

Funding sources in the pre-early stage of entrepreneurship: A study of the influencing factors

Fuentes de financiación en la etapa preliminar del emprendimiento: un estudio de los factores que influyen en su elección

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Abstract: This study examines the factors that shape funding source preferences among university students at the pre-early stage of entrepreneurship, with particular attention to the role of universities as potential funding providers. While prior research has extensively analyzed how universities foster entrepreneurial intentions and capabilities, less is known about the role of universities in influencing the assessment of alternative sources of finance by entrepreneurs. Using survey data for 331 university students from Valencia (Spain), this study analyzes how entrepreneurial intentions, authentic leadership traits, and gender affect preferences across five funding categories: universities, public institutions, private institutions, financial institutions, and informal networks such as family and friends. The results of the multinomial logit model show that students with stronger entrepreneurial intentions are significantly more likely to choose private-sector funding sources over university-based financing, while authentic leadership traits do not influence funding preferences. Also, female students are more likely to select private institutions rather than universities as funding providers. Overall, the findings suggest that universities are not perceived as primary financial actors by nascent entrepreneurs, despite their central role in entrepreneurship education and support. These results highlight a credibility gap between universities' strategic mission in fostering entrepreneurship and their perceived relevance in early-stage entrepreneurial finance, suggesting the need for institutional initiatives that strengthen universities' visibility and legitimacy as funding partners.

Keywords: Entrepreneurship · Funding source preferences · Entrepreneurial intentions · Authentic leadership · Gender · Education

Resumen: Este estudio examina los factores que influyen en las preferencias por distintas fuentes de financiación entre estudiantes universitarios en la etapa pretemprana del emprendimiento, con especial atención al papel de las universidades como posibles proveedores de financiación. Aunque la literatura previa ha analizado ampliamente cómo las universidades fomentan las intenciones y capacidades emprendedoras, se conoce menos sobre si el entorno universitario también influye en la forma en que los emprendedores potenciales evalúan y seleccionan fuentes alternativas de financiación. Para abordar esta cuestión, se utilizan datos de encuesta recogidos de 331 estudiantes universitarios en Valencia (España). El estudio analiza cómo las

intenciones emprendedoras, los rasgos de liderazgo auténtico y el género afectan a las preferencias entre cinco categorías de financiación: universidades, instituciones públicas, instituciones privadas, instituciones financieras y redes informales como familiares y amigos. El análisis empírico emplea un modelo logit multinomial para estimar la probabilidad de seleccionar cada fuente de financiación en relación con las universidades. Los resultados muestran que los estudiantes con mayores intenciones emprendedoras tienen significativamente más probabilidades de preferir fuentes de financiación privadas, financieras e informales frente a la financiación universitaria. Por el contrario, los rasgos de liderazgo auténtico no presentan una influencia estadísticamente significativa en las preferencias de financiación. Asimismo, se observan diferencias de género en forma de una mayor probabilidad de que las mujeres seleccionen instituciones privadas en lugar de universidades como proveedores de financiación. En conjunto, los resultados sugieren que las universidades no son percibidas como actores financieros principales por los emprendedores nacientes, lo que evidencia una brecha entre su misión estratégica de fomentar el emprendimiento y su relevancia percibida en la financiación emprendedora en etapas tempranas.

Palabras clave: Emprendimiento · Preferencias de fuentes de financiamiento · Intenciones emprendedoras · Liderazgo auténtico · Género · Educación

1. Introduction

Entrepreneurship is widely recognized as a fundamental driver of economic growth, fostering innovation, job creation, and regional development (Méndez-Picazo et al., 2021). Universities play a central role in this process by creating environments that support entrepreneurial activity and equipping students with the skills, knowledge, and resources required to transform business ideas into viable ventures (Sim et al., 2021; Tomy & Pardede, 2020; Turker & Selcuk, 2009). Many successful entrepreneurs, such as Bill Gates, Mark Zuckerberg, and Melanie Perkins, launched their ventures during their university years, illustrating the importance of university ecosystems in entrepreneurial development. Prior research similarly highlights academic institutions as incubators of entrepreneurial thinking and opportunity recognition (e.g., Rasmussen & Sørheim, 2006; Wright et al., 2017; Shane, 2004). Within this context, universities function not only as educational institutions but also as key actors within broader entrepreneurial ecosystems, shaping entrepreneurial behavior through institutional mechanisms and strategic choices (Álvarez & Barney, 2007; Autio et al., 2018).

Although these individuals are often portrayed as leaving university to pursue business opportunities, research indicates that formal education, particularly entrepreneurship education, plays a significant role in shaping entrepreneurial skills and intentions, and enhancing preparedness for business creation (Boldureanu et al., 2020; Hahn et al., 2019; Kolstad & Wiig, 2015; Zhang et al., 2022). The university environment serves a fertile ground for idea generation, exposure to role models, and the development of an entrepreneurial mindset, factors that strengthen students' confidence and motivation to engage in entrepreneurship (Boldureanu et al., 2020; Farhangmehr et al., 2016; Rivero & Ubierna, 2021; Sun et al., 2023). Psychological and contextual influences, together with curricular and extracurricular experiences, also contribute to shaping entrepreneurial intentions (Hassan et al., 2021; Li et al., 2023). However, while these relationships are well documented from educational and behavioral perspectives, their strategic implications—particularly regarding how institutions influence early-stage resource decisions—remain insufficiently explored (Costa et al., 2023; Ireland et al., 2023).

Universities support entrepreneurship through three main channels: education, institutional support mechanisms, and the cultivation of an entrepreneurial climate. Entrepreneurship education (EE) has expanded beyond traditional business schools to various academic disciplines, strengthening students' entrepreneurial self-efficacy and perceived behavioral control (Daze, n.d; Galvão et al., 2020). This interdisciplinary approach encourages innovation-oriented thinking and

opportunity recognition (Lu et al., 2021; Saeed et al., 2015; Su et al., 2021). In addition to education, universities offer tangible support mechanisms such as incubators, mentorship programs, startup competitions, and networking opportunities, which enhance the feasibility of new ventures and reinforce entrepreneurial ecosystems (Bacq et al., 2017; Jones et al., 2015; Mele et al., 2024). These institutional initiatives should be understood not merely as operational support tools but as strategic interventions that influence opportunity recognition and resource orchestration—two core dimensions of strategic entrepreneurship theory (Hitt et al., 2001; Ireland & Webb, 2007).

If universities shape opportunity recognition and resource orchestration through education and institutional support, it is natural to ask whether this influence extends to one of the most consequential early decisions an aspiring entrepreneur faces: the choice of where to seek funding. Choosing a funding source is rarely a purely financial act. It reflects how entrepreneurs perceive their own legitimacy, their relationship with different institutional actors, and their expectations about growth and control. Yet this connection between universities' ecosystem role and students' financing preferences has received limited attention. The literature has focused on how universities build entrepreneurial intentions and capabilities, but has overlooked how that same institutional environment shapes the way students evaluate and select funding providers. As a result, the influence of universities on students' early-stage financing preferences remains insufficiently understood in the existing literature.

A key challenge for early-stage entrepreneurs is securing financial resources, which are essential for business survival and growth (Aldrich, 1999; Brush & Chaganti, 1999; Cooper & Dunkelberg, 1986). Entrepreneurs typically rely on diverse funding sources, including personal savings, family and friends, grants, crowdfunding, angel investors, and university-backed funds. The selection of funding sources is influenced by multiple factors, including individual background, industry dynamics, risk perception, and financial availability (Morris et al., 2017). Despite this recognized influence, empirical evidence on how individual characteristics—such as entrepreneurial intentions, leadership traits, and gender—moderate students' funding preferences remains scarce. This gap highlights the need to integrate strategic entrepreneurship perspectives, which emphasize resource management and institutional mechanisms, to better understand how universities shape students' early financing decisions (Álvarez & Barney, 2007; Autio et al., 2018).

The Global Entrepreneurship Monitor (GEM) underscores the relationship between education and entrepreneurship, demonstrating that individuals with higher education levels are more likely to start a business (Global Entrepreneurship Monitor, n.d.). These findings highlight the importance of university-based entrepreneurship support programs in fostering entrepreneurial activity. The report further indicates that financial constraints remain a primary barrier for early-stage entrepreneurs, reinforcing the need for institutional mechanisms that facilitate access to funding. Understanding how these financial constraints interact with university support structures is critical for developing targeted policies that enhance entrepreneurial success. From a strategic perspective, examining these interactions aligns with recent calls for research examining how institutional contexts and actor heterogeneity shape entrepreneurial outcomes (Autio et al., 2018; Costa et al., 2023; Ireland et al., 2023).

The relationship between university support and entrepreneurial intentions has been widely examined, with research indicating that perceived support positively affects attitudes, self-efficacy, and business intentions (Lu et al., 2021; Su et al., 2021). Moreover, the entrepreneurial climate within universities mediates this relationship, amplifying the impact of institutional support (Sim et al., 2021). Universities function as enablers of opportunity spaces within regional entrepreneurial ecosystems, fostering knowledge transfer, human capital development, and innovation (Rinkinen et al., 2023). Institutional and policy support further strengthen entrepreneurial universities, aligning strategy and resources with entrepreneurship goals (Bezanilla et al., 2020). However, a gap remains in understanding how these factors influence financial decision-making among entrepreneurs in the pre-early stage. Addressing this limitation contributes to bridging strategic and educational perspectives within entrepreneurship research, and advances our understanding of how micro-level motivations and macro-level institutional conditions jointly shape funding behavior in nascent ventures.

This study addresses this research gap by examining the factors that influence funding decisions in the pre-early stage of entrepreneurship. Utilizing the Entrepreneurial Intentions Model (Liñán & Chen, 2009) and the Authentic Leadership Questionnaire (Walumbwa et al., 2008), the study investigates how cognitive, motivational, and leadership factors impact early-stage funding choices. By doing so, the study answers recent calls from the strategic entrepreneurship literature to integrate individual and institutional dimensions in explaining early-stage entrepreneurial behavior (Costa et al., 2023; Ireland et al., 2023). The findings provide insights into the role of universities in shaping financial strategies for nascent entrepreneurs and contribute to the development of policies and academic programs that better support early-stage ventures.

The paper is structured as follows: the next section presents a literature review outlining key theoretical frameworks and hypotheses. This is followed by a discussion of the methodology, including details on the sample, survey instruments, and analytical approach. The results section presents the findings, followed by conclusions, implications, limitations, and recommendations for future research.

2. Literature review

Access to funding is one of the most significant challenges faced by early-stage ventures. Start-ups often struggle to secure external capital due to information asymmetries between entrepreneurs and funders (Borrás, 2020; Davila et al., 2003; Gompers & Lerner, 1999; Prohorovs et al., 2019). Scholars have employed game-theoretical models such as the Prisoner's Dilemma to characterize the tensions in this relationship (Cable & Shane, 1997). In emerging economies, this gap is particularly pronounced. For instance, Araque-Jaramillo (2009) shows that entrepreneurs in Ecuador predominantly rely on personal savings due to the scarcity of formal financing options. More recently, Sandoval-Álvarez (2023) has emphasized the role of entrepreneurial education in shaping students' entrepreneurial intentions.

In terms of available funding mechanisms, Bonini and Capizzi (2019) classify early-stage finance into three broad categories:

- Equity-based funding: includes incubators, accelerators, university-affiliated seed funds, business angels, and crowdfunding platforms (Capizzi & Carluccio, 2016; Mitchell, 2010).
- Non-equity funding: primarily consists of commercial banks, governmental, and regional development agencies (Wilson, 2011).
- Expert services: comprises professional advisors, lawyers, foundations, universities, and research centres that provide strategic guidance and legitimacy (Busenitz, 2003; Isenberg, 2010).

While structural and market-based factors are well-studied, individual-level characteristics are increasingly recognized as critical determinants of how entrepreneurs navigate the funding landscape. In this regard, three key factors—entrepreneurial intentions, authentic leadership, and gender—offer a multidimensional lens for understanding funding behavior among nascent entrepreneurs.

These three constructs, though stemming from distinct theoretical domains (entrepreneurial cognition, leadership theory, and gender studies), are conceptually interrelated in the context of early-stage entrepreneurship: First, entrepreneurial intentions shape individuals' motivations and strategic orientations, influencing how they perceive and evaluate funding opportunities. Second, authentic leadership influences how entrepreneurs engage with stakeholders, potentially affecting the credibility and trustworthiness required to attract specific types of funding. Third, gender, understood as a socio-structural variable, intersects with both intentions and leadership expression, shaping access to financial networks and preferences for more inclusive or relational funding sources. Together, these dimensions offer a comprehensive framework for analyzing how university students—many of whom represent future entrepreneurs—form preferences regarding early-

stage finance. Understanding these preferences is vital not only for improving access to capital but also for designing institutional support mechanisms aligned with diverse entrepreneurial profiles.

The following sections review the literature on each construct and examine their proposed influence on funding preferences, culminating in the formulation of three testable hypotheses.

2.1 Entrepreneurial Intentions

Entrepreneurial intentions (EI) is a widely recognized predictor of entrepreneurial behavior, particularly among students (Briseño-Aguirre et al., 2024; Liñán et al., 2011; Tomy & Pardede, 2020; Zhang et al., 2014). Rooted in psychological models such as Ajzen's Theory of Planned Behavior (Ajzen, 1991) and Shapero's Entrepreneurial Event Model (Shapero & Sokol, 1982), EI reflects an individual's cognitive commitment to start a business. Krueger et al. (2000) argue that intention models can be extended beyond the act of founding a business to other key strategic decisions, such as financing choices.

Traits commonly associated with higher entrepreneurial intention—such as self-efficacy, risk tolerance, and proactivity—also shape how individuals evaluate and select funding options (Rauch & Frese, 2007). At early stages, financing decisions are not just operational but also strategic, with long-term implications for growth, legitimacy, and control (Jones et al., 2015; Wright et al., 2017). Therefore, students with higher entrepreneurial intentions may demonstrate distinct funding preferences, favoring more competitive or growth-oriented funding sources.

H1: Individuals with stronger entrepreneurial intentions exhibit a preference for funding sources associated with competitive and growth-oriented sectors.

2.2 Authentic Leadership

The importance of leadership in entrepreneurial ventures has grown alongside shifts in organizational values, particularly after the 2008–2009 financial crisis. Traditional transactional leadership, characterized by control and reward structures, has given way to more values-driven approaches such as authentic leadership (Bass, 1985; Zehnder et al., 2017). Authentic leadership (AL) emphasizes self-awareness, transparency, and ethical behavior (Jensen & Luthans, 2006; Monzani & Van Dick, 2020).

Authentic leaders are perceived as trustworthy and morally grounded, qualities that are especially important when seeking legitimacy in sectors with higher demands for transparency—such as universities, public institutions, and financial systems (Banks et al., 2016; Monzani et al., 2016, 2019).

However, the assumption that authentic leadership aligns directly with a preference for institutional or public funding sources requires a stronger theoretical foundation. Research in strategic leadership highlights the complexity of leader identity, value congruence, and stakeholder engagement, but does not directly predict financing source selection (Hannah et al., 2011; Shepherd, 2015).

To provide a deeper theoretical underpinning, this study draws on signaling theory and stakeholder legitimacy theory. Signaling theory explains how leaders with authentic leadership traits send credible, values-based signals that reduce information asymmetry and build trust with resource providers (Alsos & Ljunggren, 2017; Zott & Huy, 2007). These signals of ethical conduct and transparency are especially valued by publicly supported institutions and universities, which prioritize social legitimacy and accountability (Zott & Huy, 2007). Stakeholder legitimacy theory complements this by emphasizing how authentic leaders align ventures with the expectations and norms of key stakeholders, enhancing legitimacy which facilitates access to these funding sources (Zott & Huy, 2007).

Therefore, authentic leadership functions as a strategic signal that enhances an entrepreneur's legitimacy in institutional contexts and is expected to be positively associated with preferences for transparent, institutional funding sources.

H2: Individuals exhibiting authentic leadership traits are more likely to prefer funding sources associated with transparent and institutional sectors, such as universities, public institutions, and the financial system.

2.3 Gender and Entrepreneurial Finance

Gender remains a salient factor in the entrepreneurial landscape. Numerous studies have identified disparities between men and women in terms of access to funding, entry into entrepreneurship, and business performance (Halabisky, 2018; Zhang & Zhou, 2021). The Global Entrepreneurship Monitor (n.d.) highlights a persistent gender gap in total entrepreneurial activity, funding confidence, and investment behavior. Empirical evidence further suggests the presence of gender bias in early-stage investment decisions, as male investors show less interest in female-led startups compared to observably similar male-led ventures, despite the latter underperforming relative to the former (Ewens & Townsend, 2020).

These structural barriers and gender stereotypes contribute to women's limited access to formal funding, leading many to favor informal funding channels such as family and friends (Brush et al., 2018; Gicheva & Link, 2013; Greve & Salaff, 2003). Additionally, public and academic institutions increasingly implement gender equity policies to foster more inclusive environments. Women may therefore exhibit preferences for funding sources operating within or associated with these sectors.

From the supply side, women investors also exhibit more risk-averse profiles, and are underrepresented in investment activity (Harrison et al., 2020; Mohammadi & Shafi, 2018). The lack of female role models within entrepreneurial networks further exacerbates this funding gap (Klyver & Grant, 2010). Together, these behavioral, social, and institutional dynamics may shape women's funding preferences toward more inclusive and relationally oriented sources.

However, it is crucial to distinguish between genuine preference formation and responses to structural constraints. Women's observed preference for inclusive funding sources may partly reflect adaptations to systemic barriers and gender biases in financial markets, rather than purely volitional choice. (Alsos & Ljunggren, 2017; Marlow & Patton, 2005).

This differentiation helps clarify the observed funding behavior of men and women entrepreneurs, suggesting that gender gaps in funding are shaped by both socio-structural constraints and the evolution of individual preferences.

H3: Women display a preference for funding sources associated with gender equality policies, such as public institutions, universities, and informal networks (e.g., family and friends).

3. Data and methods

3.1 Sample

A survey questionnaire was designed to investigate students' potential choice of funding providers at the early stage of entrepreneurship. The questionnaire was distributed to the university population of Valencia (Spain) between November and December 2021. The average age of the respondents was 21.14 (SD = 5.14; min = 17; max = 52), and 47% were female. Regarding academic experience, 61% of them were first year students, 35% declared being somewhere in the middle of the academic career, and only 4% had already finished the degree. In terms of academic background, 53% of respondents studied Business and Economics, 31% STEM, 4% Social Sciences and Law, 8% Arts and 4% belonged to other disciplines. With respect to institutional affiliation, 83% of respondents came from Valencian public universities (University of Valencia and Polytechnic University of Valencia), and the rest of respondents (17%) came from other universities.

This paper examines the role of different funding sources at the early stage of entrepreneurship. In particular, we focus on entrepreneurial intentions as 89.72% of respondents had not yet started a business project, while 47% reported intentions to start a business in the future, indicating a generally positive entrepreneurial orientation. In contrast, 10.28%

of the students declared themselves as real entrepreneurs running a business. This rate of active entrepreneurs is similar to the 10.8% rate showed by GUESSS report of university entrepreneurs in Spain in 2021 (Ruiz-Navarro et al., 2021).

3.2 Questionnaire

Entrepreneurial Intentions (EI) were assessed using a self-report scale adapted from Liñán and Chen (2009). Specifically, we employed the core measure from their entrepreneurial intention model, which consists of six items (see Appendix I). As previously noted, most respondents indicated an intention to pursue entrepreneurship, while only a small proportion had already launched a business. Therefore, in this study, entrepreneurial intention is used as a proxy for future entrepreneurial activity, particularly in relation to preferences for different types of funding sources.

Another key construct examined is authentic leadership (AL), a concept rooted in human resource management and social psychology. Prior studies have demonstrated that AL positively influences business behavior and job performance (Yang & Kim, 2018), as well as effective organizational management (Datta, 2015). Its relationship with pro-social and anti-social behaviors has also been explored in samples including both practicing managers and students with varying levels of entrepreneurial intention (Monzani et al., 2021). We measured AL using the Authentic Leadership Questionnaire (ALQ) developed by Walumbwa et al. (2008), which includes 16 items rated on a 5-point Likert scale (1 = “Not at all” to 5 = “Frequently, if not always”). The Spanish version, validated by Moriano et al. (2011), was used in this study (see Appendix I).

Participants also provided sociodemographic information, including gender, academic background, and international academic experience (e.g., Erasmus programs), which have been previously linked to entrepreneurial outcomes (Kwong et al., 2009). In addition, we collected data on parental education to control for background-related influences.

Finally, the questionnaire included several items related to perceptions of academic institutions and funding at the early entrepreneurial stage. The first set of questions assessed trust in institutions, revealing that respondents generally trust universities more than public or private institutions. A second group of items addressed beliefs about the role of university education in entrepreneurship. Although respondents generally did not view university education as essential for becoming an entrepreneur, many agreed that universities should support students in preparing for the labor market.

A third section explored students' perceptions of access to funding, with most respondents indicating a preference for a funding hierarchy: first from universities, followed by public institutions, and lastly from private entities. This suggests that students perceive universities as potential funding sources, at least in principle. The final section captured preferred types of funding, with grants and training programs emerging as the most valued options among respondents.

After defining the explanatory and control variables, we model the decision-making process through which individuals select among alternative funding providers when considering the launch of a new business project. The main objective of the study is to identify the characteristics that explain funding provider choice, with particular attention to the role of universities as potential vehicles for start-up financing.

3.3 Method

The data analysis was conducted using Stata 14 statistical software. To explore and summarize the dataset, we employed descriptive statistics, mean comparison tests, and parametric analyses. These preliminary techniques helped identify patterns and relationships within the sample.

The core of the analysis relies on the use of parametric statistical modeling to empirically test the theoretical framework and hypotheses previously discussed. Specifically, a multinomial logit (MNL) model was applied to examine the influence of individual-level variables—entrepreneurial intentions, authentic leadership, and gender—on students' preferences for different types of funding sources. This model allowed us to estimate the probability of selecting one funding source over

others as a function of the explanatory variables. The goal was to determine which factors significantly influence funding provider choice at the pre-early stage of entrepreneurship.

Table 1 presents the descriptive statistics of the main variables used in the study as control variables, including the funding providers that we clustered in five categories such as *University*, *Public institution*, *Private institution*, *Financial institution* and *Family and friends*. The questionnaire items were organized into four groups covering institutional trust, perceptions of universities and studies, access to funding, and preferred funding types.

Table 1: Descriptive statistics

Variables	Obs	Mean	Std.Dev.	Min	Max
Entrepreneur	331	0.10	.30	0	1
Entrepreneurial intentions	297	4.34	1.76	1	7
Authentic leader	331	3.98	0.47	1	5
Female	331	.47	0.50	0	1
University experience	297	1.93	1.39	1	6
International studies	331	.28	0.45	0	1
Mother education	331	2.89	1.67	0	6
Father education	331	2.92	1.57	0	6
<i>Funding providers:</i>					
Universities	297	2.79	1.21	1	5
Public institutions	297	3.29	1.21	1	5
Private institutions	297	3.76	1.08	1	5
Financial institutions	297	3.48	1.12	1	5
Family and friends	297	3.24	1.35	1	5
<i>Institutional trust level:</i>					
Trusting universities	331	3.51	0.93	1	5
Trusting public institutions	331	3.05	1.08	1	5
Trusting private institutions	331	3.41	1.03	1	5
<i>Studies and universities:</i>					
Successful entrepreneurs start their projects during their university studies	331	2.88	1.07	1	5
Entrepreneurs must have university studies	331	2.41	1.23	1	5
The university must accompany students in their search for a profession	331	4.25	0.91	1	5
<i>Students should have access to funding:</i>					
From universities	331	4.22	0.95	1	5
From public institutions	331	4.03	1.04	1	5
From private institutions	331	3.55	1.14	1	5
<i>Type of funding:</i>					
Low interest rate loan	297	3.67	1.09	1	5
Training programs	297	4.13	0.99	1	5
Loan subject to guarantees of success	297	3.44	1.04	1	5
Contest	297	3.57	1.09	1	5
Grants	297	4.29	0.87	1	5

Entrepreneur is a dichotomous variable that equals 1 if the respondent already started a business project (0 otherwise). *Entrepreneurial intention* is measured using the six questionnaire items described above (Liñán & Chen, 2009). The variable was constructed as the average of these six items, yielding a Cronbach's alpha of $\alpha = 0.95$. *Authentic Leader* is measured using the 16 original items from the Authentic Leadership scale Walumbwa et al. (2008). The mean score was computed, resulting in a Cronbach's alpha of $\alpha = 0.86$. *Female* is a binary variable equal to 1 if the respondent is a female (0 otherwise). Educational level is captured through *University Experience*, measured as the number of years the respondent has spent in higher education. *International studies* is a dichotomous variable equal to 1 if the respondent has studied abroad (e.g., through an Erasmus program). *Mother* and *Father education* represent parental educational attainment, ranging from no formal education (0) to PhD level (6). Funding provider preferences were measured across five categories—*Universities*, *Public sector*, *Private sector*, *Financial institutions*, and *Family and friends*—using a 5-point Likert-type scale. The next section presents the empirical results.

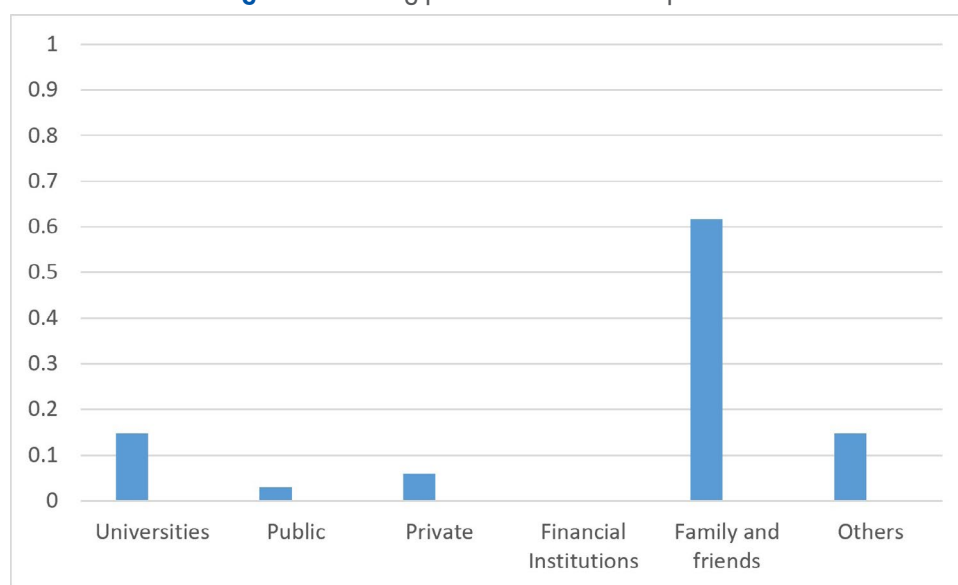
4. Results

4.1 Descriptive overview

Table 1 summarizes the main descriptive characteristics of the 331 respondents. About 21% reported having started a business (“real entrepreneurs”), while 79% were non-entrepreneurs. Among non-entrepreneurs, 157 were classified as low-intention ($EI < \text{median}$) and 140 as high-intention ($EI \geq \text{median}$).

Figure 1 presents the funding sources effectively used by real entrepreneurs, who represent roughly a subset (10%) of the sample. Consistent with prior evidence (Prohorovs et al., 2019), the majority relied on non-institutional funders, mainly family and friends. Real entrepreneurs are predominantly male (71%) and have longer university experience ($M = 2.56$ years, $SD = 1.80$) compared to the overall sample—patterns consistent with the Global Entrepreneurship Monitor (GEM) data.

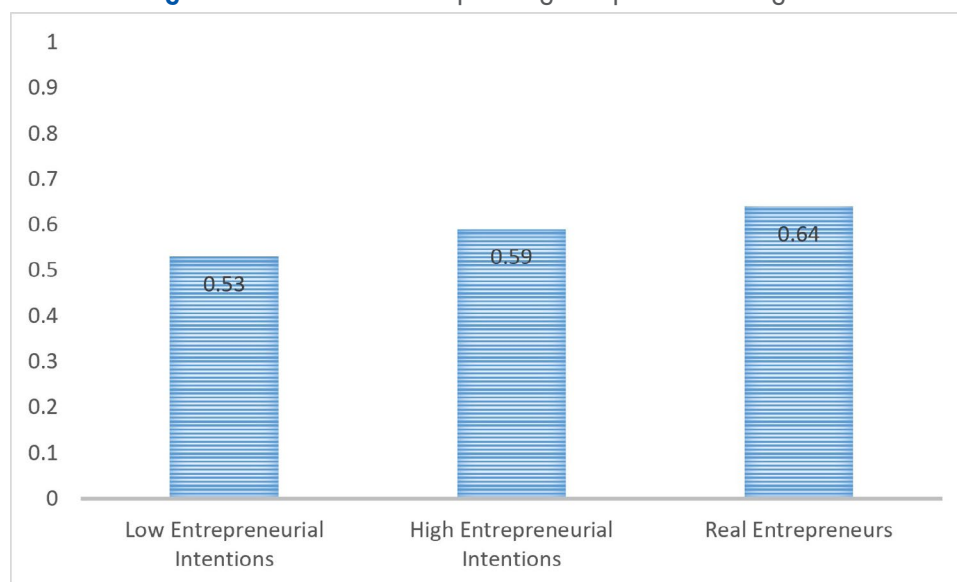
Figure 1: Funding providers for real entrepreneurs



4.2 Entrepreneurial intention and authentic leadership

Figure 2 shows the mean level of Authentic Leadership (AL) across the three entrepreneurial categories (low EI, high EI, real entrepreneurs). A clear positive trend emerges: respondents with stronger entrepreneurial intentions and those already running a business display higher AL scores. This association supports prior research linking leadership self-awareness and ethical orientation to entrepreneurial engagement (Monzani et al., 2021; Walumbwa et al., 2008). Such findings suggest that authentic leadership may help foster prosocial and sustainable entrepreneurial behaviour.

Figure 2: Authentic leadership among entrepreneurial categories



4.3 Funding preferences among intentional entrepreneurs

Table 2 reports students' preferred funding sources (ranked 1–5). University support is, on average, the least preferred option, while private institutions rank highest (t-test, $p < 0.001$). This indicates that students perceive public or university-based funding as less accessible or less relevant for early-stage ventures.

The lower panel of Table 2 displays differences in mean funding preferences across individual characteristics (EI, AL, gender, discipline). Following reviewers' recommendations, all continuous constructs were kept in their original scales. Higher entrepreneurial intention (EI) is associated with a greater preference for private, financial, and informal sources, and a lower preference for university or public funding—suggesting that highly motivated entrepreneurs rely less on institutional channels.

Higher authentic leadership (AL) is generally associated with higher expected funding levels, except for private investors and family/friends, consistent with the idea that authentic leaders tend to seek transparent, legitimacy-based funding. Female participants report higher expected amounts across most sources (except financial institutions), echoing evidence that women perceive greater funding barriers and therefore express stronger funding needs (Carter et al., 2003).

Finally, STEM students show a greater preference for university and financial institutions, while business and economics students favor private or informal sources. These patterns highlighting heterogeneity in funding perceptions across academic backgrounds, informing the subsequent discussion on institutional strategies to support entrepreneurship.

Table 2: Discrete choice among the sources of funding for pre-early stage entrepreneurs.

Funding providers	University	Public institutions	Private institutions	Financial institutions	Family and friends
Average	2,79	3,29	3,76	3,48	3,24
St.dev.	1,21	1,21	1,08	1,12	1,35
Obs.	297	297	297	297	297
Variations:					
Entrepreneurial Intentions	-0,31	-0,27	0,35	0,23	0,25
Authentic Leadership	0,27	0,24	-0,07	0,13	-0,16
Female	0,13	0,25	0,09	-0,09	0

Variations correspond to the average value of each variable when the variable takes value 1 minus value 0.

4.4 Relationship between key variables and funding sources

Table 2 offers an initial overview of the relationship between funding source preferences and the three main explanatory variables examined: Entrepreneurial Intention (EI), Authentic Leadership (AL), and Gender.

Respondents with higher entrepreneurial intentions tend to prefer private, financial, and informal (family/friends) sources, while showing lower interest in university or public funding. Conversely, individuals with higher authentic leadership scores exhibit stronger preferences for university, public, and financial funding, and lower preferences for private and family/friend funding. This pattern aligns with the notion that authentic leaders tend to pursue transparent and goal-oriented funding sources in line with their underlying values.

Gender differences also emerge: female students show higher preference for university, public, and private institutions, and a lower preference for financial institutions, with no significant difference in family/friends funding. These trends are consistent with previous research highlighting gendered perceptions of access to capital and institutional support (Carter et al., 2003).

Since these patterns cannot be fully tested using descriptive data alone, we proceed with a Multinomial Logit (MNL) regression model to formally examine the determinants of funding source preferences. The five funding categories—university, public institutions, private institutions, financial institutions, and family/friends—were measured on a five-point Likert scale (1 = “Totally disagree”, 5 = “Totally agree”).

The MNL model is appropriate given the non-ordinal and mutually exclusive nature of the dependent variable, allowing the estimation of the relative likelihood of selecting each funding source, using university funding as the reference category.

The explanatory variables include entrepreneurial intentions, authentic leadership, and gender, along with sociodemographic controls, trust in institutions, perceived access to funding, and academic background, as reported in Table 1. The results of the multinomial logit regression are presented in Table 3, providing an overview of how individual traits and contextual perceptions shape students’ funding preferences.

Table 3: Determinants of funding source preferences: average marginal effects from the multinomial logit model

Model	Public institutions	Private institutions	Financial institutions	Family and friends
Entrepreneurial intentions	-0.010 (0.015)	0.016 (0.018)	0.017 (0.012)	-0.019 (0.014)
Authentic leader	-0.007 (0.058)	-0.044 (0.061)	0.037 (0.040)	0.010 (0.048)
Female	-0.114** (0.050)	0.184*** (0.054)	0.023 (0.035)	-0.033 (0.043)
Sociodemographics				
University experience	-0.019 (0.018)	0.003 (0.021)	-0.015 (0.015)	0.014 (0.016)
International studies	0.143*** (0.054)	-0.037 (0.062)	0.010 (0.036)	-0.093* (0.056)
Mother education	-0.008 (0.020)	0.020 (0.023)	0.010 (0.016)	-0.019 (0.018)
Father education	-0.035* (0.020)	0.027 (0.022)	-0.010 (0.015)	0.019 (0.017)
Institutional trust level				
Trusting universities	-0.095*** (0.031)	0.098*** (0.035)	-0.048** (0.023)	0.008 (0.028)
Trusting public institutions	0.063** (0.030)	-0.068** (0.031)	0.016 (0.021)	-0.030 (0.024)
Trusting private institutions	-0.034 (0.025)	0.030 (0.030)	0.008 (0.018)	0.037 (0.024)
Studies and universities				
Successful entrepreneurs start their projects during their university studies	-0.035 (0.024)	0.033 (0.025)	0.028 (0.017)	-0.018 (0.021)
Entrepreneurs must have university studies	-0.003 (0.020)	-0.094*** (0.022)	0.004 (0.014)	0.036** (0.018)
The university must accompany students in their search for a profession	0.088*** (0.034)	-0.022 (0.032)	-0.018 (0.020)	-0.003 (0.026)
Access to funding				
From universities	-0.049 (0.033)	-0.012 (0.035)	0.004 (0.021)	0.024 (0.028)
From public institutions	0.046 (0.033)	-0.036 (0.031)	-0.014 (0.019)	-0.026 (0.025)
From private institutions	-0.037* (0.022)	0.018 (0.027)	0.003 (0.016)	-0.003 (0.021)
Type of funding				
Low interest rate loan	0.045* (0.023)	0.068*** (0.025)	-0.036** (0.015)	-0.035* (0.020)
Training programs	0.042 (0.029)	0.010 (0.029)	0.011 (0.019)	0.011 (0.024)

Model	Public institutions	Private institutions	Financial institutions	Family and friends
Loan subjected to guarantees of success	0.018 (0.026)	0.030 (0.028)	-0.003 (0.017)	0.015 (0.023)
Contest	-0.053* (0.028)	-0.045 (0.030)	0.038* (0.021)	0.020 (0.026)
Grant	0.002 (0.035)	0.025 (0.039)	-0.017 (0.025)	-0.033 (0.029)
Observations	273	273	273	273
Log likelihood			-333.9984	
Pseudo R2			0.1986	

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

Table 3 presents the findings from the multinomial logit (MNL) model, which examines the determinants of funding source preferences among nascent entrepreneurs. The dependent variable captures the preferred source of funding at the pre-early stage of entrepreneurship, with university-based funding serving as the reference category. Unlike raw coefficients, the Average Marginal Effects (AMEs) reported in Table 3 represent the change in the *predicted probability* of selecting each alternative funding source—public institutions, private institutions, financial institutions, or family and friends—relative to universities, holding all other factors constant. Prior to model estimation, we verified the absence of multicollinearity among explanatory variables. Variance Inflation Factor (VIF) diagnostics indicated that all values were below 2.0 (mean VIF = 1.47), confirming the independence of predictors.

Regarding the three main attitudinal variables, individuals with stronger entrepreneurial intentions are significantly more likely to select private institutions as their preferred funding source compared with universities ($p < 0.01$). This positive and robust marginal effect indicates that higher entrepreneurial motivation increases the probability of turning to formal private-sector channels, consistent with Hypothesis 1. Conversely, authentic leadership does not exert a statistically significant effect across any funding category ($p > 0.10$), suggesting that leadership self-perception does not play a direct role in shaping initial funding decisions—thus providing no empirical support for Hypothesis 2.

Gender differences remain statistically significant in several cases. Female participants show a lower probability of selecting public and financial institutions ($p < 0.05$) and a slightly higher probability of relying on private or informal (family and friends) sources ($p < 0.10$). These findings indicate gendered perceptions of accessibility and trust toward formal institutions, which leads to the rejection of Hypothesis 3.

Among sociodemographic variables, international study experience has a positive and marginally significant effect on the probability of choosing public institutions over universities ($p < 0.10$). This suggests that global exposure enhances familiarity with institutional funding mechanisms outside academia.

Trust-related variables are key predictors of funding preferences. Greater trust in universities significantly reduces the probability of selecting public ($p < 0.01$) and financial institutions ($p < 0.10$), while trust in public institutions increases the probability of choosing public funding ($p < 0.05$). These results imply that individuals who place greater confidence in their universities prefer to remain within the academic ecosystem, whereas those with high trust in public institutions are more open to external governmental channels. By contrast, trust in private institutions is positively associated with the probability of selecting family and friends as funders ($p < 0.10$), revealing a behavioral spillover in which trust in private actors extends into informal networks.

Beliefs about higher education also shape funding choices. Individuals who strongly agree that university education is essential for entrepreneurship are less likely to choose public ($p < 0.10$) and private institutions ($p < 0.01$) relative to universities, underscoring the perceived legitimacy of academic institutions in entrepreneurial preparation. Conversely, those who agree that universities should actively support professional development are more likely to select public institutions ($p < 0.05$), highlighting the continuity between university support and public-sector funding.

Finally, perceived access to finance and preferences for funding mechanisms significantly influence decisions. Believing that one has easy access to private funding reduces the probability of selecting public sources ($p < 0.10$), suggesting substitution between these channels. A preference for low-interest loans increases the likelihood of selecting public ($p < 0.05$) and private institutions ($p < 0.01$). Similarly, training programs raise the probability of choosing public ($p < 0.05$), private ($p < 0.10$), financial institutions ($p < 0.05$), and family and friends ($p < 0.10$). Success-contingent loans are associated with higher probabilities of selecting public ($p < 0.10$), private ($p < 0.05$), and family funding sources ($p < 0.10$), suggesting that shared-risk financing is appealing across channels. In contrast, valuing contest-based funding reduces the probability of selecting public ($p < 0.05$) and private institutions ($p < 0.10$) relative to university-based funding, suggesting that competitive schemes are viewed as more accessible within academic settings.

Overall, the AMEs confirm that trust, gender, and perceived access exert a stronger influence on funding source preferences than attitudinal traits such as leadership style. Expressing results in probability terms provides a clearer, policy-relevant interpretation of early-stage entrepreneurial financing behavior.

5. Conclusion and discussion

This study examined the individual-level variables that influence funding source preferences among university students in the pre-startup phase. Focusing on the role of academic institutions, we explored how entrepreneurial intentions, authentic leadership, and gender shape students' choices among different funding options. As most respondents had not yet started a business, entrepreneurial intention served as a meaningful proxy for potential entrepreneurial behavior and early resource mobilization.

Existing literature and European policy frameworks emphasize the importance of fostering entrepreneurship within higher education due to its positive impact on student development and business creation (Tomy & Pardede, 2020). Universities therefore play a central role within the entrepreneurial ecosystem, yet previous studies have highlighted limitations in their reach and influence across various entrepreneurial dimensions (Wright et al., 2017). Our study contributes to this debate by empirically testing whether universities are perceived as credible funding actors by aspiring entrepreneurs and how this perception compares to alternative funding providers.

The findings suggest that universities are not perceived as preferred funding sources, a perception that differs significantly from students' attitudes toward public, private, and informal options. This credibility gap underscores an institutional disconnection between universities' strategic mission in entrepreneurship promotion and their perceived role as financial enablers. As Bergmann et al. (2018) argue, universities often focus on knowledge dissemination rather than strategic engagement within entrepreneurial ecosystems, which may explain their limited visibility in students' funding expectations.

Our analysis of entrepreneurial intention (H1) confirms that individuals with stronger entrepreneurial drive are more likely to prefer competitive and formal environments—specifically, private and financial institutions—over university or public funding. This finding supports the view that early entrepreneurs approach financing strategically, seeking autonomy, professionalism, and scalability within market-based channels (Krueger, 2009; Liñán & Fayolle, 2015).

The null result for authentic leadership (H2) invites a more substantive reading than a simple rejection of the hypothesis. It would be tempting to read this result as a limitation of the study or as evidence that leadership traits are simply irrelevant to early financing decisions. We argue, however, that a more theoretically productive interpretation is possible. Authentic leadership is not a static individual attribute that operates independently of context—it is a relational construct that unfolds through repeated interactions with followers, stakeholders, and resource providers (Gardner et al., 2011; Walumbwa et al., 2008). At the pre-early stage of entrepreneurship, these interactions have not yet taken place. Nascent entrepreneurs are making funding evaluations before they have built a venture identity, assembled a stakeholder network, or demonstrated the kind of consistent ethical conduct that authentic leadership theory assumes others will recognize and respond to. The construct, in other words, has not yet had the opportunity to express itself. This suggests that the null effect we observe is not a failure of authentic leadership as a theoretical lens, but rather a signal of its temporal boundary: leadership traits may become increasingly relevant as entrepreneurs move from intention toward action, and as their ventures acquire the relational and institutional visibility that authentic leadership requires to operate. Future research would benefit from examining this activation process longitudinally, tracking how leadership traits shape resource acquisition decisions as ventures mature (Hannah et al., 2011; Shepherd, 2015).

Regarding gender (H3), results reveal that women are more likely to choose private institutions as funding providers, while no significant differences are found for public or informal channels. This partially contradicts expectations of gendered inclusivity in funding behavior. Previous research has shown that women often face greater barriers in accessing capital due to structural constraints, limited networks, and institutional biases (Alsos et al., 2006; Greene et al., 2001). Our findings suggest that these barriers persist even at the intention stage, shaping early perceptions of funding accessibility. This result echoes evidence from Coleman and Robb (2016), reinforcing the persistence of gender-based inequalities in entrepreneurial finance.

Individual characteristics matter, but our results suggest that the institutional context in which students are embedded may matter even more. Across all funding categories, trust emerges as a strong and consistent predictor of preference—a finding that invites us to look beyond rational choice models of early-stage financing. When nascent entrepreneurs evaluate where to seek funding, they do not appear to be running a purely financial calculation. They are drawing, often implicitly, on their prior experience with institutions and the credibility those institutions have built over time. Students who trust universities gravitate toward the academic ecosystem; those who trust public institutions are more willing to engage with governmental channels. This is not simply a matter of familiarity—it reflects a deeper cognitive process through which institutional legitimacy shapes resource-seeking behavior (Autio et al., 2018; DiMaggio & Powell, 1983; Suchman, 1995). The practical implication is significant: if trust is what drives early funding preferences, then the most effective way for universities to become relevant financial actors is not to multiply their funding instruments, but to invest in consistent, transparent, and credible engagement that builds trust in the first place.

This study set out to understand what shapes funding preferences among nascent entrepreneurs—and the answer suggests that it is more institutional than individual. Taken together, our findings make three contributions to the literature on strategic entrepreneurship. First, they extend the Theory of Planned Behavior beyond venture creation, showing that entrepreneurial intention also shapes how students think about financing—a dimension that has received surprisingly little empirical attention. Second, they refine our understanding of authentic leadership by identifying the pre-early stage as a context where relational leadership traits have not yet found the conditions necessary to operate. This is not a limitation of the theory, but a clarification of its scope. Third, and perhaps most consequentially, they position institutional trust as the primary lens through which nascent entrepreneurs evaluate funding providers—suggesting that the decision of where to seek money is, at its core, a decision about whom to believe. Together, these findings point toward a more grounded understanding of how actor-level dispositions and institutional environments interact at the earliest—and least studied—

phase of the entrepreneurial journey. If universities wish to play a more meaningful role in that journey, the path forward lies in becoming more credible, not just more resourceful (Autio et al., 2018).

The implications of these findings extend well beyond academic debate. For policymakers and university leaders, they offer a practical reorientation: the challenge is not simply to create more funding options, but to become the kind of institution that aspiring entrepreneurs actually trust and turn to. Entrepreneurial contests, early-stage grants, and simplified legal frameworks for academic startups are useful tools—but their value lies less in the resources they provide than in the signal they send about institutional commitment. The same logic applies to digital platforms connecting students with investors, venture alumni, and public funding officers: what matters is not just the infrastructure, but the message it conveys about who universities are willing to stand behind. Alumni investor networks and co-branded programs with private or public partners can reinforce that message further, turning institutional values into visible, tangible evidence (Alsos & Ljunggren, 2017). Ultimately, communicating a clear and credible message—that entrepreneurship is a valued and supported career path within universities—can shape how students think, plan, and act, contributing meaningfully to a more dynamic and inclusive entrepreneurial culture.

6. Limitations and future research

While this study provides valuable insights into the determinants of funding source preferences among nascent entrepreneurs, several limitations should be acknowledged. First, the research design is cross-sectional, which restricts our ability to infer causality between attitudinal variables and funding preferences. Future studies could adopt longitudinal or experimental designs to capture how intentions, leadership traits, and trust evolve as individuals transition from ideation to venture creation.

Second, the study relies on self-reported measures collected from university students. Although this population represents an ideal setting for studying early entrepreneurial behavior, future research could extend the analysis to diverse samples, including alumni entrepreneurs or participants in university incubators, to validate the robustness of our findings across different stages of the entrepreneurial journey.

Third, while we employed validated scales for entrepreneurial intention and authentic leadership, these constructs could be complemented with behavioral or situational indicators to better capture the complexity of decision-making in real funding contexts. Integrating qualitative insights or mixed-method approaches could also enrich our understanding of how perceptions of institutional credibility and legitimacy influence funding behavior.

Finally, future research could explore comparative analyses across institutional contexts, examining how variations in university governance, funding ecosystems, or cultural norms shape students' perceptions of academic institutions as funding providers. Such investigations would contribute to a more nuanced understanding of how universities can strengthen their strategic role as orchestrators within entrepreneurial ecosystems.

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Appendix I

Table A1: Entrepreneurial Intention (Liñan & Chen, 2009)

Indicate your level of agreement with the following statements from 1 (total disagreement) to 7 (total agreement)							
	1	2	3	4	5	6	7
1. I am ready to do anything to be an entrepreneur	☐	☐	☐	☐	☐	☐	☐
2. My professional goal is to become an entrepreneur	☐	☐	☐	☐	☐	☐	☐
3. I will make every effort to start and run my own firm	☐	☐	☐	☐	☐	☐	☐
4. I am determined to create a firm in the future	☐	☐	☐	☐	☐	☐	☐
5. I have very seriously thought of starting a firm	☐	☐	☐	☐	☐	☐	☐
6. I have the firm intention to start a firm some day	☐	☐	☐	☐	☐	☐	☐

Table A2: Authentic leadership items (Walumbwa et al., 2008).

Indicate your level of agreement with the following statements from 1 (total disagreement) to 5 (total agreement)					
	1	2	3	4	5
1. I can list my three greatest weaknesses.	☐	☐	☐	☐	☐
2. My actions reflect my core values.	☐	☐	☐	☐	☐
3. I seek others' opinions before making up my own mind.	☐	☐	☐	☐	☐
4. I openly share my feelings with others.	☐	☐	☐	☐	☐
5. I can list my three greatest strengths.	☐	☐	☐	☐	☐
6. I do not allow group pressure to control me.	☐	☐	☐	☐	☐
7. I listen closely to the ideas of those who disagree with me.	☐	☐	☐	☐	☐
8. I let others know who I truly am as a person.	☐	☐	☐	☐	☐
9. I seek feedback as a way of understanding who I really am as a person.	☐	☐	☐	☐	☐
10. Other people know where I stand on controversial issues.	☐	☐	☐	☐	☐
11. I do not emphasize my own point of view at the expense of others.	☐	☐	☐	☐	☐
12. I rarely present a "false" front to others.	☐	☐	☐	☐	☐
13. I accept the feelings I have about myself.	☐	☐	☐	☐	☐
14. My morals guide what I do as a leader.	☐	☐	☐	☐	☐
15. I listen very carefully to the ideas of others before making decisions.	☐	☐	☐	☐	☐
16. I admit my mistakes to others.	☐	☐	☐	☐	☐