

The Impact of Social Networks on the Entrepreneurial Intention of Tunisian Women: A Comparative Analysis of Informal and Formal Ties

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Abstract

This research examines the influence of different forms of social networks informal networks characterized by strong ties (e.g., family and friends) and formal networks characterized by weak ties (e.g., entrepreneurial associations and support institutions) on the entrepreneurial intention of Tunisian women. Drawing on a quantitative research design, data were collected through a structured questionnaire administered to a purposive sample of 100 Tunisian female entrepreneurs. The empirical analysis demonstrates that informal social networks exert a significantly greater impact on entrepreneurial intention than formal networks. Specifically, the presence of a close entrepreneurial role model, the perception of favorable subjective norms, and strong emotional and moral support from family and friends were found to be critical determinants of entrepreneurial intent. In contrast, access to formal support structures such as incubators, professional associations, or business development services showed a comparatively weaker effect. The study is limited by its context-specific sample and cross-sectional design, which may constrain the generalizability of its findings. Nevertheless, it provides meaningful contributions to the literature on gender and entrepreneurship in the MENA region by highlighting the pivotal role of social capital, particularly informal networks, in shaping women's entrepreneurial trajectories. The findings hold practical implications for policymakers and entrepreneurship support organizations seeking to design more inclusive and socially embedded interventions that respond to the lived realities of women entrepreneurs in Tunisia.

Keywords: Informal social networks • Formal social networks • Entrepreneurial intention • Role model • Subjective

Introduction

Nowadays, women's entrepreneurship is deemed to be a source of both economic growth and new-job creation; therefore, women's entrepreneurship requires encouraging [1-3]. Throughout their entrepreneurial career, however, women face many problems. For instance, they encounter the problem of accessing information, financing, useful networks, and the problem of reconciliation between family and professional life. These problems can lower the chances of success for female entrepreneurs [4]. To cope with these problems, women must show solidarity, develop and mobilize their relational networks which can provide access to useful information and resources for business creation and development [4]. Indeed, much research on entrepreneurship has highlighted the role of social networks in the various phases of the entrepreneurial process [5-7]. Social networks which are characterized by the «relationships between social entities, such as individuals, groups, businesses, nations or any other form of organization [8]. Are integral parts of the entrepreneurial environment According to the literature, they have an influence on discovering and seizing opportunities [9,10] innovating and creating [11] as well as accessing ideas, knowledge [10,12] the know-how [13] and financial resources [14].

Since the entrepreneurial intention is the key element in the entrepreneurial process, researchers, like Cantzler I and Leijon S [15] Slotte-Kock S and

Coviello N [16] and Chang EPC, et al. [17] stress the importance of social networks in forming and developing women's entrepreneurial intention. The significance of social networks varies depending on their type. Prior to starting their businesses, women tend to rely on both strong-tie networks comprising close family and [18-20] weak-tie networks, which include institutional support and entrepreneurial associations [21].

Nevertheless, social-relation networks of female entrepreneurs are rarely identified in the Tunisian context. Therefore, with regard to the scarcity of researches on the social network of the female entrepreneur, we position this work in such a context which is hardly studied despite the significance of social networks for setting up and developing women's entrepreneurial intention. Thus, in our study we will try to shed light on the following question: How do social networks influence the entrepreneurial intention of Tunisian women? Our purpose is to investigate the impact of informal social networks with strong ties and formal social networks with weak ties on the entrepreneurial intention of women. In this article, we try to contribute to the literature by examining the relationship between informal social networks with strong ties (family and friends) and formal social networks with weak ties (entrepreneurial circle) and the entrepreneurial intention. We present, first, a theoretical context of the entrepreneurial intention in general and a theoretical context of this relationship. Second, we investigate the impact of informal social networks with strong ties and formal social networks with weak ties on women's entrepreneurial intention.

Literature Review

We give, in this section, a theoretical presentation of the entrepreneurial intention. Also, we develop the theoretical hypotheses dealing with the impact of informal social networks with strong ties and the formal ones with weak ties on women's entrepreneurial intention.

The entrepreneurial intention: A theoretical framework

In the literature, there are two main approaches to explaining the entrepreneurial intention of an individual. The first approach is based on the work of Kent CA, et al. [22]. They explain the entrepreneurial intention of an

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individual through his/her perceived desirability (the social and cultural factors that influence the entrepreneurial behavior), perceived feasibility (perceptions of creative support factors) and the propensity towards action.

The second part of the paper takes the behavior theory developed by Ajzen I [23] as a basis. It defines intention as an indicator of "the willingness to try, the effort one is willing to make to behave in a certain way" which is determined by 3 concepts: the attitudes associated with behavior, the subjective norms and the perceptions of behavioral control.

We briefly show the model of the entrepreneurial event of Kent CA, et al. [22] as well as the theory of planned behavior of Ajzen I [23] which will be the focus of the first presentation.

The theory of planned behavior: Social psychology contributes to the phenomenon of entrepreneurial intention. Although it is related to the field of social psychology, the theory of planned behavior is a reference which is recurrently used in most researches that have focused on the study of intentional behavior. Indeed, this theory gives the intention a great weight in the prediction of behavior. The theory of planned behavior expresses the intention through the use of three antecedents (Figure 1):

-The attitudes towards behavior: express the degree of favorable or unfavorable evaluation that the individual makes about his aspired behavior.

-The perceived subjective norm: is the perception that the individual acquires after the social pressures applied by close people (parents, family, friends) compared to what he would like to undertake [23].

-The perceived control: is a variable that has been added to the theory of reasoned action. Indeed, for Ajzen I [23], the intention can discover a field of expression only if it is under the control of the individual's will.

The author distinguishes the three explanatory variables of intention and reduces them to individual beliefs. Beliefs represent the information (true or false) that an individual is making about the world. Ajzen I [23] classifies them into three categories:

-The behavioral beliefs which serve to evaluate the consequences of the action. They, then, affect the attitude;

-The normative beliefs which act on the subjective norm;

-The control beliefs which guide the perceived control.

As can be seen in the Figure above, the three explanatory variables of intention are correlated. They relate, directly or indirectly, to two aspects which are inseparable from the human thought (affective: attitude and subjective norms, and reasoned: perceived control). By merging their effects, they lead to the emergence of a form of intention. The more the subjective norm, the

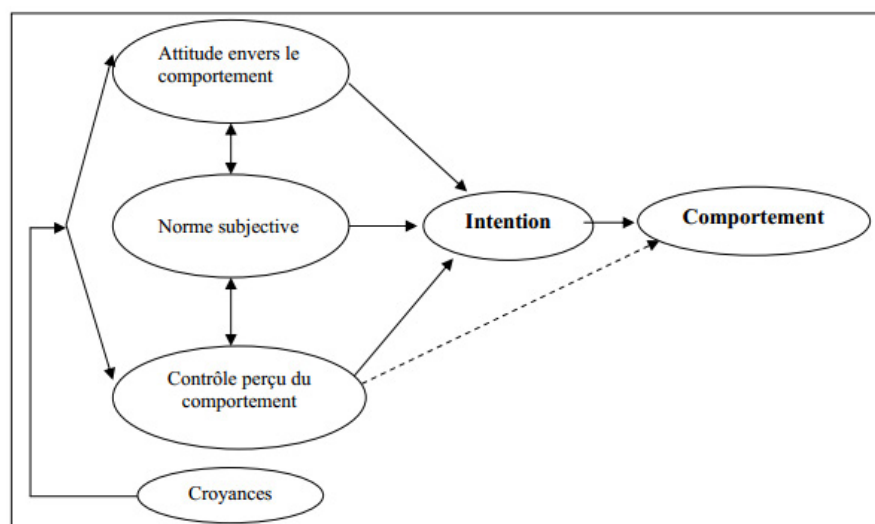


Figure 1. The theory of planned behavior. Source: Adapted and translated from Ajzen.

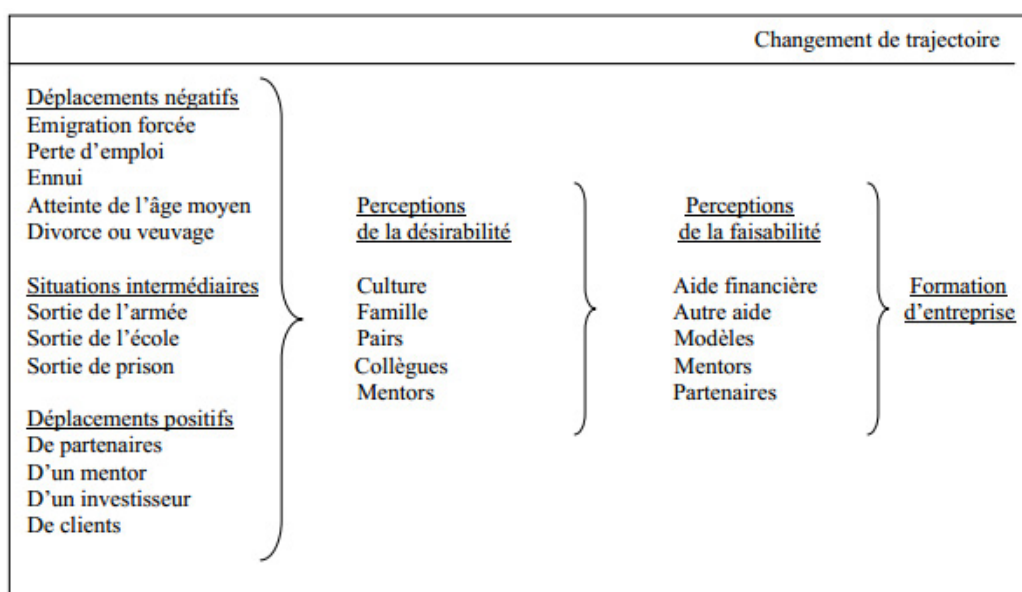


Figure 2. Forming the entrepreneurial event. Source: Shapero and Sokol.

attitude and the perceived control are favorable, the stronger the intention to perform the intended behavior will be.

The model of the entrepreneurial event of Shapero and Sokol (1982): Kent CA, et al. [22] develop the model of entrepreneurial event (Figure 2) according to which an individual evaluates the decision to make according to three elements: 1) his perception of the behavior-desirability; 2) his propensity to act; willingness to act according to one's intentions and 3) his perception of the feasibility of the intended behavior. Many studies support this model to understand the entrepreneurial behavior [24-26]. For Kent CA, et al. [22], the entrepreneurial behavior is directly influenced by the perceptions of desirability and feasibility of the behavior. Desirability and feasibility are both explained by the beliefs and perceptions the person has about the world around him. Thus, according to the logic of the authors, the desire, the perceived feasibility and, consequently, the intention to create a business would be based on the beliefs of the individuals.

More specifically, the perception of desirability refers to the extent to which an individual is eager to start a business [22]. The latter is influenced by the existence of models in the family circle [27]. In addition, the cultural and social factors directly affect the perceived desirability of the entrepreneurial behavior; the applied social pressure, for example, is reflected by the conveyed and valued professional characteristics [28]. also say that the intentions are affected by the perception that the entrepreneurial behavior is personally desirable, and, secondly, that it is socially desirable.

In addition to being desirable, the act of creation must also be feasible. Entrepreneurial feasibility, thus, refers to the degree to which an individual thinks that he can successfully manage the business creation project. It depends, indeed, on the availability of the resources needed to create the business, the skills of the entrepreneur, and it depends on the entrepreneur's self-confidence to carry out the tasks for the success of a business creation project.

After presenting the main conceptual models of entrepreneurial intention namely, Ajzen I [23] Theory of Planned Behavior and Kent CA, et al. [22] Model of the Entrepreneurial Event a growing body of research supports integrating both approaches. The combined framework suggests that entrepreneurial intention is primarily shaped by two key attitudes: perceived desirability and perceived feasibility, as further developed by Emin S [29].

The impact of informal social networks with strong ties and the formal ones with weak ties on the entrepreneurial intention.

Previous research suggests that social network ties influence entrepreneurial intention.

The study of the effect of social networks on the entrepreneurial intention of Tunisian female entrepreneurs is a key issue. According to Anderson J and McCormick R [30]. the social network is made up of two types of network; namely, the informal and formal networks.

In fact, some researchers have shown the importance of informal social networks (family and friends) and others have emphasized the importance of formal social networks (entrepreneurial circle) [31]. We try to present, in this section, the assumptions about the impact of informal and formal social networks on the entrepreneurial intention.

The impact of informal social networks with strong ties on the entrepreneurial intention

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The impact of informal social networks with strong ties on the entrepreneurial intention: To talk about the entrepreneur's informal social networks is to speak about family and friends. Referring to the literature dealing with the networks of social relations, we can explain the informal social network by several variables, such as the existence of a close model of entrepreneur, favorable subjective norms, family support (parents, spouse) and friends.

In this section, we investigate how the factors of informal social networks can influence the desirability and perceived feasibility and the entrepreneurial intention of female entrepreneurs during the pre-creation phase.

The effect of the existence of a close model of entrepreneur: The entrepreneurial literature has emphasized the influence of close relations on the entrepreneurial intention. To take into account only the case of a positive influence, several researches have retained the existence of a model of entrepreneur within the family or in the close relations.

It is Shapero A [32], who by starting from the trait approach to work on entrepreneurship, emphasizes that «starting a business becomes an imaginable act when the entrepreneur can refer to a model that he tried». In this respect, we know that the role of the model explains in a large number of cases the decision to start a business. We can, thus, assume that the larger the number of entrepreneurs in a society is, the more numerous and valued the current models of entrepreneurs will be, and the more youngsters will try to imitate these models; that is to say, they choose entrepreneurship as a career [27] also stresses that the perception of desirability is influenced by the presence of models of entrepreneurs in the closest relations.

In France, Francoz D and Bonneau J [33] note that most business-creators have in their entourage a self-employed person: it is often a member of their family (41% of cases), a friend (21% of cases) or both at once (10% of cases).

In the first chapter, we have stated that the studies of women's entrepreneurship established around the world converge towards the idea that most entrepreneurs' fathers are self-employed [34]. Thus, these studies advocate the existence of a relationship between the job of the parents, in particular that of the father, and the entrepreneurial desire to be a potential creator [35].

In the same vein Abbasianchavari A and Moritz A [36] as well as Paturel R and Arasti Z [37] suggest that the presence of entrepreneurial role models within the family or social circle is a significant factor influencing entrepreneurial intention. Earlier research by Shapero A [32], Hisrich RD and Brush CG [34], Collins OF and Moore DG [35] and Dunkelberg WC and Cooper AC [38] has shown that a high percentage of female entrepreneurs have fathers who were self-employed. Consequently, this familial relationship can help explain the desire to become an entrepreneur. Regarding parents' occupations, having a self-employed or entrepreneurial father appears to accustom the child to the ideas of independence and flexibility associated with the entrepreneurial role, to the extent that the child regards their father as a role model to emulate. with the entrepreneurial role, to the extent that the child regards their father as a role model to emulate.

The existence of models in the family and among friends has been recognized as an influential factor in the entrepreneurial intention [39]. In the same context, Gasse Y and D'Amours A [40] state that most often entrepreneurs come from families in which the parents or other relatives are in business or self-employed; thus, many researches indicate that it is the case of 50% of them. One can presume that youngsters grown up in this kind of family or entourage consider their parents or relatives as models to imitate. The same finding has recently been made by Diochon M, et al. and his colleagues [41] in a Canadian study of the entrepreneurs actively involved in business creation (nascent entrepreneurs), about 46% of their parents are entrepreneurs or business owners.

According to the survey of Smith NR, et al. [2] made on 58 entrepreneurs, the female entrepreneur is four times more likely to be influenced by the family than the population in general. Indeed, among the sample chosen by Smith NR, et al. [2], 37% of female entrepreneurs' fathers are business-leaders or self-employed. Also, 10% of these women's fathers are closely related to the business world and 16% of their mothers run their own business.

Similarly, a qualitative study conducted by Zouiten J [42] on a sample of Tunisian female entrepreneurs shows that the existence of a model of entrepreneur within the family increases the entrepreneurial intention.

It can, therefore, be assumed that women who have entrepreneurs in their informal social networks have access to valuable resources. These resources are not easy to obtain by non-entrepreneurs.

Regarding these considerations, the following hypothesis can be made

Hypothesis 1.1: The existence of entrepreneur (s) in the close entourage increases the entrepreneurial intention of women.

The subjective norms

«The subjective norms result from the perceptions of the social pressure about what the parents, family and friends think about what one would like to do» [23].

They can be the effect of sensitivities that arise in a wider circle than that of the immediate environment. A government, for instance, that encourages the creation of a high-tech enterprise may increase the sensitivities of the individuals to move towards technology companies. The subjective norms also refer to the concept of desirability developed by Kent CA, et al. [22].

Perceived feasibility also depends on the subjective norms because when they are favorable, they increase the potential entrepreneur's self-confidence. In this context [23] confirms that the more favorable the subjective norms are, the stronger the intention to perform the intended behavior will be. Yet, the results concerning the effect of the subjective norm on the intention of the entrepreneurial behavior remain divergent. Some researchers do not manage to isolate the significant impact of this element [43], while others attribute a significant positive effect on the entrepreneurial intention of students [44,45].

In the light of these considerations, the following hypothesis can be made:

Hypothesis 1.2: The more the subjective norms are favorable, the stronger the entrepreneurial intention of women is.

The presence of family and friendly support: The research suggests that the potential entrepreneurs who discuss business start-up ideas with their family members and friends receive an emotional support [46]. This social support improves the entrepreneurs' motivation for the creation and success of the businesses.

According to Zghal N [47], the entrepreneur benefits from support to start a business. This support comes from the family and friends and, in return, positively influences the feasibility and desirability of entrepreneurship. Likewise, Zouiten J [42] affirms that the family circle of the female entrepreneur, especially her close entourage (her parents and her husband), can influence her entrepreneurial action. This influence is generated by the act of the network on the entrepreneur in terms of psychological and moral support and in terms of advice. However, it can be an obstacle for the entrepreneurial adventure in general and that of women in particular. In their empirical study Zouiten J [42] shows that most of the women surveyed told us that they had received a significant support from their families. This support was more important for those whose fathers were entrepreneurs and who seemed to bring credibility and desirability to the entrepreneurial act.

According to Johannisson B [48], the potential female entrepreneur needs all the wealth in terms of knowledge, the know-how and support that can be provided by friendly relations [49], in addition to providing emotional support, the family provides emotional comfort, while experienced friends provide advice, encouragement and revive the potential entrepreneur's enthusiasm.

Family members and friends belonging to the network are an important source of moral support for entrepreneurs [50]. Entrepreneurs get more resources from close relationships than from distant ones [51]. Strong ties with friends and family are a support for the entrepreneurial project [52]. These supportive relationships, as a result, have a positive effect on the entrepreneurial intention [53].

With respect to these considerations, the following assumptions can be made:

H1. 3: The existence of a family support has a positive impact on women's entrepreneurial intention.

H1.4: The existence of a friendly support has a positive effect on women's entrepreneurial intention.

Poon JPH, et al. [54] State that the informal social network increases women's probability to become entrepreneurs. So we propose the following global hypothesis about the impact of informal social networks on the entrepreneurial intention.

H1. Informal social networks positively influence the entrepreneurial intention of women

The impact of formal social networks with weak ties on the entrepreneurial intention of women: According to Zouiten the intention to be an entrepreneur, for Tunisian women, is positively associated with their access to support organizations and their membership in associations of entrepreneurs.

Similarly, Zghal shows that female entrepreneurs' formal social network plays a stimulating role in creation. She shows that the entrepreneur is not an isolated individual and her commitment to the realization of her project is affected by the interaction with her social milieu which encourages, helps and supports her psychologically or, on the contrary, discourages her and curbs her impetus.

The support structures allow entrepreneurs to access several strategic resources to successfully create their business. Among the most important resources we can cite financial assistance, logistical support, training in management techniques, legal help, technical or technological assistance for the product itself, market study and feasibility, the recommendation and the legitimacy of the support structure to give credibility to the project and, finally, the emotional and moral support Imikirene K [55]. We can conclude that support structures increase the entrepreneurial intention of entrepreneurs.

With these considerations in mind, the following assumptions can be made:

Hypothesis 2: Formal social networks positively influence women's entrepreneurial intention

H2.1: Women's access to support organizations positively influences their entrepreneurial intention.

H2.2: Women's membership in at least one association of entrepreneurs has a positive impact on their entrepreneurial intention.

Research Methodology

The sample

The representativeness of the sample depends on the adopted sampling method; whereas, the precision of the results obtained during an opinion poll depends on the size of the sample [56]. Thus, our sample in the study includes 100 Tunisian female entrepreneurs.

Data collection

To collect the data, we used a structured questionnaire administered between May 2024 and February 2025. Prior to distributing the questionnaire to a larger sample, a pre-test was conducted with a small group of female entrepreneurs (N = 10). The purpose of this pre-test was to gather feedback and recommendations on both the content and the format of the questionnaire.

The initial version of the questionnaire was tested on ten female entrepreneurs who participated in the World Day of Female Entrepreneurs, organized by the National Chamber of Female Entrepreneurs on May 16 and 17, 2024, in Sfax, Tunisia. Based on their feedback, several modifications were made, including rephrasing some questions and clarifying the language used in certain response options.

For the main data collection phase, we opted for face-to-face distribution of the finalized questionnaire. This approach facilitated direct interaction with respondents, allowing us to conduct informal interviews with several female business leaders, which helped us gather additional qualitative insights related to social networks.

The questionnaire covered several key topics: entrepreneurial intention, informal social networks, formal social networks, and characteristics related both to the businesses and to the Tunisian female entrepreneurs

The variables measurement

In accordance with our assumptions, the measurements of the endogenous and exogenous variables are defined below:

Measurement of the variable to explain: Entrepreneurial intention: In our research, we address female entrepreneurs to find out the extent to which the probability of starting their own business is influenced by social networks.

We measure the entrepreneurial intention of the woman by a single item using the likert scale from 1 to 5: «Before going into business, your intention to start your own business is: 1/very low, 2/low, 3/medium, 4/strong and 5/very strong ». This item is drawn from the work of Emin S [29].

The measurement of the explanatory variables: We classify social networks into two types: informal social networks (with strong ties) involving families and close friends, and formal social networks (with weak ties) constituting support organizations dedicated to business- creation and associations of entrepreneurs.

Lechner C, et al. [57] suggests that there is no concrete measurement of social networks. However, referring to the approaches of Premaratne [58], social networks were measured through a series of questions based on the nature of the social networks in which the respondents participated before creating their businesses. Some dichotomous questions were used to measure informal and formal networks.

Informal social networks (with strong ties): The measurement criteria of informal social networks according to Nkakleu R., et al. [59] are the existence of a close entrepreneur model, favorable subjective norms and the existence of close family and friendly support.

* The existence of a close model of entrepreneur

The measurement of a close model of entrepreneurs is done by the following item [29,60] The existence of models of entrepreneurs within the family and friends? (0/no: 1/yes).

* The favorable subjective norms

To measure the subjective norms, we ask female entrepreneurs to answer the following question: "Specify the opinion of the following people regarding your decision to start a business: parent, friend (s), spouse": (Please mark each possibility from 1 to 5 (1/Very unfavorable to 5/very favorable)) [29].

* The existence of close supports (family and friendly)

We will measure the existence of close supports before the creation of companies using two items according to Ozgen E and Baron RA [61].

« Before starting your business, did you get support from your families? Yes No».

« Before starting your business, did you get support from your close friends? Yes No ».

Formal social networks (with weak ties): The measurement criteria of formal social networks according to Nkakleu R, et al. [59], Tounès A [60] and Watson J [62] are:

- Resort or not to support organizations dedicated to creating companies before launching the business. (1 if the female entrepreneur resorts to support organizations before starting the company, 0 if not).

- Membership in at least one association of entrepreneurs dedicated to business creation before starting the company (1 if the female entrepreneur

belongs to at least one association of entrepreneurs before the start of the business, 0 if no) [19].

Results and Discussion

The sample descriptive analysis

This section presents the results obtained from SPSS version 26 regarding the socio-demographic characteristics of Tunisian female entrepreneurs.

As shown in (Table 1), the average age of female entrepreneurs in Tunisia falls between 31 and 35 years. A majority hold a high level of education, with 75.5% possessing a university degree (bachelor's degree, master's degree, or higher). Furthermore, 73.2% have participated in entrepreneurship training programs. Most respondents also have acquired professional experience prior to starting their own business, primarily within the same business sector they currently operate in (73.2%). Regarding marital status, 71.8% of the women are married, and 80.3% have up to two children.

Multi-varied analyses

To test the significance of the variables of informal social networks with strong ties in the women's entrepreneurial intention (Y1), we propose the following model 1:

$$Y_{1i} = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + U_{1i} / i = 1, \dots, 101$$

Where

Y_1 = Women's entrepreneurial intention

X_1 = The existence of a close model of entrepreneur

X_2 = The subjective norms

X_3 = Family support

X_4 = Close friends' support

The estimation of Model 1 was performed using ordered polytomous logistic regression. The empirical results are presented in (Table 2) below:

The use of an ordered polytomous logistic regression model yields expected results, demonstrating that the existence of a close entrepreneurial role model (X1), subjective norms (X2), family support (X3), and support from friends (X4) all have a positive and significant effect on the entrepreneurial intention of the Tunisian women in our sample [63-66].

The empirical findings indicate that having a close entrepreneurial role model significantly increases the entrepreneurial intention among these women. The professional activities of individuals within the immediate social environment of Tunisian women strongly influence their intention to engage in entrepreneurship. Thus, there is a close relationship between the presence of a nearby entrepreneurial role model and the perceived desirability of entrepreneurship among Tunisian women. This result aligns with previous research by Paturel R and Arasti Z [37] and Gasse Y and D'Amours A [40]. It suggests that the delayed entry of Tunisian women into entrepreneurship can be attributed, in part, to the scarcity of such role models or examples to emulate, thereby confirming Hypothesis H1.a.

Furthermore, the results reveal that favorable subjective norms significantly impact women's entrepreneurial intention. This outcome is consistent with the context of our sample, which consists of women living in an Arab-Muslim society where social norms exert strong influence on individual behavior, particularly for women. The supportive opinions of close relatives family members and friends positively enhance the entrepreneurial intention of the women in our study. This finding corroborates prior analyses by Birley S [10], Ajzen I [23] and Diochon M, et al. [41]. Tunisian female entrepreneurs clearly place considerable importance on the views of their parents, spouses, and friends regarding their business initiatives. Consequently, subjective norms play a crucial role in shaping the entrepreneurial intentions of Tunisian women, thus confirming Hypothesis H1.b.

Table 1. The sociodemographic characteristics of the respondents.

		Percentage	Cumulative Percentage
Age of the Entrepreneur	Less than 25 years	36.6	36.6
	Between 25 and 30 years	19.7	56.3
	Between 31 and 35 years	38.0	94.4
	between 36 and 40 years	2.8	97.2
	Between 41 and 50 years	2,8	100.0
	Total	100.0	
	Bac	11.3	11.3
	Bac+1	2.8	14.1
	Between 41 and 50 years	2.8	100.0
	Total	100.0	
Education Level	Bac	11.3	11.3
	Bac+1	2.8	14.1
	Bac+2	8.5	22.5
	Bac +3	11.3	33.8
	Bac+4	29.6	63.4
	Bac+5 or more	36.6	100.0
	Total	1000	
Professional Experience	Yes	73.2	73.2
	No	26.8	100.0
Marital Status	Unmarried	12.7	12.7
	Divorced	12.7	25.4
	Widow	2.8	28.2
	Married	71.8	100.0
	Total	100.0	
Number of Children	Without children	26.8	26.8
	with 1 child	19.7	46.5
	With 2 children	33.8	80.3
	Avec 3 enfants	15.5	95.8
	More than 3 children	4.2	100.0
	Total	100.0	

Table 2. Multi-varied analysis of model 1.

The Dépendent Variables	Model 1 Coefficient (Prob)
X_1	2.163583 (0.0098)*
X_2	1.272232 (0.0003)*
X_3	0.834458 (0.0189)*
X_4	1.04219 (0.0493)*
R^2	0.329903

Also, the existence of family and friendly support before the creation of the company increases the intention of the Tunisian women, who are involved in our sample, to start a business. This agrees with that of the authors Zghal N [47] and Sequeira J, et al. [53], so, the sub-assumptions H1.c and H1.d are confirmed (Table 3).

We find that informal social networks with strong ties play a key role in women's entrepreneurial intention.

In order to test the effect of the formal social network variables on women's intentions, we suggest testing the following model 2:

$$Y1_i = \beta_0 + \beta_5 X5_i + \beta_6 X6_i + U1_i / i = 1, \dots, 101$$

Where

$Y1_i$ = Women's entrepreneurial intention

$X5_i$ = Access to support organizations dedicated to business creation

$X6_i$ = Affiliation to at least one association of entrepreneurs

The estimation of model 2 above by the ordered polytomous logistic regression method gives us the empirical results presented in (Table 4) below:

The empirical results show that the formal variables expressed by the official support organizations dedicated to the creation of enterprises like the API, the business center, the startup incubator, the UTICA ($X6$) and the membership in associations of entrepreneurs ($X7$) have a significant effect on the entrepreneurial intention. This result contradicts that of Zghal N [47] and Imikirene K [55]. This confirms the two sub-hypotheses H2.a and H2.b and hypothesis 2.

Indeed, the introduction of the explanatory variables of informal and formal social networks allows us to specify the following model 3:

$$Y1_i = \beta_0 + \beta_1 X1_i + \beta_2 X2_i + \beta_3 X3_i + \beta_5 X5_i + \beta_6 X6_i + U1_i / i = 1101$$

The estimation of model 3 by the ordered polytomous logistic regression gives us the empirical results presented in the following (Table 5):

Table 3. Mult-varied analysis of model 2.

The Dependent Variables	Model 2 Coefficient (Prob)
X_5	1.776684 (0.0000)*
X_6	0.927938 (0.0446)*
R^2	0.24

Table 4. Multi-varied analysis of model 3.

The Dépendent Variables	Model 1 Coefficient (Prob)
X_1	1.609096 (0.0012)*
X_2	1.61482 (0.0000)*
X_3	1.007870 (0.0075)*
$3X_4$	0.97216 (0.0372)*
X_5	1699113 (0.0001)*
X_6	1.620978 (0.0016)*
R^2	0.46345

Table 5. The marginal effects of the business intention model.

Explanatory Variables	X_1	X_2	X_3	X_4	X_5	X_6
The marginal effect	0.24	0.23	0.20	0.19	0.16	0.14
Prepared by the author (2025)						

Prepared by the author (2025)

The empirical results found are much better in terms of the significance of the variables as well as in terms of the model performance. They show that all the variables of informal and formal social networks have a positive and significant effect on the entrepreneurial intention of Tunisian women.

The marginal effects analysis

In order to improve the results and to determine the effect of an explanatory variable on the probability that a woman's intention increases, after the increase of a unit of the exogenous, we draw the marginal effects.

Generally, to measure the sensitivity of the probability with regard to the explanatory variables, we calculate the marginal effect. When the explanatory variables are continuous, the marginal effect is equal to the derivative of the estimated probability with respect to the components of xi.

In our study, to derive the effect of an explanatory variable from the probability that the entrepreneurial intention of a woman i increases, after the increase of a unit of the exogenous, we calculate the marginal effect. The calculation of the marginal effect can be implemented by the Bartus margin command (2005) or manually calculated in stata on the basis of the Norton formula (2004).

Using the Stata software allows us to estimate the following marginal effects:

We find that the marginal effects of the explanatory variables are positive and consistent with the facts. Indeed, the increase in one unit of the variable X_1 , expressing the existence of a close entrepreneur model, boosts the probability of entrepreneurial intention among the women in our sample by 0.24.

Equally important, an increase of one unit of the variable X_2 , expressing the subjective norms, increases the probability of intention of Tunisian women to start a business by 0.23. This means that favorable subjective norms influence directly and significantly the intention to launch a business. Also, an increase of one unit of the variables X_3 and X_4 , respectively indicating the receipt of family and friendly support, increases the women's probability of

intention to start a business by 0.20 and 0.19.

Similarly, an increase of one unit of the variables X_5 and X_6 , expressing women's access to support organizations and their membership in at least one association of entrepreneurs, respectively increases their probability of entrepreneurial intention by 0.16 and 0.14.

These results show that the variables related to informal social networks have a stronger influence on the entrepreneurial intention of Tunisian women than the variables related to formal social networks.

Conclusion

The importance of social networks in forming and developing entrepreneurial intention has been the focal point of many studies dealing with entrepreneurship. Despite the growing importance of this concept, a few researches have tried to find how social networks may influence women's entrepreneurial intention. This paper has attempted to contribute to the existing literature interested in women's entrepreneurship, the role and the advantages of the nature of social networks in forming and developing the entrepreneurial intention of Tunisian women. Actually, it analyzed the impact of informal social networks with strong ties and formal social networks with weak ties on the entrepreneurial intention of Tunisian women. The result highlights, on the one hand, that both types of social networks have a positive and significant effect on women's entrepreneurial intention. On the other hand, it shows that the variables of informal social networks such as the existence of a close entrepreneur model, the favorable subjective norms and the support from family and friends increase more strongly the intention of women to start their business than the variable of formal social networks such as women's access to support organizations, before the creation of their companies, and their affiliation to at least one association of entrepreneurs.

Thus, we can conclude that the entrepreneurial intention of Tunisian women is heavily dependent on informal social networks with strong ties. Informal social networks play a crucial role in the formation and development of Tunisian women's entrepreneurial intention. This paper has just focused on

the first phase of the business creation process. Yet, the future studies should examine the impact of informal social networks with strong ties and formal social networks with weak ties on the business growth and development as the third phase of the entrepreneurial process.

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