Succession Intentions in Family Farming: Evidence from Marginal Rural Areas in Paraguay

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Abstract

Family farms in the Global South are vital for global food security, yet they are particularly exposed to succession issues. In Paraguay, a country where family farming is predominant, we know little

about the main aspects characterising the intention of having a successor. By using Social Reproduction Theory as theoretical construct and an original database of Paraguayan farmers, this study employs a logistic regression model to examine how productive capital, reproductive capital, and external frictions are associated to the likelihood of having a successor. The analysis reveals that economic factors, particularly land availability, play a decisive role, whereas human capital and mechanisation show weaker effects. Therefore, we argue that succession reflects a broader set of structural and contextual dynamics that situate Paraguayan family farmers within a dual agrarian structure marked by inequality and exclusion.

Keywords: Paraguay; Farm succession; Family farming; Rural development policy.

JEL codes: O12, Q12, Q15

1. Introduction

Family farms continue to play a vital role in ensuring food security, providing rural employment, and fostering community resilience worldwide, despite the significant structural changes that agrifood systems have undergone in recent decades (FAO, 2025). Despite their critical role in sustainably transforming agri-food systems to feed the world, family farmers are particularly vulnerable to market forces that contribute to exploitation and wealth concentration (Wesz Junior et al., 2024). They are also disproportionately affected by poverty and vulnerability (HLPE, 2013). In Latin America, family farms constitute approximately 82% of all farms (Cavicchioli et al., 2018), and the sustainability of agricultural activities depends greatly on the successful transfer of farms within families (Suess-Reyes & Fuetsch, 2016; Breitenbach & Foguesatto, 2023), which has become a critical policy concern for Latin American policymakers (IFAD, 2014; Schneider, 2016).

Existing literature on farm succession identifies those factors influencing the likelihood of intergenerational transfer of family farms (Rodríguez-Lizano et al., 2020). However, the specific drivers and conditions facilitating this transfer remain insufficiently studied, especially in Latin

America. In this context, Paraguay stands out as an emblematic case, as the Latin American country where family farming represents the largest share of agricultural holdings (Leporati et al., 2014), constituting “the pillar of national agricultural production, representing nearly 90% of the farms in the country” (MAG, 2025, p. 11). Paraguay has one of the highest rates of land concentration in the world (Cardozo & Solís, 2024) and one quarter of the rural population lives under poverty line (INE, 2025). Such hard living conditions have caused an important migration, especially among young individuals, to urban areas in search of better opportunities.

Despite the importance of family farming in this country, the literature on farm succession is limited and fragmented, often embedded within broader studies of rural development and agrarian change. This paper aims to overcome this research gap by investigating this phenomenon using a new and unique dataset, resulting from extensive fieldwork in the San Pedro province of Eastern Paraguay. Building on Social Reproduction Theory (SRT) we employ a logistic regression model to explore those factors related to productive and reproductive capital. Results indicate that in poor households, the likelihood of having a successor is related to the household’s internal labour and external social safety nets, representing a strategy for the social survival of the family unit, rather than a business opportunity. Beyond the peculiarity of the Paraguayan case, this study can offer useful insights to understand the dynamics of succession and family farm sustainability in the broader context of the vast vulnerable and marginalised areas of the Global South.

The article is organized as follows: after this introduction, Section 2 reviews the main theoretical approaches to farm succession and discusses the key drivers identified in the literature. Section 3 presents the analytical framework based on Social Reproduction Theory and introduces the Paraguayan context, as well as the data and empirical strategy adopted. Section 4 reports the main results of the econometric analysis, which are then discussed in Section 5 in light of the broader debates on social reproduction. Finally, Section 6 offers concluding remarks, highlighting the main contributions of this study and suggesting directions for future research.

2. Theoretical framework

2.1. Farm succession: models

Farm succession, broadly defined as the intergenerational transfer of agricultural assets, management responsibilities, and farming knowledge from one generation to the next (Chiswell, 2018), represents a fundamental process in sustaining rural livelihoods and ensuring the continuity of agricultural systems worldwide. The process of farm succession can be understood as a case of an intertemporal and multi-dimensional allocation problem (Rodríguez-Lizano et al., 2020). It involves legal, economic, social, and cultural factors, as the transfer process encompasses both tangible assets, such as land, machinery, and productive equipment, and intangible assets, such as managerial skills, cultural knowledge, and social connections (Mishra & El-Osta, 2008). Theoretical approaches to farm succession are framed through a variety of analytical lenses, ranging from the household and family models (Becker, 1964) to the SRT (Mezzadri et al., 2024). This diversity reflects the complexities of intergenerational transfers, particularly in the context of small-scale and family-operated agricultural activities (Doss & Quisumbing, 2019).

In agricultural economics, household and family models combine production and consumption decisions into a cohesive framework, emphasizing how farm households aim to maximize utility by simultaneously considering present consumption, farm profitability, and the long-term goal of passing the farm on to the next generation (Becker, 1981). Within this perspective, succession becomes an intertemporal allocation problem in which parents weigh the trade-offs between current welfare and the need to invest in the farm's continuity, with major determinants including profitability, transaction costs of land transfer, children's occupational preferences, and the relative opportunity costs of off-farm labour (Singh et al., 1986).

Closely related is the literature on intergenerational transfer and human capital theories, which emphasize that farm succession depends on parents' ability and willingness to invest in their heirs' skills and education, as well as on the expected returns of farming relative to non-farming occupations

(Becker & Tomes, 1979). Migration and rural-to-urban mobility play a decisive role in this framework, as higher wages outside agriculture reduce the likelihood that children will remain on the farm. In these models, the farm is treated as both a productive asset and a cultural (i.e., symbolic) asset, with succession determined by the perceived economic and cultural value of tangible assets (i.e., land) and the quality of life in rural communities.

The phenomenon of farm succession is also embedded in life-cycle and succession planning models, which build on the life-cycle hypothesis (Modigliani, 1988) to explain how aging, retirement, and bequest motives shape farmers' decisions about transferring both assets and knowledge. From this perspective, succession is conceptualized as a strategic planning process in which uncertainty about retirement age, heirs' willingness, and off-farm opportunities all play key roles (Glauben et al., 2009).

More recent contributions from behavioural economics have also emphasized that farm succession decisions are not primarily driven by profit maximization, but are first and foremost guided by non-monetary forms of utility. Succession is strongly influenced by cultural and social norms, gender roles, and community expectations, which mediate the relationship between economic incentives and family choices (Shin et al., 2025). More recent studies have also discussed the intrinsic dimensions of individuals, exploring the role of personality traits in the formation of aspirations, within specific socio-economic contexts (Deißler et al., 2023).

For these reasons, the problem of farm succession has increasingly been framed through the lens of SRT, which emphasizes the intergenerational transfer of not only material resources (economic aspects) but also cultural norms, family dynamics, gendered identities, environmental sensibility, and social capital (socio-environmental aspects). In this view, succession is not merely the handover of land and productive assets, but a process embedded in the reproduction of the family farm as both an economic unit and a social institution (Burton & Fischer, 2015).

2.2 Farm succession: drivers and rationales

Among the social factors influencing farm succession, age and gender play significant roles (Arends-Kuenning et al., 2021; Breitenbach & Foguesatto, 2023). Researchers such as Bavorová et al. (2025, p. 13217) suggest that "age influences the transferor's decision to transfer land". This relationship is generally considered nonlinear: i.e., the probability of succession increases with the owner's age up to a certain point, and then it begins to decline (Pessotto et al., 2019). With respect to gender, women often find themselves excluded from land transfer processes due to patriarchal norms and legal biases, despite their contributions to agricultural production (Breitenbach & Corazza, 2020). Interestingly, women typically outlive their spouses and may, at times, be the ones responsible for making succession decisions (Bavorová et al., 2025).

Another critical factor is the level of education and training of the farm's owner. Empirical research indicates that farmers with higher levels of education and technical skills are significantly less likely to have successors (Foguesatto et al., 2020; Mishra et al., 2010). However, the literature review conducted by Suess-Reyes and Fuetsch (2016) reports conflicting evidence on this point, with important studies in Europe and America that observed an increase in the probability of succession when parents' educational level is higher.

Additionally, both the number of children and the embeddedness of owner networks are typically viewed as positive influences on the intergenerational transition in family farming (Bavorová et al., 2025; Tofollo et al., 2025). However, the impact of the number of children remains unclear in Latin American countries. For example, having a high number of children can result in succession challenges and competition over land distribution (Foguesatto et al., 2020; Suess-Reyes & Fuetsch, 2016).

While socio-symbolic factors highlighted in SRT have a significant influence on farmers' decisions, economic factors still play a crucial role in farm succession (Mishra et al., 2010). Income has been found to be positively associated with farm succession in several studies (Foguesatto et al., 2020; Pessotto et al., 2019). Land tenure regimes have more heterogeneous effects. In general, farm size is

158 considered a positive driver of farm succession (Foguesatto et al., 2020). However, the coexistence
159 of private property, communal land systems, occupied land, and indigenous territories tends to
160 generate fragmentation and blurred incentives for farm transfer (De Janvry et al., 2015). Moreover,
161 insecure titles discourage successors from investing in land and complicate legal transfer.

162 The availability of farm labour and the use of technology may impact the process of farm succession
163 (Bavorová et al., 2025). A seminal paper by Carla Gras (2009, p. 347) highlighted that "family farmers
164 have faced pressures to increase farm acreage and income, and [...] the growing use of mechanization
165 has displaced family labor." This situation can create challenges for the succession process due to a
166 lack of family members actively working on the farm.

167 Finally, environmental issues are becoming increasingly relevant for farmers planning their
168 succession (Borda et al., 2023; Suess-Reyes & Fuetsch, 2016). Rural youth steadily migrate because
169 of the worsening environmental conditions characterising Latin American countries, which make it
170 difficult to continue farming activities (Audefroy & Cabrera Sánchez, 2011). On this point,
171 Breitenbach and Corazza (2021) and Breitenbach and Foguesatto (2023) noted that environmental
172 risks and uncertainties negatively affect farm succession; therefore, negative perceptions of the
173 environmental situation and its evolution may affect the succession process. In a recent review of the
174 literature on family farming and climate change, Chao (2024, p. 10) pointed out that family farmers
175 "are more inclined to adopt sustainable land use practices". Latin American family farmers have a
176 long history of introducing and developing various sustainable practices, such as agroecology
177 (Sabourin et al., 2017), which are often the result of successful intergenerational succession.

178 **3. Methodology**

179 *3.1. Farm succession: A social reproduction approach*

180 The continuity of family farming in the Global South, particularly within Paraguay, cannot be
181 adequately captured by neoclassical models of firm behaviour that view succession as a mere utility-

maximizing transfer of assets. Neoclassical models rest on assumptions of price-taking agents with stable preferences and rational utility maximization subject to budget constraints. These assumptions are fundamentally ill-suited to the context of smallholder farming in low-income rural economies such as Paraguay, where markets are incomplete or absent, property rights are insecure, and household survival depends on non-market labour and informal social arrangements (Ellis, 1993; de Janvry & Sadoulet, 2006). For these reasons, we ground our framework on the SRT, which explicitly theorizes the interdependence between productive and reproductive labour as the foundation of household viability (Bhattacharya, 2017). Coherently, SRT considers the farm not a simple business-oriented economic agent, but rather a site where the productive (market-oriented labour) and the reproductive (family-oriented labour) aspects are inextricably linked. This perspective allows us to conceptualise farm succession as the successful reproduction of the peasant household as both a productive and social unit. Following the logic of the SRT and the dynamics of agrarian change characterized by Bernstein (2010), we conceptualise the sustainability of farm succession as a strategic equilibrium between productive and reproductive capital. In this framework, succession is viewed as a continuous process of reproducing the household's social and material conditions. By incorporating the concept of the agrarian habitus (Bourdieu, 2002), our model accounts for the cultural transmission of farming identity, while recognizing that this reproduction is constantly challenged by the reproduction squeeze (Bernstein, 2010) and external socio-economic frictions.

SRT, however, originates primarily in sociological traditions and has been articulated largely in non-formalized terms (Bakker, 2007; Ferguson, 2016); no suitable model for quantitative empirical analysis has been previously developed in the current literature. Consequently, here we translate the core SRT logic into a formal structure that can be mapped onto observable variables and estimated with an econometric model. In this sense, this framework provides internal coherence to our interpretation of succession intentions and informs the operationalization of variables for the quantitative analysis.

Our theoretical approach allows for a rigorous analysis of succession intent as a leading indicator of long-term rural persistence (Inwood & Sharp, 2012) within the specific precariousness of the Paraguayan family farm context. Specifically, we begin by defining the sustainability of succession (S) through a foundational SRT identity. Unlike a standard profit function, the viability of passing on the farm depends on the net balance of material and social forces. This can be summarized as:

$$S = (P + R) - (C + D) \quad (1)$$

In Equation (1), P (productive capital) represents market-based assets, while R (reproductive capital) captures the hidden value of unpaid domestic labour and emotional resilience that maintains the workforce. These are weighed against C (commodity pressure), which captures external market forces and volatility, and D (degradation of social ties), which represents the internal drain caused by burnout or the desire for autonomy.

Furthermore, a critical component of the reproduction process is the total labour (L) required to maintain the farm's viability. Departing from neoclassical labour models, SRT posits that the survival of the family farm relies fundamentally on the invisible exploitation of the domestic sphere (Bhattacharya, 2017), that is $L = Lm + Lr$, where Lm represents market-facing labour (e.g., planting, harvesting), and Lr represents reproductive labour (e.g., childcare, meal preparation, and social maintenance), with Lr that plays an essential role in sustaining Lm, because it represents the work that produces and sustains the life of the Lm worker.

Thus, a succession crisis occurs when the household enters what Bernstein (2010) calls a reproduction squeeze, that is a conditions where, due to the deterioration in the terms of exchange (falling output prices and rising input and living costs), despite the efforts of Lr in maintaining the farm unit, the farm ceases to be a viable site for the family life. This scenario forces the next generation to seek alternatives, as the perceived life-quality within the farm falls below the threshold of social acceptability. Finally, given that succession is not merely the transfer of physical assets, but the

intergenerational transmission of the agrarian habitus (Bourdieu, 2002) in the form of cultural capital (i.e., the ingrained skills and identity of being a farmer, *H*), succession failures are often exacerbated by the erosion of this cultural capital by the so-called friction of modernity, F. Here, F represents the devaluing of rural life compared to urban alternatives. When F is high, the cultural tie to the land is severed, and the reproductive cycle breaks down for any given level of productive and reproductive capital, even in the presence of potential physical heirs.

The formal structure of Equation (1) also serves an empirical purpose, in that it generates directional predictions that guide the econometric specification. Thus, to translate this abstract theory into a testable econometric model, we map these conceptual pillars onto observable variables. Specifically, the model predicts that succession intent *S* is positively associated with productive capital *P*, operationalized through variables such as family income, land area, and the use of mechanical tools, and with reproductive capital *R* proxied here by variables such as the number of children, the age and gender of the farm family head, and affiliation with rural networks. Conversely, *S* is expected to be negatively associated with the (C + D) and friction (*F*) pillars, which are operationalized through variables that capture labour-pull forces and the potential degradation of cultural capital, such as education level. In particular, the friction term, captured by education level and exposure to urban alternatives, is predicted to weaken the intergenerational transmission of farming identity when rural life is perceived as socially inferior to urban alternatives. All these predictions are thus not ad hoc hypotheses; they follow directly from the model's theoretical structure and map onto the variables included in the econometric specification. In this sense, the theoretical framework and the empirical model are not parallel narratives but structurally connected components of a unified analytical strategy.

3.2. Farm succession in rural Paraguay

Paraguay is a small, open economy (WTO, 2024), that heavily relies on exports due to its limited domestic market, both in size and purchasing power. Since 2003, the country has increasingly

integrated into the global economy, primarily driven by its agricultural production. It has greatly benefited from the international commodities supercycle (Balakrishnan et al., 2021), demonstrating a significant growth trajectory. However, the structure of its economy has shown minimal diversification and continues to depend on resource extraction and low-value-added production (Arce & Rojas, 2020).

The expansion of agricultural export-oriented production has incentivised the creation of new companies that process raw materials and caused increased pressure on natural resources, expanding production to previously virgin areas: deforestation is growing to expand the area available for intensive agriculture and livestock farming[1] (Arce & Rojas, 2020; Fehlenberg et al., 2017). Exports are concentrated in a few key products: soybeans, which accounted for 23% of total exports in 2024; beef, at 10%; and other soy-derived products, such as soybean residues and oilcakes, at 9%. The rising global demand for these products has significantly boosted production volumes; however, this growth has created increasing pressure on resources and family farms (Wesz Junior, 2022).

While large-scale agribusinesses dominate the export market for crops such as soybeans and beef, a significant number of rural households in Paraguay operate as family farms. These farms primarily produce for local markets and for their own subsistence; however, they often operate under precarious land tenure, facing challenges such as limited access to modern technology and credit markets (FAO, 2021 & 2022; Riquelme & Vera, 2019).

Paraguay's family farms reflect unique historical and institutional factors, while also illustrating many of the broader challenges found in other Latin American countries. The country exhibits high land concentration, featuring large estates along with a myriad of fragmented family holdings (Wesz Junior et al., 2018). Moreover, some family farmers lose land through informal sales or encroachment, and families unable to organize succession or defend their parcels may lose them to expansionary

[1] For more details see https://www.globalforestwatch.org/dashboards/country/PRY/?category=undefined.

281 pressures (Galeano, 2012a). These pressures influence the younger generation's perception of farming
282 as a viable career, directly affecting succession likelihood (Dobrée, 2013).

283 In Paraguay, the succession process is deeply embedded in a highly unequal land tenure system, where
284 family farmers often operate as a buffer against the aggressive expansion of large-scale mechanized
285 agribusiness, particularly soy monocultures (Galeano, 2012b). Unlike the European context, where
286 succession is often supported by institutional subsidies and formal retirement schemes, in Paraguay,
287 the reproduction of the family farmers depends almost exclusively on the household's internal
288 capacity to transform its productive logic under a reproduction squeeze (Bernstein, 2010). However,
289 generational change is not a guaranteed catalyst for modernization. In many instances, the friction of
290 modernity remains high due to the lack of infrastructure for family farming (Gattini, 2011).
291 Nevertheless, a successful generational change is particularly relevant because it represents a strategic
292 resistance to the de-peasantization process. The future of these farms depends on whether the
293 intergenerational transfer of the agrarian habitus (Bourdieu, 2002) includes the capacity for
294 entrepreneurial adaptation, allowing the family unit to navigate the tension between self-sufficiency
295 and market integration.

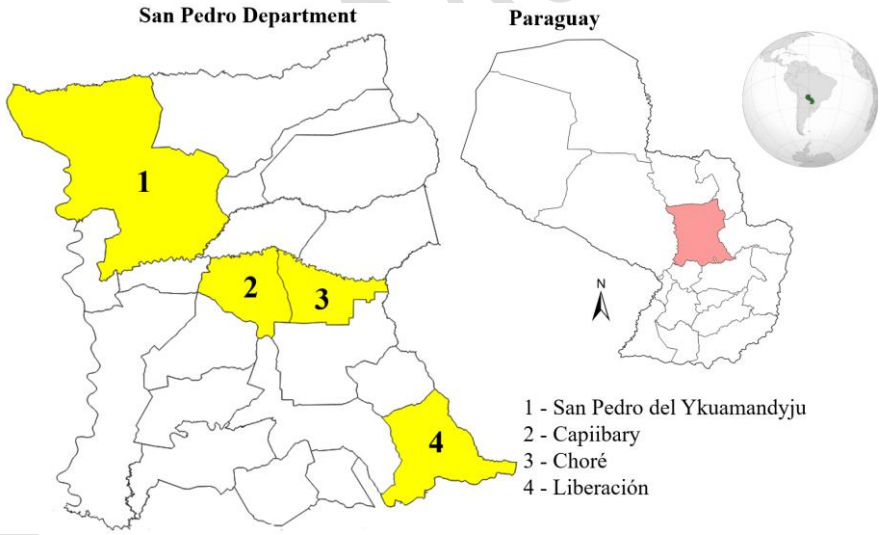
296 *3.3. Data collection*

297 The Department of San Pedro was chosen because it has the highest concentration of family farming
298 in Paraguay (MAG, 2025) and its role as the primary location for the State's establishment of public
299 colonies in recent decades (Areco & Rojas, 2017). In 2022, San Pedro had 55,698 family farming
300 holdings, but together accounted for only 22% of the total area, with an average area of 7.1 hectares
301 per holding (MAG, 2025). As Torres Figueredo (2008) notes, a large proportion of family farmers in
302 San Pedro are in critical economic conditions due to limited land availability, lack of access to
303 technology and equipment, and the absence of public support. This situation has direct implications
304 for farming succession and the social reproduction of farming families. Furthermore, San Pedro
305 consistently ranks among the departments with the highest rates of monetary poverty and social

exclusion in Paraguay (Serafini, 2019; INE, 2025), exemplifying what the literature on family farming in Latin America describes as marginal rural areas (Leao & Goulao, 2025), i.e. territories marked by socioeconomic inequalities and limited market integration.

Field research was conducted across four districts in San Pedro: Capiibary, Choré, San Pedro del Ykuamandyju, and Liberación (Figure 1). These districts were chosen for their presence of family farming and because existing contacts facilitated access to households for the research team. A structured questionnaire was developed to collect information on household composition, production units, associative networks, production systems, sources of income, perceptions of the environmental situation, and future prospects. From 2020 to 2022, questionnaires were administered to 1,405 farming households. Each district had between 338 and 382 completed questionnaires.

Figure 1. Location of the districts surveyed in San Pedro (Paraguay).



Households were selected using a stratified random sampling approach, covering communities located (1) farther from urban centres, (2) in intermediate areas (along main access roads), and (3) close to urban centres. While this design does not produce a statistically representative sample at the national level, it ensures internal representativeness of different types of rural settings within San Pedro.

However, the implementation of this strategy was disrupted by the onset of the COVID-19 quarantine, which impacted our fieldwork. Once mobility restrictions were eased, the research was resumed, though under conditions different from those initially planned. At that point, access to communities was mediated by community coordinators, i.e. local representatives responsible for sharing information about the research, negotiating the research team's entry, and guiding the researchers during fieldwork. Although this approach was necessary to complete the fieldwork, it may have introduced potential selection bias. To mitigate this risk, the research team maintained the original stratification criteria and applied the questionnaire systematically within each selected community.

3.4. Empirical specification Table 1 provides a summary of the data collected via questionnaire and used as variables for modelling Equation (1).

Table 1. Variables included in the analysis.

Variable	Definition	Variable type	Group
Age	Age of the respondent in years	Numeric	Social
Gender	Gender of the respondent (male=1; female=0)	Dummy	Social
Education	Education level of the respondent (from no education (1) to post-graduate education (9))	Ordered categorical	Social
Children	Number of children of the respondent	Numeric	Social
Network	Affiliation to an association of producers	Dummy	Social
Income	Sum of all sources of income from all family members (in PYG)	Numeric	Economic
Land	Total area of the farm in hectares	Numeric	Economic
Own_land	Percentage of land owned over the total area of the farm	Percentage	Economic
Occupied_land	Percentage of land occupied over the total area of the farm	Percentage	Economic
Employees	Presence of non-family members working in the farm	Dummy	Economic
Technology	Use of mechanical tools and support for farming activities	Dummy	Economic

Environmental_perception	Relevance of environmental aspects and issues for the respondent: 1 if very important, 0 otherwise	Dummy	Environmental
Seeds	Use of conventional seeds for farming activities	Dummy	Environmental
Succession	If the respondent believes there is a family member who will continue with the farming activities: 1 they believe there is a successor, 0 otherwise	Dummy	Dependent variable

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336 In particular, the above social, economic, and environmental drivers have been included as regressors
337 in a logistic model, described in Equation (2):

338 $$P_i\,(Y_i = 1) = \frac{e^{Zi}}{1+e^{Zi}} \text{ for } Z_i = \beta_0 + \underbrace{\beta_1 X_1 + \cdots + \beta_m X_m}_{Productive\ capital} + \underbrace{\beta_n X_n + \cdots + \beta_q X_q}_{Reproductive\ capital} + \underbrace{\beta_r X_r + \cdots + \beta_v X_v}_{Friction} \quad (2)$$

339
340 where the dependent variable is defined, following the same approach adopted by Foguesatto et al.
341 (2020), by the answer (yes or no) provided by the farm's owner to the following question: "Is there
342 any family member that you think will continue working on your property, after you are no longer
343 able to work on it?" .

344 Our dependent variable is thus the likelihood of succession expressed as a function of the interaction
345 between productive, reproductive, and friction-based variables. In SRT, the reproduction of the
346 peasantry depends on the intergenerational willingness to maintain the farm. If the intent is absent,
347 the reproductive cycle has already broken, even if the current head of household is still farming. In
348 other words, subjective expectations of succession serve here as a leading indicator of farm
349 investment behaviour and long-term sustainability. Analysing the drivers of this intent allows us to
350 identify the structural barriers to reproduction before the farm is permanently abandoned.

351 To capture non-linear effects, the regression model includes the variables of age, land, and income in
352 both their original values and their squared terms. Additionally, we controlled for the distribution of
353 farmers across four different districts: namely, Capiibary, Choré, San Pedro del Ykuamandyju, and
354 Liberación.

4. Results

The descriptive statistics of the variables employed in this study and their correlations are presented in Tables 2 and 3, respectively. From a total of 1,405 respondents, we removed observations with missing data, resulting in a final database of 1,018 farmers. The majority of respondents are male (73%). On average, they are 50 years old and have two children, and most of them have a basic elementary education. When looking at the economic factors, such as income and land, we can see that the distribution seems particularly skewed, with many farmers with a low income and a relatively low amount of available land, and a few farmers with higher quantities. Additionally, approximately 47% of these farmers have indicated a potential successor. In comparison to the overall situation in rural Paraguay, 61.7% of the population is male, the majority are between the ages of 45 and 54, and most producers have completed between the 4th and 6th grades of basic school education (MAG, 2024): therefore, our sample is rather representative of the national rural population but it is also characterised by elements of high marginality.

Table 2. Descriptive statistics.

Variable	Number of observations	Mean	Standard deviation	Minimum	Maximum
Age	1,018	50.50	14.19	16	90
Gender	1,018	0.73	0.45	0	1
Education	1,018	2.61	1.25	1	8
Children	1,018	2	1.68	0	12
Network	1,018	0.18	0.39	0	1
Income	1,018	1,116,640	1,461,698	0	12,900,000
Land	1,018	6.64	6.63	0	120
Own_land	1,018	0.52	0.49	0	1
Occupied_land	1,018	0.06	0.24	0	1
Employees	1,018	0.40	0.49	0	1
Technology	1,018	0.43	0.50	0	1
Environmental_perception	1,018	0.46	0.50	0	1
Seeds	1,018	0.85	0.36	0	1
Succession	1,018	0.47	0.50	0	1

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Table 3. Correlation matrix.

	Age	Gender	Education	Children	Network	Income	Land	Owner_land	Occupied_land	Employees	Technology	Environmental_perception	Seeds	Succession
Age	1													
Gender	0.1050	1												
Education	-0.3662	- 0.0165	1											
Children	-0.1711	-0.0053	-0.0150	1										
Network	-0.0598	- 0.0022	0.0314	0.0015	1									
Income	0.0448	-0.0360	0.1347	0.2534	-0.0707	1								
Land	0.2567	0.1164	-0.0629	-0.0786	0.0657	-0.0910	1							
Own_land	0.1192	-0.0771	-0.0468	-0.1269	-0.1549	0.0471	-0.0046	1						
Occupied_land	-0.0727	0.0642	- 0.0002	0.0348	- 0.0156	-0.0335	-0.0222	-0.2764	1					
Employees	0.0085	0.0583	0.0506	-0.0264	0.0841	-0.0286	0.1600	-0.0871	-0.0591	1				
Technology	0.0911	0.0754	0.0453	-0.0592	0.0727	-0.0359	0.1818	0.0908	-0.0812	0.1930	1			
Environmental_perception	0.0203	0.1766	0.0576	-0.0247	0.0975	-0.1522	0.1212	-0.1257	0.0385	0.1227	0.1761	1		
Seeds	-0.0259	-0.0378	-0.0500	0.0544	-0.0244	-0.0400	-0.0511	-0.0650	-0.0165	-0.0569	-0.1294	0.0338	1	
Succession	0.0533	0.1008	-0.0969	0.1257	0.0705	-0.0671	0.1115	-0.1461	0.1106	0.0994	-0.0229	-0.0991	0.0319	1

The results of the logistic model are presented in Table 4. A first important finding is that social factors do not appear to be associated to the succession process. Only the number of children ("Children") shows strong statistical significance, while "Network" and "Education" are moderately significant at the 10% level. Furthermore, none of the other variables demonstrated significant effects. Specifically, both the number of children and affiliation with socio-economic networks are positively associated with the likelihood of having a successor, as they increase the chances that someone will continue working on the farm and benefit from the relationships established by the householder. On the other hand, the householder's education level ("Education") has a negative coefficient, indicating that higher education is associated with a lower probability of finding a successor.

Table 4. Logistic regression results.

Variable	Coefficient
Constant	-1.401 (0.850)*
Age	0.005 (0.031)
Age^2	0.000 (0.000)
Gender	0.108 (0.162)
Education	-0.120 (0.063)*
Children	0.217 (0.047)***
Network	0.352 (0.183)*
Income	-2.17e-07 (1.02e-07)**
$Income^2$	2.07e-14 (1.51e-14)
Land	0.073 (0.019)***
$Land^2$	-0.001 (0.000)***
Own_land	-0.415 (0.156)***
Occupied_land	1.014 (0.317)***
Employees	0.246 (0.146)*
Technology	-0.339 (0.152)**
Environmental_perception	0.583 (0.150)***
Seeds	0.281 (0.203)
District	YES
Observations	1,018
Pseudo R^2	0.11
Prob > chi2	0.00

Statistical significance: * = 10%; ** = 5%; *** = 1%. Standard errors in parentheses.

When looking at the economic factors, only "Employees" is statistically significant at 10%, while all other variables are significant at 5% or 1%. Family income ("Income"), total area of the farm ("Land"), and percentage of occupied land ("Occupied_land") are positively linked to succession, while the percentage of own land ("Own_land") and the use of mechanical tools ("Technology") are negatively associated with the dependent variable. Thus, economic factors appear more relevant when examining the succession process. Finally, among the environmental factors, only "Environmental_perception" is statistically significant. This regressor has a positive coefficient, indicating that individuals with strong environmental awareness are more likely to find a successor for their farm.

5. Discussion

The relevance of "Children" and "Network" suggests that succession in San Pedro may be driven by the household's internal labour pool and external social safety nets. For the poorest households in our sample, succession may not be a choice of business expansion, but a strategy for the biological and social survival of the family unit.

The results also reveal a complex relationship between material assets and succession intent. While farm's dimension ("Land") shows a significant positive relationship with the possibility of having a successor, the negative coefficient for "Own_land" paired with the strong positive effect of "Occupied_land" provides a counter-intuitive finding that aligns with SRT. In the context of rural poverty, households on occupied or informal land may express a higher intent for succession, whereas those with established ownership might have the flexibility to transition out of agriculture. Furthermore, the role played by income ("Income" and "Income^2") indicates that when monetary wealth increases the reliance on the farm as a site of social reproduction decreases, but only up to a certain level. These findings demonstrate that succession in San Pedro is less about transmission of wealth accumulation (as in developed or emerging economies) and more about the precarious

management of labour and land as the only viable means of maintaining the household's existence across generations.

The dynamics observed in this study reflect a broader crisis of intentions toward farm succession in marginal rural areas across the Global South. Our findings suggest that in resource-constrained environments the farm is kept as a defensive asset. When social safety nets are lacking, the intergenerational continuity of the farm may help in providing absolute landlessness. This explains why, contrary to the trends in industrialised nations, the poorest households in our sample show the strongest commitment to succession. On the other hand, farmers who are less wealthy but possess some capital and education often face difficulties in establishing succession. This challenge arises because potential heirs may find employment opportunities in other sectors or choose to migrate to urban areas. However, relying on the family unit highlights the vulnerability of rural poverty: when external frictions, such as the pull of urban migration or the lack of formal land titles, become too great, the reproductive cycle is at risk of collapsing.

This picture is aligned van der Ploeg's (2018) analysis, which points out that the contemporary rural landscape is increasingly characterized by a split between family farms integrated into agro-industrial chains and those that adhere to peasant forms of production, relying on family labour and survival strategies. This reinforces a pattern of social reproduction driven more by necessity than by choice. Especially in developing countries such as Paraguay, succession is often triggered by crises such as the owner's illness or death, rather than through proactive planning. This circumstance exacerbates the precariousness of farmers, who must manage the family business while facing emergencies. This situation creates a poverty trap for family farmers and can be problematic for domestic food production (Riquelme & Vera, 2019).

6. Conclusions

This article contributes to the literature on family farming and generational succession by providing one of the first empirical analyses of the determinants associated with the succession intentions in

Paraguay, a country where family farming is particularly relevant but remains underexplored in academic research. Building on an original dataset from over 1,000 family farms in San Pedro, the study explores how social, economic, and environmental factors are associated with the expectations of intergenerational transfer.

Our findings confirm that succession in marginal rural areas cannot be understood solely through household or life-cycle models that emphasise individual decisions and profit-maximizing behaviour. Rather, succession reflects a broader set of structural and contextual dynamics that situate Paraguayan family farmers within an agrarian structure marked by inequality and exclusion. Moreover, our results suggest that the expectations on reproduction of family farming in Paraguay is driven simultaneously by opportunity and constraint. The analytical lens of SRT proves particularly insightful in interpreting these findings. Succession in family farms cannot be reduced to a transfer of productive assets: it is the intergenerational reproduction of the household as both an economic and social unit. The role of reproductive capital (proxied by family composition, network membership, and gender) is associated with succession intent alongside more conventional economic variables, confirming that the survival of the family farm is likely to depend on the essential contribution of reproductive labour.

Similarly, the reproduction squeeze theorized by Bernstein (2010) finds empirical expression in our results: tenure insecurity and commodity pressure systematically undermine succession prospects even among households with sufficient productive capital. In this sense, the SRT framework does not merely provide a narrative backdrop to the analysis: it structures the interpretation of the econometric results and explains why standard household models, focused exclusively on income and asset maximization, would fail to capture the full complexity of succession dynamics in a context as precarious as rural Paraguay.

Over the last decades, public programmes have sought to support family farmers in Paraguay (Gattini, 2011; Riquelme & Vera, 2019; Wesz Junior et al., 2018). Access to credit has been a core measure, but the two traditional institutions responsible for this policy, the Banco Nacional de Fomento (BNF

- National Development Bank) and the Crédito Agrícola de Habilitación (CAH - Agricultural Credit for Habilitation), have had great difficulty in including the most vulnerable family farmers (Molinas Bogado, 2025). There have also been initiatives to engage younger generations more directly by promoting vocational training and a simplified access to land and capital. These efforts, however, have remained limited in scale and scope, reaching only a small fraction of rural youth (Riquelme & Vera, 2019). Despite these efforts, farm succession itself remains largely absent from the policy agenda in Paraguay. There are no comprehensive or targeted policy frameworks explicitly designed to support intergenerational transfer; as a result, succession tends to be treated as a private family subject rather than a structural aspect characterising rural development. This policy gap is particularly problematic in a context marked by land concentration and limited economic opportunities for rural youth. This suggests that there is significant scope for developing more integrated and targeted public policies that explicitly incorporate succession as a key dimension of rural development strategies in Paraguay.

The present study is not without limitations.. A first shortcoming is that we were not able to study the impact of productivity: our dataset does not allow us to explore efficiency and carry out consistent cost-benefit analysis. Moreover, we were not able to shed light on the role of innovation, which is usually associated with productivity increases. A second limitation is that we do not dispose of information on economic alternatives to family farming: as a consequence, we cannot discriminate between farmers who purposely choose to continue the family business, disregarding other options, and those who do not feel to have other employment possibilities. Finally, we recognise that our regression model cannot be used for inferring causality effects, and the R^2 is not particularly high; nevertheless, the area under ROC curve is 0.71, which is considered acceptable, and other studies on a similar topic (using cross-section data) reported similar results (Mishra et al., 2010; Liu et al., 2023; Shin et al., 2025). Future research could address these limitations by incorporating longitudinal and qualitative data to capture how technical aspects and aspirations evolve over time and influence intergenerational succession.

503 **References**

504 Arce, L. and Rojas, G. (2020). Paraguay. In Cálix, Á. and Blanco, M. (eds), Los desafíos de la
505 transformación productiva en América Latina: Perfiles nacionales y tendencias regionales (Vol. II,
506 Cono Sur), pp. 369-426. México: Friedrich-Ebert-Stiftung.

507 Areco, A. and Rojas, L. (2017). Las colonias campesinas en Paraguay. Asunción: Base
508 Investigaciones Sociales.

509 Arends-Kuenning, M., Kamei, A., Garcias, M., Romani, G.E. and Assis Shikida, P.F. (2021). Gender,
510 education, and farm succession in Western Paraná State, Brazil. Land Use Policy, 107: 105453.

511 Audefroy, J.F. and Cabrera Sánchez, B.N. (2011). Impactos de los desastres hidrometeorológicos en
512 la migración humana. Instituto Politécnico Nacional.

513 Bakker, I. (2007). Social reproduction and the constitution of a gendered political economy. New
514 Political Economy, 12(4), 541–556.

515 Balakrishnan, R., Lizarazo Ruiz, S.V., Santoro, M., Toscani, F.G. and Vargas, M. (2021). Commodity
516 cycles, inequality, and poverty in Latin America. IMF Departmental Paper No. 2021/009.

517 Bavorová, M., Ullah, A., Garcia, Y.A. and Cavicchioli, D. (2025). Factors influencing farm
518 succession decisions: Evidence from coffee farmers of Colombia. Environment, Development and
519 Sustainability, 27(6): 13215-13234.

520 Becker, G.S. (1964). Human Capital. Chicago: University of Chicago Press.

521 Becker, G.S. (1981). A Treatise on the Family. Cambridge, MA: Harvard University Press.

522 Becker, G.S. and Tomes, N. (1979). An equilibrium theory of the distribution of income and
523 intergenerational mobility. Journal of Political Economy, 87(6): 1153-1189.

524 Bernstein, H. (2010). Class Dynamics of Agrarian Change. Halifax, CA: Fernwood Publishing.

525 Bhattacharya, T. (Ed.). (2017). Social Reproduction Theory: Remapping Class, Recentering
526 Oppression. London, UK: Pluto Press.

527 Borda, Á.J., Sárvári, B. and Balogh, J.M. (2023). Generation change in agriculture: A systematic
528 review of the literature. Economies, 11(5): 129.

529 Bourdieu, P. (2002). The peasant and his body. Ethnography, 3(4): 579-599.

530 Breitenbach, R. and Foguesatto, C.R. (2023). Should I stay or should I go? Gender differences and
531 factors influencing family farm business succession in Rio Grande do Sul, Brazil. Land Use Policy,
532 128: 106597.

533 Breitenbach, R. and Corazza, G. (2020). Rural youth from Rio Grande do Sul, Brazil: Gender issues
534 in generational succession. Revista Brasileira de Gestão e Desenvolvimento Regional, 16(3): 397-
535 412.

536 Breitenbach, R. and Corazza, G. (2021). ¿Ser o no sucesor? A qué aspira la juventud rural de Rio
537 Grande do Sul. Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud, 19(3): 212-234.

538 Burton, R.J.F. and Fischer, H. (2015). The succession crisis in European agriculture. Sociologia
539 Ruralis, 55(2): 155-166.

540 Cardozo, H.P. and Solís, J. (2024). Evolución de la estructura agraria paraguaya: Concentración de la
541 tierra y expansión del agronegocio (2008–2022). Revista de Ciencias Sociales, 24(2): 1306-1323.

542 Cavicchioli, D., Bertoni, D. and Pretolani, R. (2018). Farm succession at a crossroads: The interaction
543 among farm characteristics, labour market conditions, and gender and birth order effects. Journal of
544 Rural Studies, 61: 73-83.

545 Chao, K. (2024). Family farming in climate change: Strategies for resilient and sustainable food
546 systems. Heliyon, 10: e28599.

547 Chiswell, H.M. (2018). From generation to generation: Changing dimensions of intergenerational
548 farm transfer. Sociologia Ruralis, 58: 104-125.

549 Deißler, L., Mausch, K., Karanja, A., McMullin, S. & Grote U. (2023). A complex web of interactions:
550 Personality traits and aspirations in the context of smallholder agriculture. Bio-based and Applied
551 Economics, 12(1): 53-67.

552 de Janvry, A., & Sadoulet, E. (2006). Progress in the modeling of rural households' behavior under
553 market failures. In A. de Janvry & R. Kanbur (Eds.), Poverty, inequality and development: Essays in
554 honor of Erik Thorbecke (pp. 155–181). Springer.

555 De Janvry, A., Emerick, K., González-Navarro, M. and Sadoulet, E. (2015). Delinking land rights
556 from land use: Certification and migration in Mexico. American Economic Review, 105(10): 3125-
557 3149.

558 Dobrée, P. (2013). La tierra en el Paraguay: De la desigualdad al ejercicio de los derechos. Asunción:
559 ICCO.

560 Doss, C.R. and Quisumbing, A.R. (2019). Understanding rural household behavior: Beyond Boserup
561 and Becker. Agricultural Economics, 51(1): 47-58.

562 Ellis, F. (1993). Peasant economics: Farm households and agrarian development (2nd ed.). Cambridge
563 University Press.

564 FAO (2021). Reseña de agricultura familiar – Paraguay. Rome: FAO.

565 FAO (2022). Prioritizing investment in Paraguay’s agriculture is vital for recovery. Policy Brief.
566 Rome: FAO.

567 FAO (2025). Transforming food and agriculture through a systems approach. Rome: FAO.

568 Fehlenberg, V., Baumann, M., Gasparri, N.I., Piquer-Rodríguez, M., Gavier-Pizarro, G. and
569 Kuemmerle, T. (2017). The role of soybean production as an underlying driver of deforestation in the
570 South American Chaco. Global Environmental Change, 45: 24-34.

571 Ferguson, S. (2016). Intersectionality and social-reproduction feminisms: Toward an integrative
572 ontology. Historical Materialism, 24(2), 38–60.

573 Foguesatto, C.R., Mores, G. de V., Dalmutt Kruger, S. and Costa, C. (2020). Will I have a potential
574 successor? Factors influencing family farming succession in Brazil. Land Use Policy, 97: 104643.

575 Galeano, L.A. (2012a). Paraguay and the expansion of Brazilian and Argentinian agribusiness
576 frontiers. Canadian Journal of Development Studies, 33(4): 458-470.

577 Galeano, L. A. (2012b). Paraguay: El avance de la agricultura mecanizada y sus efectos en el
578 campesinado. Asunción, Paraguay: Centro Paraguayo de Estudios Sociológicos (CPES).

579 Gattini, J. (2011). Competitividad de la agricultura familiar en Paraguay. Nota técnica No. 5.
580 Asunción: CADEP.

581 Glauben, T., Petrick, M., Tietje, H. and Weiss, C. (2009). Probability and timing of succession or
582 closure in family firms: A switching regression analysis of farm households in Germany. Applied
583 Economics, 41(1): 45-54.

584 Gras, C. (2009). Changing patterns in family farming: The case of the Pampa region, Argentina.
585 Journal of Agrarian Change, 9(3): 345-364.

586 HLPE – High Level Panel of Experts (2013). Investing in smallholder agriculture for food security.
587 Rome: FAO.

588 IFAD (2014). Family farming in Latin America: A new comparative analysis. Rome: IFAD.

589 INE – Instituto Nacional de Estadística (2025). Principales resultados de pobreza monetaria y
590 distribución de ingresos: EPHC 2022–2024. Available at:

https://www.ine.gov.py/Publicaciones/Biblioteca/documento/271/Pobreza%20Monetaria_%20EPHC%202024_INE.pdf](https://www.ine.gov.py/Publicaciones/Biblioteca/documento/271/Pobreza%20Monetaria_%20EPHC%202024_INE.pdf (Accessed 18 August 2025).

Inwood, S. M., & Sharp, J. S. (2012). Farm persistence and adaptation at the rural–urban interface: Succession and farm adjustment. Journal of Rural Studies, 28(1), 107–117. doi: 10.1016/j.jrurstud.2011.07.005

Leao, R. and Goulao, L. F. (2025). Regional Perspectives of Rural Development in Latin America and the Caribbean: A Contextualized Framework Tested by Clustering Analysis. Latin American Policy, 16(3), e70021.

Leporati, M., Salcedo, S., Jara, B., Boero, V. and Muñoz, M. (2014). La agricultura familiar en cifras. In Salcedo, S. and Guzmán, L. (Eds.), Agricultura Familiar em América Latina y El Caribe: recomendaciones de política, pp. 35-56. FAO.

Liu, Q., Maule, B. and Zhang, W. (2023). Of women and land: How gender affects successions and transfers of Iowa farms. Applied Economic Perspectives and Policy, 45(4): 2255-2280.

MAG – Ministry of Agriculture and Livestock (2024). VI Censo Agropecuario Nacional - CAN 2022. Available at: https://portal.gis.mag.gov.py/arcgis/apps/sites/#/geoportal/pages/datos-tabulados (Accessed 4 June 2025).

MAG – Ministry of Agriculture and Livestock (2025). Caracterización de la agricultura familiar paraguaya a partir de los datos del CAN 2022. Available at: https://can2022.mag.gov.py/wp-content/uploads/2026/06/CARACTERIZACION-DE-LA-AGRICULTURA-FAMILIAR-PARAGUAYA.CAN2022.pdf (Accessed 16 June 2026).

Mezzadri, A., Stevano, S., Ossome, L. and Bargawi, H. (2024). The social reproduction of agrarian change: Feminist political economy and rural transformations in the global south. An introduction. Journal of Agrarian Change, 24(3): e12595.

615 Mishra, A.K. and El-Osta, H.S. (2008). Effect of agricultural policy on succession decisions of farm
616 households. Review of Economics of the Household, 6(3): 285-307.

617 Mishra, A.K., El-Osta, H.S. and Shaik, S. (2010). Succession decisions in US family farm businesses.
618 Journal of Agricultural and Resource Economics, 35(1): 133-152.

619 Modigliani, F. (1988). The role of intergenerational transfers and life-cycle saving in the accumulation
620 of wealth. Journal of Economic Perspectives, 2(2): 15-20.

621 Molinas Bogado, L.D. (2025). Evaluación del Crédito Agrícola de Habilitación (CAH) en Paraguay:
622 una mirada hacia el acceso. Master's Dissertation, Universidade Federal da Integração Latino-
623 Americana (UNILA). Foz do Iguaçu, Brazil.

624 Pessotto, A.P., Costa, C., Schwinghamer, T.D., Colle, G. and Dalla Corte, V.F. (2019). Factors
625 influencing intergenerational succession in family farm businesses in Brazil. Land use Policy, 87:
626 104045.

627 Riquelme, O. and Vera, E. (2019). Mapeo de programas y proyectos públicos y privados de desarrollo
628 rural para la Agricultura Familiar Campesina (AFC). Available at: www.decidamos.org.py/wp-
629 content/uploads/2019/11/Mapeo-de-programas-y-proyectos-para-la-AFC_DyP.pdf (Accessed 20
630 September 2025).

631 Rodríguez-Lizano, V., Montero-Vega, M.Y. and Sibelet, N. (2020). Which variables influence the
632 succession process in family farms? A literature review. Cahiers Agricultures, 29(39).

633 Sabourin, E., Patrouilleau, M.M., Le Coq, J.F., Vásquez, L. and Niederle, P. (2017). Políticas públicas
634 a favor de la agroecología en América Latina y el Caribe. CIRAD/FAO.

635 Schneider, S. (2016). Family farming in Latin America and the Caribbean: Looking for new paths of
636 rural development and food security. International Policy Centre for Inclusive Growth (IPC-IG)
637 Working Paper No. 137. Brasilia: UNDP - IPC-IG.

638 Serafini, V. (2019). Pobreza rural en Paraguay. Lima, IEP.

639 Shin, M., Loughrey, J., Dillon, E. and Kinsella, A. (2025). The social and economic determinants of
640 farm succession in Ireland. Bio-Based and Applied Economics. https://doi.org/10.36253/bae-16403.

641 Singh, I., Squire, L. and Strauss, J. (1986). A Survey of Agricultural Household Models: Recent
642 Findings and Policy Implications. The World Bank Economic Review, 1(1): 149-179.

643 Suess-Reyes, J. and Fuetsch, E. (2016). The future of family farming: A literature review on
644 innovative, sustainable and succession-oriented strategies. Journal of Rural Studies, 47(A): 117-140.

645 Tofollo, V., Foguesatto, C.R., Pelegrini, T., Dal Moro, L., Neckel, A., Breitenbach, R. and Mores, G.
646 (2025). Generational succession in dairy-producing families associated with an agricultural
647 cooperative in Rio Grande do Sul, Brazil. Journal of Agribusiness in Developing and Emerging
648 Economies. https://doi.org/10.1108/JADEE-06-2024-0180.

649 Torres Figueredo, O.A. (2008). Agricultura familiar no leste do Departamento de San Pedro,
650 Paraguai: origem, evolução, situação atual e perspectivas. PhD dissertation, Universidade Federal do
651 Rio Grande do Sul. Porto Alegre.

652 van der Ploeg, J.D., 2018. The New Peasantries: Rural Development in Times of Globalization.
653 Routledge.

654 Wesz Junior, V. J. (2022). Soybean production in Paraguay: Agribusiness, economic change and
655 agrarian transformations. Journal of Agrarian Change, 22(2): 317-340.

656 Wesz Junior, V. J., Zimmermann, S. A., and Rios, F. D. C. (2018). La institucionalización de políticas
657 públicas para la agricultura familiar en Paraguay. Raízes: Revista de Ciências Sociais e
658 Econômicas, 38(1): 80-97.

659 Wesz Junior, V. J., Piras, S., Grisa, C. and Ghinoi, S. (2024). Agri-Food Policies and Family Farms'
660 Commercialization: Insights from Brazil. Sustainability, 16(24): 11102.

661 WTO – World Trade Organization (2024). Trade policy review: Paraguay. WT/TPR/S/463. Geneva:
662 WTO.