste for innovation, or the feeling of being closer to a professional model are all major determinants of entrepreneurs' satisfaction (Carree and Verheul, 2012; Jensen *et al.*, 2017).

In doing so, the determination of the professional objectives of farmers and Improving job satisfaction has become one of the main corporate objectives in recent years (Garcia-Bernal *et al.*, 2005). However, this support, which is becoming more and more personalized, requires a better understanding and analysis of the determinants of job satisfaction among farmers. This in turn facilitates adaptation and the feasibility to propose more adequate solutions. Nevertheless, there is minimal research on what creates job satisfaction in the agricultural sector. Of the little research that has been conducted, much is outdated and does not accurately define the various objectives associated with job satisfaction (Lémery, 2003; Arthur *et al.*, 2005; Dufor *et al.*, 2010; Guan *et al.*, 2018; Rao, 2019).

Several economic models have been developed to define job satisfaction. Three main types of models can however be identified. The first model combines factors influencing job satisfaction. Herzberg (1964) based his work on these models in the first instance, notably by considering the extrinsic factors of motivation (salary level, socio-professional relations, etc.). Further work was then developed to identify the factors that influence job satisfaction, including age, experience, and other organizational variables in work, engagement, stress, autonomy, recognition, routinization, communication with peers, accuracy and professionalism, etc. (Blegan 1993; Kalliath and Morris 2002; Williams 2005).

A second model attempts to prioritize the factors influencing job satisfaction in order of importance for individuals. These models were constructed based on the theoretical concept developed by Locke (1976) of the "needs fulfillment system". According to this conceptualization, it is possible to establish a hierarchy of needs directly related to contextual factors such as recognition, innovation, etc. which would gradually increase job satisfaction.



Finally, new integrative models have been constructed from the interactions of different factors and their influences on job satisfaction. Among these models, are those proposed by Evans (2009) and Evans and Olumide-Aluko (2010) which consider job satisfaction to be influenced by extrinsic professional factors (work environment) and intrinsic personal factors (the need for recognition ...). However, studies and models developed on the job satisfaction of farmers show very mixed results depending on the country considered. European farmers, for example, seem more satisfied with their professional situation than their Indian or Chinese counterparts (Merriott 2016, Soron 2019). While in Italy, farmers are seeking to redefine their job satisfaction, valuing creativity, innovation and small farms (Milone and Ventura, 2019). However, in Switzerland and Germany, the size of the farm is less important than the income level in the farmers' job satisfaction criteria (Besser and Mann, 2015). In France, farmers' satisfaction is closely linked to income and social recognition (Mzoughi, 2014). However, in certain agricultural areas, such as Western France where we conducted this study, agricultural activity remains unrewarding and is held responsible for not only environmental degradation but also detrimental effects on human health (Duru and Therond 2015; Levain 2016).

The purpose of this paper is twofold. Firstly, a sociological study combined with a statistical analysis (mixed factor analysis and ascending hierarchical classification) were used to classify farmers according to their professional goals. Secondly, an ordered logistic regression was applied to identify the various factors that contribute to farmers' job satisfaction.

Data

This research is based on a socio-economic study conducted in 2019 among farmer-members of an agricultural cooperative in the Brittany region of Western France. This study had a dual purpose. Firstly, it categorised the diversity of farmers' professional objectives; secondly, it highlighted the principal influencing factors of job satisfaction and explored the notion of whether or not achieving self-assigned objectives actually contributes to job satisfaction.

There are many studies on the evaluation of job satisfaction, but few are applied to the agricultural profession. While most of these studies use economic methods, the methodological challenge of our work was to adapt these frameworks to the farming profession.

Consequently, and considering the methodological innovation of this approach, we initially performed a qualitative study. This first step was aimed at documenting the various professional objectives and identifying the social mechanisms which influenced and shaped these objectives. Secondly, we performed a quantitative survey in order to collect the data needed for an economic evaluation, in order to identify the contributing factors influencing professional satisfaction of the farmers.

Qualitative surveys: exploring the diversity of professional goals

The qualitative study consisted of conducting semi-structured interviews lasting approximately 2 hours with approximately twenty farmers belonging to a diverse panel both in terms of production and their partnership strategy. This qualitative exploratory study explored their logic and professional models, as well as the objectives they set for each work dimension. It also took into account current situations, ambitions, and challenges incurred, in order to consider the criteria of professional satisfaction.

We referred to a semi-structured interview guide organised into three thematic sections in order to understand i) their socio-professional trajectory and installation conditions, ii) their objectives and satisfaction levels according to the various farm activities in addition to their personal life, and finally iii) their professional conception and how and where they see themselves in the future. This guide was



accompanied by a specific question aimed at analyzing the structural variables of the farm and also at conducting a comparative analysis of the farms surveyed. This first qualitative study allowed us to define four groups of objectives characterizing variants in the representation of technical goals, economic goals, organizational goals and personal goals of the respondents. Table 1 presents a table listing all these variables and modalities.

Quantitative survey: identifying the main factors of farmers' job-satisfaction

The analysis of the semi-structured interviews initiates a second phase of investigation, this time conducting a quantitative survey with 35 farmers with a questionnaire. The quantitative survey is based on a specific, representative sample according to farm specialisation in the Brittany region, which makes it possible to understand, analyze and model the various factors and determinants of farmers' satisfaction.

Statistical methods, multiple factor analysis "MFA" (Pagès, 2014) and hierarchical ascending classification are used to identify different classes of farmers according to their professional objectives. An ordinal logistic regression model then explores the statistically significant relationships between farmer job satisfaction and explanatory variables.

The dependent variable represents the satisfaction expressed by farmers with respect to his job which is ranked from 1 to 5, 5 is the highest score. Selected explanatory variables include the characteristics of the farmer, the characteristics of the farm, the economic situation and professional goals (Table 2). This study allows us to highlight the effect of these determinants on farmer job satisfaction.

Empirical model

In this study we explore econometrically variations in farmer satisfaction according to their specific and farm characteristics, in an empirical study using a categorical model. More precisely, we use Logit ordinal regression models to study the determinants of the coefficient associated with the satisfaction variable. Using an ordered Logit model with five ordered categories. The dependent variable y_i for this study therefore takes the value Yi = "very.not. satisfied "," not.satisfied "," moderately.satisfied "," satisfied " or " very.satisfied "and is associated with an underlying latent variable Y ^{*}_i, as follows:



Where xi is a vector where xi = $x^{1}i...x^{K}$, $\forall i = 1, ..., N$, of moderating variables explaining the observed effects, β is the parameters to be estimatedⁱ and i is a normal standard shock with $\beta = (\beta 1...\beta \kappa)^{3} \in \mathbb{R}^{K}$,



 ζ_i i.i.d. $(0, \sigma^2 \varepsilon)$ the threshold parameters estimated from the data and where ζ_i / $\sigma \zeta$ follows a distribution function law F (.) Corresponding to the logistic law. They allow matching the latent variable to the observed variable, and estimate the probability associated with each observed effect. Given the moderator variables, the probability that y =j|j ε ("very.not. Satisfied", "not.satisfied", "moderately.satisfied", "satisfied", "very.satisfied") is given by

Prob (y_i = "very.not. satisfied") = Prob (y*_i=1) = F (
$$\frac{1}{\sigma\zeta} - \frac{xi\beta}{\sigma\zeta}$$
)
Prob (y_i = "not.satisfied") = Prob (y*_i=2) = F ($\frac{2}{\sigma\zeta} - \frac{xi\beta}{\sigma\zeta}$)
Prob (y_i = "moderately.satisfied") = Prob (y*_i=3) = F ($\frac{3}{\sigma\zeta} - \frac{xi\beta}{\sigma\zeta}$)
Prob (y_i = "satisfied") = Prob (y*_i=4) = F ($\frac{4}{\sigma\zeta} - \frac{xi\beta}{\sigma\zeta}$)
Prob (y_i = "very.satisfied") = Prob (y*_i=5) = F ($\frac{5}{\sigma\zeta} - \frac{xi\beta}{\sigma\zeta}$)

The signs of the estimated parameters β can give an indication of whether the latent variable y^*_i increases from outcomes when the determinant xi increases (or takes the value one in the case of a dummy variable).

Results and discussion

Identification of the professional objectives of farmers

Sociological surveys of farmers have allowed them to formulate their own goals in their own words. The answers to open questions about professional goals allowed us to formulate professional objectives and to classify them into four categories: the technical objectives, relating to a specific production activity on the farm; organizational objectives, relating to the management of the company as a whole; economic objectives, relating to overall revenue and personal costs and finally personal objectives, according to the farmer himself.

Technical objectives

Technical objectives were defined as productive activities and related activities. Farmers formulated both qualitative and quantitative objectives, which varied according to the nature and purpose of the production concerned. The technical objectives relating to the productive activities of the farm are thus multiple and precise, and also depict quantity, quality and temporality, and are accompanied by thorough clarifications from the farmer himself.

These technical objectives essentially boil down to two major objectives; production optimization (with invariable number of animals or hectares, increase of production and yield in liters, tons, or carcass weight etc.) and product development (in terms of price, quality and labelling with respect to the environment and health).

Organizational objectives

Organizational objectives concerning the business are formulated on a short and medium-term basis



by the farmer himself. These objectives which focus on the improvement of work organization are grouped into four organizational objectives. Notably, farmers are looking to improve the organization of work (best practice, optimal management with a powerful and team and competent employees, improved organization of employees, coordination between partners

...), to reduce a drudgery of work ; to gain more freedom of choice (freedom to manage and choose supply networks, food autonomy for herds, be less dependent on supervisory authority); and finally development and repositioning of their farm businesses through an increase in investment and capital for a better transmissibility.

Economic objectives

In addition to organizational and technical objectives, farmers have set economic objectives. Each with his or her own formulation, farmers would like to increase private levies in order to improve their livelihoods and to support the needs of their families (offer remuneration to family members, sustain a standard of living from farming, increase the farm's profitability earn a good income ...), to stabilize and secure their incomes including income from off-farm activities (to alleviate the risks, the durability of their income, to ensure a remuneration and security of income over time ...) and finally to reduce the debt ratio.

Personal goals

Farmers finally express personal goals, relating to the lifestyle they wish to adopt, the hours they wish to work, the frequency of weekend and holiday breaks, and finally how they wish to direct their professional and personal lives. By completing this survey, the farmers express their personal goals and evaluate their quality of life. These four categories of objectives have highlighted the diversity of management styles and the perception of job satisfaction among farmers.

Classification of farmers according to their professional objectives

A Multiple Factor Analysis (MFA) was conducted with the objective of classifying farmers according to their occupational goals. This method of analysis makes it possible to study a set of variables (13 variables) related to the technical, economic, organizational and personal objectives (Table 1).

The circle of correlations is composed of two representative axes of variables. These two axes enabled the explanation of 18.5% (Dim 1) and 16.5% (Dim 2) of the analyzed information. These two dimensions explain 35% of the information contained in our dataset (Figure 1) and thus appear representative.

The ascending hierarchical classification by software R classified the farmers into three groups (Figure 2 and 3). The first group identified in this classification, represents those farmers whose primary objectives are economical and organisational with a particular focus on increasing their private levies (PL). This group represents 44% of the farmers surveyed. They are seeking a new strategy which allows them to adapt to a changing and challenging economic climate whilst enabling them to maximise private levies and farm organization as a whole. The private levies incurred by this group are currently low (a variation between $1000 \in$ and $2000 \in$) but are set to gradually increase over time.

These farmers are mainly elderly farmers (60% of the farmers are over 40 years old) and have focused on setting farm objectives to ensure the farm's resilience and better transmissibility of his farm.



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March 29th – April 1^{rst}, 2021 Clermont-Ferrand (France)

Groups of objectives	Objectives	Abbreviations	
Personal goals	Free time	FTime	
	Professional welfare	ProWelfare	
	Work-family balance	WorkFamily	
	Social and professional expansion	SPExpansion	
Economic goals	Private levies	Levies	
	Decrease debit rate	Debit	
	Income security	IncomSecur	
Technical goals	Production optimization	ProdOpt	
	Valorization of the product	Valorization	
Organizational goals	Transmissibility	Trans	
	Improving the organization of work	Workorganisation	
	Free decision-making	DecisionMaking	
	Decrease of drudger of work	WorkDrudger	

Table 1. Table of farmers' professional objectives.



Figure 1. Correlation Circle of Multiple Factor Analysis of professional objectives.

These farmers are observing an unfavorable sectoral climate, and believe that the agricultural sector would benefit from drawing inspiration from other sectors. They look for examples that are often chosen outside of the farming community. In this group, 73% of these farmers have non-farm work experience before being a farmer. Inspired by other companies or their past non- agricultural work



experience, these farmers can bring new ideas on how to manage the economic or organizational dimension of the farm, in terms of autonomous decision-making.

These farmers have an advantage due to the transferrable business strategies and skills they bring from their previous work experience. The agricultural activity is evaluated in the same way as another professional activity, on criteria of income and free time. They set personal goals in addition to professional goals. These farmers work flexible hours and primarily seek a balance between their professional and personal.

These farmers attach great importance to their association with dynamic professional networks, from which they leverage information and access resources. A significant part of their time is devoted to these associations (on average one day per week). Notably, 67% of these farmers belong to labor groups or collectives. The persistence in seeking inspiration from these professional networks and as a result initiating new and innovative ways to develop their farm businesses, is transforming farmers into entrepreneurs. (Bréchet *et al.*, 2009; Jensen *et al.*, 2017).

The second group of farmers represents 44% of our sample. These farmers focus primarily on personal goals first and organizational and technical goals second. In fact, more than 60% of farmers in this group seek as a priority in their farming activities, to have more free time for family and recreation. These farmers are mostly young farmers under 40 years old and are at the beginning of their family life cycles.

These farmers therefore consider that the primary issue in regard to success, lies in organizational innovation and rank technical innovation as the core element in a new business strategy.

For this reason, these farmers set objectives for improving work organization and investment in increasing work comforts. As the majority of farmers are specialized in dairy cattle or poultry,40% and 20% respectively, we were then able to distinguish several strategies according to production category. Indeed, dairy production still requires physical strain and leaves farmers with the solution of sharing constraints or using milking robot. Poultry farmers are turning to new information and communication technologies (NICT), which allow activities to be tracked and intervened with remotely.

These farmers are also seeking optimization of productivity and a strategy to increase production without increasing factors (the number of animals or land) resulting in labor productivity. This labor-saving strategy can be so beneficial in economic terms but it enhances quality of life. Indeed, the monthly private levies of this group of farmers amount to on average $2020 \in$ (vary between \in 1,500 and \in 5,000). These farmers, having a stable financial situation, do not formulate economic objectives or increase private levy nor does the debt ratio decrease. They are essentially seeking a certain quality of life which is particularly important for these farmers.

Finally, the third group comprises 12% of farmers surveyed. They are characterized by a strategy focussed on developing their farm activity. As a result, they are not motivated by technical innovation but on the value of their end product. These farmers therefore focus on a more practical strategy emphasising product enhancement.

These farmers set objectives based on product value, to which they attach economic objectives relating to security and income stability and a reduction in debt ratio. Farmers in this category are from generations of farmers and settle for the most part into the farming community. In fact, 75% of these farmers have agricultural experience and 25% have experience derived from non- agricultural activities. This particular scenario may partly explain the dual intention of developing the business, without however taking the risk of putting it into financial difficulty. In addition, these farmers refrain from comparing their farm to other non-agricultural businesses.



They reject the image of the entrepreneur and the financial goals endorsed by the other farmer groups. For these farmers, agricultural activity is not comparable to another and is distinguished by a culture and a rural way of life; the origin of their professional choice and professional welfare.

The affection these farmers carry for the rural way of life is thus manifested by a personal investment in local life (associative commitment, local mandate, etc.) and a need for flexible working hours, to allow for quality family time. Unlike farmers in the second group, farmers in the third group are not particularly focused on distinguishing between professional and personal quality time. They often live in close proximity to the farm and maintain a permanent link with the farm. These farmers essentially chose this job for the freedom and quality of life it offers. They seek to limit investment in order to maintain control of their working time.



Figure 2. Histogram of classification of farmers according to their professional objectives.



Figure 3. Distribution of farmers according to their professional objectives.



Identification of farmers' satisfaction factors

The final step of our economic analysis was to study the factors involved in the level of satisfaction that farmers express with respect to their job. As a result, we focused the analysis on 12 explanatory variables, and endeavoured to evaluate their relative contribution to the job satisfaction of the farmers surveyed.

The variables chosen to explain farmers' satisfaction with their occupation are presented in table 2. These variables include those that characterize the farm. They are the specialization variables (Specialization) which consist of the degree of multiple activities and especially multiple animal activities (multiple variable or categorical); use of digital tools (Digital tools), in this variable we include production digital tools for example robots, sensors, drones, ... (binary variable); the presence of a potential successor (Successor) (binary variable). The characteristics of the famer include the variable on the number of years of installation (Installation) which refer to the experience and also the farming seniority; the off-farm work (Off-farm word) which explains the presence of an agricultural or nonagricultural activity outside the farm (binary variable); its level of education (Education level) (multiple variable or categorical); and its membership to groups, associations or professional networks (Groups or networks) (binary variable). Variables related to professional goals are; the expression of an economic objective as the high-priority objective by the farmer (Economic goals) (binary variable); the expression of a personal goal as the high-priority objective by the farmer (Personal goals) (binary variable) and the degree of achievement in relation to its first objective (First objective) which varies between 1 and 6 (from weaker "1" to stronger "6"). And lastly, the variables that describe the economic situation represented by the monthly levies (Levies) and the gross operating surplus (GOInc).

Groups of variables	Variables	Abbreviations	
Characteristics of the farmer	Year of installation	Installation	
	Work off-farm	Off-farm work	
	Education level	Education level	
	membership to groups or networks	Groups or networks	
Characteristics of the farm	Use of digital tools.	Digital tools	
	Specialization	Specialization	
	Successor	Successor	
	Monthly levies	Levies	
	Gross operating income	GOInc	
Professional objectives	Economic goals	Economics goals	
	Personal goals	Personal goals	
	Degree of achievement of first objective	First objective	

Table 2. Table of explanatory variables of farmer's job satisfaction.

The ordinal logistic regression analysis (table 3) illustrates that specialization is statistically significant and negatively influences farmers' job satisfaction. The negative sign indicates that the more the farmer diversifies, *i.e.* introducing additional animal breeds and other agricultural activities etc. the less satisfied he is with his agricultural activity. Professional satisfaction is inversely proportional to farm specialization, especially in the case of mixed livestock, due to an increase in technicalities, farm organization, animal health management and ultimately workload.



According to farm attributes, the use of digital tools had a positive and statistically significant impact on farmers' job satisfaction. This positive sign shows that the use of digital tools promotes job satisfaction in farmers. Indeed, the use of digital tools in agriculture makes it increasingly possible to simplify overall agricultural activity, thereby reducing the drudgery and time commitment of work. Farmers are subjected to multiple pressures such as stock management, job automation, production, monitoring, decision-making, dealing with hazards to name but a few. Implementing field-based detection devices and efficient monitoring systems (using sensors, biosensors, wearable technologies and reboots) helps farmers make informed and relevant decisions that improve their performance and productivity. This technology helps to make the farmer's life easier and allows him to have more free time with his family and enjoy his life, making him more satisfied and passionate about his job. However, it must be noted that the sample of farmers surveyed in this study were uncommon in the fact that they embraced digital tools (more than 67% had one or more digital applications). This sample is therefore not representative of French farmers nor farmers in Brittany as a whole.

The presence of a potential successor is positively correlated with their job satisfaction at 0.1 statistically significant level. The presence of a successor reassures the farmer of the future of his farm and thereby increasing his job satisfaction. Indeed, the presence of a potential successor facilitates career management by farmers.

As for the variables representing the characteristics of the farmer, the number of years of installation of the farmer is statistically significant at 0.1 level but negatively correlated with job satisfaction. Indeed, the longer the farmer is settled, the less satisfied he is with his job as a farmer. These results show the motivation of young farmers who have recently been installed on the farm or older farmers who have chosen the field of farming after previous work experience in other sectors and who are ultimately more satisfied with their farming careers than their previous professions. Dissatisfaction from long-established farmers may be justified due their concern over the future of their farm businesses, especially if there is no successor to assume responsibility. The latter generally sets exploitation objectives to ensure smoother transferability of their holdings. It can be also be related to the impression that farming is less economically favorable than before.

The result of the ordinal logistic regression analysis also highlighted that the off-farm activity and income variable has a negative and statistically significant relationship at 0.1 level with farmers' satisfaction. This sign revealed that farmers who are not engaged in an off-farm activity, are more satisfied with their profession as they do not have to juggle their time between off-farm activities and on-farm practices, thus preventing them from getting involved in the implementation and maintenance of their actual farming activities. Other farmers resort to off- farm activities to improve their incomes in the event that current agricultural activities are not economically viable. Likewise, farmers with off-farm activities could compare agricultural revenue to other more lucrative sector revenues. This would explain their dissatisfaction.

The farmers' level of education is positively correlated with their job satisfaction but statistically insignificant. This highlights that relatively better educated farmers are more satisfied with their farming careers. This positive sign also suggests that farmers who are satisfied with their farming careers are those who have gathered transferrable skills and knowledge from previous education and work experience. These skills and knowledge enhance their ability to manage the farm business in a productive way, thereby improving job satisfaction.

With regard to the professional integration of farmers, which was measured through the extent of involvement with external groups, associations or professional networks, has a statistically insignificant



2nd International Symposium on Work in Agriculture Thinking the future of work in agriculture

March 29th – April 1^{rst}, 2021 Clermont-Ferrand (France)

correlation with their job satisfaction with a positive sign. This positive sign shows that belonging to work collectives increases the job satisfaction of farmers. This result can be explained by the competitive and progressive climate that prevails in certain groups and encourages some farmers to capitalise on this knowledge and connections to monitor their capabilities and improve their agricultural activities. These comparisons between farms allow everyone to find ways to improve by drawing on the experience of peers. These discussion groups also help to build strong social relationships and ultimately help increase the level of job satisfaction in farmers. Similarly, Caillaud and Zimmermann, 2011 in their sociological study found that extra-professional activities can be a source of "self-realization" for the individual and lead him to feel a sensation of success sometimes absent from his professional life.

In addition, Hansen and Osteras (2019) have shown that professional support refers to useful workplace relationships with supervisors and co-workers in relation to work-related issues (Price, 1997). A high level of support is associated with increased satisfaction (Häusser *et al.*, 2010). This leads us to detect the importance of social networks among farmers, as a source of social and professional support, according to Hansen (2013).

The ordinal regression analysis also showed that those farmers who rated economic objectives as their primary professional objective is statistically significant at 0.1 level with a negative result. This negative sign demonstrates that if the farmer's priority is to live off the farm's income, reduce his debt ratio or to protect his revenue, his level of job satisfaction will be low. This result shows the importance of income stability and economic status with regard to job satisfaction for farmers. However, because it is difficult to achieve this objective, this would increase the level of frustration and dissatisfaction.

Contrary to the results in relation to economic objectives, the ranking of personal objectives as the primary professional objective, the result is statistically insignificant but is correlated positively with the job satisfaction of the farmers. Indeed, these results show that farmers who set personal goals as a priority are farmers who are satisfied with their farming activities and who are pursuing more quality time for family and recreation activities and to overall achieve a good standard of life., In addition, the degree of achievement concerning the farmer's first objective is positively correlated with his job satisfaction at a statistically significant result of

0.05 level. That is to say, the more farmers achieve their first career goals, the more satisfied they are with their jobs.

Private levies are negatively correlated and statistically insignificant in regard to farmers' satisfaction with their trade. Although the private levy is a good indicator to compare between different enterprises and specialization, these results would suggest that it is not an optimal indicator to estimate the income, as some fiscal strategies would impact on private levies and some farmers could choose to invest more or to profit from the acquisition of property. Contrary to this result, Bakan and Buyukbese (2013) have verified that there is a significant relationship between employees' income level and employees' job satisfaction. He explains that employees with high income levels have reported significantly higher levels of satisfaction than employees with low income levels. This leads us to the hypothesis that concerning the specific conditions within the agricultural sector, farmers are considering additional ways to increase income which in return increases job satisfaction. However, Hansen and Osteras (2019) have showed that among work-related stressors in farmers can be financial hardship. According to their results and those of Duc (2008) the income and the appreciation of his job as a farmer are positively correlated. The higher the income, the more he feels appreciated as a farmer.

Similarly, for the gross operating surplus, the results of the ordinal regression analysis showed that it is



statistically insignificant but positively correlated with the satisfaction of farmers. This demonstrates that the higher the gross operating surplus, the higher the level of jobsatisfaction amongst the farmers. This surplus reassures the farmer about the economic situation of the farm and enables him to see the farm's profitability. However, this indicator is very heterogeneous and depends on farm specialization. This result therefore promotes the conception of a further declarative analysis concerning professional goals and their degree of achievement as opposed to uniquely applying economic indicators.

	Estimate	Std. Error	z value	Pr(> z)
Installation	-0.118889	0.069798	-1.703	0.08851 *
Specialization	-2.852748	0.917325	-3.110	0.00187 ***
Economics goals	-3.986136	2.229327	-1.788	0.07377 *
Personal goals	2.082702	2.334429	0.892	0.37230
Digital tools	7.952791	2.834244	2.806	0.00502 ***
Off-farm work	-12.505531	4.446861	-2.812	0.00492 ***
Education level	0.418190	0.554694	0.754	0.45090
Levies	-1.615128	1.387931	-1.164	0.24455
GOInc	0.002065	0.004038	0.511	0.60901
First objective	1.434722	0.598764	2.396	0.01657 **
Groups or networks	0.454268	1.392065	0.326	0.74418
Successor	2.746770	1.658356	1.656	0.09766 *

 Table 3. Results of the Ordinal Logistic Regression Model for Factors Influencing Farmer Job

 Satisfaction. Signif. codes : 0.001 '***' 0.01 '**' 0.05 '*' 0.1 '.' 1. logLik-19.70. AIC 71.39 8(0).

Conclusion

Practitioners, researchers and policy makers suggest that sufficient income levels and income stability are reflecting the well-being of farm families. Rare however are the studies that investigate the wellbeing or the job satisfaction of farmers and how much the income would contribute to them. Some people feel satisfied with a high salary even when they do not like what they are doing, while others are happy doing what they are passionate about even if the salary is not what they would like it to be (BrighterMonday, 2018). In agriculture it seems to be especially true, and one can attribute this to the quality of live in rural areas that it provides

In this study we find that there is not a unique conception of the job success or satisfaction. The classification of statements of farmers using hierarchical method allows us to grasp the diversity of conceptions of the professional success of farmers as well as the objectives they associate with them. Even if the conceptions of job success and satisfaction would change depending on the personal context, they gain to be enlightened by general changes of job conception in the society. New goals like more free-time and family time are desired by farmers, especially the youngest of them or those who experienced a non-farm job before becoming a farmer, and influence their job satisfaction. This is consistent with results showed by Deffontaines, (2014) which suggest that family situations of farmers are influencing their well-being or more precisely their unhappiness. Regression method show that farmers looking for economic goals are the most dissatisfied with their job. The use of new digital tools helps farmers to reach higher degree of job satisfaction. This is consistent with the achievement of the objective to get more time for family and recreation. On the other hand, farmers who has settled since long time are less satisfied with their farming job. Having the perspective of getting a successor helps



them to better consider their job success and therefore increased job satisfaction.

To conclude, our study shows that there is no single conception of job satisfaction, describe the postures of the farmers regarding their professional objectives and job satisfaction, and reveals consistent contrasting reasoning among farmers beyond incomes. Therefore, these postures refer to contrasting professional models that should be further explored and described.

These results invite us to further explore the implications of the typology of farmers according to their objectives and satisfaction on the professional models that underlie them. First, we recommend to enlarge the sample to further study the link between job satisfaction and professional models, and therefore the ability of the French agricultural system to support the well-being of a diversity of farmers. Then, we recommend to further study how the evolution of the framework of entering the farming profession (requirement, training, etc.) influence the proportion of the different types of farmers and their dynamic. Finally, we recommend an additional study to explore the implications of this typology on farm advisory services, as they unequally meet the objectives of the different types of farmers.

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