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Understanding intergenerational farm succession intentions and discussions in family farms: Evidence from Hungary

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ABSTRACT

In European agriculture, generational change represents a major challenge for future farm management, as the low number of young people and the ageing farming population risk the survival of family farms. The agricultural structure of Hungary, the dominance of family farms, and the emotional attachment to the land call attention to examining farm succession processes. The paper analyses generational renewal in agriculture using quantitative, empirical methods in a Central Eastern European region, building on the theoretical frameworks of Socioemotional Wealth and Family Firms. An online survey questionnaire collects responses from 249 Hungarian farmers, which are analyzed using logit and probit regression models. The study explores how family involvement, farm management, economic performance, and intergenerational collaboration are associated with engagement in succession-related discussion and intention. Results indicate that farmers' decision-making roles, family members' active participation, favourable financial performance, and family support are positively associated with a higher likelihood of engaging in discussions about generational change. In turn, the members of the Y and Z generations show lower engagement in such discussions, while the more active role of female farmers raises new interpretative possibilities for gender roles. The research highlights the interplay between economic considerations and emotional and identity-based motivations in succession discussions. These findings support policy measures aimed at supporting early-stage engagement in succession processes, including aspects related to family relationships, knowledge transfer, and generational attitudes.

1. Introduction

To maintain the competitiveness of agriculture, the European Union's Common Agricultural Policy (CAP) has identified demographic challenges within the sector as critical issues to tackle. Therefore, farm succession and generational change in agriculture have become an urgent topic for the long-term sustainability of rural economies and the preservation of family farming traditions (Corsi, 2009; Sroka et al., 2019). In Central and Eastern Europe (CEE), as elsewhere in the European Union, the agricultural sector faces a dual challenge: an ageing farming population and a shortage of younger successors willing or able to take over farm management (Borda et al., 2023; Popa & Rahoveanu, 2021; Swain & Hamza, 2023). In response, tools and measures to support generational changes have been implemented (Zagata & Sutherland, 2015). However, the effects of these interventions have often been criticized due to their limited efficiency and effectiveness. Against this background, the main objective of the paper is to examine the factors associated with succession-related discussions in Hungarian family farms, using original survey data. Rather than analysing completed farm transfers, the paper focuses on early-stage engagement in succession processes, captured through whether respondents have discussed generational transfer within the family. The study focuses on the occurrence of family-level discussions about farm succession or generational transfer, and not on formal succession planning, succession intentions, or the actual transfer of ownership or management. This focus is theoretically and empirically relevant because succession is interpreted as a multi-stage process in which early family discussions represent an initial step before formal planning and eventual transfer (Chiswell & Lobley, 2018; Conway et al., 2020; Lobley et al., 2010). Such discussions provide a basis on which family members begin to address continuity, control, emotional attachment, and future farm management before formal succession decisions are made.

Demographic pressures on ageing farm managers are compounded by structural barriers, such as access to land, administrative burdens, and information gaps, which hinder effective succession planning and discussion (Nipers & Pilvere, 2020; Swain & Hamza, 2023). Existing

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research suggests that succession decisions are not simply economic but are also impacted by socioemotional wealth and the desire to preserve family identity, control, and legacy (Conway et al., 2020; Plana-Farran & Gallizo, 2021). However, the applicability of these perspectives in CEE countries, particularly in Hungary, remains underexplored. As one of the largest agricultural producers in CEE, Hungary has a long family-farming tradition and a high proportion of its land used for agriculture. The agri-food sector plays a vital role in the national economy (e.g., contributing significantly to GDP, employment, and rural livelihoods), and food export ensures food security in the European Union (Csáki & Jámbor, 2013; Maró et al., 2024). This makes Hungary a relevant region for examining generational change and succession-related processes in agriculture.

More specifically, the research pays particular attention to family dynamics, generational differences, and socio-emotional considerations in shaping succession-related engagement. In. In Western Europe, there is already extensive literature on the economic, social, and cultural aspects of farm succession and generational change (Borda et al., 2023; Brandth & Overrein, 2013; Chiswell & Lobley, 2018; Corsi, 2009). However, these processes remain relatively under-researched in CEE, where family farming is influenced by distinct historical, institutional, and demographic characteristics. Limited quantitative evidence is available on early-stage succession processes, particularly on succession-related discussions before formal planning or actual farm transfer. Based on original survey data collected and focusing on these discussions, this work contributes to the literature beyond its geographical focus and sheds light on an often overlooked phase of farm succession. Furthermore, this work applies the theoretical framework of Socioemotional Wealth (SEW) (Conway et al., 2020; Plana-Farran & Gallizo, 2021), the Theory of Family Farms (TFF) (Garner & De la O Campos, 2014) and the Generation Theory (McCrindle & Wolfinger, 2009) to interpret succession-related duscussion. SEW helps explain why emotional attachment, family identity, and the preservation of family legacy may motivate families to discuss generational transfer. TFF highlights the role of family involvement, ownership, and decision-making structures in shaping such discussions. Generation Theory provides a basis for examining whether engagement in succession-related discussions differs across age cohorts. This combined approach enhances the analysis by allowing succession-related discussions to be interpreted simultaneously as emotional and identity-based processes, as outcomes of family-farm governance and decision-making structures, and as behaviours that may vary across generational cohorts.

The research contributes to the literature in several ways. First, it provides original qualitative empirical evidence, based on primary survey data collected from 249 Hungarian farmers, on the factors associated with succession-related discussions, including family participation, decision-making power, generational cohorts, and gender differences. Second, it adapts established theoretical frameworks to the specific socio-economic context of Hungarian agriculture. Beyond economic rationality, the research highlights how family identity, emotional attachment, and transgenerational values are associated with succession intentions. Third, the study applies two complementary probit models to separately examine family-related and generational factors. This modelling strategy allows for a clearer identification of how different dimensions of succession-related discussions operate, by distinguishing between intra-family dynamics and generational patterns. Previous studies highlight that succession is a multi-stage process, where early discussions and intention formation represent critical steps preceding formal planning and eventual transfer (e.g., Chiswell, 2018; Conway et al., 2020; Lobley et al., 2010). In this research, succession-related discussion is treated as an early-stage indicator of succession engagement, rather than as evidence of completed succession or formalized succession planning.

All in all, the paper aims to explain early-stage succession engagement in Hungarian family farms by examining how family-related, organizational, economic, and generational factors are associated with succession-related discussions. In doing so, it contributes to the literature by providing quantitative evidence from an under-researched CEE context and by focusing on a preliminary phase of succession that precedes formal planning and actual farm transfer. Building on these contributions, this research addresses the following questions:

(1) What factors are associated with Hungarian farmers' engagement in succession-related discussions?
(2) How do family-related characteristics relate to engagement in succession-related discussions?
(3) How does generational affiliation relate to engagement in succession-related discussions?

The paper is structured as follows. Section 2 reviews the relevant literature on generational change in agriculture, specifically socio-cultural and economic factors influencing succession. It also introduces the theoretical framework, drawing on the SEW, TFF and Generation Theory to formulate testable hypotheses. Section 3 describes the data collection process, survey methodology, and variable construction. Section 4 outlines the results of the regression models. Section 5 discusses the main findings of the existing literature and highlights their implications. Finally, Section 6 concludes the paper and reflects on its limitations and potential directions for future research.

2. Literature review

2.1. Theoretical background

To understand generational change in agriculture, it is not enough to examine farm succession based solely on economic rationality. The literature increasingly recognizes that the operation and succession of family farms are not purely driven by economic considerations but are also embedded in social norms, cultural values, and family relationships (Conway et al., 2020; Nuthall & Old, 2017; Plana-Farran & Gallizo, 2021). Thus, the process of generational change is not only a technical or financial transaction but also a set of personal and emotional decisions. It is determined, for example, by relationships among family members, the need to preserve family identity, and the commitment to a way of life. This is particularly relevant for analysing succession-related discussions, as such discussions often emerge before formal planning or actual farm transfer and are driven by emotional and organizational family-farm dynamics. Thus, the study draws on two complementary theoretical perspectives, the Socioemotional Wealth (SEW) Theory (Conway et al., 2020; Plana-Farran & Gallizo, 2021), the Theory of Family Firms (TFF) and the. The former illustrates how non-financial goals (e.g., emotional attachment, family control) influence the strategic decisions of family farms (Berrone et al., 2012; Gómez-Mejía et al., 2007; Swab et al., 2020), while the latter focuses on how family ownership and control, and governance structures influence firms' operations, decision-making, and long-term strategy (Astrachan et al., 2014; Chrisman et al., 2005). Generation Theory complements these perspectives by drawing attention to differences in attitudes, motivations, and life-cycle positions across age cohorts (McCrindle & Wolfinger, 2009).

Family firms often focus on non-financial goals and preserving intergenerational values (Garner & De la O Campos, 2014). In the case of these firms, the family ownership role directly influences corporate culture, governance, and the willingness to innovate or take risks (Astrachan et al., 2014; Chrisman et al., 2005; Manzano-García et al., 2023). While family influence often strengthens cohesion and commitment, excessive control may hinder effective succession (Chrisman et al., 2005; Chrisman & Holt, 2016; Miller & Le Breton-Miller, 2006). These concepts explain why family businesses often make more conservative, risk-averse decisions or reject specific growth opportunities (e.g., avoid undermining family values or power). Furthermore, these approaches

provide a multidimensional perspective on agricultural succession, taking into account the specificities of the Hungarian ageing agricultural society (Swain & Hamza, 2023). While these theoretical perspectives originate from different strands of the literature, they are interrelated of family farm succession. SEW theory emphasizes the role of emotional attachment, identity, and the preservation of family legacy, while TFF highlights governance structures, decision-making processes, and the distribution of control within the family. Generation Theory (Swab et al., 2020), in turn, captures differences in attitudes, motivations, and life-cycle positions across age cohorts. All these frameworks provide the conceptual basis for the hypotheses developed below. SEW informs expectations about family support and emotional attachment, TFF informs expectations about family involvement and decision-making roles, and Generation Theory informs expectations about differences between generational cohorts in succession-related discussions.

2.2. Generational change in agriculture – factors, barriers, and possible solutions

Generational change in agriculture is a crucial for the sustainability of family farming and rural communities, particularly in an ageing farming population and the limited presence of young farmers (Borda et al., 2023; Conway et al., 2020; Lobley et al., 2010; Maró et al., 2025; Popa & Rahoveanu, 2021). The so-called "young farmer problem" reflects demographic ageing and the declining attractiveness of agriculture among younger generations (Nipers & Pilvere, 2020; Zagata & Sutherland, 2015). Due to off-farm job opportunities, higher education, and the physical demands of farming, young people are finding agriculture less attractive and interesting (Brandth & Overrein, 2013; Mizik et al., 2025; Plana-Farran & Gallizo, 2021). Older farmers may delay the transfer of control due to strong emotional attachment to land and farming identity, further complicating succession processes (Chiswell, 2018; Downey et al., 2016; Lobley et al., 2010). Thus, generational change in agriculture is a universal process with some regional characteristics. In Europe, as well as in Australia (Downey et al., 2017), family farms are considered efficient if farmers are skilled. However, the administrative burdens of generational change and information gaps remain a barrier (Coopmans et al., 2020; Eistrup et al., 2019; Swain & Hamza, 2023). Younger generations often quit farm jobs and are less interested in farming in Asia (Firman et al., 2023; Jansuwan & Zander, 2021b; Widiyanti et al., 2018). In Africa, younger generations have less access to land and, therefore, causes generational renewal problems (Lindsjö et al., 2021). In CEE, these challenges are often compounded by structural constraints, including small-scale farm structures, limited access to land, capital, and institutional barriers that hinder farm continuity (Nipers & Pilvere, 2020; Swain & Hamza, 2023; Török et al., 2024).

Moreover, according to Ariyo and Mortimore (2012), the challenge of transitioning from an ageing agricultural population to a new generation of producers is often distorted by agricultural policy. Policy responses have focused on supporting young farmers through financial incentives, education, and knowledge transfer programs, as well as facilitating land access and retirement schemes for older farmers (Coopmans et al., 2020; Gkatsikos et al., 2022; Pechrová & Šimpach, 2020). Many programs, measures, and supports aim to fix the problem of generational renewal. The EU sponsors the Young Farmers Programme, which provides financial support to farmers under the age of 40 to start their farming business (Gkatsikos et al., 2022; Pechrová & Šimpach, 2020; Popa & Rahoveanu, 2021). The non-family succession in Austria (Korzenszky, 2019), and the conversion of coffee plantations to other land uses in Costa Rica (Bosselmann, 2012) are some strategies being used to address these challenges. Education and training programmes facilitating entry into the agricultural sector and knowledge transfer are also essential to increasing the productivity and adaptability of young farmers (Jansuwan & Zander, 2021a; Mizik et al., 2025; Niewolny & Lillard, 2010). Combining formal and informal knowledge, including off-farm professional experience, can benefit farms' innovation capacity (Plana-Farran & Gallizo, 2021; Šūmane et al., 2018).

However, beyond economic support, there is growing recognition that successful generational renewal also depends on addressing social and emotional factors, including family relationships, identity, and long-term commitment to farming (Conway et al., 2020; Downey et al., 2016). Making agriculture more attractive for young people as a career choice is also necessary, including introducing technology, encouraging innovation, and boosting a positive image of the agricultural profession (Coopmans et al., 2020; Widiyanti et al., 2018). Although the ageing farming population and the lack of young successors remain substantial challenges, the changes brought about by late modernity and the innovative approaches of the new generation of farmers offer optimism for the future of agriculture (Borda et al., 2023). Young people increasingly gain off-farm work experience or higher education qualifications before returning to the farm. This can bring new skills and perspectives to the farm and accelerate the process of generational change (Chiswell, 2018; Farrell et al., 2022; Swain & Hamza, 2023). Moreover, rising global food demand and public interest in the sector could positively impact young people's awareness, interpreted as the appeal of farming (Chiswell & Lobley, 2018).

2.3. Formulating hypotheses based on the literature

In the last section of the literature review, the hypotheses of the paper are established. In family firms, ownership, management, and control are often shared among family members (Manzano-García et al., 2023), and economic considerations and non-financial goals such as family identity and continuity shape strategic decisions. According to SEW theory, maintaining family control and emotional bonds with the business are primary motivational factors behind long-term planning (Berrone et al., 2012; Chrisman & Holt, 2016). High levels of family involvement are thus correlated with a higher likelihood of succession planning, as this process safeguards transgenerational control and identity (Swab et al., 2020). In particular, the presence of family labour on the farm reinforces operational efficiency and intergenerational cohesion, thereby strengthening the emotional attachment necessary for a successful generational transition (Gómez-Mejía et al., 2007). These dynamics are especially relevant in countries such as Hungary, where emotional ties to land and family business remain deeply rooted across generations (Swain & Hamza, 2023).

H1. (family involvement hypothesis): Family members involved in the farm's workforce (presence of family labour in farm operations) are more likely to engage in discussions about generational change.

Moreover, decision-makers protect financial returns and sustain family influence and identity (Conway et al., 2020; Plana-Farran & Gallizo, 2021). Those with control are empowered to align with family values. Family members in decision-making roles have greater autonomy and are more likely to feel they own the company's future. This role creates opportunities to address strategic issues, such as succession (Chrisman & Holt, 2016). Participation in decision-making also entails a transformation of the agent-principal relationship, enabling the individual actor to act in his own interest and in line with family values (Astrachan et al., 2014).

H2. (decision-making control hypothesis): Farmers (respondents) with higher decision-making power are more likely to initiate discussions about farm succession.

Based on SEW theory, close family relationships help preserve nonmaterial values such as family identity and transgenerational traditions (Berrone et al., 2012; Chrisman & Holt, 2016). For family members involved in the operation of the farm, generational change is not a business decision, but rather an emotionally motivated process in which the role of family cohesion is particularly emphasized (Plana-Farran & Gallizo, 2021). Family support influences agricultural

career choices and discourses about the farm's future. An environment in which family members actively encourage conversations about succession increases the likelihood that succession processes will occur in a structured, forward-looking manner (Conway et al., 2020). This pattern reflects the emotional dimension of family farms and personal relationships are integral to decision-making. Thus, childhood attachment to agriculture strengthens a sense of belonging and succession-related discussions and intentions (Firman et al., 2023; Jansuwan & Zander, 2021a).

H3. (family cohesion hypothesis): Higher family support is positively associated with the likelihood of discussing generational change (succession intentions of their inheritors).

Furthermore, the literature shows a positive correlation between farm financial performance or net profitability and the likelihood of engaging in farm succession discussion and planning. Financially stable farms are more likely to have the incentive and capacity to initiate succession discussions, while underperforming farms often delay such conversations due to uncertainty or lack of assets (Akintayo & Makinde, 2025; Mishra et al., 2010; Nipers & Pilvere, 2020).

H4. (farm financial performance): A farm having a higher financial performance, measured by Standard Output, is more likely to support a discussion of generational change.

Gender roles in the agricultural sector are driven by social expectations, particularly in the case of family farms, where traditional patriarchal divisions of labour and values are dominant (Brandth & Haugen, 2010; Brandth & Overrein, 2013; Chiswell, 2018). The literature suggests that male heirs are more often directly involved in farm processes and are more likely to be viewed by parents as the natural successors (Brandth & Haugen, 2010; Chiswell & Lobley, 2018). As a result, female family members are often excluded from decision-making and succession discussions, even if they have strong emotional ties to the farm and regularly work on it (Borda et al., 2023; Lobley et al., 2010). The underrepresentation of female heirs is due to formal legal and economic barriers, and family members often perceive them as less competent or legitimate heirs (Brandth & Haugen, 2010; Brandth & Overrein, 2013). This may be particularly pronounced in countries, where traditional gender roles have been reinforced after the economic transition (Maró et al., 2025; Swain & Hamza, 2023). However, a growing body of literature suggests that female successors can also become strategic actors if they receive appropriate institutional support and recognition (Conway et al., 2020; Coopmans et al., 2020).

H5. (gender/family role hypothesis): Male successors who are more frequently entrusted with traditional agricultural tasks, reflecting societal expectations, are more likely to report succession discussions due to greater influence in family succession processes.

Moreover, regarding sociodemographic attributes, the literature indicates that farmers with agricultural education or higher agricultural qualification level engage more with conversations about farm succession and generational change. Education enhances awareness of long-term planning, succession risks, and institutional frameworks that support generational renewal (Conway et al., 2021; Sroka et al., 2019). Thus, educated farmers are also more likely to participate in formal succession programs and knowledge-sharing activities.

H6. (qualification)Farmers holding higher level of agricultural qualification are more likely to discuss generation change.

Finally, older farmers are more talkative in discussing farm succession than their younger counterparts. The generational differences are based on perceived social responsibility, life experience, and attitudes toward continuity in farming. Younger generations, while concerned about succession, are less inclined to initiate succession planning conversations, often due to uncertainty, perceived inequality, or a sense of disempowerment (Borda et al., 2023; Conway et al., 2021; Sroka et al., 2019).

H7. (generational differences in attitudes towards farm succession planning): Older generation farmers (Baby Boomers) are more likely to speak about generation change than younger ones.

3. Data and methodology

3.1. Presentation of sample and variables

An online survey was constructed to question various generations of Hungarian farmers about their generational change and succession processes, conducted from 1 March to 31 May 2025. The questionnaire was developed in Hungarian and pre-tested for clarity before dissemination. The questionnaire was structured into four main modules: (1) demographic and educational background, (2) farm characteristics (e.g., farm type, size, and financial performance), (3) family involvement and decision-making roles, and (4) succession-related attitudes and discussions. Most variables used in the empirical analysis were derived from closed-ended questions using binary (yes/no) or ordinal response categories. The dependent variable, generation succession discussion, is based on the question: *"Have you discussed farm succession or generational transfer within the family?"* (1 = yes, 0 = no). Explanatory variables were operationalized as follows: family support captures whether respondents reported receiving encouragement from family members to pursue agriculture (1 = yes, 0 = no); family involvement measures whether family members are actively engaged in farm work; decision-making (referring to the strategic not operational decisions) indicates whether the respondent participates in farm-level strategic decisions. Farm's financial performance is proxied by Standard Output,self-reported in categories.

The survey was distributed using a non-probability, convenience sampling approach through professional agricultural networks and online platforms. The questionnaire link was disseminated via mailing lists and communication channels of agricultural organizations in Hungary, including the National Chamber of Agriculture, and sector-specific farmer groups (e.g., Young Agribusiness Association, Agroinform online agricultural platform, Cool Farmers, Agricultural Influencers, Agribusiness Club, Association of Cattle, Swine, Sheep and Goat farmers). Participation was voluntary and anonymous. Data was collected using Qualtrics software, ensuring ethical transparency and broad reach. In some cases, recipients were able to share the survey later within their professional networks, introducing a limited snowball sampling element. Approximately 400 individuals were reached through these channels. While this approach enabled broad access to respondents, it may also result in a sample biased toward more digitally active and younger farmers.

Throughout these processes, internationally recognized methodological standards for email (Sheehan, 2001) and social media-based research were followed (Fricker, 2008; Kosinski et al., 2015). The raw survey data were subjected to a cleaning procedure. First, responses with substantial missing information (e.g., incomplete sections of the questionnaire) were removed. Second, consistency checks were performed to identify logically contradictory answers across related questions, and such observations were excluded. Third, variables included in the regression analysis were screened for missing values, and observations with missing data in these key variables were removed using listwise deletion. This stepwise procedure ensured a consistent and analytically useable dataset for the empirical analysis. While this approach enabled broad access to respondents, it may also result in a sample biased toward more digitally active and younger farmers.

After these steps, the final dataset consisted of 249 complete observations. Due to the online distribution method, the sample is not fully representative of the Hungarian farming population and is biased toward younger and more digitally active respondents. In the sample, the proportion of men is 58.2%, and the proportion of women is 41.8%. In

terms of age distribution, the majority belong to Generation Z (1995–2009) (48.59%), followed by Generation Y (1980–1994) (28.92%), while Generation X (1965–1979) and the baby boomer generation (1946–1964) are represented in smaller proportions. Almost half of the respondents (47.79%) have higher agricultural education, while 15.26% do not. The picture is varied in terms of years spent in agriculture. Many respondents have worked in the profession for 5–10 years (29.72%), but the proportion of those with several decades of experience is also significant. Regarding the agricultural sectors, most respondents were crop producers (58.3%), mixed crop and livestock (37.3%), and livestock farmers (4.4%) (Table 1).

Table 2 provides an overview and descriptive statistics of the variables used in the analysis. For each variable, the table presents the variable name, a brief description, the type of variable (e.g., dummy, ordinal, or scale), the number of observations (Obs.), the mean value (Mean), the standard deviation (Sd), as well as the minimum (Min) and maximum (Max) values. It is important to note that, in this research, farm succession is not measured as the actual transfer of farm ownership or management, but rather as succession-related discussions within the family. Thus, the dependent variable captures an early-stage, intention-based dimension of the succession process, reflecting whether respondents have engaged in conversations about generational change. While such discussions are widely recognized in the literature as a crucial precursor to succession planning, they do not necessarily result in formalized succession decisions or actual farm transfer.

The analysis does not distinguish between the perspectives of incumbent operators and potential successors; instead, it reflects respondents' subjective perceptions, which may vary depending on their position in the succession process. Therefore, the results should be interpreted as reflecting early-stage engagement in the succession-related discussions rather than completed succession outcomes. In addition, several explanatory variables, such as family support, decision-making participation, and financial performance, may be potentially endogenous and jointly determined with succession-related discussions. This is particularly relevant in family farm contexts, where decision-making, support, and communication processes are inherently interdependent. Therefore, the estimated coefficients should be interpreted as conditional correlations within a jointly determined system, rather than as independent causal effects.

Table 1
Presentation of the sample.

Characteristics	Sample (n = 249)	Sample (%)
Gender		
Female	104	41.77%
Male	145	58.23%
Generation cohorts by age based on McCrindle and Wolfinger (2009)		
GenZ (1995-2009)	121	48.59%
GenY (1980-1994)	72	28.92%
GenX (1965-1979)	38	15.26%
Baby-boomer (1946-64)	18	7.23%
Education in agriculture		
Higher education degree in agriculture	119	47.79%
Secondary education degree in agriculture	38	15.26%
Vocational qualification in agriculture	54	21.69%
No agriculture education	38	15.26%
Working in agriculture		
5 years or less	56	22.49%
5-10 years	74	29.72%
11-20 years	57	22.89%
21-30 years	32	12.85%
31-40 years	23	9.24%
41-50 years	5	2.01%
51 or more years	2	0.8%
Generation of farmers		
First	50	20.08%
Second	76	30.52%
Third	77	30.92%
Fourth or more	46	18.48%
Agricultural sector		
Plant production	145	58.23%
Livestock farming	11	4.42%
Mixed farming	93	37.35%

Source: authors' composition based on sample data

3.2. Methods and models used

The research employs logit and probit regression models to empirically investigate the factors influencing generational succession in Hungarian agriculture. This approach is particularly suitable when the dependent variable is dichotomous, in this case, whether the respondent has engaged in discussions about generational change (yes = 1, no = 0). The probit model estimates the probability that a farmer discusses succession based on explanatory variables such as family involvement, decision-making authority, economic performance, and generational affiliation. The use of this method allows for modelling the latent propensity of succession intentions as a function of observable characteristics, while assuming a normal distribution of the error term (Wooldridge, 2010; Yatchew & Griliches, 1985).

Two separate models (see Model 1 and Model 2) were constructed. The first focuses on socio-organizational variables linked to SEW and TFF, such as family labour, financial performance, and decision-making participation, following similar applications in farm succession literature (e.g., Chrisman & Holt, 2016; Gómez-Mejía et al., 2007). The second model incorporates age-based generational cohorts built on Generation Theory (McCrindle & Wolfinger, 2009) and controls for agricultural education and family support. The econometric models were estimated using maximum likelihood estimation. The goodness-of-fit of the models was evaluated using the Hosmer–Lemeshow and Pearson chi-square tests (Hosmer et al., 1997; Paul et al., 2013). Similar modelling strategies have been applied in succession-related research in developed, high-value-added, and transitional agriculture (Bosselmann, 2012; Mishra et al., 2010). Thus, to model the empirical background of the economic theory of family firm succession, logit and probit regression is estimated (Equation (1)).

$$\text{Generation\_succession\_discussion} = \beta_0 + \beta_1\text{Family\_support} + \beta_2\text{Family\_involvement} + \beta_3\text{Financial\_ performance} + \beta_4\text{Decision\_making} + \beta_5\text{Age} + \beta_6\text{Gender} \quad (1)$$

In addition, to capture firm succession at different generation levels, the McCrindle and Wolfinger (2009) Generation Theory is applied, and a second probit regression is estimated (Equation (2)).

$$\text{Generation\_succession\_discussion} = \beta_0 + \beta_1\text{Qualification} + \beta_2\text{Family\_support} + \beta_3\text{Gen\_Z} + \beta_4\text{Gen\_Y} + \beta_5\text{Gen\_X} \quad (2)$$

To construct the model probability, we assume that (1) Yi^* = latent (unobserved) propensity to discuss generational change/generation succession, (2) $Yi = 1$ if $Yi^* > 0$ (i.e., the respondent has discussed generational change/generation succession), $Yi = 0$ otherwise. The Model 1 is:

$$Yi^* = \beta_0 + \beta_1\text{Family\_involvement}_i + \beta_2\text{Family\_support}_i + \beta_3\text{Financial\_performance} + \beta_4\text{Decision\_making}_i + \beta_5\text{Age}_i + \beta_6\text{Gender}_i + \varepsilon_i$$

The model 2 is:

$$Yi^* = \beta_0 + \beta_1\text{Qualification}_i + \beta_2\text{Family\_support}_i + \beta_3\text{Gen\_Z}_i + \beta_4\text{Gen\_Y}_i + \beta_5\ \text{Gen\_X}_i + \varepsilon_i$$

Then the probability model converts to Model 1:

$$\Pr(Y_i = 1) = \Phi(\beta_0 + \beta_1\ \text{Family\_Support}_i + \beta_2\ \text{Family\_involvement}_i + \beta_3\ \text{Financial\_performance}_i + \beta_4\ \text{Decision\_making}_i + \beta_5\text{Age}_i + \beta_6\text{Gender}_i),$$

and Model 2:

$$\Pr(Y_i = 1) = \Phi(\beta_0 + \beta_1\text{Qualification}_i + \beta_2\text{Family\_support}_i + \beta_3\text{Gen\_Z}_i + \beta_4\text{Gen\_Y}_i + \beta_5\ \text{Gen\_X}_i)$$

Table 2
Explanation and descriptive statistics of the variables used.

Variable name	Description	Type	Obs.	Mean	Sd	Min	Max
Generation_succession_discussion	farmers have discussed succession within the family	dummy variable: (1 if yes, they farmers have discussed succession, 0 otherwise)	249	0.578	0.495	0	1
Family_ support	family support to choose a career in agriculture	dummy variable: (1 if yes, family support is provided, 0 otherwise)	249	0.755	0.431	0	1
Family_involvement	involve family member who actively works on the farm	dummy variable: (1 if at least one family member actively works on the farm, 0 otherwise)	249	0.233	0.423	0	1
Financial_performance	level of financial support the farm received, is proxied by Standard output (SO) of the farm	ordinal variable: levels of standard gross margin (1-6 scale)*	249	3.538	1.462	1	6
Decision_making	young farmers participation in decision-making of family business	dummy variable: (1 if yes, 0 otherwise)	249	0.257	0.438	0	1
Age	age of the respondents	scale variables: (18-130)	249	35.815	13.594	19	76
Gender	gender of the respondents	dummy variable: (1 if men, 0 otherwise)	249	0.582	0.494	0	1
Qualification	lhe levels of highest agricultural qualification obtained by the farmer/ respondent	ordinal variable: (1-4): 1 - No agricultural qualifications 2- Professional qualification 3- Secondary education 4- Higher education	249	2.956	1.144	1	4
Variables created according to the Generation Theory (McCrindle & Wolfinger, 2009)							
Gen_Z	Generation Z	dummy variable: 1 if age is between 16 and 30, 0 otherwise	249	0.486	0.501	0	1
Gen_Y	Generation Y	dummy variable: 1 if age is between 31 and 45, 0 otherwise	249	0.289	0.454	0	1
Gen_X	Generation X	dummy variable: 1 if age is between 46 and 60, 0 otherwise	249	0.153	0.360	0	1
Baby_Boomers	Baby Boomer Generation	dummy variable: 1 if age is higher than 60, 0 otherwise (this is the reference group for generation dummies, which are set to be 0)	249	0.072	0.259	0	1

Note: *Financial performance is measured by Standard output (SO) 1-less than €4000 (app. 1 ha of arable land), 2- €4000-7999 (app. 1-5 ha of arable land), 3 - €8000-14,999 (app. 5-12 ha of arable land), 4- €15,000-99,999 (app. 13-100 ha of arable land), 5-€100,000-499,999 (100-500 ha of arable land), 6- more than €500,000 (>500 ha of arable land).
Source: authors' composition based on the literature and sample data

Where Φ is the cumulative distribution function (CDF) of the standard normal distribution. $Pr(Y_i=1)$ indicates the probability of occurrence of the dependent variable, β_0 is the constant term, *and* $\beta_{1\text{-}6}$ captures the estimated coefficients for independent variables. It is important to note that the empirical analysis is based on cross-sectional data and a reduced-form specification. Therefore, the estimated coefficients should be interpreted as conditional associations rather than causal effects. In addition, potential simultaneity between key variables (e.g., family support, decision-making, and succession discussions) cannot be ruled out, and thus the direction of causality cannot be clearly established.

The selection of control variables is guided by the theoretical framework combining Socioemotional Wealth, the Theory of Family Firms, and Generation Theory. Accordingly, the models focus on demographic characteristics (age, gender, and generation cohort), human capital (agricultural qualifications), and family-related factors (family support, family involvement, and decision-making participation), which are paramount for explaining early-stage succession discussions. Some structural and economic variables, such as farm size, land ownership structure, and profitability, are not included in the empirical models. This is due to data limitations and to the analysis's prioritization of the relational and socioemotional dimensions of succession behavior. Therefore, the estimated coefficients should be interpreted as conditional associations. Model 1 includes variables capturing family involvement, decision-making participation, and financial performance, which reflect core dimensions of family firm behaviour. Demographic controls (age and gender) are included to account for individual-level heterogeneity.

Model 2 focuses on generational differences and therefore replaces age with generation dummies. The Baby Boomer generation serves as the reference category, allowing coefficients on other generations to be interpreted relative to older farmers. Qualification and family support are retained as control variables due to their theoretical relevance for succession engagement. In this study, the empirical analysis prioritizes inference on coefficient estimates over predictive performance. Model evaluation relies primarily on likelihood-based measures and robustness of coefficients across alternative specifications, while classification-based metrics are reported only as complementary information. Some potentially relevant structural and economic variables (e.g., farm size, land ownership, profitability, or inheritance expectations) are not included in the models, which may introduce omitted variable bias; therefore, the estimated coefficients should be interpreted as conditional associations. All models were estimated using maximum likelihood with default convergence criteria. Categorical variables were included as factor variables. Binary outcome models were estimated using StataNow 19.5 version's logit and probit commands with default maximum-likelihood settings.

4. Results

4.1. Determinants of discussion about succession in family firms

Logit and probit regression along with average marginal effects (Table 3) were calculated to examine factors associated with whether Hungarian farmers had discussed generational change. The evaluation of Model 1 focuses primarily on explanatory adequacy rather than predictive performance. While classification-based indicators such as the ROC curve (0.755) and overall classification accuracy (67.1%) are reported for completeness, they are not the primary criteria for model assessment in this study. Instead, model validity is assessed using likelihood-based measures. The likelihood ratio (LR) test indicates that the model is statistically significant ($p < 0.000$), confirming that the included explanatory variables jointly improve model fit relative to a null model. In addition, goodness-of-fit tests (Hosmer–Lemeshow test: $p = 0.714$; Pearson test: $p = 0.504$) suggest that the model is well specified. To assess the stability of the results, additional estimations were performed using alternative model specifications. Reduced-form models

Table 3
Probit and logit regression and Average marginal effects for discussion about generation succession planning.

VARIABLES	(1)	(1)	(2)	(2)
	logit	Average marginal effects (AMEs) logit	probit	Average marginal effects (AMEs) probit
	Generation_succession_discussion			
Family_ support	0.782**	0.154**	0.472**	0.153**
	(0.339)	(0.064)	(0.203)	(0.064)
Family_involvement	0.842**	0.165**	0.530**	0.172**
	(0.400)	(0.076)	(0.238)	(0.075)
Financial_performance	0.347***	0.068***	0.211***	0.069***
	(0.114)	(0.021)	(0.069)	(0.021)
Decision_making	1.115***	0.219***	0.675***	0.220***
	(0.368)	(0.068)	(0.218)	(0.067)
Age	0.031***	0.006***	0.019***	0.006***
	(0.012)	(0.002)	(0.006)	(0.002)
Gender	−0.795**	−0.156***	−0.491***	−0.160***
	(0.316)	(0.059)	(0.188)	(0.0585)
Constant	−2.543***		−1.541***	
	(0.623)		(0.365)	
Pseudo R^2	0.156		0.154	
LR $\chi 2$	0.000		0.000	
Observations	249	249	249	249

Note: Standard errors in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.

were estimated excluding potentially endogenous variables such as family support and decision-making participation (see Appendix, Table A1, Table A3). The results remain qualitatively consistent across specifications. The signs and statistical significance of the main explanatory variables are unchanged, indicating that the findings are not sensitive to the choice of functional form or model specification.

Table 3 presents the results of a probit regression analysis examining the factors associated with the engagement in generational succession-related discussions within family farms. The results indicate that all included variables are statistically significant at the 1% or 5% level, highlighting their relevance in explaining the dependent variable. Among these, the decision-making role shows the strongest positive association with succession-related discussions ($\beta = 0.675$, $p < 0.01$), suggesting that individuals involved in decision-making are significantly more likely to report such discussions. Similarly, family involvement on the farm ($\beta = 0.530$, $p < 0.05$) and perceived family support ($\beta = 0.472$, $p < 0.05$) are positively associated with succession discussions, suggesting that active family participation and a supportive family environment is associated with a higher likelihood of engaging in succession-related discussions. Financial performance, measured by Standard output (SO), has a smaller but still statistically significant coefficient ($\beta = 0.211$). Regarding demographic variables, age is positively related to succession-related discussions ($\beta = 0.019$, $p < 0.01$), suggesting that older respondents are more likely to report such discussions. In contrast, gender has a negative, statistically significant association ($\beta = -0.491$, $p < 0.01$). This indicates that male respondents are less likely than female respondents to report family-level discussions about generational transfer.

Table 3 also reports average marginal effects (AMEs), which express the results in terms of changes in predicted probabilities. In substantive terms, participation in decision-making is associated with an approximately 22 percentage point higher probability of reporting succession-related discussions, holding other variables constant. Family involvement increases this probability by about 17 percentage points, while family support is associated with an increase of approximately 15 percentage points, highlighting the importance of family dynamics in early-stage succession engagement. Financial performance shows a smaller but still significant association, with a one-unit increase in SO corresponding to a 6.9 percentage point increase in the probability of engaging in such discussions. Regarding demographic characteristics, is positively associated with succession-related discussions, with each additional year corresponding to approximately 0.6 percentage points. In contrast, male respondents are about 16 percentage points less likely than female respondents to engage in succession-related discussions.

4.2. Generational differences in discussion about succession planning

Model 2 was estimated to capture the impacts of Generation Theory (McCrindle & Wolfinger, 2009), family support, and qualification on generation succession (Table 4). As in Model 1, the evaluation of Model 2 prioritizes explanatory inference over predictive performance. Although the ROC value (0.702) and classification accuracy (62.65%) indicate moderate predictive ability, these measures are interpreted as complementary to model assessment. Model validity is evaluated using likelihood-based diagnostics. The likelihood ratio (LR) test confirms that the explanatory variables are jointly significant ($p < 0.000$). Goodness-of-fit tests (Hosmer–Lemeshow test: $p = 0.329$; Pearson test: $p = 0.473$) indicate an acceptable model fit. Log-likelihood values are reported in Table 4 to facilitate comparison across model specifications. In addition, robustness checks using alternative specifications (Appendix, Table A2, Table A3) confirm that the main results, particularly the negative association between younger generations and succession discussions, are stable with respect to model choice and variable inclusion.

Table 4 presents the results of a probit and logit regression model estimating the associations between generational affiliation and other explanatory variables and engagement in succession-related discussion, as well as average marginal effects for both models. The dependent variable is the same as in previous models, whether the respondent has engaged in discussions related to generational succession in the family business. The results demonstrate that family support is statistically significant ($\beta = 0.531$, $p < 0.01$) and is positively associated with engagement in succession-related discussions. In addition, agricultural qualification shows a positive and significant association with succession-related discussions ($\beta = 0.192$, $p < 0.05$), suggesting that higher levels of agricultural education are associated with a greater likelihood of engaging in succession-related discussions. The core focus of this model is the examination of generational differences. The reference category is the Baby Boomer Generation (individuals over the age of 60), and the coefficients for other generational cohorts (Gen Z, Gen Y, and Gen X) are all negative and statistically significant:

Table 4
Probit and logit regression and Average marginal effects (AMEs) for the Generation Theory.

VARIABLES	(1)	(1)	(2)	(2)
	logit	Average marginal effects (AMEs) logit	probit	Average marginal effects (AMEs) probit
	Generation_succession_discussion			
Qualification	0.306**	0.067**	0.192**	0.068***
	(0.126)	(0.026)	(0.077)	(0.027)
Family_ support	0.884***	0.193***	0.531***	0.189***
	(0.321)	(0.066)	(0.195)	(0.066)
Gen_Z	−1.912**	−0.417**	−1.102***	−0.393***
	(0.793)	(0.167)	(0.421)	(0.145)
Gen_Y	−2.541***	−0.554***	−1.487***	−0.530***
	(0.810)	(0.165)	(0.432)	(0.144)
Gen_X	−1.802**	−0.393**	−1.034**	−0.369**
	(0.833)	(0.177)	(0.449)	(0.156)
Constant	0.733		0.382	
	(0.833)		(0.449)	
Pseudo R^2	0.082		0.083	
LR $\chi 2$	0.000		0.000	
Observations	249	249	249	249

Note: Standard errors in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.
Reference category for generation variables is Baby Boomer cohort.

- Generation Z (age 16–30) shows a significantly lower probability of engaging in succession-related discussions ($\beta = -1.102$, $p < 0.01$), indicating a generational difference in engagement with succession-related discussions.
- Generation Y (age 31–45) shows the strongest negative association ($\beta = -1.487$, $p < 0.01$), suggesting that individuals in this age group are less likely to engage in such discussions.
- Generation X (age 46–60) also has a significantly negative association with the dependent variable ($\beta = -1.034$, $p < 0.05$), albeit to a lesser extent than Generation Y.

The results are consistent across model specifications, and the AMEs facilitate interpretation in probability terms. Family support is associated with an approximately 19 percentage point higher likelihood of succession-related discussions. Agricultural qualification is also positively associated, with a more modest association of about 6.8 percentage points. In contrast, as mentioned before, all younger generations are significantly less likely to engage in succession discussions compared to the Baby Boomer reference group. The largest negative effect is observed for Generation Y, which is associated with a 53 percentage point lower probability, followed by Generation Z (−39 percentage points) and Generation X (−37 percentage points). These findings highlight substantial generational disparities, with younger cohorts markedly less engaged in succession-related discussions, while family support remains a key associated factor.

To visually summarize the main generational finding, Fig. 1 presents the average marginal effects of generational cohorts based on the probit specification of Model 2. The figure shows that, compared with the Baby Boomer reference group, all younger generations are less likely to engage in succession-related discussions. The largest negative marginal effect is observed for Generation Y, followed by Generation Z and Generation X.

The evaluation of the models focuses on explanatory inference rather than predictive performance. While classification-based indicators (e.g., ROC and accuracy) are reported, they are interpreted as secondary to coefficient estimates and marginal effects, which are more directly aligned with the theoretical objectives. The robustness checks support the stability of the results. The estimated coefficients are consistent in sign, magnitude, and statistical significance across logit and probit specifications, as well as in reduced-form models excluding endogenous variables. This consistency indicates that the main findings are not sensitive to model specification and strengthens confidence in the reported associations.

5. Discussion

The results, within aging farmers society context of Hungary, affirm the relevance of the SEW and TFF in explaining succession behaviour on Hungarian family farms. The findings also provide additional support for applying Generation Theory in understanding age-based differences in discussion about succession planning. The dependent variable captures succession-related discussions rather than actual farm transfer. Therefore, the findings reflect factors influencing early engagement in succession processes, rather than completed succession outcomes.

5.1. The role of socioemotional wealth and family dynamics

In line with previous studies (Berrone et al., 2012; Plana-Farran & Gallizo, 2021), the findings suggest that family involvement (e.g., in the decision-making) and family support significantly associated with a higher likelihood of discussing generational change, highlighting their relevance in succession-related engagement among Hungarian farmers. These factors represent core components of SEW (Conway et al., 2020; Plana-Farran & Gallizo, 2021), particularly emotional attachment, family control, and identity preservation. The significant positive association between family involvement and succession discussions is consistent with the view that integrating family members into the business strengthens operational capacity and emotional commitment to intergenerational continuity. Furthermore, the strong positive association of decision-making participation is consistent with the role of empowerment in succession intentions. This aligns with findings from Chrisman and Holt (2016), suggesting that individuals in influential roles are more likely to internalize strategic priorities such as succession. These results suggest that family farms are oriented toward emotional and legacy-based goals over purely financial ones, thus, emotional attachment to farming is a factor in succession (Downey et al., 2016; Swain & Hamza, 2023).

The positive association with age is also consistent the lifecycle perspective of farm operators, where older farmers, more aware of succession needs, are more inclined to initiate generational discussions. This observation aligns with the findings of Downey et al. (2016) and Lobley et al. (2010), who emphasize that ageing and an identity

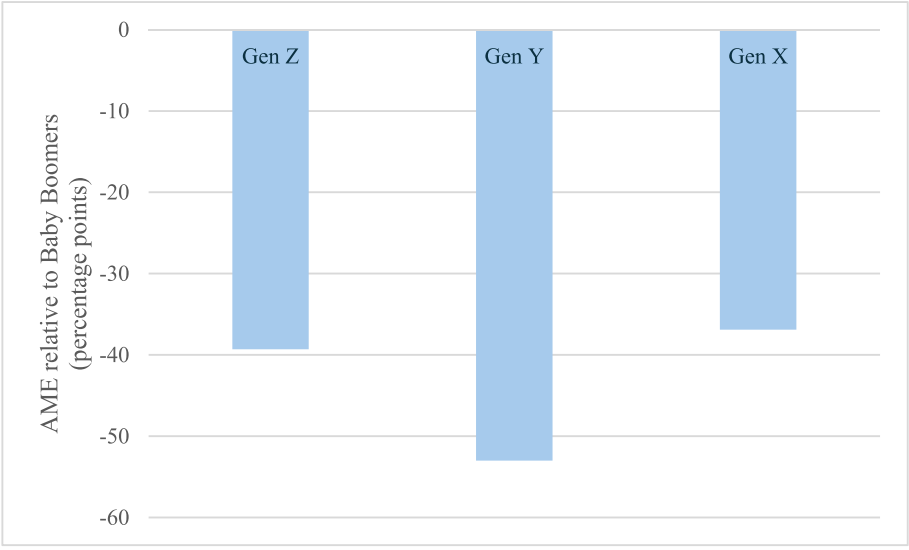

Fig. 1. Average marginal effects of generational cohorts on succession-related discussions
Note: The figure reports average marginal effects from the probit specification of Model 2. The Baby Boomer cohort is the reference category. Values indicate percentage-point changes in the probability of engaging in succession-related discussions relative to Baby Boomers.

intertwined with land ownership often compel older generations to consider continuity planning, even amid emotional resistance to retirement. The significance of farm economic performance suggests that economically stronger farms are more likely to engage in succession-related discussions, which may be related to greater capacity for long-term planning and continuity considerations (Lobley et al., 2010; Nipers & Pilvere, 2020).

The finding that female respondents are more likely to engage in succession-related discussions contrasts with the literature (Daniele et al., 2026; Liu et al., 2023), which frequently emphasizes the marginalization of women in formal farm succession processes. Women's roles in agriculture are often less visible or formally recognized, which can limit their participation in succession conversations (Brandth & Overrein, 2013; Chiswell & Lobley, 2018; Mizik et al., 2025). It also suggests a divergence between informal communication processes and formal succession outcomes. Because the dependent variable captures family-level discussions rather than formal decision-making authority or actual farm transfer, this result should not be interpreted as evidence of greater female influence in succession outcomes. Instead, it may reflect gendered differences in communication roles, emotional labour, or informal involvement in family discussions about the future of the farm. One possible interpretation is that evolving cultural roles and norms (Kahneman & Tversky, 2013; Vanclay & Enticott, 2011), where younger generations may increasingly recognize women's strategic and emotional contributions to farming operations. Thus, further qualitative research is needed to determine whether this pattern reflects a genuine shift in gender roles or the continuation of supportive, but less formalized, contributions.

5.2. Generational disparities and disengagement

Based on Generation Theory (McCrindle & Wolfinger, 2009), the second model revealed significant associations across generational groups in succession engagement. Compared to the Baby Boomer generation, all younger cohorts (Generation X, Y, and Z) were less likely to report discussing generational change. This pattern was particularly pronounced among Generation Y (aged 31–45), who showed the lowest level of engagement. This trend is in line with earlier research (see e.g., Bertolozzi-Caredio et al., 2020; Chiswell & Lobley, 2018), which associates younger generations with increased individualization, off-farm employment aspirations, and delayed returns to agriculture. The results may reflect lower levels of attachment to agricultural identity and long-term farm commitment among younger cohorts. It could happen especially if the farm's economic viability is uncertain or insufficient to support a modern lifestyle.

In this context, agricultural education shows a positive association with discussion about succession planning. This supports earlier claims (see e.g., Farrell et al., 2022; Šūmane et al., 2018) that formal training is associated with stronger professional identity and long-term engagement, potentially mitigating generational withdrawal. Moreover, family support is also positively related to succession engagement, suggesting that intergenerational encouragement and shared values are important for succession engagement - even when economic rationality is not primary. These results underline generational disparities in attitudes and behaviours toward discussion about succession planning in agriculture. Younger generations appear to be less engaged in such discussions, which may be related to differing career aspirations, lower levels of farm engagement, hesitation about long-term involvement in agriculture, or the fact that succession may not yet be perceived as an immediate or relevant issue. Thus, these generational differences should be interpreted with caution. They may reflect life-cycle effects or the timing of succession relevance rather than stable attitudinal differences between cohorts. For example, younger respondents may be less likely to discuss succession simply because their parents are still actively managing the farm or because formal transfer is not yet a pressing family concern. Based on these results, Table 5 summarizes the empirical support for the hypotheses, including their validation status and a brief justification based on the statistical findings. The table reports only the direction and significance of the main associations, while the detailed interpretation is provided in the preceding discussion.

Table 5
Summary of empirical support for the hypotheses.

Hypothesis	Model	Result	Justification
H1. Family involvement	1	Accepted	Positive and significant association.
H2. Decision-making control	1	Accepted	Strongest positive association in Model 1.
H3. Family cohesion/ support	1, 2	Accepted	Positive and significant in both models.
H4. Farm's financial performance	1	Accepted	Positive and significant, although smaller in magnitude.
H5. Gender/family role hypothesis	1	Rejected	Male respondents were less likely to report succession-related discussions.
H6. Farmer's qualification	2	Accepted	Higher agricultural qualification was positively associated with discussions.
H7. Generational differences	2	Accepted	Younger cohorts showed lower engagement than Baby Boomers.

5.3. Managerial and policy implications

The research results have several practical lessons for farm-level decision-making process and policy design. At the corporate (farm management) level, raising awareness and strengthening family roles in farm operations may be important. Decision-making power and the active involvement of family labour are highly associated with engagement in succession-related discussions. In addition, the results highlight that a structured division of tasks and responsibilities within the farm, along with family members' involvement in strategic decisions, can contribute to the initiation and development of succession processes. Thus, managers could develop internal operational practices that encourage open communication, strengthen intergenerational bonding, and support the integration of young generations. Tools such as family strategic planning, facilitated generational workshops, or legal advisory support may be useful for supporting early-stage succession discussion.

At the policy level, the results suggest that financial incentives itself may not be sufficient to encourage early-stage succession-related engagement. Family cooperation, emotional attachment, and identity preservation are also relevant considerations for policy instruments. Thus, future agricultural policies could (1) develop broader support programs that also focus on intergenerational knowledge transfer, mentoring and strengthening family cohesion; (2) promote the development of decision-making skills among younger generations through training programs, especially in family farm businesses; (3) recognize and support the role of female farm successors; and (4) reduce negative stereotypes surrounding agriculture through indirect communication and social awareness-raising that may discourage younger generations from choosing a career.

The lower engagement of younger generations in succession-related discussions may pose challenges for the long-term continuity of family farms. This trend could be addressed by education and communication campaigns that highlight agriculture's social value, innovation potential, and opportunities for self-fulfilment. From an educational perspective, the early introduction of agricultural careers in schools, especially in rural areas, may be beneficial. Career guidance programs integrated into formal education, such as interactive lessons, farm visits, and internship programs, can help young people see agriculture not only as an outdated, physically demanding job but also as a creative and innovative profession. Agricultural innovations and new technologies (e.g., precision farming, agricultural robotics) may attract younger generations, especially those with technological interests or environmental

awareness. Bridging the generation gap, therefore, not only a communication challenge, but also an educational and policy issue linked to the future continuity of family farms. Overall, the research highlights that early-stage engagement in succession processes depends not only on financial incentives but also on the ability of farms to integrate emotional, relational, and identity-based considerations into strategic decision-making. Recognizing and supporting these factors may help facilitate the initiation of succession-related discussions within family farms.

6. Conclusions

Generational change represents a significant challenge for Hungarian agriculture, which cannot be explained by economic rationality alone. It is a complex, socially and emotionally embedded process that is closely related to the future sustainability of family farms. The main contribution of the current research is that it empirically examined main factors associated with succession-related discussions in Hungarian agriculture, exploring the logic of family operations, emotional attachment, and generational differences. The study adapted the SEW and TFF theoretical frameworks to Hungarian conditions and included an analysis of generational attitudes and life situations to interpret generational change. The results suggests that family support, decision-making capacity, and family members' functional participation in farm operations are strongly associated with engagement in succession-related discussions. These factors highlight the interplay between economic considerations and the preservation of family identity and emotional investment. In contrast, lower engagement is observed among younger generations, which may indicate that succession-related engagement is less pronounced among younger cohorts.

Overall, the main strength of the study lies in its original empirical focus on early-stage succession-related discussions in Hungarian family farms. By combining primary survey data with an integrated theoretical approach, the paper contributes to a deep understanding of how family, organizational, economic, and generational factors are associated with succession-related engagement before formal succession planning or actual farm transfer occurs. However, it is important to highlight specific research limitations, which also indicate new research directions. First, the analysis is based on cross-sectional survey data, which restricts the ability to draw dynamic inferences about the determinants of succession intentions. The estimated associations are consistent with the literature; future research using longitudinal data would be suited to capture succession dynamics over time. Second, the study focuses on succession-related intentions and discussions rather than the actual realization of farm transfer, capturing an early and critical stage of the succession process. Third, although the sample size is comparable to that of similar empirical studies, the survey's voluntary online nature limits its representativeness. The data collection strategy resulted in a sample biased toward younger, more digitally active farmers, which is reflected in the overrepresentation of Generation Z respondents. This imbalance is particularly relevant in the context of farm succession, as succession decisions are often more directly associated with older farm owners who are closer to retirement. Thus, the findings should be interpreted with caution, as they primarily reflect succession-related attitudes and discussions within a younger and more engaged segment of the farming population. Therefore, the external validity of the results is limited, and future research would benefit from more balanced and representative sampling strategies, that include higher proportion of older farmers.

The survey relied on a non-probability, voluntary online sampling strategy. The resulting sample is not representative of the Hungarian farming population. The recruitment channels and online format attracted younger, more digitally active farmers, which may influence the distribution of generational cohorts, education levels, and farm characteristics in the dataset. Therefore, the findings should not be interpreted as population-level estimates, but rather as indicative patterns within the surveyed group. The cross-sectional nature of the data also limits the analysis, as farm succession is inherently a dynamic, longitudinal process. Therefore, the results capture early-stage associations at a single point in time and cannot reflect how succession intentions and discussions develop over time. Omitting these variables may introduce omitted-variable bias and distort the estimated relationships. In addition, potential endogeneity of certain explanatory variables may bias the estimated coefficients, which should be considered when interpreting the results. Finally, the generational differences identified in the analysis may partly reflect life-cycle effects and the timing of succession relevance, rather than stable attitudinal differences between cohorts. Further attention should be paid to the role of women, especially in informal contributions such as caregiving and emotional labour, which are often overlooked in quantitative approaches.

Another limitation involves the potential endogeneity of the explanatory variables, including family support, decision-making participation, and financial performance. These factors may be jointly determined with succession-related discussions, as family dynamics, economic conditions, and communication processes are inherently interdependent in a family farm. As a result, simultaneity cannot be ruled out, and the estimated coefficients should be interpreted as conditional associations rather than causal effects. Furthermore, the analysis employed succession-related discussions as a proxy variable for an early-stage indicator of succession, which does not necessarily lead to actual succession outcomes. Future research is therefore needed to examine how early-stage discussions and intentions translate into actual succession outcomes, ideally using longitudinal or administrative data. Despite these limitations, the findings provide novel empirical evidence on succession intentions in Hungarian family farms and offer a basis for future research on intergenerational farm transitions.

CRediT authorship contribution statement

J.M. Balogh: Writing – review & editing, Validation, Supervision, Software, Project administration, Methodology, Investigation, Formal analysis. **Á.J. Borda:** Writing – original draft, Investigation, Data curation. **Z.M. Maró:** Writing – review & editing, Writing – original draft, Validation, Supervision, Investigation, Conceptualization.

Ethical statement

This research involved human participants and was conducted using an anonymous online survey of Hungarian farmers between March and May 2025. Participation was voluntary, respondents were informed about the purpose of the research, and informed consent was obtained prior to survey completion. No personally identifiable information was collected, and all responses were analyzed in aggregate form to ensure confidentiality and anonymity. Data were collected through an anonymous, voluntary online survey with informed consent, no personally identifiable information was gathered, and the study complied with GDPR. The research was conducted in accordance with the ethical principles of the Declaration of Helsinki and the ethical guidelines for social sciences research of Corvinus University of Budapest.

Declaration of AI-assisted technologies

The authors declare that they have used Grammarly as an artificial intelligence (AI)-assisted technology solely for language editing and formatting.

Data availability statement

The data supporting the findings of this study are not publicly available due to confidentiality considerations but are available from the corresponding author upon reasonable request.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ssaho.2026.103099.

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