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Exploring the Factors Influencing Women Entrepreneurship in Saudi Arabia: A Strategic Plan for Sustainable Entrepreneurial Growth

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Abstract: Saudi Vision 2030, a strategic framework aimed at diversifying the economy and enhancing societal inclusivity, aligns with the UN's Sustainable Development Goals (SDGs) by promoting gender equality and sustainable economic growth. Sustainability is central to fostering women's entrepreneurship, as it drives social equity, economic diversification, and innovation, elements which are crucial to sustainable development. While the existing literature has primarily focused on women's entrepreneurship in the Western world, limited attention has been given to its development in the Global South, particularly in Saudi Arabia. As a nation undergoing transformative social, cultural, and economic shifts, women entrepreneurs play a critical role in aligning entrepreneurial efforts with global sustainability goals. This research investigates the factors influencing Saudi women to become entrepreneurs, specifically examining the factors that inspire or hinder them from creating their own ventures. Drawing upon cognitive and social capital theories, which have proven their soundness in the existing literature, this research utilizes a dataset of 1715 women entrepreneurs analyzed through binomial logistic regression. The findings indicate that social desirability, relational capital, experience as angel investors, age, income, and education significantly increase the likelihood of women's entrepreneurship. By contextualizing women's entrepreneurship within Saudi Arabia's evolving societal and economic landscape, this research highlights their potential as drivers of inclusive growth and sustainable economic empowerment. Furthermore, the research outlines strategies to enhance women's entrepreneurial participation, contributing both to the entrepreneurship literature and the realization of Saudi Vision 2030.

Keywords: cognition; social capital; entrepreneurship; Saudi Arabia; Saudi Vision 2030

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1. Introduction

Promoting women's entrepreneurship is crucial for achieving sustainable development by fostering gender equity, economic diversification, and innovation [1–3]. While research acknowledges the significant potential of women entrepreneurs, it predominantly focuses on Western contexts, neglecting the unique socio-cultural and economic dynamics of non-Western regions such as Saudi Arabia. This study bridges this critical gap by examining

the entrepreneurial potential of Saudi women within the transformative context of Saudi Vision 2030, employing an integrative framework to identify key enablers and barriers.

Women constitute half of the global population and possess immense potential to drive economic growth and social transformation [4–8]. Recognizing this potential, global economies, including Saudi Arabia, are increasingly emphasizing the importance of women's participation in entrepreneurial activities as a pathway to sustainable economic empowerment [6]. Recent studies [9–12] underscore the pivotal role of women's entrepreneurship in holistic development. However, the underutilization of women's entrepreneurial capacity can lead to untapped human capital, lower living standards, and inefficiencies in policy implementation [13–16]. Consequently, empowering women entrepreneurs is not merely an economic imperative but also a critical strategy for achieving sustainability [2].

While extensive research has been conducted on women-led businesses, a significant portion of this research focuses on business performance in developed Western contexts [7,14,17–19]. Comparatively less attention has been given to venture creation and entrepreneurial propensity among women, particularly in non-Western regions like Saudi Arabia, which exhibit unique socio-cultural and economic dynamics. Despite higher numbers of women-led ventures in the developing world [20], gender disparities in entrepreneurial activity persist, further highlighting the need to address these research gaps [21,22]. Saudi Arabia's ongoing reforms under Vision 2030, aimed at enhancing women's rights and promoting entrepreneurship, underscore the urgency required in regard to investigating women's entrepreneurship within this evolving context. Addressing this research gap aligns with global sustainability goals, as fostering women's entrepreneurial initiatives contributes to equitable economic progress and social inclusion.

The existing literature on entrepreneurship in emerging economies has often explored themes such as training, skills development, and team dynamics [22–24]. However, these studies frequently suffer from hindsight and survival biases by focusing exclusively on established entrepreneurs, neglecting potential entrepreneurs who could drive future growth [25]. Furthermore, while numerous frameworks have been used to study entrepreneurship, recent advancements advocate for an integration of theories, particularly cognitive and social capital perspectives, to gain a more comprehensive understanding of venture initiation processes [22,26–29].

This research contributes to the existing literature on women's entrepreneurship with a specific focus on sustainability. By shifting attention from Western contexts to Saudi Arabia—a nation undergoing transformative socio-cultural and economic changes under Vision 2030—it emphasizes the unique regional dynamics that influence entrepreneurial action. Investigating the entrepreneurial potential of women in the Middle East and North Africa (MENA) region bridges a critical gap in the literature and aligns with sustainability goals by fostering gender equity and economic diversification.

The integration of cognitive and social capital frameworks is particularly relevant to Saudi Arabia's unique context. Cognitive capital, encompassing entrepreneurial self-efficacy and risk perception, is significantly influenced by cultural norms and the evolving role of women in Saudi society. Social capital, represented by networks and community support, plays a vital role in a society where family and tribal affiliations significantly impact opportunities. By applying these frameworks to the entrepreneurial journeys of Saudi women, this study provides a nuanced understanding of how socio-cultural and structural factors enable or constrain venture creation. These insights are crucial for developing and implementing policies and interventions that effectively support women entrepreneurs and align with local realities.

Aligned with Saudi Vision 2030, this research offers actionable insights for fostering women's entrepreneurship by addressing structural and perceptual barriers, including

risk perception and social network limitations. These findings inform the development of evidence-based policies that promote sustainable economic empowerment and inclusive growth. Utilizing Global Entrepreneurship Monitor (GEM) data from over 1700 Saudi women and employing a logistic regression analysis ensures methodological rigor and generalizability. This study underscores the transformative potential of women entrepreneurs in achieving sustainability through equitable opportunities, economic inclusion, and long-term development.

The remainder of this paper is structured as follows: the next section discusses the theoretical framework and hypotheses (see Figure 1); the Section 3 details the research methodology, including the variables selected and the analytical technique; the Section 4 presents the results and hypothesis testing; the Section 5 discusses the findings and their implications and presents concluding remarks.

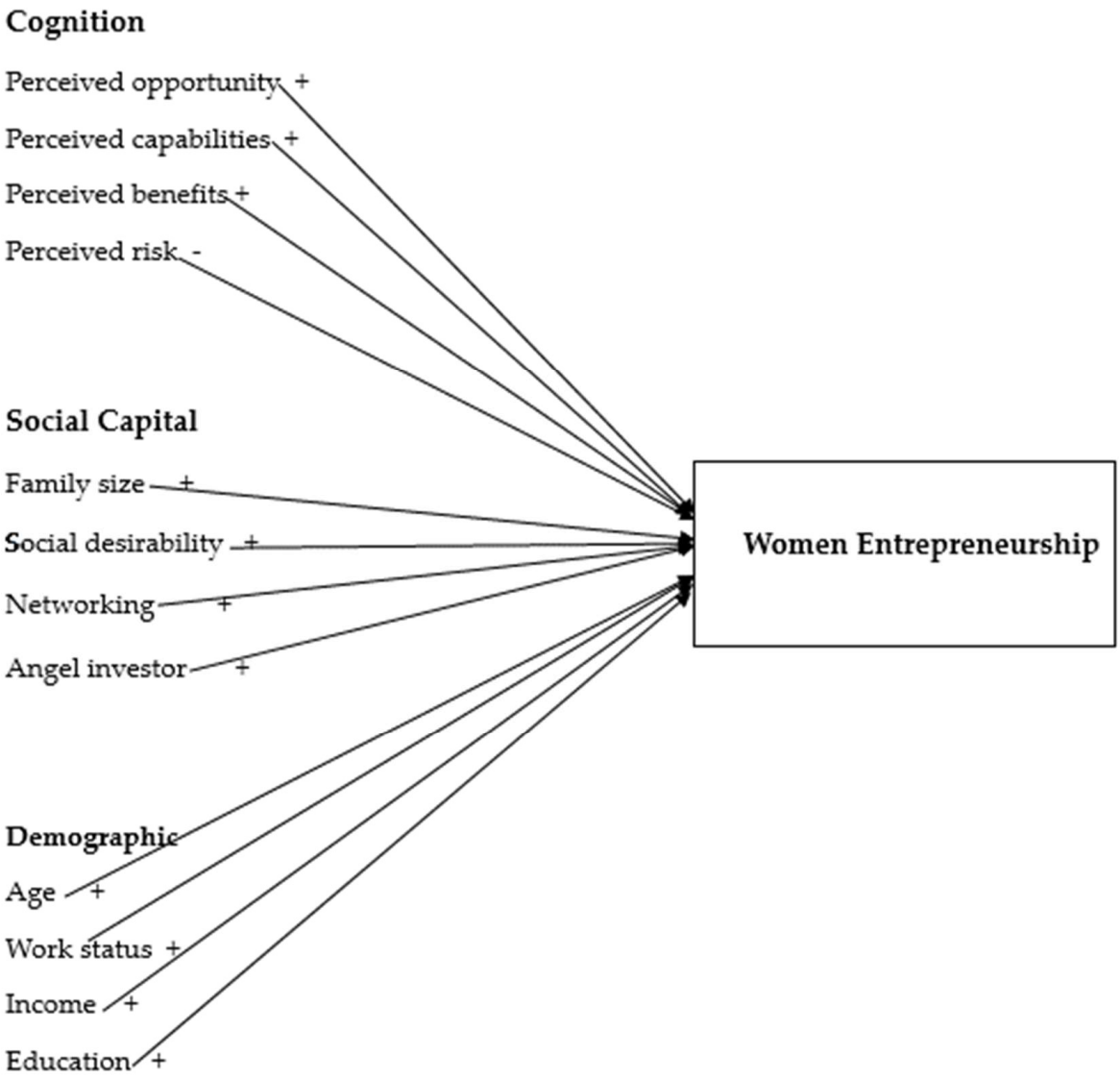


Figure 1. Hypothesized relationship among the variables.

2. Theoretical Framework and Hypotheses

2.1. Cognitive Theory of Entrepreneurship

Entrepreneurship involves the decision to embark on a new venture [30], a process that necessitates significant cognitive processing. Research on cognition in entrepreneurship has primarily focused on the thought processes of entrepreneurs [31–34], specifically

the cognitive frameworks employed by entrepreneurs to evaluate, assess, and make decisions, such as opportunity assessment, venturing decisions, and the implementation of growth strategies.

Initially, entrepreneurship scholars explored individual traits and characteristics, such as locus of control, risk-taking propensity, and other motivational factors [17,30,35,36]. Subsequently, numerous scholars integrated these traits with demographic variables [21,25,37], leading to a more nuanced understanding of the role of traits and demographics in influencing entrepreneurial activity. However, not all entrepreneurship scholars concur with this approach to explaining venturing factors. Some have raised concerns regarding its methodology, while others have questioned its predictive power [38].

Meanwhile, the cognitive theory of entrepreneurship gained significant momentum due to its ability to explain mental processes such as perception and attitude [28,29,39,40]. Entrepreneurs identify, evaluate, and exploit opportunities to generate profits [41] through cognitive processing [32]. The study of perception has yielded crucial insights into the understanding of entrepreneurs [40,42]. Perception is a subjective interpretation of reality that is influenced by an individual's background and environment [40]. It is a subjective interpretation of a real situation and lacks objectivity [43]. This study utilizes four key categories of perception (perceived opportunity, perceived capabilities, perceived risk, and attitude) which are hypothesized to significantly influence women's entrepreneurship in Saudi Arabia.

2.1.1. Perceived Opportunity

Individuals with an entrepreneurial mindset are more adept at identifying and capitalizing on business opportunities [44]. References [41,45,46] characterized entrepreneurship as a process of discovering, analyzing, and exploiting opportunities. Consequently, perceiving opportunities is a crucial component of entrepreneurial action [47]. Given the varying levels of social interaction and the differing statuses of males and females in developing economies, women may perceive opportunities differently than their male counterparts [48]. This gender disparity suggests that women and men may recognize entrepreneurial opportunities differently due to their distinct perspectives [48]. Studies have empirically demonstrated variations in entrepreneurial interest across genders [49]. Entrepreneurship scholars have observed that patriarchal societies often limit women's access to entrepreneurial opportunities compared to men [26,27]. Some authors have suggested that women are not afforded the same opportunities as men due to the prevailing stereotype that entrepreneurship is primarily a male domain. Based on these observations, we present the following hypothesis:

H1: *Women who are able to perceive opportunities are more likely to become entrepreneurs in Saudi Arabia.*

2.1.2. Perceived Capabilities

Existing research has demonstrated that perceived capabilities play a significant role in women's entrepreneurship. Empirical evidence suggests a strong association between perceived capabilities and entrepreneurial intention and action [50]. Perceived capabilities, also known as self-efficacy, refer to an individual's belief in their ability to successfully perform a specific task. Scholars have explained that self-efficacy drives an individual's belief that they can achieve their goals. Women who perceive themselves as capable of acting on feasible ideas are more likely to become entrepreneurs. Scholars like [21] have empirically tested and found a robust correlation between perceived capabilities and entrepreneurship. Moreover, numerous empirical studies, systematic literature reviews, and meta-analyses

have confirmed a direct link between perceived capabilities and entrepreneurship [51]. Based on these findings, we present the following hypothesis:

H2: *Perceived capabilities have a significant positive impact on women's entrepreneurial intentions in the Saudi Arabian context.*

2.1.3. Attitude

According to the theory of planned behavior, attitude influences intention and subsequent action [52], including entrepreneurial intention and action [53]. Ajzen ([52], p. 188) defines attitude as "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question". The 'attitude towards entrepreneurship' refers to the perceived desirability of self-employment relative to organizational employment. Consequently, a positive attitude towards self-employment signifies that the individual favors self-employment over a salaried job [54]. This concept, akin to expectation, assesses judgments regarding the personal desirability of engaging in a particular activity. This attitude is contingent upon beliefs and expectations concerning the personal consequences of the outcomes resulting from the behavior, serving as a measure of construct validity. Therefore, we propose the following hypothesis:

H3: *Entrepreneurship desirability has a significant positive influence on women's entrepreneurial intentions in Saudi Arabia.*

2.1.4. Perceived Risk

Several scholars have argued that entrepreneurs are not inherently risk averse due to the nature of their activities, which play a crucial role in societal and economic development [55]. Opportunity recognition and exploitation inherently involve risks and the possibility of failure. Therefore, a deliberate consideration of these probabilities is essential for individuals making entrepreneurial decisions [56]. Risk perception is associated with the evaluation of threats to an individual's ability to achieve important goals [57]. It is an emotional response related to entrepreneurial decision-making. Numerous studies have demonstrated that risk perception impacts entrepreneurial actions [58]. Risk perception has been characterized as negative emotions [55], a sense of shame, an inability to achieve targets [59], or an attitude towards risk [60] in the existing literature. These findings suggest that risk perception represents an emotional response to a perceived threat. According to cognitive theory, any situation where the potential outcomes are perceived as negative is considered a threat [34]. A significant body of entrepreneurship research indicates that lower risk perception enhances the likelihood of new venture creation [21]. Based on these findings, we formulate the following hypothesis:

H4: *Perceived risk has a significant negative influence on women's entrepreneurial intention in Saudi Arabia.*

2.2. Social Capital Theory of Entrepreneurship

The role of social capital in understanding entrepreneurial action has been widely acknowledged in recent decades [61–64]. Social capital facilitates entrepreneurs' access to crucial resources necessary for launching new businesses [65]. Considering the significance of social capital, this study focuses on two key dimensions: angel investors and social networks. These factors have demonstrated their effectiveness in predicting entrepreneurial action [50,66–68].

2.2.1. Family Social Capital

Family social capital emphasizes the crucial role of the family as a fundamental institution for transmitting social capital, defined as the capacity to gain advantages through social connections. Social capital resides within relationships and social structures, enabling actions within these networks. It contributes to both expressive outcomes, such as life satisfaction, and instrumental outcomes, such as improved employment opportunities. Family capital, a distinct form of social capital, arises from interactions within the family unit and fosters mutual interdependence and solidarity. Researchers contend that family capital plays a more vital role than non-family social capital in influencing professional outcomes [1,69]. It provides access to labor and fosters trust within group settings, making family members reliable partners for tasks involving risk or confidentiality.

Entrepreneurship scholarship demonstrates that family capital significantly supports entrepreneurial ventures. For example, Indian weavers have effectively leveraged family capital for innovation and credit recovery. Therefore, family capital plays a crucial role in supporting entrepreneurship in emerging economies.

H5: *Family social capital has a significant positive impact on women's entrepreneurial intentions in Saudi Arabia.*

2.2.2. Social Networks

Entrepreneurs can benefit significantly from the experiences of other entrepreneurs when starting a new business. Networking with other entrepreneurs fosters an entrepreneurial mindset and enhances an individual's ability to navigate the challenges associated with entrepreneurship [53]. Numerous studies have empirically supported the role of networking as an enabler of entrepreneurial action [21,70]. Shepherd and colleagues [71], drawing on role theory, argued that relationships with other entrepreneurs increase the likelihood of new venture creation. Tsai and Ghoshal [64] found that new knowledge flows through social capital bridges. Access to knowledge enhances an individual's ability to identify opportunities, subsequently leading to new venture creation [72]. Entrepreneurship scholarship suggests that relationships between entrepreneurs facilitate the acquisition of novel ideas, consequently enabling those with extensive networks to more readily establish new ventures [68]. For women entrepreneurs, the recent literature has indicated that networks with other entrepreneurs can significantly contribute to new venture creation [73]. Furthermore, women entrepreneurs often require specific technical skills that can be acquired through interactions with established entrepreneurs. Honig and Honig [62] argued that social capital facilitates access to entrepreneurial resources and encouragement. Therefore, we present the following hypotheses:

H6: *Networking has a significant positive influence on women's entrepreneurial intentions in Saudi Arabia.*

2.2.3. Cognitive Social Capital

Opportunities often arise from human interactions, resulting from the asymmetrical distribution of knowledge among individuals. In this exchange of knowledge through social contacts, the cognitive dimension of social capital represents the shared ideals and collective vision among the participants involved in information sharing [64]. These shared values facilitate social support, thereby enhancing information transmission among individuals. Moreover, these prevalent methods of contextual perception assist individuals in interpreting novel insights [63]. The societal perception that entrepreneurship is a desirable career path enhances individuals' awareness of entrepreneurial potential, subsequently motivating them to pursue entrepreneurship. Previous studies have demonstrated that

ideological frameworks influence the entrepreneurial behaviors of younger generations of Saudi Arabian women [21]. Previous generations of women who have experienced restrictive productivity policies may perceive new farming and business methods as regressive, hindering these endeavors. Consequently, we propose the following hypothesis:

H7: *Social desirability towards entrepreneurship has a significant positive influence on women's entrepreneurial intentions in Saudi Arabia.*

2.2.4. Informal Investors

Individuals with prior experience in angel investing or investing in ventures led by relatives or acquaintances exhibit a significantly higher propensity to initiate new endeavors. Numerous studies have found that prior experience as informal or angel investors generally fosters a more favorable disposition towards entrepreneurship [21,74]. The involvement of business angels or informal investors in early decision-making processes, whether through investment or informal financing of other enterprises, cultivates a greater propensity for risk-taking among individuals compared to those without such prior experience. Angel investors frequently initiate or provide backing to new enterprises [75,76]. Furthermore, role theory posits that angel investors become familiar with the experiences of other entrepreneurs and their respective environments. Consequently, their direct experiences, close relationships, and heightened awareness expose them to the success stories of other entrepreneurs, thereby instilling confidence in their own ability to successfully establish new companies.

The 'network theory' posits that individuals who have informally invested in or supported other businesses as angel investors are likely to have easier access to the resources and critical information necessary for initiating and sustaining a business. An empirical study suggests that female company leaders tend to utilize both internal and external resources less frequently. Social capital and the external institutional environment influence the propensity for internal finance both negatively and positively [77]. Therefore, the following hypothesis is proposed:

H8: *Prior informal investments in other businesses have a significant positive influence on women's entrepreneurial intentions in Saudi Arabia.*

3. Materials and Methods

3.1. Theoretical Framework

This study leverages cognitive and social capital frameworks to interpret key entrepreneurial behaviors and decisions in Saudi Arabia. The chosen variables, such as "Perceived capabilities" and "Social networks", directly correspond to the constructs of cognitive and social capital, respectively. These variables capture the interplay between individual confidence, social support systems, and entrepreneurial decision-making, particularly within the context of Saudi Arabia's unique socio-cultural dynamics. This integration ensures a culturally sensitive application of theoretical constructs to the dataset.

3.2. Data Source

Data for this research were obtained from the Adult Population Survey (APS) of the Global Entrepreneurship Monitor (GEM) Database for the year 2020. GEM serves as a globally recognized representative for extensive survey-based research on entrepreneurship, encompassing attitudes, behaviors, and entrepreneurial ecosystems. Methodological information regarding the data collection process can be found at https://www.gemconsortium.org/wiki/1599 (accessed on 11 December 2024).

The GEM framework was significantly enhanced by the work of Reynolds et al. [78], enabling the measurement and analysis of various facets of the entrepreneurship phenomenon. As evidenced by several studies [9,75,79–82], GEM offers a robust theoretical framework that facilitates the collection of diverse, substantial, reliable, and comparable data on the entrepreneurial environment and activity.

We accessed the APS-2020 data from the GEM website, specifically utilizing data from 2020 due to the three-year lag in public availability of GEM APS data (details available at https://www.gemconsortium.org/data, accessed on 3 November 2024). The APS dataset comprises a total of 141,403 responses, with 4027 responses being specific to Saudi Arabia. We extracted the Saudi Arabian data into a separate file using SPSS version 22.0.

3.3. Additional Considerations

Table 1 presents the current state of the female labor market in Saudi Arabia.

Table 1. Female labor market in Saudi Arabia.

Indicator	Data/Trends	Source
Female Labor Force Participation Rate	35%+ (recent years, up from ~20% in 2018)	[12,83]
Employment Rate: Full-Time vs. Part-Time	~70% full-time, ~30% part-time	[83,84]
Major Industries	Education (40%), Healthcare (30%), Public Admin (20%)	[83]
Freelance Work	Increasing; ~15% of employed women	[85]

From the APS-2020 dataset, 469 variables were available, out of which 12 were selected based on their direct relevance to the study's objectives. These variables capture critical aspects such as perceived opportunities, risk, and social capital, which are central to understanding entrepreneurial behavior within the Saudi context. The variable selection process ensured alignment with the study's theoretical frameworks and hypotheses, as detailed in Table 2.

The GEM database's global standardization and inclusion of nascent entrepreneurial activities provide a comprehensive and unbiased foundation for this study. Its ability to identify individuals at various stages of entrepreneurship minimizes selection bias, ensuring the reliability and generalizability of findings.

GEM categorizes entrepreneurs into three classifications according to the phase of their entrepreneurial endeavor. First, total early-stage entrepreneurial activity (TEA) denotes persons who are in the process of initiating a new business or proprietors of a nascent enterprise [78]. Second, "established business EB owners are persons who have created and maintained firms that have disbursed pay or salaries for over 42 months". Third, intentional entrepreneurs are those who are either in the process of launching a business at the time of the interview or are actively contemplating the establishment of a firm within the next three years.

The GEM database offers several advantages over collecting new data for our investigation. GEM is one of the most comprehensive and standardized global databases available. It consists of uniform data types across numerous countries, making it a truly global dataset. GEM not only collects data on individuals' current business ventures but also encompasses a wide range of explanatory factors that can shed light on various entrepreneurial phenomena. Crucially, GEM identifies individuals in the nascent stages of entrepreneurship, thereby mitigating the selection bias that arises when studies utilize data that exclude entrepreneurs who may have prematurely ceased their efforts during the data collection phase. Therefore, we contend that the GEM database is well suited for this investigation.

Table 2. Description of variables and measures.

Variable	Description	Type
	Dependent variable	
Women entrepreneurship	"Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?" It is denoted by 1 and 0 in the other case.	Binary
	Independent variables	
Perceived opportunities	"where the individual who sees good opportunities to start a firm in the area is denoted by the value 1."	Binary
Perceived risk	"if she indicates that fear of failure would prevent them from starting up a business, then this case is denoted by 1 value."	Binary
Perceived capabilities	"if she has the adequate knowledge, essential skills and minimum experience to set up a business, it is denoted by value 1 and 0 in the other case."	Binary
Professional Attraction Attitude	"In your country region, most people believe that starting up a business is an attractive profession."	Binary
Family social capital	"Number of family members living in a residence"	Binary
Social networks	"if the individual personally knows someone who has started up their own business in the last 2 years, it is denoted by the value of 1 and 0 in the other case."	Binary
Cognitive social capital	"In your country region, a person who successfully starts up a new business gains high social status and prestige."	Binary
Informal Investors	"which takes value 1 if the individual has provided personal funds to help other people start a business in the past 3 years, excluding investment in Bonds shares or mutual funds, 0 in the other case."	Binary
Age	"Age of individual"	Numerical
Education	"if the individual has primary education or less, it is denoted by the value of 1 and 0 in the other case"	Categorical
Employment	"If an individual is working, then denoted by value 1 and 0 in the other case."	Categorical
Income	"The response categories were "lowest 33, middle, and upper 33 percentile. The first income group was considered for reference category."	Categorical

3.4. Binary Logistic Regression Analysis

Binary logistic regression is one of the prominent statistical methods suitable for modeling binary outcome variables, such as success vs. failure or yes vs. no. In addition, it forecasts the probability of an event and offers both categorical predictions and insights into the likelihood of different outcome variables [86]. The method establishes a linear relationship between predictor variables and the log-odds of the outcome, enabling intuitive interpretation of how predictors influence event likelihood [87].

Moreover, the key strength of binary logistic regression is its flexibility in handling multiple predictors, whether continuous, categorical, or interaction terms. Unlike linear regression, it does not assume normality of predictors, making it robust to non-normal distributions. It employs maximum likelihood estimation MLE estimation and uses Omnibus test and pseudo-R-square for assessing model fitness [88].

In comparison to other regression methods, binary logistic regression is principally suited for binary outcome variables, avoiding problematic predictions like probabilities outside the 0–1 range, which can occur with linear regression [89]. Its results are interpreted through odds ratios, clarifying the effect of predictors. It balances simplicity and flexibility by accommodating transformations and interactions without overfitting, unlike complex models such as neural networks [90]. Usually supported by all statistical software, logistic regression is accessible and straightforward to execute [90]. Thus, we are using SPSS 22.0 version to run binary logistic regression for the analysis, as our dependent variable is binary and other variables are binary, categorical, and continuous.

4. Results

The Section 4 is divided into four parts, namely descriptive statistics (see Table 3), correlation (see Table 4), model fitness (see Tables 5 and 6), and binary logistic regression.

4.1. Descriptive Statistics

We employed descriptive statistics to contextualize the research findings and provide a detailed profile of the study sample.

Table 3. Descriptive Statistics.

Variables	N	Min	Max	Mean	S.D.
Women entrepreneurship	1676	0	1	0.31	0.462
Age	1714	18	64	36.73	10.758
Work status	1662	10	30	15.20	6.172
Income	1672	33	68,100	26,049.65	32,072.576
Education	1713	0	1720	732.71	644.112
Perceived opportunity	1697	1	5	4.13	1.076
Perceived capabilities	1698	1	5	3.97	1.159
Perceived benefits	1698	1	5	4.32	0.983
Perceived risk	1702	1	5	3.21	1.393
Family size	1708	2	12	5.07	1.487
Social desirability	1691	1	5	4.35	0.909
Networking	1710	0	3	0.93	0.992
Angel investor	1698	0	1	0.14	0.347
Valid N listwise	1527				

As illustrated in Table 3, 31% of respondents expressed an intention to start a business within the next three years. The mean age of participants was 36.73 years, with a broad range of 18 to 64 years and a standard deviation of 10.758, indicating a diverse age distribution. Respondents demonstrated optimism about local business opportunities, while a moderate mean score suggests that many felt adequately prepared to launch a business. A mean score of 4.32 highlights a strong interest in entrepreneurship as a career, though a score of 3.21 indicates that risk perception remains a significant concern. An average household size of five suggests that family dynamics might play a role in entrepreneurial decisions. A high societal respect for successful entrepreneurs is reflected in a mean score of 4.35. However, the data also revealed limitations in personal networks and financial support for entrepreneurship, with low mean scores of 0.93 for connections with other entrepreneurs and 0.14 for involvement in funding other businesses.

4.2. Correlation

The correlation matrix gives initial support for the hypotheses we proposed and provides a preliminary sustenance for regression analysis, as the r value is less than 0.6; hence, multicollinearity is not a problem. Table 4 shows the relationships between variables related to women's entrepreneurship and factors like age, work status, income, education, perceptions, family size, and networking.

The correlation matrix shows that networking has the highest correlation with female entrepreneurship, while age, work status, education, family capital, and risk have negative correlations with the entry of women into entrepreneurship.

Table 4. Correlation matrix.

		1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Women entrepreneurial intention	1												
2.	Age	−0.088 **	1											
3.	Work status	−0.181 **	0.017	1										
4.	Income	0.002	0.084 **	0.055 *	1									
5.	Education	−0.067 **	−0.009	−0.183 **	0.042	1								
6.	Perceived opportunity	0.045	0.038	0.037	0.066 **	−0.114 **	1							
7.	Perceived capabilities	0.078 **	0.006	−0.153 **	0.061 *	−0.075 **	0.463 **	1						
8.	Perceived benefits	0.065 **	0.012	0.007	0.070 **	−0.143 **	0.587 **	0.431 **	1					
9.	Perceived risk	−0.144 **	0.001	0.110 **	0.018	−0.038	0.153 **	0.024	0.160 **	1				
10.	Family size	−0.035	0.222 **	0.147 **	0.156 **	−0.078 **	0.082 **	0.021	0.030	0.003	1			
11.	Social desirability	0.113 **	0.031	−0.030	0.116 **	−0.167 **	0.462 **	0.432 **	0.595 **	0.143 **	0.026	1		
12.	Networking	0.223 **	0.034	−0.131 **	0.141 **	−0.019	0.034	0.104 **	0.037	0.078 **	−0.030	0.029	1	
13.	Angel investor	0.073 **	0.019	−0.088 **	0.086 **	0.050 *	0.075 **	0.078 **	0.043	0.005	0.044	0.051 *	0.006	1

**. Significance level is 0.01; *. Significance level is 0.05.

4.3. Model Fitness and Summary

4.3.1. Omnibust Test of Model Fitness

We ran an Omnibus test to check the model fitness. Table 5 shows that the model is a good fit, as the *p* value is lower at 0.000.

Table 5. Omnibus Tests of Model Coefficients.

		Chi-Square	Df	Sig.
Step 1	Step	225.281	14	0.000
	Block	225.281	14	0.000
	Model	225.281	14	0.000

4.3.2. Model Summary

In Table 6, the value 1679.036 indicates the fit of the logistic regression model to the data.

A smaller value of −2 Log Likelihood suggests a better fit of the model. The results indicate that the logistic regression model explains a modest amount of variability in the dependent variable 19.2% using Nagelkerke R^2.

Table 6. Model summary.

Step	−2 Log Likelihood	Cox And Snell R Square	Nagelkerke R Square
1	1679.036	0.137	0.192

4.4. Binary Logistic Regression and Hypotheses Testing

A logistic regression analysis was employed to test our hypotheses (see Table 7). The findings revealed several significant relationships. Firstly, age demonstrated a significant negative association with women's entrepreneurship, indicating that, as age increases, the likelihood of engaging in entrepreneurial activities decreases. The odds ratio (ExpB = 0.979) suggests a slight reduction in the odds of entrepreneurship for each additional year of age. Secondly, work status emerged as a strong predictor of entrepreneurial pursuits. Students

and retirees were found to be 2.32 times more likely to become entrepreneurs compared to other groups. Conversely, full-time employment did not significantly impact the likelihood of entrepreneurship. Thirdly, income level appeared to influence entrepreneurial decisions. Middle-income individuals were significantly less likely to engage in entrepreneurship (ExpB = 0.695), potentially due to financial constraints. While high-income individuals also exhibited reduced odds, this effect was not statistically significant. Finally, education level showed a significant positive association with women's entrepreneurship, suggesting that higher levels of education increase the likelihood of entrepreneurial activity. However, the effect size of education on entrepreneurship was minimal (ExpB = 1.000).

Table 7. Logistic regression.

	B	S.E.	Wald	df	Sig.	ExpB
I. Demographic						
Age	−0.021	0.006	11.498	1	0.001	0.979
Work status			25.223	2	0.000	
-Student/retired	0.842	0.291	8.360	1	0.004	2.321
-Full-time	0.229	0.299	0.585	1	0.444	1.257
Income Level			5.785	2	0.055	
-Middle income	−0.363	0.154	5.549	1	0.018	0.695
-High income	−0.232	0.147	2.485	1	0.115	0.793
Education	0.000	0.000	7.572	1	0.006	1.000
II. Cognition						
Perceived opportunity	0.023	0.073	0.096	1	0.757	1.023
Perceived capabilities	−0.121	0.063	3.691	1	0.055	0.886
Perceived benefits	0.111	0.087	1.655	1	0.198	1.118
Perceived risk	−0.303	0.044	46.641	1	0.000	0.739
III. Social capital						
Family social capital	−0.025	0.044	0.337	1	0.561	0.975
Social desirability	0.324	0.090	12.949	1	0.000	1.383
Relational capital	0.580	0.063	85.610	1	0.000	1.786
Angel investors	0.451	0.169	7.160	1	0.007	1.570
Constant	−1.322	0.523	6.398	1	0.011	0.267

Our first hypothesis proposed that women who are able to perceive opportunities are likely to start a business in Saudi Arabia. The results show that perceived opportunity B = 0.023, Sig. = 0.757 has no significant relationship with entrepreneurship $p > 0.05$. Hence, we reject this hypothesis.

The second hypothesis projected that perceived cognitive capabilities have a strong impact on women's decisions to start businesses in Saudi Arabia. The finding shows that perceived capabilities B = −0.121, Sig. = 0.055 have a marginally significant negative relationship and suggests that higher self-perceived capabilities may slightly reduce entrepreneurship likelihood. This could reflect overconfidence in other career paths. Therefore, we do not accept this hypothesis.

In regard to personal attitude, we hypothesized that women who consider entrepreneurship as a desirable career choice are more likely to become entrepreneurs in Saudi Arabia. Logistic regression shows that personal attitude B = 0.111, Sig. = 0.198 does not significantly predict entrepreneurship likelihood $p > 0.05$. Thus, we discard this hypothesis.

We also anticipated that perceived risk negatively affects the entrepreneurship of Saudi Arabian women. The findings reflects that perceived risk B = −0.303, Sig. = 0.000 has a significant negative relationship with entrepreneurship. This result indicates that higher risk perception substantially decreases entrepreneurship likelihood. The odds ratio ExpB = 0.739 shows a strong deterrent effect. Thus, we accept this hypothesis.

Our fifth hypothesis posited that family social capital has a positive impact on female entrepreneurs in Saudi Arabia. The result reflects that family social capital B = −0.025, Sig. = 0.561 has no significant effect on entrepreneurship likelihood $p > 0.05$. Therefore, this hypothesis is rejected.

A sixth hypothesis was planned, namely that Saudi Arabian women are more likely to start businesses when they know other entrepreneurs. The findings suggest that B = 0.324, Sig. = 0.000. A significant positive relationship shows that individuals valuing societal approval are more likely to engage in entrepreneurship ExpB = 1.383. Hence, we support this hypothesis.

We also proposed that Saudi Arabian women are more inclined towards entrepreneurship when they feel entrepreneurial activity is socially recognized in their country in the seventh hypothesis. The result shows that networking B = 0.580, Sig. = 0.000 is a very strong predictor, as individuals with strong networks are twice as likely to engage in entrepreneurship as others ExpB = 1.786. Hence, we accept this hypothesis.

Our last hypothesis predicted that informal investments in other businesses positively affect women's inclination towards entrepreneurship in Saudi Arabia. Logistic regression indicated that being an angel investor B = 0.451, Sig. = 0.007 significantly increases entrepreneurship likelihood, with an odds ratio of 1.57. Thus, we validate this hypothesis.

5. Discussion

The study contributes to the literature by providing a nuanced understanding of the cognitive and social capital determinants of entrepreneurial propensity among Saudi women. By contextualizing findings in the unique socio-economic, cultural, and policy frameworks of Saudi Arabia, the research offers several key insights that merit further discussion and comparison with the existing literature.

Unexpectedly, the results indicate that, in the context of Saudi Arabia, perceived opportunities do not directly influence the likelihood of women starting a business. While women may perceive opportunities in the marketplace, they might hesitate to act on them due to a lack of confidence in their own capabilities or fear of failure. These concerns are particularly relevant in Saudi Arabia, where the entrepreneurial culture is still developing and women may face additional challenges in securing resources, establishing networks, and navigating legal and societal constraints. Previous research has shown that entrepreneurial intentions are often shaped by more than just the recognition of opportunities, and other factors, such as risk perception, social capital, and personal traits, play an equally important role in decision-making [78].

Furthermore, the lack of a significant relationship between perceived opportunities and entrepreneurial intentions in this study suggests that, while recognizing opportunities is a key first step, other contextual factors—such as risk perception, access to resources, and cultural norms—are likely more influential in shaping women's entrepreneurial decisions in Saudi Arabia. This finding calls for further research into the broader set of variables that may support or hinder entrepreneurial activity among women in Saudi Arabia beyond the mere recognition of opportunities.

The study identifies risk perception as a significant deterrent to entrepreneurial intent. This aligns with global research indicating that women often exhibit higher risk aversion than men due to socio-cultural pressures and limited fallback options in case of failure [58]. The cultural context in Saudi Arabia, where societal expectations around women's roles are undergoing transformation, amplifies this dynamic. Similar studies, such as those by [60], emphasize risk perception as a barrier for women in conservative societies but find that strong family or institutional support can mitigate this effect. This study, however, did not identify family social capital as a significant factor, indicating a possible area for governmental intervention.

A surprising finding was the somewhat negative relationship between perceived capabilities and the likelihood of entrepreneurship. This result is not in congruence with the prior studies [21,51], which consistently demonstrated a positive association between self-

efficacy and entrepreneurial intention. Women who have high levels of self-perceived ability may overstate the difficulties associated with entrepreneurship and choose a safe career. Highly skilled individuals may be more inclined to have stable prospects in professional or corporate areas rather than pursuing entrepreneurship. Cultural obstacles and the emerging entrepreneurial ecosystem in Saudi Arabia may hinder the transformation of confidence into action, leading to a discrepancy between talents and ambitions. Reference [59] has contended that individuals with greater resources and expertise may be more cautious due to a heightened awareness of entrepreneurial risks.

Unpredictably, family social capital did not significantly affect female entrepreneurship. Given the collectivist culture of Saudi Arabia, where familial assistance is frequently considered essential, this is unexpected. The changing socio-economic environment under Saudi Vision 2030 may diminish dependence on conventional family frameworks for entrepreneurial assistance. Women who possess better education and financial autonomy may perceive familial support as being less essential to their business endeavors. Studies in various collectivist cultures, including Turkey [69], indicate that familial support significantly facilitates entrepreneurship. Meanwhile, a study regarding Pakistan shows a different finding that indicates that family social capital is a barrier to funding access [27]. Therefore, more studies are needed to reach a conclusion.

The study highlights the positive and significant influence of social networks, indicating that women acquainted with other entrepreneurs are considerably more inclined towards entrepreneurship. This finding aligns with work emphasizing the significance of role models and peer impact in fostering entrepreneurial intention [59]. The significant impact of networking mirrors observations from industrialized countries, such as the United States, where mentorship and access to entrepreneurial ecosystems are essential [73].

Experience as an informal investor or business angel was another crucial determinant of venturing decisions. Women engaged in entrepreneurial decision-making via investments seem more predisposed to initiating their own enterprises. This finding corresponds with global research that underscores the significance of angel investors in nurturing entrepreneurial ecosystems [75]; however, it also reveals a disparity in the limited experiences of Saudi women, indicating a need for intervention through policy and education.

5.1. Contributions

This study significantly contributes to the practical understanding of women entrepreneurship within Saudi Arabia's evolving socio-economic context, which is lagging in this type of research [91]. Theoretically, it amalgamates cognitive and social capital frameworks to explore factors affecting entrepreneurial intent, providing a nuanced perspective that bridges gaps in the extant literature. As it focuses on Saudi Arabia under Vision 2030, it highlights the unique socio-cultural dynamics of the region, challenging established assumptions such as the relationship between perceived capabilities and entrepreneurial intent. These findings open avenues for a more contextualized application of entrepreneurship theories, enriching their relevance for a non-Western context.

This study employs a robust binary logistic regression analysis on data from the Global Entrepreneurship Monitor (GEM). Usage of a large and representative dataset ensures statistical generalizability insights into the factors shaping female entrepreneurial behavior. This rigorous approach positions the research as an important contribution to empirical investigations in the field, particularly within less-studied contexts such as Saudi Arabia.

The findings offer insights for policymakers and stakeholders. The study underscores the pivotal role of social networks and informal investments in fostering entrepreneurial activity while identifying risk perception as a significant deterrent of entrepreneurial endeavors. This research aligns with Saudi Vision 2030 by addressing structural barriers

and promoting women's economic participation. Additionally, it highlights the significance of culturally tailored strategies to empower female entrepreneurs and provides a roadmap for evidence-based policy interventions.

5.2. Strategic Plan for Sustainable Growth

The policy recommendation is discussed in regard to three different categories, namely financial, educational, and structural.

5.2.1. Financial

The outcome of this study emphasizes the importance of addressing financial barriers to women's entrepreneurship in Saudi Arabia. A key impediment is risk perception, which can deter women from engaging in entrepreneurial activities. To lessen these concerns, authorities can introduce financial safety measures, such as government-backed loan guarantees or insurance schemes, to reduce the risk of financial loss. Moreover, it is crucial to raise awareness among women entrepreneurs about the role of informal investments, particularly angel funding. Officials should work to facilitate access to networks of informal and formal investors, including providing tax incentives to individuals who fund women entrepreneurs. This could significantly enhance access to capital for women-led businesses. Additionally, the training initiatives should include components on attracting and managing investments, which will improve the effectiveness of financial assistance provided to female entrepreneurs.

5.2.2. Educational

Education plays a critical role in reducing the barriers to women entrepreneurship in Saudi Arabia. Entrepreneurial education programs should focus on risk evaluation and management, equipping women with the knowledge and skills to transform potential problems into feasible opportunities. Tailored entrepreneurship training programs that focus on real skills, such as financial literacy, business planning, and digital marketing, are essential. These programs should deliberate the unique cultural and legal contexts of Saudi Arabia to ensure their significance and effectiveness. Moreover, the government should prioritize the development of networking and mentorship programs, which can play a vital role in shaping the entrepreneurial attitude. By facilitating interactions between aspiring entrepreneurs and experienced business owners, industry experts, and investors, policymakers can help women build strong professional networks. Public campaigns that showcase the achievements of Saudi female entrepreneurs could also inspire others and serve as valuable educational tools.

5.2.3. Structural

The structural framework for supporting female entrepreneurship in Saudi Arabia should include the creation of robust and supportive entrepreneurial ecosystems. This includes the formation of women-centric business incubators and accelerators that can provide mentorship, market access, and training. These ecosystems can significantly diminish perceived risks by offering women entrepreneurs a platform for growth and development. Furthermore, networking and mentorship programs should be integrated into the entrepreneurial structure, with the government facilitating both online and offline venues where women can connect, exchange experiences, and receive counseling. Structural support should also extend to families, as their support can play a crucial role in encouraging women to pursue entrepreneurship. Policymakers should promote public awareness campaigns and incentives for families who actively support and encourage female entrepreneurs, contributing to cultural shifts that facilitate greater acceptance of women in business.

Addressing financial, educational, and structural barriers, policymakers can create a favorable environment for women entrepreneurs in Saudi Arabia, helping them overcome challenges and thrive in alignment with Vision 2030.

5.3. Limitations of the Research

Nevertheless, despite its qualities, the study suffers specific limitations. This study is related to Saudi Arabia, which possesses a unique social-cultural and economic context; therefore, the study may not be applicable to regions with differing socio-cultural dynamics. Moreover, the reliance on cross-sectional data limits insights into changes over time.

The usage of Global Entrepreneurship Monitor (GEM) data, although it offers a strong base, limits the research to binary variables that may overgeneralize entrepreneurial attitudes and behaviors. We measured concepts like perceived opportunity as unidimensional, which neglects some critical elements like opportunity generation, identification, evaluation, and exploitation. Furthermore, the study is contextually confined to the study's results from Saudi Arabia, may limit its applicability to areas with different socio-cultural dynamics.

The study does not include some essential variables, such as innovation orientation, digital skills, and access to technology, which are increasingly vital for entrepreneurial initiation and success. Other dimensions of social capital, such as institutional trust and community support, were also not investigated. Also, the cross-sectional nature of the data limits the strength to measure the evolution of entrepreneurial activity over time, particularly as Saudi Arabia enacts its Vision 2030 changes.

5.4. Potential for Future Research

Future research can expand the scope of variables by incorporating multidimensional constructs, such as opportunity generation, identification, evaluation, and exploitation, to provide a more nuanced understanding of entrepreneurship. Furthermore, it should include factors like innovation orientation, digital skills, and access to technology, which are increasingly critical in entrepreneurial success. Future studies could also explore other dimensions of social capital, such as institutional trust and community support, and adopt a longitudinal approach to track changes in entrepreneurial activity over time, especially as Saudi Arabia enacts its Vision 2030 reforms. A mixed-methods approach, including qualitative methods like in-depth interviews or case studies, could provide deeper insights into the experiences of women entrepreneurs, while comparative studies across different socio-cultural contexts would enhance the generalizability of the findings. Moreover, integrating technological factors and examining government policies and institutional trust would offer a more comprehensive view of the barriers and opportunities women face. Finally, diversifying data sources beyond GEM and using longitudinal datasets could further enrich the understanding of women's entrepreneurship.

6. Conclusions

This study elucidates the cognitive and social capital elements affecting women's entrepreneurial inclinations in Saudi Arabia, providing significant insights for policymakers, educators, and researchers. Essential findings underscore the necessity to tackle risk perception, strengthen social networks, and foster informal investment to motivate women to engage in entrepreneurial endeavors.

Unanticipated results, including the somewhat adverse effect of perceived capabilities, highlight the distinctive socio-cultural and economic environment of Saudi Arabia. These findings underscore the necessity for customized, culturally attuned strategies that correspond with the overarching objectives of Vision 2030.

By addressing these concerns and utilizing the opportunities presented by continuing changes, Saudi Arabia can establish an ecosystem that empowers women entrepreneurs while promoting economic diversification and growth. Ongoing research and persistent policy initiatives will be essential for the advancement and prosperity of women's entrepreneurship in the region.

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