

Investigating the priority level of decision-making factors influencing generational succession

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Abstract

This study aimed to identify the priority level of decision-making factors influencing generational succession in the perception of potential successors. The data were obtained using a questionnaire with 25 questions applied to a sample of 308 potential successors. The AHP Modeling (Analytic Hierarchy Process) method was used to analyze the data. Regarding the criteria, Cr6 "Business relations" obtained the highest priority level (0.3975), while Cr2 "Infrastructure and coexistence in the rural environment" was the least prioritized (0.0467). When it comes to the global weight of all the subcriteria, Scr25 "Price" (0.2532), Scr19 "Social valorization" (0.1116), and Scr23 "Access to commercialization" (0.1027) were the most prioritized. In contrast, Scr1 "Size of the farm" (0.0021), Scr9 "Leisure infrastructure" (0.0029), and Scr4 "Activity diversification" (0.0039) obtained the lowest priority level among all the variables analyzed. Therefore, this study concluded that criteria external to farms have a greater influence on generational succession.

Keywords: Analytic Hierarchy Process. Farms. Priority Level. Potential Successors.

Investigando o grau de prioridade dos fatores decisórios que influenciam na sucessão geracional

Resumo

O presente estudo teve como objetivo identificar o grau de prioridade dos fatores decisórios que influenciam na sucessão geracional na percepção de potenciais sucessores. Os dados foram obtidos por meio de um questionário com 25 questões e aplicados a uma amostra de 308 potenciais sucessores. O método utilizado para a análise dos dados foi a Modelagem AHP (*Analytic Hierarchy Process*). Em relação aos critérios, observou-se, que a Cr6 "Relações comerciais" obteve maior grau de prioridade (0,3975), enquanto o Cr2 "Infraestrutura e convívio no meio rural" foi o menos priorizado (0,0467). Em se tratando, do peso global de todos os subcritérios, identificou-se que o Scr25 "Preço" (0,2532), seguido de Scr19 "Valorização social" (0,1116) e Scr23 "Acesso a comercialização" (0,1027) foram os mais priorizados. Em contrapartida, verificou-se que o Scr1 "Tamanho da fazenda" (0,0021), Scr9 "Infraestrutura de lazer" (0,0029) e Scr4 "Diversificação das Atividades" (0,0039) obtiveram o menor grau de prioridade entre todas as variáveis analisadas. Conclui-se, portanto, a partir de estudo, que critérios externos as fazendas exercem maior influência em relação a sucessão geracional.

Palavra-Chave: Processo Hierárquico Analítico. Fazendas. Nível de Prioridade. Potenciais sucessores.

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1 Introduction

Even though the conceptual definitions of generational succession differ, it refers to a complex process developed within the family, which involves the continuous and progressive transmission of the family production unit's management and ownership. For Wheeler et al. (2012), this is a complex and unpredictable process because there is a distinction between succession (management transfer of the farm business) and inheritance (transfer of property ownership). On some farms, inheritance and succession occur almost simultaneously. However, in others, succession can happen well before inheritance (WHEELER et al., 2012).

For Shahzad et al. (2021), the progressive transfer of the farm's managerial and operational control between generations refers to a crucial and often challenging phase, with implications for both farming entities and the long-term feasibility of farm production units. In this sense, Chiswell and Lobley (2018) provide corroboration by pointing out that succession represents the renewal of agriculture, especially family farming, thus providing continuity of activities and transition for future generations (FOGUESATTO et al., 2020). For Rodriguez-Lizano et al. (2020), succession is a multifactorial process explained by a combination of factors in each specific agricultural situation and context.

Due to its complexity, generational succession has drawn the interest of researchers worldwide, who analyze these processes using different perspectives and approaches. Morais et al. (2018) point out that, traditionally, a common approach used by researchers to study generational succession is the indication of the head of the farm regarding the presence or absence of a potential successor (BREITENBACH; CORAZZA, 2020; ARENDS-KUENNING et al., 2021; SHAHZAD et al., 2021).

Another strand of literature investigates the factors that positively or negatively influence potential successor choices (CAVICCHIOLI et al., 2015; MORAIS et al., 2017; MORAIS et al., 2018; CAVICCHIOLI et al., 2018; PESSOTTO et al., 2019; FOGUESATTO et al., 2020; SHAHZAD et al., 2021; ABDALA et al., 2021). In addressing this second strand of studies, Rodriguez-Lizano et al. (2020) listed five groups of factors using a literature review: characteristics of the farmer; farm; family; context; and psychological variables that influence generational succession. Among the most studied factors in quantitative studies, the authors highlight the farmer's characteristics, while the contextual and psychological characteristics are the least studied.

On the other hand, qualitative studies focused predominantly on the analysis of socioeconomic factors, communication between father and heir regarding the succession

process, integration in decision-making, trust in the heir, and successor training (RODRIGUEZ-LIZANO et al., 2020).

Bertolozzi-Caredio et al. (2020) point out that the factors involved in succession belong to four dimensions (individual, family, institutional, and contextual) and that while the individual dimension is central to the process, the other factors contribute at different levels to the three succession stages, defined by the authors as potentiality, willingness, and effectiveness (BERTOLOZZI-CAREDIO et al., 2020).

Despite this vast field of literature analyzing the different factors interfering in the succession process, there is no hierarchization. In other words, no studies show the priority and importance level in the perception of potential successors. In this sense, and aimed at filling this gap in existing research, we ask the following question: what is the priority level of factors related to the generational succession processes of potential successors?

Therefore, this study aimed to identify the priority level of decision-making factors influencing generational succession in the perception of potential successors. In order to meet the proposed objective, the *Analytic Hierarchy Process* (AHP) modeling method was used to analyze the data. The AHP approach has been widely applied in many fields to analyze and evaluate complex decisions and conflicting interests. In the rural context, this approach has been applied for public policy prioritization analysis (PETRINI et al., 2016; SANTOPUOLI, 2016), in rural tourism (WANG, 2020; XU et al., 2022), in rural land use planning (CAY; UYAN, 2013; FELTYNOWSKI; SZAJT, 2021), in the analysis of factors influencing rural labor quality (HOANG, 2020), in sustainability issues (GOVINDAN et al., 2016; TORRES et al., 2020), measurement of ecotourism sustainability potential (LIN; LU, 2013) among other studies.

This wide range of themes that outline the use of AHP modeling in rural studies is relevant for analyzing the factors influencing the succession processes. Furthermore, this study may contribute to public policies prioritizing investment in actions with a higher importance level in the perception of potential successors, thus enabling the concretization of generational succession processes.

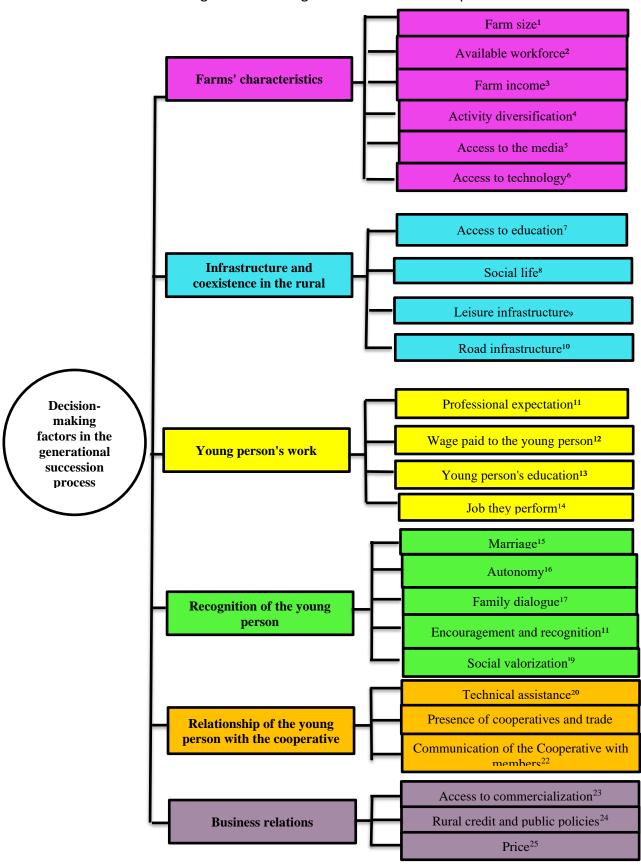
2 Materials and Methods

2.1 Research design, sampling, and survey

The first stage of the study included a literature review, which aimed to identify, based on studies already conducted, the groups and the decision-making factors influencing

enerational succession (Table 1). The authors defending each decision factor are inserted in the text notes.

Table 1 - Main decision-making factors in the generational succession process



The study's target population was defined after identifying the main factors listed in the literature as important in the succession process. It refers to potential successors between the ages of 18 and 30, members or members' children from grain, cattle and dairy cooperatives, which operate in Southern Brazil. The age clipping is based on the fact that, in this age group, the life projects of young people are already being defined.

The successor, or effective successor, is defined as the individual with full managerial control of the farm (CHISWELL, 2014). Meanwhile, the potential successor is defined as a young person recognized by the farmers and their families as the potential future successor, with such recognition being due, at least in part, to the successor's involvement in farm activities (BERTOLOZZI-CAREDIO et al., 2020).

Considering the access difficulty to potential successors, the target population was obtained by contacting the agricultural technicians and the members' registration sector of grain, cattle and dairy cooperatives, which identified the potential successors.

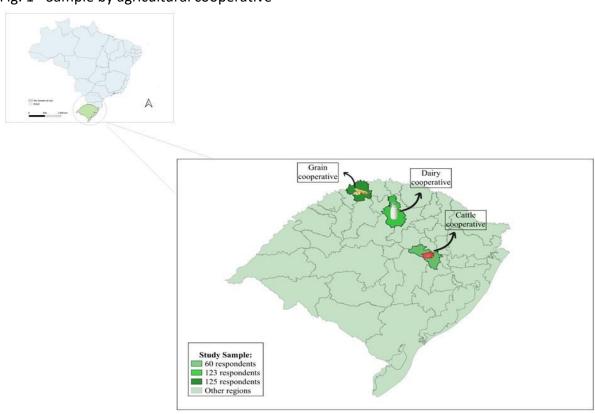


Fig. 1 - Sample by agricultural cooperative

Source: Prepared by the authors based on survey data.

When selecting the segments and the representative cooperatives, we considered Brazil's main productive chains in agribusiness. When selecting the young respondents, in addition to the age group criterion and being a potential successor, the farm's main source of income should

come from products of the segments in which the cooperatives operate (grain, cattle, diary). The grain, cattle and dairy cooperatives in this study are located in the Northwest and Center-East regions of the State of Rio Grande do Sul.

The data collection instrument was developed based on 25 factors, of which 24 were listed in the literature (Figure 1), and one factor (communication with the cooperative) was defined based on suggestions from the agricultural cooperatives. Thus, the evaluation refers to 25 factors (24 from the literature and one suggested by the cooperatives).

The figure 1 shows the target population and the respective sample in each cooperative. Data collection involved a field survey, with the application of a questionnaire in a 9-point *Likert* scale format. A total of 308 potential successors participated in the study.

2.1 Data analysis procedure

After collecting data, the Analytic Hierarchy Process (AHP) modeling method was conducted. The AHP model uses a multi-criteria decision analysis (MCDA) approach to solving complex problems. This method was developed by a mathematician called Thomas Lorie Saaty (SAATY, 2008) to clarify problems through a systemic perspective.

This method allows decomposing the decision objectives into multiple levels and then performing calculations, which is suitable for complex decision-making problems with multiple criteria or disordered structures. By breaking down complex problems into several levels and factors, this method makes a comparative judgment of importance between two indexes and establishes a judgment matrix. The importance level of the analyzed variables can be obtained by calculating the maximum eigenvalue and the corresponding eigenvector of the judgment matrix (XU et al., 2022).

First, the objective, criteria, and sub-criteria were defined. This study aimed to identify the priority level of decision-making factors influencing generational succession in the perception of potential successors. This study presents six criteria and 25 subcriteria (Figure 1).

Then, the judgment matrices were constructed. The judgment matrix refers to the relative importance between this level and its related factors compared to a certain factor at the previous level. All indicators are compared in pairs using the "consistent matrix method". The mutual scaling method reduces the difficulty of mutual comparison between different properties of the indicators and improves accuracy. This method determines the weight of each index in the total benefit to construct the judgment matrix. Therefore, the matrix judgment scale in the analytic

hierarchy process presents the importance of each element in the matrix quantitatively. This study used the 1 to 9 scale method to score each index and build the evaluation index judgment matrix.

The averages were used to establish the matrices based on Saaty's (2008) importance scale. The *Analytic Hierarchy Process (AHP)* uses the nominal scale for comparison. The nominal scale is divided into nine hierarchies from "equal importance" to "absolute importance", which are weighted from 1 to 9. In effect, this process coded the information into numerical values to quantify the importance level of all the components studied. The table 2 shows Saaty's (2008) importance scale.

Table 2 - Definition and description of the AHP process evaluation scale.

Scale	Evaluation	Reciprocal
Extremely preferred	9	1/9
Very strong to extreme	8	1/8
Very strongly preferred	7	1/7
Strong to very strong	6	1/6
Strongly preferred	5	1/5
Moderate to strong	4	1/4
Moderately preferred	3	1/3
Equal to moderate	2	1/2
Equally preferred	1	1

Source: Saaty (2008)

Next, we constructed the judgment matrix, which determines the weight of each index in the total benefit, to build the judgment matrix. Therefore, the matrix judgment scale in the analytic hierarchy process presents the importance of each element in the matrix quantitatively. Table 3 shows the judgment matrix definition diagram.

Table 3 - Judgment Matrix Definition Diagram

Importance comparison between two elements	Weight
X and Y are equally important	1
X is a little more important than Y	3
X is more important than Y	5
X is much more important than Y	7
X is extremely more important than Y	9
Intermediate Value of two adjacent judgments	2,4,6,8

Source: Xu et al. (2022).

After constructing the judgment matrix, the sum method was used to calculate the weight vector. First, the column vector is normalized, and then the new matrix is summed. Finally, the weight vector is obtained by normalization.

A.
$$W = \lambda max$$
. W

Then, the Consistency Index (CI) and the Consistency Ratio (CR) were checked to understand the judgment's consistency. The CI measures the inconsistency level of pairwise judgments. The steps for verifying consistency were: first, the consistency indicators must be calculated.

Second, the Random Index (RI) values (Table 4) must be checked to determine the corresponding average random consistency index. Finally, the consistency index can be calculated.

Table 4 - The Random Indexes for calculating the consistency ratio.

n.	3	4	5	6	7	8	9	10	
RI	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49	

Source: Saaty (1977).

 P_i = Global priority of the alternative i.

 p_{ij} = Local priority regarding criterion j.

 w_i = Criterion weight j.

Table 4 shows the values corresponding to the matrix order. The following values were used in this study: (1.24) for the 6X6 matrix; (0.90) for the 4x4 matrices; (1.12) for the 5x5 matrices; (0.58) for the 3X3 matrices. This calculation made it possible to identify the consistency ratio of the judgments made. Saaty (2008) states that a consistent judgment requires $RC \le 0.10$. The analysis was performed using the Microsoft Excel© software.

3 Results and discussions

The table 5 shows the judgment of potential successors regarding decision-making factors influencing generational succession.

Table 5 - Judgment of the criteria and subcriteria concerning decision-making factors

Criteria	Local Weight	Subcriteria	Local Weight
		Sr1. Farm Size	0.0367
		Sr2. Available workforce	0.1043
Cr1. Farms' characteristics	0.0584	Sr3. Farm income	0.3924
		Sr4. Activity diversification	0.0664
		Sr5. Access to the media	0.1638
		Sr6. Access to technology	0.2363
λMáx.: 6.4915 CI: 0.0983 CR:0.07	793	λMáx.: 6.4494 CI: 0,0899 CR: 0.0724	
		Sr7. Access to education	0.2745
Cr2. Infrastructure and coexistence in the rural	0.0467	Sr8. Social life and number of people in the community	0.1228
environment		Sr9. Leisure infrastructure	0.0624
		Sr10. Road infrastructure	0.5403
λΜáx.: 6.4915 Cl: 0.0983 CR:0.07	793	λMáx.: 4.2005 CI: 0.0668 CR: 0.0742	
		Sr11. Professional expectation	0.4995
Sr2. Voung norsen's work	0.1534	Sr12. Wage paid to the young person	0.1465
Cr3. Young person's work	0.1524	Sr13. Young person's education	0.0655
		Sr14. Job they perform	0.2884
λMáx.: 6.4915 Cl: 0.0983 CR:0.07	793	Sr14. Job they perform λΜάχ.: 4.2320 CI: 0.0773 CR: 0.0859	
∖Máx.: 6.4915 CI: 0.0983 CR:0.07	793	Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage	0.0467
		Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy	0.0467 0.0859
Cr4. Recognition of the young	793 0.2393	Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy Sr17. Family dialogue	0.0467 0.0859 0.2536
Cr4. Recognition of the young		Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy Sr17. Family dialogue Sr18. Encouragement and recognition	0.0467 0.0859 0.2536 0.1476
λΜáx.: 6.4915 CI: 0.0983 CR:0.07 Cr4. Recognition of the young person		Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy Sr17. Family dialogue	0.0467 0.0859 0.2536
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Cr4. Recognition of the young person AMáx.: 6.49147 CI: 0.09829 CR:0	0.2393	Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy Sr17. Family dialogue Sr18. Encouragement and recognition Sr19. Social valorization λMáx.: 5.2487 CI: 0.0622 CR: 0.0555 Sr20. Technical assistance Sr21. Presence of the cooperative, trade unions, and associations	0.0467 0.0859 0.2536 0.1476 0.4663
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Cr4. Recognition of the young person AMáx.: 6.49147 CI: 0.09829 CR:0 Cr5. Relationship of the young person with the cooperative	0.2393 . 07927 0.1057	Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy Sr17. Family dialogue Sr18. Encouragement and recognition Sr19. Social valorization λMáx.: 5.2487 CI: 0.0622 CR: 0.0555 Sr20. Technical assistance Sr21. Presence of the cooperative, trade unions, and associations Sr22. Communication of the Cooperative with	0.0467 0.0859 0.2536 0.1476 0.4663 0.2583 0.1047
Cr4. Recognition of the young person Cr5. Relationship of the young person with the cooperative	0.2393 . 07927 0.1057	Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy Sr17. Family dialogue Sr18. Encouragement and recognition Sr19. Social valorization λMáx.: 5.2487 CI: 0.0622 CR: 0.0555 Sr20. Technical assistance Sr21. Presence of the cooperative, trade unions, and associations Sr22. Communication of the Cooperative with members	0.0467 0.0859 0.2536 0.1476 0.4663 0.2583 0.1047
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Cr4. Recognition of the young person AMáx.: 6.49147 CI: 0.09829 CR:0 Cr5. Relationship of the young person with the cooperative	0.2393 0.07927 0.1057	Sr14. Job they perform λMáx.: 4.2320 CI: 0.0773 CR: 0.0859 Sr15. Marriage Sr16. Autonomy Sr17. Family dialogue Sr18. Encouragement and recognition Sr19. Social valorization λMáx.: 5.2487 CI: 0.0622 CR: 0.0555 Sr20. Technical assistance Sr21. Presence of the cooperative, trade unions, and associations Sr22. Communication of the Cooperative with members λMáx.: 3.0385 CI: 0.0192 CR: 0.0332	0.0467 0.0859 0.2536 0.1476 0.4663 0.2583 0.1047 0.6370

Source: Research Data

The results show that the judgments on managerial succession presented CR lower than 0.10, considering the consistent priorities according to Saaty (2008). Therefore, Cr6 "Business relations" obtained the highest priority level (0.3975). Business relationships, price, and market access are closely related to *farm performance*. *Thus*, the probability of succession increases with farm performance measured through farm income. Furthermore, the probability of having a succession plan increases with the family's wealth expectancy, which is indirectly related to farm performance (MISHRA; EL-OSTA, 2007).

On the other hand, Cr2 "Infrastructure and coexistence in the rural environment" was the least prioritized (0.0467). On leisure infrastructure in rural areas, previous studies had found that the low participation of young people in leisure activities due to the scarce spaces for leisure activities and the lack of infrastructure interferes with the succession process (SPANEVELLO, 2008; WEISHEIMER, 2009; SAVIAN, 2011; SILVA et al., 2011; FOGUESATTO et al., 2016; BEDNAŘÍKOVÁ et al., 2016; BREITENBACH; CORAZZA, 2019; BREITENBACH; TROIAN, 2020).

Moreover, Matte, Spanevello, and Andreatta (2015) observed that a reduction in the rural population influences the leisure provided in rural areas and that the main leisure activities offered are found in urban areas. These results may be linked to the fact that the potential successors analyzed in this study reside, for the most part, relatively close to urban areas and do not consider the availability of leisure infrastructure in rural areas a priority.

The local weight of the sub-criteria (Scr) was also analyzed by verifying the priority level of the variables. Therefore, in Cr1 "Farm characteristics", Scr3 "Farm income" obtained the highest prominence (0.3924). In contrast, "Sr1 Farm size" obtained the lowest prominence (0.0367). Regarding the most prioritized subcriterion, it is worth noting that financial capital represents a decisive requirement for the decision to take over the farm, as it improves prospects. Thus, young people on farms with higher profitability tend to be more likely to decide in favor of farming (Hennesy & Rehman, 2007).

For Pessotto et al. (2019), the higher the family income range, the more likely the potential successor will be interested in staying on the farm. Leonard et al. (2017) also observed the opposite in a study in which they found that young people are more likely to leave financially unsustainable farms but stay as long as the annual income of potential successors supports their needs. Bertolozzi-Caredio (2020) also evidenced low profitability when analyzing factors determining succession in extensive cattle ranching.

In the investigation carried out on the items corresponding to Cr2 "Infrastructure and coexistence in the rural environment", Scr10 "Road infrastructure" was the most prioritized

(0.5403). Regarding this subcriterion, Silva et al. (2011) considers the poor conditions and conservation of roads as an obstacle to living in rural areas. For Bednaříková et al. (2016), road quality is a factor that intervenes in satisfaction with life in rural areas. In addition, Barbosa et al. (2020) emphasize the improvement of road infrastructure as one of the elements that would facilitate succession on farms. Aldanondo Ochoa et al. (2007) observed that intra-family farm transfers are less likely as the distance to the nearest urban center increases.

Conversely, Sr9 "Leisure infrastructure" in rural areas was the least prioritized (0.0624) among potential successors. Regarding this factor, it is important to highlight that a significant number of the young people who make up the study live in the urban environment, having the rural environment as a place reserved only for agricultural work, especially the young people associated with the grain cooperative.

In Cr3 "Young person's work", Scr11 "Professional expectation" obtained a higher prominence (0.4995). Given this reality, we can infer that potential successor feeling satisfied or unsatisfied with a farming way of life determines succession (Hautaniemi & Gutmann, 2006). In this same criterion, the Sr13 "Young person's education" obtained a lower priority level (0.0655).

According to Cavicchioli et al. (2028), young people with access to education are less likely to remain in rural areas as they move away from the countryside and look for alternative urban jobs. In addition to this finding, other authors have found that young people with access to courses of study linked to agricultural sciences have a significantly greater interest in staying rural and participate more in farm activities compared to those studying courses of study in other areas (CAVICCHIOLI et al., 2015; BEDNAŘÍKOVÁ et al., 2016; BREITENBACH; CORAZZA, 2019).

The analyses performed on Cr4 "Recognition of the young person" pointed out that Scr19 "Social valorization" obtained the highest priority level (0.4663). In this reality, different authors highlight a devaluation of the farmer's identity from the occupation and agricultural work (SPANEVELLO, 2008; PANNO, 2016; BREITENBACH; CORAZZA, 2017). According to Weisheimer (2009), young rural people feel dissatisfied with the poor valorization of the rural producer. Moreover, when dealing with valorization in rural areas, rural women wish to have professional recognition and valorization regarding their attributions (BARBOSA et al., 2020). Morais et al. (2017) found that professional recognition influences successors' perceptions of their ability to take over the farm.

On the other hand, the Sr15 "Marriage" obtained a lower priority level (0.0467). For Matte et al. (2019), young men find it difficult to engage in marriage with rural girls. However, this lower weight identified here can be explained by Lago et al (2022), who observed that young people

consider the possibility of residing in the urban environment and working in the rural one because of the farm infrastructure and investments made. In this sense, the matrimonial issue does not directly influence the succession.

In Cr5 "Relationship of the young person with the cooperative", the Scr22 "Communication of the cooperative with members" was the most prioritized (0.6370). In this regard, previous studies have shown that farmers associated with an organization, such as a cooperative, have a higher probability of succeeding (CORSI, 2009; KERBLER, 2012; BERTONI; CAVICCHIOLI, 2016; Cavicchioli et al., 2018). For Abdala et al. (2021), membership in a cooperative is positively correlated with a family discussion about succession in ownership. In this sense, we can infer that cooperative actions have stimulated discussions about family succession since the continuity of cooperatives is also related to the renewal of farms and the inclusion of new members (ABDALA et al., 2021).

The analysis performed on Cr6 "Business relations" highlighted Scr25 "Price" as the most prioritized (0.6370). Regarding price, Costa (2006) and Fischer et al. (2016) emphasize that the price fluctuations of agricultural products make it difficult for people to stay in farming activities. Spanevello (2008), Savian (2011), Silva et al. (2011), and Bertolozzi-Caredio et al. (2020) further report the increasing trend of the rural producer's production costs, the low price paid for the product, and a drop in consumption leading to low profitability, which makes it a disadvantage to reside in rural areas. Perhaps, price is highly related to income because it is highly valued among potential successors.

On the other hand, the Sr24. "Rural credit and public policies" obtained a lower priority level (0.1047). For Savian (2011), the rural activity would be more attractive to young people if there were public policies for land acquisition, leisure, technical support, professional education, and incentive for agricultural income, with the reduction of input costs and better prices for agricultural products. Eistrup et al. (2019) further highlight that one of the biggest barriers to succession is often related to access to land and credit. Another related study by Morais et al. (2017) demonstrated that the ease of acquiring more land influences the perceptions of successors about their ability to take over the farm. Therefore, agricultural policies that provide credit to buy more land could stimulate generational succession (MORAIS et al., 2017).

In figure 2, we can see the global weight of the 25 sub-criteria investigated, identifying the priorities of all the variables analyzed together.

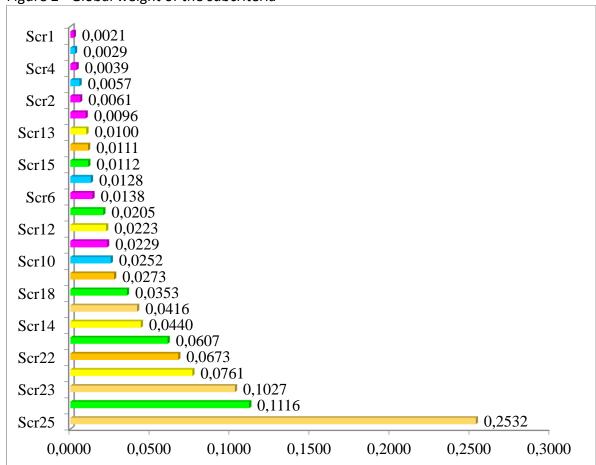


Figure 2 - Global weight of the subcriteria

Source: Research Data

The results indicate the global weight of all the subcriteria related to the following constructs: Characteristics of the farm, Infrastructure and coexistence in the rural environment, Young person's work, Recognition of the young person, Relationship of the young person with the cooperative, and Business relations. Thus, Scr25 "Price" (0.2532), Scr19 "Social valorization" (0.1116), and Scr23 "Access to commercialization" (0.1027) were the most prioritized. These variables belong to the "Business relations" construct (0.3975) and the Cr5 "Recognition of the young person" construct (0.2393).

In contrast, Scr1 "Size of the farm" (0.0021), Scr9 "Leisure infrastructure" (0.0029), and Scr4 "Activity diversification" (0.0039) obtained the lowest priority level among all the variables analyzed. These variables belong to construct Cr1 "Characteristics of the farm" (0.0584) and Cr2 "Infrastructure and coexistence in the rural environment" (0.0467).

Regarding farm size, it is possible to infer that the results obtained here are contrary to the findings of previous authors. The probability of succession depends largely on farm size, meaning that larger farms are more likely to be transferred (GLAUBEN et al., 2009, ALDANONDO

OCHOA et al., 2007, MISHRA; EL-OSTA, 2008; GLAUBEN et al., 2009, KERBLER, 2012; MORAIS et al., 2018). In this regard, Fischer and Burton (2014) point out that there is less friction between people on large farms and, therefore, better succession. In addition, smaller farms can often only support one family (FISHER; BURTON, 2014).

Regarding specialization diversification in family farming, the literature diverges, stating that specialized farms, often larger ones, are more likely to have a named successor and to be transferred within the family (GLAUBEN et al., 2004) because their production efficiency is higher. However, on-farm diversification is also positively related to the likelihood of having a successor (SOTTOMAYOR et al., 2011) because additional activities reduce risk, increase farm income, and thus make succession more attractive. Furthermore, when comparing specialized farms to diversified ones, we find that the former tend to have a later succession than the latter, stemming from the highly specialized knowledge that must be acquired before the acquisition (GLAUBEN et al., 2004). Figure 3 presents a summary of this study's main results based on the results obtained.

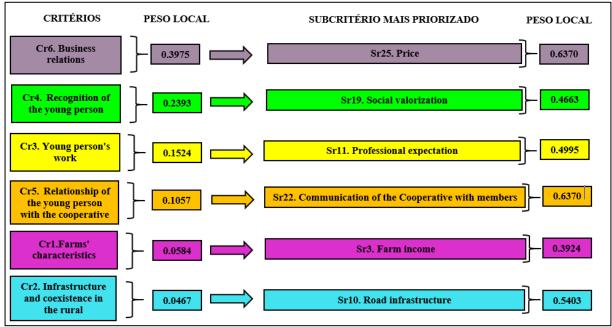


Figure 3 - Summary of the main results obtained from the AHP Modeling

The next section highlights the theoretical, methodological, and empirical implications. Furthermore, it highlights the study's main limitations and future directions.

4 Final considerations

This study aimed to identify the priority level of decision-making factors influencing the generational succession of potential successors. The factors were listed through the literature, and the AHP (*Analytic Hierarchy Process*) Modeling method was used to analyze the data.

Regarding the analyzed criteria, we observed that commercial relations obtained the highest priority level, while infrastructure and coexistence in the rural environment were the least prioritized. When dealing with the global weight of all the subcriteria, price, followed by social valorization and access to commercialization, was the most prioritized. In contrast, the farm size, followed by leisure infrastructure and activity diversification, obtained the lowest priority level among all the variables analyzed.

Upon concluding this research, we emphasize that the results were not presented to ignore certain decision-making factors in succession processes but rather to problematize the subject and demonstrate the priority level in the perception of potential successors, considering the analyzed context.

As a limitation, we highlight that this study was conducted in specific contexts. Therefore, it would be important to expand the research to other regions and other segments of the farming industry. Furthermore, as suggestions for future studies, we infer the importance of including other factors from the literature which were not analyzed in the study.

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