

# DOES FAMILY SUPPORT MATTER? THE INFLUENCE OF SUPPORT FACTORS ON ENTREPRENEURIAL ATTITUDES AND INTENTIONS OF COLLEGE STUDENTS

**Tao Shen, Rutgers, The State University of New Jersey**  
**Arturo E. Osorio, Rutgers, The State University of New Jersey**  
**Alexander Settles, Rutgers, The State University of New Jersey**

## ABSTRACT

*Entrepreneurship educators provide knowledge and information to university students to help them choose a personal career path that may include entrepreneurship as an option. The purpose of this paper is to test an expanded entrepreneurial intention model to identify the factors that shape the entrepreneurial attitudes and the intentions of college students while considering the effect that entrepreneurship education has on these students. Intentions-based research in entrepreneurship can assist universities to properly shape the college experience of students to encourage them to become entrepreneurs. In this paper we propose an extended model to explain entrepreneurial intentions that includes perceived university support (i.e., education, entrepreneurship concept development, business development), structural support (e.g., perceived local social and economic structures, personal interpretation of local regulatory environment), and family support (i.e., personal and business advice, financial, material and emotional access). A sample of 473 college students in a major state university in the United States has been used in this analysis. The results of this analysis indicate that perceived university support is not significantly related to perceived desirability and feasibility entrepreneurial intentions. The results indicate that perceived desirability and feasibility of entrepreneurial action remain significant predictors of college students' entrepreneurial intentions. Findings also show that the new variable - perceived family support - is positively related to perceived desirability and feasibility of starting a business. Perceived structural support in terms of economic and political support for entrepreneurs positively influences perceived desirability and feasibility to start a business. Our findings suggest that educators and policymakers need to consider the role of personal perceptions of family and structural support when seeking to promote entrepreneurial actions of college students through policies or educational programs and to rethink the current models of entrepreneurial education that are detached from family support*

**Key words:** *Entrepreneurship Education; Entrepreneurial Intention; Entrepreneurial Attitudes; Family Support; Careers; Student Entrepreneurship*

## INTRODUCTION

Entrepreneurship has long been identified as a critical driving force of economic growth and prosperity (Van Praag & Versloot, 2007). College-age students' propensity toward entrepreneurial actions is a key variable in shaping the entrepreneurial environment of cities, as college graduates may consider entrepreneurship as their career path (Roudaki, 2009). Research

has suggested that entrepreneurial intentions are an immediate predictor of entrepreneurial activity (See Bird, 1988 for original work on the topic; See Krueger, Reilly, & Carsrud, 2000 for a summary in the literature), which is the inspiration for an inquiry about what may influence students' entrepreneurial intentions in the first place (Kuehn, 2008; Lee, Wong, Foo, & Leung, 2011). The extant literature on this area of research suggests that entrepreneurial intentions are generally shaped by the perceived desirability and perceived feasibility of entrepreneurship (Shapero & Sokol, 1982). Perceived desirability, in this context, is defined as the attractiveness of starting a business, while perceived feasibility refers to the degree to which an individual feels capable of starting a business (Shapero, 1975). Furthermore, this literature has also advanced that both desirability and feasibility are influenced by exogenous factors such as personal traits, demographics, and external support (Krueger et al., 2000; Lüthje & Franke, 2003; Peterman & Kennedy, 2003; Shapero & Sokol, 1982).

Yet, findings on the relationship between external support factors and college students' entrepreneurial intentions have not been fully consistent (Zellweger, Sieger, & Halter, 2011). Autio, Keeley, Klofsten, and Ulfstedt (1997), for example, established the presence of a negative relationship between university environment support and students' entrepreneurial intention. In contrast, Lüthje and Franke (2003) and Turker and Selcuk (2009) reported a positive relationship between perceived college environment as a support factor and college students' entrepreneurial intentions. Schwarz, Wdowiak, Almer-Jarz, and Breitenecker (2009) found that there is no significant relationship between environmental support factors and college students' entrepreneurial intentions, yet they found a direct relationship between perceived university support and entrepreneurial intentions of college students. The inconsistent findings on the relationship between support factors and entrepreneurial intentions reinforce the need to further examine the relationship between support factors and entrepreneurial intentions (Bae, Qian, Miao, & Fiet, 2014) in particular the role of the support of family and friends (Schwarz et al., 2009). The inability by universities to adequately identify the support factors and their influence on the entrepreneurial intentions of their students can negatively influence entrepreneurial activities of college students (Lüthje & Franke, 2003). In particular, this may lead to unsuccessful institutional efforts to support entrepreneurial actions and entrepreneurship ecosystems (Markusen, 1996; Nambisan & Baron, 2013). This is critical because college students can be prime candidates for entrepreneurial activities as they are preparing to join the job market and their thoughts are focused on their future careers (Byabashaija & Katono, 2011).

To help bring clarity in the literature regarding the relationship between external support and college students' entrepreneurial intentions and to answer the call from Fayolle and Liñán (2014) that researchers should further examine the role of context and institutions in future entrepreneurial intention research, we use an expanded model of entrepreneurial intentions to identify three support factors that may influence college students' entrepreneurial inclinations. Specifically, we explore the influence that family support, university support, and structural support may have on college students' entrepreneurial attitudes and intentions. While university support and structural support have been studied as antecedents of entrepreneurial intentions in prior research (e.g., Saeed, Yousafzai, Yani-De-Soriano, & Muffatto, 2014; Turker & Selcuk, 2009), this paper may be one of the first attempts to empirically test the influence of family support, along with university and structural support, on entrepreneurial intentions of college students. Current research on the family and entrepreneurship has focused on entrepreneurial exposure, seeking to determine if the entrepreneurial exposure at the family level may influence the entrepreneurial preferences of the younger members of the family (e.g., Laspita, Breugst,

Heblich, & Patzelt, 2012; Murphy & Lambrechts, 2015; Wyrwich, 2015), and not specifically on the value of perceived family support as we have proposed in this paper.

Through this research, we aim to make two main contributions to the entrepreneurial intentions literature. First, we examine how the presence of external support factors in the venture creation process - family, university, and society - may influence the entrepreneurial attitudes and intentions of college students and recent graduates in the United States. In particular, by extending the research that highlights the relevance of family support when starting a new business (Aldrich & Cliff, 2003), we explore the impact that perceived family support may have on college students' entrepreneurial intentions. This contribution may enrich the understanding of how to facilitate student entrepreneurship by providing them with more useful and effective support networks. Further, the findings of this research may help explain previous inconsistent research results on the relationship between support factors and college students' entrepreneurial intentions. Second, from a practical perspective, we identify additional support factors that may be used to help design more effective entrepreneurial educational programs and policies that may foster the desired entrepreneurial actions from college students and recent graduates.

## **THEORETICAL BACKGROUND AND HYPOTHESES**

Previous research has introduced several conceptual models to understand entrepreneurial intentions. Among these models, the (1) Shapero and Sokol's (1982) Entrepreneurial Event Model (EEM) and (2) Ajzen's (1991, 2011) Theory of Planned Behavior (TPB) are the most broadly accepted and used. Both models have been robustly tested and validated in the literature (e.g. Krueger et al., 2000; Peterman & Kennedy, 2003), and these theories provide comparable interpretations of entrepreneurial intentions (Krueger et al., 2000).

In EEM Shapero and Sokol (1982) presented a process model of new venture formation. While the EEM model was not originally developed as an intentions-based model, it soon became utilized as such in the entrepreneurship literature. Central to this model are the individual level perceptions of the desirability and feasibility of starting a new venture, combined with the proclivity to act upon opportunities. In overall, research supports the mediating effect for the three variables in the model, namely perceived desirability, perceived feasibility and propensity to act (Krueger & Carsrud, 1993). Perceived desirability is defined as the attractiveness of starting a business, perceived feasibility refers to the degree to which an individual feels capable of starting a business, and propensity to act is the actual likelihood to start the venture (Shapero, 1975). It is worth mentioning that the EEM is based on trigger events, which at times goes unnoticed in previous research. Thus using the EEM without building a trigger context loses the theoretical and empirical support for the model.

The TPB, first advanced by Ajzen (1991), posits that much of human behavior is planned. As such, TPB argues that individuals' behavioral intentions and actual behaviors are shaped by the individuals' attitudes toward behavior, subjective norms, and their perceived behavioral control (Ajzen, 2011). Hence, the more favorable the attitude toward behavior and subjective norm, the stronger the person's intention to perform the behavior, given a proportionally strong perceived personal behavioral control. In short, given a sufficient degree of actual personal control over their own behavior, people are expected to carry out their intentions whenever opportunity arises. In the context of entrepreneurship, TPB suggests that entrepreneurial behaviors are best predicted by entrepreneurial intentions (Kautonen, van

Gelderen, & Fink, 2015), which refer to the commitment to start a new business (Krueger & Carsrud, 1993).

Krueger et al. (2000) argue that the EEM and TPB models are homologous to one another. They reasoned that perceived desirability in the EEM model corresponds with attitudes towards behavior and subjective norms in the TPB model whereas perceived feasibility in the EEM is conceptually related with behavioral control in the TPB model. Likewise entrepreneurial intentions are determined by entrepreneurial attitudes, which in turn are affected by exogenous influences such as traits, demographics, skills, and cultural and external support (Ajzen, 1991; Shapero & Sokol, 1982) in both models. Furthermore, Souitaris, Zerbinati, and Al-Laham (2007) also suggested that the three factors (attitudes towards behaviors, subjective norms, and perceived behavioral control) in TPB are considered as attitudinal constructs, in as much as perceived desirability and perceived feasibility in EEM are also collectively regarded as entrepreneurial attitudes in the context of entrepreneurship (Krueger et al., 2000).

Yet even when homologous, the two models are not identical. A key distinction might be found in the way both models assess the likelihood of action. Perceived Behavioral Control, a factor in the TPB model is not exactly the same as the Perceived Feasibility in the EEM. Perceived Behavioral Control refers to the person's ability to self-control and act on volition, hence assuming actions are done at will, without environmental or situational constraints. Perceived Feasibility represents the individual's self-assessment of success, implying a personal perception of environmental constraints thus not taking the execution for granted. This subtle distinction allows for the EEM to be further developed and refined by including external elements to the model. Hence it has been suggested that the EEM may be best suited for assessing entrepreneurial intentions (Krueger et al., 2000). Accordingly, in this paper we adopted the EEM and examined the influence of perceived support factors on entrepreneurial attitudes (perceived desirability and perceived feasibility) and intentions. We further developed the EEM by adding family support and testing it as exogenous support factor along with university and structural support. Hence building on, and contributing to earlier findings on entrepreneurial intentions.

Prior research has documented university and structural support as main support factors that may affect students' entrepreneurial attitudes and intentions (e.g., Abebe, Gangadharan, & Sutanonpaiboon, 2014; Kraaijenbrink, Bos, & Groen, 2010; Saeed et al., 2014; Schwarz et al., 2009; Turker & Selcuk, 2009). However, the role of family as the explicit support to entrepreneurial intentions, while hinted at (e.g., Abebe et al., 2014; Schwarz et al., 2009), has largely been neglected in the entrepreneurial literature.

Family has been conceptualized and assessed as a context for entrepreneurial intentions of individuals. This family embeddedness perspective suggests that family is a significant institution that people rely on to make start-up decisions (Aldrich & Cliff, 2003) and achieve entrepreneurial success (Powell & Eddleston, 2013). This perspective has looked into succession versus own-startups (e.g., Laspita et al., 2012; Murphy & Lambrechts, 2015; Wyrwich, 2015) as well as the impact of close-relatives as entrepreneurial role models (e.g., Greene, Han, & Marlow, 2013; Laspita et al., 2012; Wyrwich, 2015). In all, recent research has focused on exploring the impact that entrepreneurial exposure at the family level (e.g., embeddedness within an entrepreneurial family) may have over the entrepreneurial intentions of the individual. However, this literature has also suggested that beyond the environmental context, the perceived support of family members can play an important role on the individuals' behavior and life choices. For instance, the original tpb model (ajzen, 1991) suggests that perceptions of family members

regarding a concrete action could directly affect the individual's intention to execute this particular behavior. In the case of entrepreneurial intentions, through the eem shapero and sokol (1982) have argued that family members may play a powerful role in establishing the desirability and credibility of the entrepreneurial action for the individual. Yet the role of family support in the context of entrepreneurial intentions of college students has not been explored.

## HYPOTHESES

### **Perceived Desirability, Perceived Feasibility, and Entrepreneurial Intention**

Shapero and Sokol (1982) argued that perceived desirability and perceived feasibility determine entrepreneurial intentions. Entrepreneurial intention refers to one's commitment to starting a new business (Krueger & Carsrud, 1993). Further developing this theoretical relationship, Krueger and Carsrud (1993) found that perceived feasibility and desirability can explain significant variance in entrepreneurial intention. Likewise, other empirical studies have provided notable evidence to support a positive relationship between perceived desirability and feasibility and entrepreneurial intention (Fitzsimmons & Douglas, 2011; Krueger et al., 2000; Zhang, Duysters, & Cloudt, 2013). We are not the first to examine the relationship between desirability and feasibility to start a business and entrepreneurial intentions. However, to ensure the completeness of our model, we will also test this relationship in the current paper. Following the lead of the EEM (Shapero & Sokol, 1982) and prior empirical findings, we expect that:

*H1 Perceived desirability is positively related to college students' entrepreneurial intentions.*

*H2 Perceived feasibility is positively related to college students' entrepreneurial intentions.*

### **Perceived Family Support, Desirability, and Feasibility**

The intention to start a business can be influenced by one's social networks he or she is embedded in (Granovetter, 1973). Social networks can provide the fundamental resources that is necessary for creating ventures, thus playing an important role in the decision to start a business (Boyd, 1989). According to Szarka (1990), a social network is typically conceptualized as sets of ties that connect individuals. This network encompasses family, friends or acquaintances. Personal ties within social networks are considered as resources that are important in establishing a business (Davidsson & Honig, 2003; Johannisson, 1996). Individuals with strong ties such as family members may obtain encouragement, advice, and other forms of support to pursue their entrepreneurial careers (Sequeira, Mueller, & mcgee, 2007). Therefore, as strong ties, family members play crucial roles in influencing individual's intentions toward business start-up (Aldrich & Martinez, 2001; Greve & Salaff, 2003; Henderson & Robertson, 2000; Sequeira et al., 2007).

The family embeddedness perspective suggests that family is an important factor influencing the entrepreneurial process including starting a business (Aldrich & Cliff, 2003). Perceived family support, as discussed in the psychology literature (e.g., Procidano & Heller, 1983), primarily consists of long term emotional (e.g., my family is sensitive to my personal needs) and intellectual support (e.g., i get good ideas about how to do things from my family). In the context of entrepreneurship, perceived emotional support concerns the perceived family members' approval and encouragement of the individual's entrepreneurial actions. Perceived intellectual support denotes a belief that family members will provide advice if asked. In addition

to perceived emotional and intellectual support, the entrepreneurship literature also recognizes perceived economic support from the family (bhandari, 2016). This perceived economic support refers to the possible financing of new ventures, and has been found to be more likely present in higher risk ventures including those with low levels of entrepreneurial expertise (au, chiang, birtch, & kwan, 2016), such as in the case of first time entrepreneurs like college students. In this research, we include all three types of perceived family support thus we define perceived family support as the individual's perceptions of having family emotional, intellectual, and economic support concerning starting a new business.

College students, given their economic and emotional dependency on their families and their limited life experiences, may find the support of their parents an important factor when considering career choices, including entrepreneurship (zellweger et al., 2011). Thus, we argue that perceived family support has a positive impact on perceived desirability and feasibility of starting a business as a career choice for college students.

The rationale of the relationship between perceived family support and entrepreneurial attitudes relies on the important role of resources such as knowledge, capital, and materials in establishing and developing an enterprise (wernerfelt, 1984). It is reasonable to expect that family support, understood as emotional, intellectual, and economic support, is a vital resource for sustaining entrepreneurship especially for college students who lack of experience and may depend on their families economically and emotionally. For instance, chrisman, chua, and steier (2002) argued that family represents a critical and often used resource for start-ups. Similarly, the family embeddedness perspective (aldrich & cliff, 2003) suggests that family contributes to start-ups by mobilizing resources and providing mental frameworks for new ventures. Furthermore, family can provide knowledge (e.g., advice on how to start a business) to its members who want to open a business. Therefore, we expect that perceived family support will encourage the actions of college students as they perceive to have access to critical resources, such as capital, materials, and knowledge, as well as emotional support. Perceived access to this support may enhance individuals' desirability and confidence to start a business. Taken together, we hypothesize the following:

*H3a Perceived family support is positively related to college students' perceived desirability to start a business.*

*H3b Perceived family support is positively related to college students' perceived feasibility to start a business.*

### **Perceived University Support, Desirability, and Feasibility**

Perceived university support refers to the students' perceptions of being assisted by their university in ways that encourage their entrepreneurial activity (Kraaijenbrink *et al.*, 2010). It is widely suggested that this institutional support plays an important role in fostering entrepreneurship (e.g. Lüthje & Franke, 2003). Kolvereid and Moen (1997), for instance, documented that college students who took entrepreneurship education reported a higher interest in becoming entrepreneurs than those who did not take it. Peterman and Kennedy (2003) found that participation in entrepreneurship programs during college increases perceived desirability and feasibility of starting a business. Likewise, Souitaris *et al.* (2007) advanced that college entrepreneurial programs raise students' entrepreneurial attitudes and intentions.

Although the effect of educational support (ES) on entrepreneurial attitudes and intentions has been extensively discussed, the majority of the research has focused on knowledge, thus overlooking the role of broader types of university support. As an exception, Kraaijenbrink et al. (2010) provided a more complete typology of university support. The researchers proposed three comprehensive types of university support: ES, concept development support (CDS), and business development support (BDS). ES refers to the provision of general knowledge and skills needed to start a new business, thus includes the extant views of university knowledge support. CDS refers to the provision of awareness, motivation, and business ideas in the early stages of the entrepreneurial process. BDS refers to the provision of support typically given to start-ups in the later stages of the entrepreneurial process (Kraaijenbrink et al., 2010), including business incubators and physical resources (Mian, 1997).

In all, full university support is expected to provide students with knowledge, mastery experience, and resources to increase their self-efficacy, thus influencing their perceived feasibility of starting a business (Shapero, 1975; Shapero & Sokol, 1982). Furthermore, according to career socialization theory (Gibb Dyer, 1994), these college experiences may influence students' desire to choose careers congruent with their learning experiences. Thus, the perceptions of university support, including socialization experiences, are expected to increase students' cognition about starting new businesses as desirable and feasible actions. Accordingly, we hypothesize that:

*H4a-1 Perceived ES is positively related to college students' perceived desirability to start a business.*

*H4a-2 Perceived CDS is positively related to college students' perceived desirability to start a business.*

*H4a-3 Perceived BDS is positively related to college students' perceived desirability to start a business.*

*H4b-1 Perceived ES is positively related to college students' perceived feasibility to start a business.*

*H4b-2 Perceived CDS is positively related to college students' perceived feasibility to start a business.*

*H4b-3 Perceived BDS is positively related to college students' perceived feasibility to start a business.*

### **Perceived Structural Support, Desirability, and Feasibility**

Entrepreneurial activity is shaped by the environmental elements where it takes place, including economic, political, and structural conditions (Turker & Selcuk, 2009). These elements may present individuals with perceived barriers or gateways that could either deter or foster their entrepreneurial actions. According to Turker and Selcuk, economic support for entrepreneurship includes venture capital availability, friendly credit conditions, and infrastructures. Political support for entrepreneurship comprises the country's favorable laws and regulations toward entrepreneurship. Finally, conceptualized structural support is the policies, regulations, and programs that the country has undertaken to support entrepreneurship.

The impact of these environmental elements is not unknown to college students. Lüthje and Franke (2003) determined that perceived environmental barriers may inhibit students from becoming entrepreneurs. Supported by this finding, and extending the argument made by Turker and Selcuk (2009), we suggest that college students' perception of a supportive environment might make this activity a more desirable career choice. We propose that a favorably perceived structural support may increase a student's positive attitudes toward starting a new business.

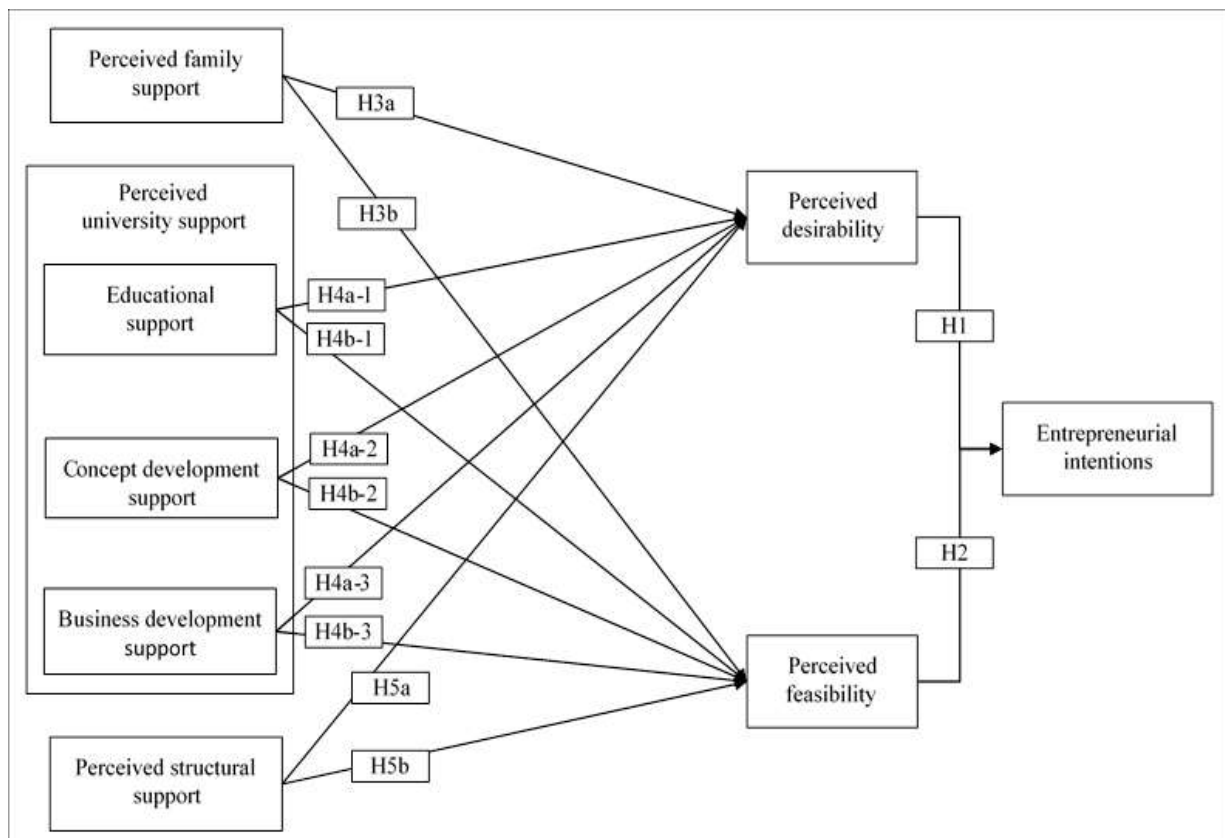
Furthermore, we suggest that these positive perceptions may also affect subjective norms causing entrepreneurship to be perceived as a favorable career choice supported by the society, thus enhancing students’ desirability to start their own business. Likewise, we suggest that favorably perceived structural support, including students’ ease in accessing resources such as capital, may also strengthen students’ perceived feasibility of starting a business. Therefore, we propose that:

*H5a* Perceived structural support is positively related to college students’ perceived desirability to start a business.

*H5b* Perceived structural support is positively related to college students’ perceived feasibility to start a business.

Taken together, we postulate a model where college students’ perceived support factors—perceived family, university, and structural support influence the perceived desirability and feasibility of entrepreneurial actions, which in turn affect entrepreneurial intentions. Figure 1 presents our research model.

**Figure 1**  
**CONCEPTUAL MODEL**





## METHODS

### Data and Sample

Given the focus on college students' entrepreneurial intentions, surveys were administered to undergraduate college students in a major state university in the northern part of the United States. The data were collected through a volunteer-based self-administered questionnaire completed outside the classroom. This university provides entrepreneurship courses, programs, and other entrepreneurship-related support to its students. We conducted two waves of data collection on 679 students, distributed across four courses, in the 2014 fall semester and the 2015 spring semester. The courses were selected to ensure the largest number of participants while preserving a representativeness of the sample. Students were informed that the survey was designed for an academic research study with the aim of better understanding college students' entrepreneurial intentions. Students were assured of the confidentiality of their responses. The two waves of data collection generated 473 usable questionnaires (69.69% response rate).

Of the 473 effective responses, 52% of the respondents were males and 48% females. Seventy-four percent of the respondents were between 18 and 23 years old, 16% between 24 and 29 years old, and 10% 30 years old or older. Eighty-nine percent of the students had a business-related major, such as management, finance, or accounting. The genders and ages of the respondents are presented in Table 1.

	MALE			FEMALE			TOTAL
AGE (YEARS)	18–23	24–29	30+	18–23	24–29	30+	
WAVE 1	109	30	15	105	30	13	302
WAVE 2	76	9	6	63	10	7	171
TOTAL	245 (52%)			228 (48%)			473 (100%)

### Measurements

As in previous work in this area (e.g. Krueger et al., 2000), all constructs were measured by a Likert-type scale of multiple items. The scale asked respondents to rate their level of agreement or disagreement for each statement from 1 (*strongly disagree*) to 7 (*strongly agree*). Items in the survey were grouped by areas to elicit cluster responses on each construct. Additional demographics and traits were also captured to help in the interpretation of the analysis. All items used in this study and their sources are listed in Table 2.

Constructs and items	Factor loading
<i>Entrepreneurial intention</i> ( $\alpha = .962$ ; $CR = .962$ ; $AVE = .895$ ) <sup>a</sup>	
(1) I have seriously considered starting my own business in the near future.	0.925

(2) I intend to start my own business in the near future.	0.944
(3) I will make every effort to start my own business in the near future.	0.969
<b>Perceived desirability (<math>\alpha = .964</math>; <math>CR = .964</math>; <math>AVE = .899</math>)<sup>b,c</sup></b>	
(1) I would love starting my own business.	0.947
(2) I would be enthusiastic if I started my own business.	0.927
(3) The idea of starting my own business is attractive to me.	0.969
<b>Perceived feasibility (<math>\alpha = .903</math>; <math>CR = .905</math>; <math>AVE = .760</math>)<sup>d</sup></b>	
(1) I am confident about my skills and abilities to run my own business.	0.874
(2) I know enough to start my own business.	0.836
(3) I would be certain of success if I started my own business.	0.904
<b>Perceived family support (<math>\alpha = .892</math>; <math>CR = .881</math>; <math>AVE = .603</math>)</b>	
If you decide to start your own business, how will your family members respond to that?	
(1) My family members will approve my actions.	0.637
(2) My family members will encourage me to start my business.	0.636
(3) If necessary, my family members will loan me money to help me start my own business.	0.929
(4) If necessary, my family members will provide me materials and equipment to help me start my own business.	0.915
(5) My family members will give me advice to start my own business.	0.710
<b>Perceived educational support (<math>\alpha = .876</math>; <math>CR = .874</math>; <math>AVE = .641</math>)<sup>e,g</sup></b>	
(1) My university offers courses on entrepreneurship.	0.597
(2) The education in my university improves my entrepreneurial skills and abilities.	0.892
(3) The education in my university encourages me to develop creative ideas for being an entrepreneur.	0.927
(4) My university arranges conferences and workshops on entrepreneurship.	0.744
<b>Perceived concept development support (<math>\alpha = .926</math>; <math>CR = .927</math>; <math>AVE = .761</math>)<sup>e</sup></b>	
(1) My university creates awareness of entrepreneurship as a possible career choice.	0.805
(2) My university motivates students to start new businesses.	0.923
(3) My university provides students with ideas to start new businesses.	0.902
(4) My university provides students with the knowledge needed to start new businesses.	0.855
<b>Perceived business development support (<math>\alpha = .923</math>; <math>CR = .928</math>; <math>AVE = .762</math>)<sup>e,f</sup></b>	
(1) My university provides business incubators to help students turn their business ideas into reality.	0.860
(2) My university provides students with the financial means to start new businesses.	0.797
(3) My university uses its reputation to support students that start new businesses.	0.888
(4) My university serves as a lead customer of students that start new businesses.	0.941
<b>Perceived structural support (<math>\alpha = .804</math>; <math>CR = .809</math>; <math>AVE = .587</math>)<sup>g</sup></b>	
(1) In America, entrepreneurs are well supported by a structural system including private, public, and nongovernmental organizations.	0.830
(2) American economy provides many opportunities for entrepreneurs.	0.785
(3) In America, laws (rules and regulations) are favorable to running a business.	0.675
<p><i>Note.</i> <math>\alpha</math> = Cronbach's <math>\alpha</math>; AVE = average variance extracted; CR = composite reliability. Model fit statistics: <math>\chi^2(349) = 1,360.369</math> (<math>p &lt; .001</math>); RMSEA = 0.078; CFI = 0.921; IFI = 0.921; TLI = 0.908. All factor loadings are significant at the .01 level.</p> <p><sup>a</sup>Liñán, F. and Chen, Y.W. (2009). "Development and cross- cultural application of a specific instrument to measure entrepreneurial intentions", <i>Entrepreneurship Theory and Practice</i>, Vol. 33 No. 3, 593–617.</p> <p><sup>b</sup>Shapero, A. and Sokol, L. (1982). "The social dimensions of entrepreneurship", in Kent, C.A., Sexton, D. and Vesper, K.H. (Eds.), <i>Encyclopedia of Entrepreneurship</i>, Prentice-Hall, Englewood Cliffs, NJ, pp. 72–90.</p> <p><sup>c</sup>Krueger, N.F., Reilly, M.D. and Carsrud, A.L. (2000). "Competing models of entrepreneurial intentions", <i>Journal of Business Venturing</i>, Vol. 15 No. 5, 411–432.</p> <p><sup>d</sup>Krueger, N.F. (1993). "The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability", <i>Entrepreneurship Theory and Practice</i>, Vol. 18 No. 1, 5–21.</p> <p><sup>e</sup>Kraaijenbrink, J., Bos, G. and Groen, A. (2010). "What do students think of the entrepreneurial support given by their universities?", <i>International Journal of Entrepreneurship and Small Business</i>, Vol. 9 No. 1, 110–125.</p> <p><sup>f</sup>Mian, S. A. (1997). Assessing and managing the university technology business incubator: an integrative framework. <i>Journal of Business Venturing</i>, 12(4), 251-285.</p>	

<sup>§</sup>Turker, D. and Selcuk, S.S. (2009). "Which factors affect entrepreneurial intention of university students?", *Journal of European Industrial Training*, Vol. 33 No. 2, 142–159.

### **Entrepreneurial Intention.**

The measurements for entrepreneurial intentions are three items adapted from Liñán and Chen (2009) study. See Table 2 for description of the constructs.

### **Perceived Desirability**

This study referred to Shapero and Sokol (1982) and Krueger et al. (2000) work to measure perceived desirability and the measurement comprises three items. See Table 2 for description of the constructs.

### **Perceived Feasibility**

This construct is measured by three items adapted from Krueger (1993) study. See Table 2 for description of the constructs.

### **Perceived Family Support**

In this study, this construct is emotional, intellectual, and economic support from family members. Emotional support was measured through two items, intellectual support through one item, and economic support through two items. See Table 2 for description of the constructs.

### **Perceived University Support.**

This construct comprises three dimensions: perceived ES, CDS, and BDS. We adapted the measurements from Kraaijenbrink et al. (2010) and Turker and Selcuk (2009) work to measure the participants' perceived university support. For perceived ES and CDS, four items were included, respectively. Regarding perceived BDS, three items were used. In addition to the three original BDS measures developed by (Kraaijenbrink et al., 2010) we added the fourth item to capture the importance of business incubators in encouraging students to become entrepreneurs (Mian, 1997). See Table 2 for description of the constructs.

### **Perceived Structural Support.**

The measurements for perceived structural support were adapted from (Turker & Selcuk, 2009) study. The three items concern the availability of capital, the laws and regulations of entrepreneurship, and economic stability. The items were framed in the everyday U.S. context of the students. See Table 2 for description of the constructs.

## Analytic Strategy

We used structural equation modeling (SEM) to conduct the data analysis. SEM is an analytical tool that combines confirmation factor analysis, regression, and path analysis. It has the ability to estimate multiple and interrelated dependence relationships, represent unobserved concepts in these relationships, consider measurement errors in estimation, and define a model explaining an entire set of relationships (Xiong et al., 2014). SEM was an appropriate analysis tool in this study because we have latent variables and used multiple regressions in the model. SEM consists of a two-step analysis: the measurement model that tests the reliability and validity of the measures and the structural model that tests the hypothesized relationships between constructs (Byrne, 2013). The use of SEM allowed to test the full model thus exploring all constructs in the context of each other hence building on earlier findings of the literature (e.g., perceived university support, preserved structural support) to advance the new variables (e.g., perceived family support).

## RESULTS

### Measurement Model

We used the software program Amos 17.0 to test the validity of the measurement model by conducting a confirmatory factor analysis. The measurement model shows acceptable fit values,  $\chi^2(349) = 1,360.369$  ( $p < .001$ ); CFI = 0.921; IFI = 0.921; TLI = 0.908; RMSEA = 0.078. The results are presented in Table 2.

Convergent validity of the constructs was established using item loadings and their significance. As shown in Table 2, the factor loadings of items on their respective constructs, ranging from 0.597 to 0.969, are all greater than the suggested minimum of 0.5 and statistically significant, suggesting that the constructs have convergent validity (Bagozzi & Yi, 1988). As suggested by Table 3, discriminant validity was also evident because the correlation between every pair of constructs was found to be below the square root of the average variance extracted of each variable (Fornell & Larcker, 1981). Reliability was established by referring to Cronbach's  $\alpha$  (Cronbach, 1951) and composite reliability (Fornell & Larcker, 1981). The Cronbach's  $\alpha$  for each construct ranges from .804 to .962, exceeding the required minimum of .7. In addition, the composite reliability value for each construct ranges from .809 to .964, above the suggested minimum of .7. Altogether, these results demonstrate the validity and reliability of the measurement model.

**Table 3**  
MEANS, STANDARD DEVIATIONS, CORRELATIONS,  
AND SQUARE ROOTS OF AVERAGE VARIANCE EXTRACTED

CONSTRUCTS	MEAN	STANDARD DEVIATION	1	2	3	4	5	6	7	8
1. Ent intentions	4.674	1.814	.946							
2. Perceived desirability	5.534	1.488	.790***	.948						
3. Perceived feasibility	4.336	1.562	.686***	.558***	.872					
4. Perceived family support	5.419	1.322	.287***	.238***	.288***	.777				
5. Perceived	5.396	1.131	.209	.195***	.281	.342	.801			

educational support			***		***	***				
6. Perceived concept development support	4.894	1.353	.251 ***	.183 ***	.337 ***	.325 ***	.771 ***	.872		
7. Perceived business development support	4.353	1.378	.244 ***	.130 **	.296 ***	.288 ***	.569 ***	.760 ***	.873	
8. Perceived structural support	4.845	1.860	.263 ***	.296 ***	.404 ***	.305 ***	.443 ***	.502 ***	.416 ***	.766
<p><i>Note.</i> The square root of the construct's average variance extracted is provided at the top of the diagonal in each column; the rest of the values are the correlations between constructs.  **<math>p &lt; .01</math>. ***<math>p &lt; .001</math>.</p>										

Finally, to address the common method variance problem (Podsakoff, mackenzie, Lee, & Podsakoff, 2003), we used Harman (1976) one-factor test. The factors with eigenvalues greater than 1.0 account for 76.727% of the total variance. The largest factor does not account for a majority of the variance (35.428%), indicating that common method variance was not a major concern in this study.

### Structural Model

Maximum likelihood analysis was employed to test the structural model. Table 4 shows the results of this model. An adequate level of fit in the model is indicated by the fit statistics,  $\chi^2(355) = 1,485.126$  ( $p < .001$ ); CFI = 0.912; IFI = 0.912; TLI = 0.899; RMSEA = 0.082. Hypothesis 1 predicted that perceived desirability is positively related to entrepreneurial intention. As shown in Table 4, the results support H1 ( $\beta = 0.716$ ;  $p < .001$ ); that is, perceived desirability has a significant positive impact on entrepreneurial intention. Hypothesis 2 predicted that perceived feasibility is positively related to entrepreneurial intention. This hypothesis is also supported ( $\beta = 0.425$ ;  $p < .001$ ), indicating that perceived feasibility positively influences entrepreneurial intentions. For Hypothesis 3a, results support the hypothesis that perceived family support is positively related to perceived desirability ( $\beta = 0.274$ ;  $p < .01$ ). Hypothesis 3b is also supported ( $\beta = 0.268$ ;  $p < .01$ ), in that perceived family support is positively related to perceived feasibility. These findings provide evidence that family support influences students' attitudes toward entrepreneurship, a key finding in this study. Hypothesis 4a1, 4a2, 4a3, 4b1, 4b2, and 4b3 predicted that perceived university support—namely, perceived ES, CDS, and BDS—are positively related to perceived desirability and feasibility. The results did not support these hypotheses. Possible reasons for why these hypotheses were rejected are reviewed in the Discussion section. Finally, we found that perceived structural support is positively related to perceived desirability ( $\beta = 0.370$ ;  $p < .001$ ) and perceived feasibility ( $\beta = 0.410$ ;  $p < .001$ ), thus supporting Hypotheses 5a and 5b.

**Table 4**  
**RESULTS OF THE STRUCTURAL MODEL**

<b>HYPOTHESIS</b>	<b>HYPOTHESIZED PATH</b>	<b>STANDARDIZED ESTIMATES</b>	<b>RESULTS</b>
H1	Perceived desirability → Entrepreneurial intentions	0.716***	Supported
H2	Perceived feasibility → Entrepreneurial intentions	0.425***	Supported
H3a	Perceived family support → Perceived desirability	0.274**	Supported
H3b	Perceived family support → Perceived feasibility	0.268**	Supported
H4a-1	Perceived ES → Perceived desirability	0.080	Not supported
H4a-2	Perceived CDS → Perceived desirability	0.008	Not supported
H4a-3	Perceived BDS → Perceived desirability	-0.066	Not supported
H4b-1	Perceived ES → Perceived feasibility	-0.063	Not supported
H4b-2	Perceived CDS → Perceived feasibility	0.132	Not supported
H4b-3	Perceived BDS → Perceived feasibility	0.068	Not supported
H5a	Perceived structural support → Perceived desirability	0.370***	Supported
H5b	Perceived structural support → Perceived feasibility	0.410***	Supported

*Note.* BDS = business development support; CDS = concept development support; ES = educational support. Model fit statistics:  $\chi^2(355) = 1,485.126$  ( $p < .001$ ); CFI = 0.912; IFI = 0.912; TLI = 0.899; RMSEA = 0.082. \*\* $p < .01$ . \*\*\* $p < .001$ .

## DISCUSSION

The main objective of this study was to assess the effect of perceived support factors on college students' entrepreneurial attitudes (perceived desirability and feasibility) and intentions. In particular, we sought to explore the importance of family support, which has received limited empirical attention in previous research, in the formation of college students' entrepreneurial intentions.

Consistent with the EEM and prior empirical findings, our study confirmed the importance of perceived desirability and feasibility as significant predictors of college students' entrepreneurial intentions. This result suggests that in order to enhance students' intentions to be self-employed, policy makers and entrepreneurship educators may consider designing policies and programs that could improve students' perceived desirability and feasibility to start a business.

The results revealed that perceived family support exerts a significant positive influence on perceived desirability and feasibility of starting a business for these college students. This finding not only confirms the important role of family support in enhancing entrepreneurial attitudes and intentions (Aldrich & Cliff, 2003; Henderson & Robertson, 2000; Shapero & Sokol, 1982), but also enriches the EEM by adding and testing the role of perceived family support as

the exogenous influence of entrepreneurial attitudes and intentions. From a practical perspective, this finding suggests that researchers, educators, and policymakers may need to consider the role of family members when encouraging entrepreneurial actions through policies or education programs. In a larger picture, counting on family members to provide emotional, intellectual, and economic support to young entrepreneurs, regardless of the personal entrepreneurial knowledge of the supportive family members, can help foster new first-generation entrepreneurs through firsthand entrepreneurial experimentation. This finding is particularly salient, as college students and recent graduates lack work and life experience to support and inform their entrepreneurial ideas. Furthermore, it is also worth noting that we identified this finding by defining perceived family support construct and designing reliable measurements for it. This construct and its corresponding measures go beyond extant research that merely considered family as a source of entrepreneurial exposure and/or posed family support only as a source of approval or rejection for the student's entrepreneurial intentions.

Another notable result is the lack of a statistically significant influence of perceived university support on perceived desirability and feasibility, as the model was further refined and new constructs were included. This finding is in contrast to previous empirical evidence based on earlier models (e.g. Saeed et al., 2014; Turker & Selcuk, 2009). This result may be explained by one of four different possibilities. First, this can possibly be related to the fact that many university entrepreneurship programs put too much emphasis on theory at the expense of practical approaches (Byabashaija & Katono, 2011). Limited to theoretical approaches, students may have limited opportunities to gain the hands-on experiences of doing business, thus decreasing their perception of running a business as a desirable and feasible career choice. As suggested by Piperopoulos and Dimov (2015), "practically oriented" entrepreneurship courses, rather than "theoretically oriented" ones, are more likely to inspire students' entrepreneurial intention. A second option for this result might be the overly high expectations of entrepreneurial education and programs. Timmons and Spinelli (1999) suggested that entrepreneurship education and programs are effective only when they enable students to develop their imagination, flexibility, and creativity and to develop their ability to think conceptually and perceive business opportunities. They stated that these are lofty standards that few universities can achieve. Therefore, given the failure to achieve the high standards of entrepreneurship education and related programs, it is understandable why, in some universities, students' entrepreneurial attitudes and intentions do not increase by the provision of university support. A third possible reason might be that many students have not been made fully aware of the availability of entrepreneurship education or related support provided by their university. Student therefore may not be utilizing or may not be even aware of the entrepreneurial support available at their university. The fourth possible explanation may be the impact of university entrepreneurship programs "professionalizing" entrepreneurship, thus equating entrepreneurship to any other college degree yet with a higher risk-income ratio (Pruett, Shinnar, Toney, Llopis, & Fox, 2009). This professionalizing concept highlights the general understanding that educators provide knowledge and information to help university students to choose a personal career path that may include entrepreneurship as an option.

In our sample, an independent-sample test revealed that those who have received or are in entrepreneurship education have significantly higher perceptions of ES, CDS, and BDS than those who have not received any entrepreneurship education. Only 70 students (14.8%) out of our 473 total respondents have had entrepreneurship education and they were independently tested. The rest of the students may have had limited opportunities to develop awareness of the

availability of the entrepreneurship education or related programs. The lack of awareness of entrepreneurship education and programs may affect the link between perceived university support and entrepreneurial attitudes.

These findings are not inconsistent with prior studies which also found no relationship or even a negative relationship between university entrepreneurship-related education and programs and entrepreneurial intentions (e.g., Byabashaija & Katono, 2011; Kusmintarti, Thoyib, Maskie, & Ashar, 2016; Oosterbeek, van Praag, & Ijsselstein, 2010). The findings in this study, along with those of prior research with similar findings, suggest that educators and university administrators may need to revisit traditional entrepreneurship education and related support programs by paying attention to the availability and quality of university support for entrepreneurship, as well as the value of family support, as we have suggested earlier.

We found that perceived structural support was significantly related to perceived feasibility. This finding confirmed the argument that structural factors are critical to the development of entrepreneurs. This finding also suggests that a favorable structural environment enhances individuals' inclination to engage in entrepreneurial activities. In order to foster entrepreneurship, government needs to enact favorable laws and regulations to support entrepreneurs. In addition, banks should consider designing more supportive loan policies for entrepreneurs.

An interesting result of this study was that males were found to significantly differ from females in their perceptions of desirability, feasibility, and intentions toward starting a business. An independent-sample *t*-test indicated that males had higher perceived desirability ( $t = 2.034$ ;  $p < .05$ ), perceived feasibility ( $t = 3.049$ ;  $p < .05$ ), and entrepreneurial intentions ( $t = 2.016$ ;  $p < .05$ ) than did females. This result is consistent with studies that found that men had higher entrepreneurial attitudes and intentions than women had (e.g., Scherer, Brodzinski, & Wiebe, 1990; Wilson, Marlino, & Kickul, 2004; Zhao, Seibert, & Hills, 2005). This finding suggests that policymakers and educators may need to develop new thinking about entrepreneurship that is more supportive of women entrepreneurial development (Zhang *et al.*, 2013). For example, considering the role of role models in students' entrepreneurial intentions, educators may think about including more female role models in entrepreneurship education (Claire & Perryman, 2016) and implement education programs that promote female self-efficacy (Wilson, Kickul, & Marlino, 2007).

### **Limitations and Future Directions**

We acknowledge four main limitations of this study. First, like most studies in the literature, we did not track the respondents' entrepreneurial behavior after the survey. A longitudinal study is recommended for future research to enhance our understanding of the relationship between entrepreneurial intentions and entrepreneurial behaviors. Second, for the purpose of this study, we primarily focused on contextual factors, particularly perceived support factors, and ignored individual factors. It should be noted that individual factors are also important in understanding entrepreneurial attitudes and intentions. Future research may take into account individual factors and their interactions with perceived support factors in influencing entrepreneurial attitudes and intentions. Third, the sample in this study only consisted of students with a business major from one cultural context. Future research may test the model by adding samples from multiple locations, universities, and majors. Fourth, while perceived family support was significant, the range of ages included in the sample may suggest that participants may have been at different points in their personal lives, thus their family



situation may differ significantly when answering the questions regarding perceived family support. Younger participants may have thought of their parents while older respondents may have considered their spouses. Hence, future research may want to explore issues at the intersection of student's position within the family and the student's perceived family support by different family members. This can help clarify issues of perceived family support in the context of family dependency (e.g., perceived family support from family providers such as parents towards daughters and sons), perceived family support among partners/equals (e.g., perceived family support between spouses or among siblings), and perceived family support within the context of family hierarchies (e.g., perceived family support from family elders).

Regardless of these limitations, our study makes important contributions to the entrepreneurial intentions literature and entrepreneurial practice. From a theoretical perspective, we contributed to the entrepreneurial intentions literature by considering the integrated support factors and their role in influencing entrepreneurial attitudes and intentions. We highlighted the role of family support for college students which has been largely neglected in previous research. In addition, we contribute to the EEM (Shapero & Sokol, 1982) by adding three support factors as the exogenous influences predicating entrepreneurial attitudes (perceived desirability and feasibility) and intentions. From a practical perspective, the findings in this study may provide the basis for policymakers to design more effective programs and policies to foster entrepreneurship outcomes, as this study provides evidence regarding the value of support factors as decisive tools in influencing the entrepreneurial attitudes and intentions of individuals. In particular, the results of this study suggest that policymakers and educators need to consider the role of family and structural support in facilitating entrepreneurship as an educational outcome. In addition, universities may need to rethink how they design entrepreneurship education and programs to more effectively involve family support networks to attain entrepreneurial outcomes as part of the educational goals. It should be noted that although the university is considered an important institution to cultivate potential entrepreneurs (Lüthje & Franke, 2003), student entrepreneurship figures still remain low (Kraaijenbrink *et al.*, 2010). Future research may address the underlying reasons of this phenomenon and provide suggestions for improving the effectiveness of university entrepreneurship education and related programs.

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