

The Role of Venture Capital and Angel Investor Networks for Supporting Entrepreneurship as a Catalyst for Saudi Economy

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Abstract:

This scientific paper examines the role of Venture Capital (VC) and Angel Investor (AI) networks in promoting entrepreneurship as a catalyst for sustainable economic development in Saudi Arabia. By using a mixed-methods approach of interviews and surveys, the paper seeks to identify key challenges facing VC and AI networks in the country, and offer insights and recommendations to stakeholders looking to further promote and support entrepreneurship. Data was collected from 250 entrepreneurs and 10 investors (Venture Capitalists and Angel Investors from different Saudi regions). Through a data descriptive analysis, the paper will explore the key challenges faced by entrepreneurs in securing funding and mentorship. It will then examine the benefits of VC and AI networks in providing early-stage funding and support, as well as their impact on the broader economy. Finally, it will discuss recommendations for policymakers, investors, and entrepreneurs looking to promote and support entrepreneurship in Saudi Arabia, such as measures to increase access to finance for startups, initiatives to promote entrepreneurship education and training, and efforts to attract more foreign investment and talent. The paper will ultimately provide valuable insights for stakeholders looking to support and promote sustainable economic and social development in Saudi Arabia.

Keywords: Venture Capital; Angels Investors; Entrepreneurship, Challenges; Sustainable Development.

JEL Classification codes:

G240 Investment Banking; Venture Capital; Brokerage; Ratings and Ratings Agencies.

G230 Pension Funds; Non-bank Financial Institutions; Financial Instruments; Institutional Investors.

1. Introduction

Entrepreneurship has long been regarded as a critical driver of economic growth and development in countries worldwide, and Saudi Arabia is no exception. The Kingdom has been steadily pushing forward with its Vision 2030 economic reform plan, which seeks to diversify its economy, reduce its dependence on oil, and encourage entrepreneurship as a means of achieving sustainable development (Ahmad et al., 2023; Aloulou & Al-Othman, 2019). Venture Capital (VC) and Angel Investor (AI) networks are playing an increasingly vital role in this endeavor, providing much-needed funding, guidance, and mentorship to aspiring entrepreneurs (Holle, 2021).

This scientific paper aims to explore the role of VC and AI networks in supporting entrepreneurship as a catalyst for sustainable development in Saudi Arabia. The paper will examine the state of entrepreneurship in the Kingdom and the challenges faced by entrepreneurs in securing funding and mentorship. It will then delve into the ways in which VC and AI networks are addressing these challenges, discussing the benefits they bring to entrepreneurs and the broader economy. Finally, the paper will offer recommendations for policymakers, investors, and entrepreneurs looking to further promote and support entrepreneurship in Saudi Arabia.

The paper will begin by providing an overview of the current state of entrepreneurship in Saudi Arabia. Despite being the largest economy in the Middle East and North Africa region, the Kingdom has historically been heavily reliant on its oil sector, with entrepreneurship playing a relatively minor role in its economic development. However, in recent years, there has been a growing recognition of the need to diversify the economy and promote entrepreneurship as a means of achieving sustainable development (Ahmad et al., 2023). The paper will discuss the progress made thus far, as well as the challenges that still need to be addressed.

One of the primary challenges faced by entrepreneurs in Saudi Arabia is securing funding (Aljuwaiber, 2020). Banks are often hesitant to lend to startups, and there are few alternative sources of financing available. This is where VC and AI networks come in. These networks provide early-stage funding to startups, typically in exchange for equity in the company. They also offer mentorship, guidance, and connections to other investors and potential customers (Harrison, 2013; Osnabrugge & Robinson, 2000; Sharma & Sehrawat, 2022). The paper will discuss the benefits of this model and how it is helping to overcome some of the challenges faced by Saudi entrepreneurs.

The paper will also explore the impact of VC and AI networks on the broader economy. By providing funding and support to startups, these networks are helping to create new jobs, spur innovation, and diversify the economy (Lerner & Nanda, 2020). They are also helping to attract foreign investment and talent, which can have a ripple effect on the entire economy (Audretsch et al., 2020). The paper will discuss some of the success stories of Saudi startups that have received funding from VC and AI networks, as well as the broader economic impact of these investments.

Finally, the paper will offer recommendations for policymakers, investors, and entrepreneurs looking to further promote and support entrepreneurship in Saudi Arabia. These may include measures to increase access to finance for startups, initiatives to promote entrepreneurship education and training, and efforts to attract more foreign investment and talent to the Kingdom.

In conclusion, this scientific paper will provide a comprehensive overview of the role of VC and AI networks in supporting entrepreneurship as a catalyst for sustainable

development in Saudi Arabia. By examining the state of entrepreneurship in the Kingdom, the challenges faced by entrepreneurs, and the ways in which VC and AI networks are helping to overcome these challenges, the paper will offer valuable insights for policymakers, investors, and entrepreneurs looking to support and promote entrepreneurship in Saudi Arabia.

2. Overview of the Research

This research work will use a mixed-methods approach to explore the role of VC and AI networks in promoting entrepreneurship and driving sustainable development in the country.

The study will involve collecting data from venture capitalists, AIs, and entrepreneurs in Saudi Arabia through both qualitative and quantitative research methods. The qualitative method will involve conducting on-line interviews with venture capitalists, and AIs to gain a detailed understanding of the challenges and opportunities for entrepreneurship in Saudi Arabia, and the role of VC and AI networks in addressing these challenges.

The quantitative method will involve administering surveys to a larger sample of entrepreneurs in Saudi Arabia to gather data on their experiences in accessing capital and other resources, as well as their perceptions of the role of VC and AI networks in supporting entrepreneurship and driving sustainable development.

The research will analyze the data collected from both qualitative and quantitative methods to identify common challenges faced by entrepreneurs in Saudi Arabia, and to explore the impact of VC and AI networks on the entrepreneurship ecosystem in the country. The study will also investigate the contribution of these networks to sustainable development in Saudi Arabia.

The research findings will be of interest to policymakers, investors, and entrepreneurs seeking to promote sustainable development through entrepreneurship in Saudi Arabia. The study will provide insights into the specific context of Saudi Arabia, highlighting the challenges and opportunities for entrepreneurship, and identifying strategies to enhance the impact of VC and AI networks on the entrepreneurship ecosystem in the country.

Overall, the research work seeks to provide a comprehensive understanding of the role of VC and AI networks in supporting entrepreneurship and driving sustainable development in Saudi Arabia, by using a mixed-methods approach that combines both qualitative (online interviews) and quantitative (online surveys) research methods.

3. Significance of the Research

This research work has significant implications for various stakeholders including policymakers, investors, entrepreneurs, and researchers.

Firstly, the study can provide policymakers with insights into the specific challenges and opportunities for entrepreneurship in Saudi Arabia and inform the design of policies and programs that can support entrepreneurship and sustainable development in the country.

Secondly, the study can inform investors about the potential benefits of investing in the entrepreneurship ecosystem in Saudi Arabia, and how they can best support the

development of this ecosystem. The study can also inform entrepreneurs about the available resources and networks that can support them in starting and growing their businesses in Saudi Arabia.

Thirdly, the study can contribute to the broader research on entrepreneurship and sustainable development by providing insights into the unique context of Saudi Arabia and identifying strategies that can be applied in other contexts.

Finally, the study has the potential to contribute to the broader goal of promoting sustainable development in Saudi Arabia by identifying the role that VC and AI networks can play in supporting entrepreneurship as a catalyst for economic growth and social development.

Hence, the significance of this research work lies in its potential to inform policy, practice, and research in the areas of entrepreneurship and sustainable development in Saudi Arabia and beyond.

4. Literature Review

The topic of understanding the role of VC and AI networks in supporting entrepreneurship as a catalyst for sustainable development has garnered increasing attention in recent years as VC and AI networks have played a significant role in supporting the entrepreneurship ecosystem in Saudi Arabia. This section will explore the current state of VC and AI networks in the kingdom and how they are helping to foster innovation, encourage risk-taking, and drive economic growth.

a. VC and AI Landscape in Saudi Arabia

VC and AI networks have been instrumental in providing the necessary capital to fuel the kingdom's entrepreneurial ecosystem (Akinwale et al., 2020). VC funds provide the capital needed to launch and grow startups, while AIs often provide the additional capital needed to take a startup to the next level (Cavallo et al., 2019). According to recent data from the leading startup data platform and investment network in the Middle East and North Africa (MENA) region MAGNIT (MENA 2022 Venture Investment Report, n.d.), Saudi Arabia's VC and private equity ecosystem has seen significant growth in recent years (FY2022 KSA Venture Investment Report, n.d.). In 2022, the Kingdom experienced a remarkable surge in funding, with a 72% increase that propelled it to its highest ever level of \$987M, coming close to reaching the \$1Bn milestone. Although there were five fewer deals than in 2021, the Kingdom still managed to secure a third of the MENA region's record funding of \$3.2Bn. Since 2016, Saudi Arabian startups have accounted for one-fifth of all impact transactions registered in the MENA region, leading the growth in impact deals (FY2022 KSA Venture Investment Report, n.d.).

In terms of sectors, healthcare and fintech were the most popular, accounting for 20% and 18% of all investments, respectively (FY2022 KSA Venture Investment Report, n.d.). The data from MAGNITT demonstrates the growing importance of Saudi Arabia's startup ecosystem and the increasing appetite for VC and private equity investment in the country.

VC and AI networks are often supported by private and public organizations; a good example of these networks in Saudi Arabia is "Jada" Company which is a government-backed fund of funds company in Saudi Arabia that was established in 2017. It is fully owned by the Public Investment Fund (PIF), which is one of the largest sovereign wealth funds in the world and is responsible for managing the Kingdom of Saudi

Arabia's investments. Jada company's primary objective is to support the growth of the VC industry in the country by investing in and supporting early-stage startups and SMEs through a network of local and international VC funds. The fund's activities are aligned with the Saudi Vision 2030 plan, which seeks to diversify the country's economy and create new opportunities for Saudi citizens. As the end of 2021, Jada company has a mandate to invest up to SAR 1.9 billion (\$510 million) in VC funds (Total Capital Committed since inception in 2018), with a total capital deployed up to SAR 392 million (\$105 million) which make it in the 2nd place across the MENA region in terms of share of funding that went to start-ups. The year 2021 was a record year for Saudi SMEs and start-ups with more than 139 deals compared to 90 deals made by 2020 leading to an increase of 54% in the total number of deals. In term of sector allocation in 2021, Food & Beverage, Fintech, Healthcare, E-commerce and Enterprise Software were the five sectors that received the most funding this year (Ramady, 2021). Food & Beverage had the lowest funding value of SAR 138.7million (USD 37 million), while E-commerce had the highest value of SAR 637.5 million (USD 170 million). Fintech and Enterprise Software both had relatively high funding values of SAR 341.2 million (USD 91 million) and SAR 495 million (USD 132 million) respectively. Healthcare had the second lowest funding value of SAR 97.5 million (USD 26 million) (Ramady, 2021).

Overall, according to Jada company, it appears that the most popular sectors for VC investment in Saudi Arabia in 2021 are E-commerce and Enterprise Software, followed by Fintech and Healthcare. Food & Beverage received the lowest amount of funding out of the five sectors. This may be due to the relatively low market potential for this sector compared to the others. It is also likely that the increasing demand for digital solutions within the other sectors have led to a surge in VC funding for them this year.

In addition, Jada company also provides support services to portfolio companies, including mentorship, networking opportunities, and access to resources and expertise. As a subsidiary of the Public Investment Fund, Jada Fund of Funds plays an important role in the development of Saudi Arabia's startup ecosystem, helping to catalyze innovation and entrepreneurship in the country and contributing to the diversification and growth of the Saudi economy (Jaffe, 2020).

Another illustration for the Saudi government's tremendous efforts to support the VC industry in the country is the establishment, in 2018, of the Saudi VC Company (SVC) (Moshashai et al., 2020). The company is owned also by the Public Investment Fund (PIF) and its primary objective is to support the growth of the VC industry in the country by investing in and supporting early-stage startups and SMEs. The company focuses on a range of sectors, including healthcare, education, energy, transportation, and others. In addition to providing funding, SVC also provides support services to portfolio companies, including mentorship, networking opportunities, and access to resources and expertise. The company is also actively involved in developing the Saudi startup ecosystem, partnering with local and international stakeholders to support entrepreneurship and innovation in the country (Moshashai et al., 2020). As a key player in the Saudi startup ecosystem, the Saudi VC Company plays an important role in driving economic growth and diversification in the country. The company's investments and support for startups and SMEs are aligned with the Saudi Vision 2030 plan, which seeks to transform the country's economy and create new opportunities for Saudi citizens. The following Table 1 summarizes the most relevant Saudi VC firms with the fund stage, investment sectors and the portfolio number of companies. The data provided in Table 1 gives an overview of the most prominent VC and private equity

firms in Saudi Arabia up to date. The firms vary in terms of their foundation date, fund stage, investment focus and portfolio companies. For example, Raed Ventures was founded in 2015 and focuses on early-stage venture investments, and has invested in 32/16 companies. Meanwhile, Emkan Capital focuses on technology companies and has a portfolio of 3 companies. All of the firms have a focus on technology, either by sector or by focusing on tech-startups or disruptive technologies. The data also shows the range of fund stages that each firm invests in, from pre-seed to series-C, depending on the firm. This data provides a good snapshot of the VC and private equity landscape in Saudi Arabia.

Table 1. SAUDI MOST RELEVANT VC AND PRIVATE EQUITY (VCPE) FIRMS
(SORTED BY PORTFOLIO COMPANIES' SIZE)

VC/PE Firm	Foundation Date	Fund Stage	Investment Focus	Portfolio Companies
<i>"Wa'ed" Ventures - Saudi Aramco</i>	2011	From Seed to Series-C	tech-based startups, home-grown technologies	50
<i>Vision Ventures</i>		Pre-Seed, Seed, and Series-A stages	Technology, Business, Strategy, and Finance.	44
<i>Impact46</i>	2020	Seed – Pre-Series A – Series A and beyond	On-demand / Insurtech / Fintech / Marketplace	33
<i>MSA</i>	2014	Not specified	disruptive companies in the biotechnology, enterprise-facing core technology, and consumer sectors	33
<i>Raed Ventures</i>	2015	Early-stage venture	Sector agnostic	32
<i>Hala Ventures</i>	2016	Early-growth stages	Tech-Startups	28
<i>STV</i>	2018	Growth-stage Tech	disruptive technology companies	26
<i>KAUST Innovation Ventures</i>	2016	Seed to early-stage	deep tech startups: Energy and environment, food and water, advanced materials, robotics/ICT and health	26
<i>Nuwa Capital</i>	2020	Early-growth stages	Sector agnostic	25
<i>Sukna Venture Studio (SVS)</i>	2019	Pre-seed, Seed, Series A & B	General technology and digital transformation	18
<i>Tech Invest Company</i>	2005	Series A to B with opportunistic Seed	Sector agnostic	15
<i>Merak Capital</i>	2018	--	technology sector	12
<i>Energy Capital Group (ECG)</i>	2006	Not specified	energy sector and energy related services	8

VC/PE Firm	Foundation Date	Fund Stage	Investment Focus	Portfolio Companies
<i>Emkan Capital</i>	2015	Early-stage venture	Technology companies	3
<i>eWTP Arabia Capital</i>	2018	Not specified	Technology companies	Not specified
<i>Nusaned – Sabic</i>	2018	Not specified	Specialty Chemicals, Renewables & Recycling	Not specified
<i>Flat6Labs KSA</i>	2013	Seed and early stage	Sector agnostic	Not specified
<i>Wady Makkah Company Ventures</i>	2017	Early-stage startups "incubated startups"	Areas & technologies dedicated to improving the Hajj and Umrah ecosystem	Not specified
<i>Saudi Startup Studio Ventures (Joe Capital)</i>	2020	Not specified	Finance, technology, and infrastructure	Not specified

b. Most Success Stories of Saudi Startups Funded from VC and PE

Noon Academy and Red Sea Farms are two of the most funded impact startups in Saudi Arabia from 2016 - Q3 2021. Noon Academy is an EdTech startup that has raised a total of \$22M over 2 funding rounds, the most recent of which was in 2020. Red Sea Farms is an agriculture startup that has raised a total of \$18M over 5 funding rounds, the most recent of which was in 2021. Both of these startups have been able to secure significant investment despite the challenging economic environment, indicating their potential for success in the future.

c. VC and AIs networks' challenges and opportunities

Several recent studies have emphasized the potential impact of VC and AI networks in addressing the challenges and promoting entrepreneurship. For example, K. A. Siddiqui et al. (2021) (Siddiqui et al., 2021) examine the challenges facing the VC industry in Saudi Arabia. The authors argue that while the Saudi Arabian government has taken steps to promote entrepreneurship and innovation in recent years, the VC industry still faces significant challenges that limit its ability to support startups and drive economic growth. The paper begins by providing an overview of the VC industry in Saudi Arabia, including its historical development, current state, and potential for growth. The authors then identify several key challenges facing the industry, including a lack of investor education and awareness, limited access to funding, and a shortage of experienced and qualified professionals. To address these challenges, K. A. Siddiqui et al. (Siddiqui et al., 2021) suggest a number of strategies for promoting the development of the VC industry in Saudi Arabia; these include increasing investor education and awareness, improving access to funding through the creation of a dedicated VC fund or government-backed investment program, and promoting the development of a skilled and experienced workforce through training and professional development programs. The paper concludes by emphasizing the importance of addressing these challenges if Saudi Arabia is to realize its potential as a hub for entrepreneurship and innovation. By promoting the development of the VC industry and addressing the challenges it faces,

the authors argue that Saudi Arabia can support the growth of new startups, drive economic development, and contribute to a more vibrant and diversified economy.

Another recent qualitative research from A. Enani and M. Khan (Enani & Khan, 2021) explores the potential of crowdfunding as a source of employment generation and growth in Saudi Arabia. The authors examine the use of crowdfunding as a means of financing small and medium-sized enterprises (SMEs) and startups, and the potential for crowdfunding to create new jobs and drive economic growth. The paper begins by providing an overview of crowdfunding as a financing tool, including the different types of crowdfunding platforms and the benefits and challenges of crowdfunding for SMEs and startups. The authors then review the literature on the impact of crowdfunding on employment generation and economic growth, drawing on case studies from around the world. Using the data which was collected through face-to-face interview with nine participants with major background of entrepreneurship eco system in Saudi Arabia, A. Enani and M. Khan (Enani & Khan, 2021) find that crowdfunding has the potential to support employment generation and economic growth by providing access to capital for startups and SMEs that may not be able to secure traditional financing. Crowdfunding can also help to build networks and communities around startups, providing them with access to expertise, resources, and potential customers. The paper concludes by suggesting several policy recommendations for policymakers and stakeholders seeking to promote the use of crowdfunding as a means of supporting employment generation and economic growth. These include the development of supportive regulatory frameworks, the provision of training and education programs for entrepreneurs and investors, and the establishment of partnerships between crowdfunding platforms and other stakeholders in the entrepreneurial ecosystem (Enani & Khan, 2021).

5. Methodology

This research work will adopt a mixed-methods approach to explore the role of VC and AI networks in promoting entrepreneurship and driving sustainable development in Saudi Arabia.

a. Qualitative Method

The qualitative method will involve conducting online interviews with Venture capitalists and AIs in Saudi Arabia. The interview questions include open-ended and close-ended questions and will focus on the Venture capitalists' and AIs' perceptions of their role in promoting entrepreneurship and sustainable development, the types of investments they make, the challenges they face, and the strategies they use to support entrepreneurs. The sample size of the Venture capitalists and AIs was limited to 10 individuals who were actively involved in VC and AI networks in the country.

b. Quantitative Method

The quantitative method will involve administering an online survey to a larger sample of entrepreneurs; 250 participants from different regions in Saudi Arabia to gather data on their experiences in accessing capital and other resources, as well as their perceptions of the role of VC and AI networks in supporting entrepreneurship and driving sustainable development. The survey was conducted with the use of a web-based survey software and sent to potential participants via email. The survey has included questions on the entrepreneurs' experiences in accessing capital and other resources, their perceptions of the role of VC and AI networks in promoting entrepreneurship and driving sustainable development, and the challenges they face in

the process. The survey sample size was determined based on the geographical distribution of the population of entrepreneurs in Saudi Arabia.

c. Data Analysis

The qualitative data collected from the interviews and surveys will be analyzed using thematic analysis and descriptive statistics, respectively. Thematic analysis will be used to identify patterns in the responses and draw insights into the Venture capitalists' and AIs' perceptions of their role in promoting entrepreneurship and sustainable development, as well as the challenges they face. Descriptive statistics will be used to analyze the survey responses and draw conclusions about the entrepreneurs' experiences in accessing capital and other resources and their perceptions of the role of VC and AI networks in supporting entrepreneurship and driving sustainable development. The results of the analysis will be presented in section (Discussion & Recommendations) that will also include recommendations for policy makers, Venture capitalists, and AIs to improve access to capital and other resources for entrepreneurs in Saudi Arabia.

6. Results and Analysis

The survey was distributed to 250 entrepreneurs by September 2022. Respondents are aged between 18 to 55 years old with gender ratio equal to 50% for male and females. The location of the participants was distributed based on the geographical distribution of the population of entrepreneurs in Saudi Arabia (Table 2). In fact, the geographical distribution of entrepreneurs in Saudi Arabia is highly concentrated in the major cities. Riyadh, Jeddah and Dammam are the three most populated cities in Saudi Arabia and also have the largest concentrations of entrepreneurs. According to a report by MAGNITT, these three cities combined account for over 70% of all entrepreneurs in the country (MENA 2022 Venture Investment Report, n.d.). Other cities such as Makkah, Madinah, Tabuk, and Al-Qassim also have significant numbers of entrepreneurs, although their share of the population is much lower (MENA 2022 Venture Investment Report, n.d.).

Table 2. DISTRIBUTION OF RESPONDENTS FOR THE ONLINE SURVEY AMONG THE LARGEST CONCENTRATIONS OF ENTREPRENEURS IN SAUDI CITIES

City	Respondents			Responses (Filled questionnaires with no missing information)			
	Male	Female	Total	Male	Female	Total	Resp. rate
<i>Riyadh</i>	25	25	50	20	26	46	92%
<i>Jeddah</i>	25	25	50	18	24	42	84%
<i>Dammam</i>	25	25	50	19	20	39	78%
<i>Makkah</i>	15	15	30	10	19	29	97%
<i>Madinah</i>	15	15	30	12	13	25	83%
<i>Tabuk</i>	10	10	20	9	10	19	95%
<i>Al-Qassim</i>	10	10	20	8	10	18	90%
				Total		218	87%

Table 2 shows the distribution of respondents for the online survey; there were a total of 218 respondents, with an overall response rate of 87%. The survey was distributed among seven (7) cities in Saudi Arabia, with Riyadh having the highest

number of respondents (50) and the highest response rate (92%). Jeddah, Dammam and Makkah had 50, 50, and 30 respondents respectively, with response rates of 84%, 78%, and 97%. Madinah and Tabuk had 30 and 20 respondents each, with response rates of 83% and 95%. Al-Qassim had the least number of respondents (20) but the highest response rate (90%). In terms of gender, the survey had an equal number of male and female respondents.

A total of 10 Venture capitalists and AIs are interviewed online. The interview questionnaire includes seven (7) open-ended questions related to the investment portfolios and criteria, sources of deal flow, perception of the investment climate, experiences of previous investments, attitudes towards risk and strategies for managing investments. It includes also a total of 45 close-ended questions using a four-point Likert scale instead the five-point Likert scale because the adopted questions are straightforward and no neutral option is needed.

After qualitative analysis of the previous collected data from entrepreneurs and Venture capitalists and AIs, a total of 19 challenges was identified. Table 3 gathers the 19 challenges and categorizes them in 6 different topics; i.e., Ecosystem, Funding, Culture, Experienced investors & mentors, Major cities' living cost, international markets. Table 3 lists some of the key challenges facing the venture capital (VC) ecosystem in Saudi Arabia. These challenges include a shortage of early-stage startups with promising business models, limited access to funding and especially early-stage funding, risk perception by investors and entrepreneurs, and a shortage of experienced investors and mentors. Additionally, the cost of living in major cities like Riyadh and Jeddah can be prohibitively expensive, making it difficult for startups to attract and retain talent. At the international market level, Saudi startups have limited access to international markets and investors, making it difficult to gain recognition and secure funding outside the region.

Table 3. VC KEY CHALLENGES IN SAUDI ARABIA CATEGORIZED BY MAIN TOPICS (BASED ON THE COLLECTED DATA)

Topics	Key Challenges
-1- Ecosystem	<ul style="list-style-type: none"> - Shortage of early-stage startups with promising business models and potential for growth, - Limited VC infrastructure, - Limited access to networks and resources,
-2- Funding	<ul style="list-style-type: none"> - Limited access to funding and especially the access to early-stage funding - Limited public markets for exit, - Limited VC resources.
-3- Cultural	<ul style="list-style-type: none"> - Risk perception by investors and entrepreneurs, - Difficulty in convincing investors to invest in high-risk ventures, - Cultural barriers to technology adoption, limited public awareness of VC, - Limited understanding of startup ecosystem.
-4- Experienced Investors & Mentors	<ul style="list-style-type: none"> - Shortage of investors with the knowledge and expertise necessary to identify and nurture promising startups, - Limited access to professional advice, - Limited knowledge of VC.
-5- Major Cities' Living Cost	<ul style="list-style-type: none"> - Cost of living in major cities (Riyadh and Jeddah) can be prohibitively expensive, making it difficult for startups to attract and retain talent, - Limited resources for entrepreneurs to cover start-up costs, - Limited access to affordable office space.
-6-	<ul style="list-style-type: none"> - Limited access to international markets,

Topics	Key Challenges
International Markets	- Lack of recognition of Saudi Arabian startups outside the region, - Limited access to international investors.

Figure 1 presents the percentage distribution of key challenges' topics facing VC and AI networks in Saudi Arabia among respondents' responses (surveys and interviews). It indicates that the key challenges facing VC and AI networks in Saudi Arabia include Ecosystem (32%), Funding (19%), Cultural (13%), Experienced Investors & Mentors (17%), Major Cities' Living Cost (8%), and International Markets (11%). This suggests that the lack of a robust ecosystem (including the shortage of early-stage startups with promising business models and potential for growth, the limited VC infrastructure and the limited access to networks and resources) and the challenges associated with finding funding (including the limited access to funding and especially the access to early-stage funding, the limited public markets for exit and the limited VC resources) are the two most pressing issues for these networks. Additionally, cultural issues, a lack of experienced investors and mentors, the higher costs of living in major cities of the country, and the need to gain access to international markets are some of the other challenges impacting these networks. To address these challenges, it is important to create an environment where VC and AI networks can collaborate and develop strategies to tackle their challenges. The following section will discuss these issues and will offer recommendations for policymakers, investors, and entrepreneurs looking to further promote and support entrepreneurship in Saudi Arabia.

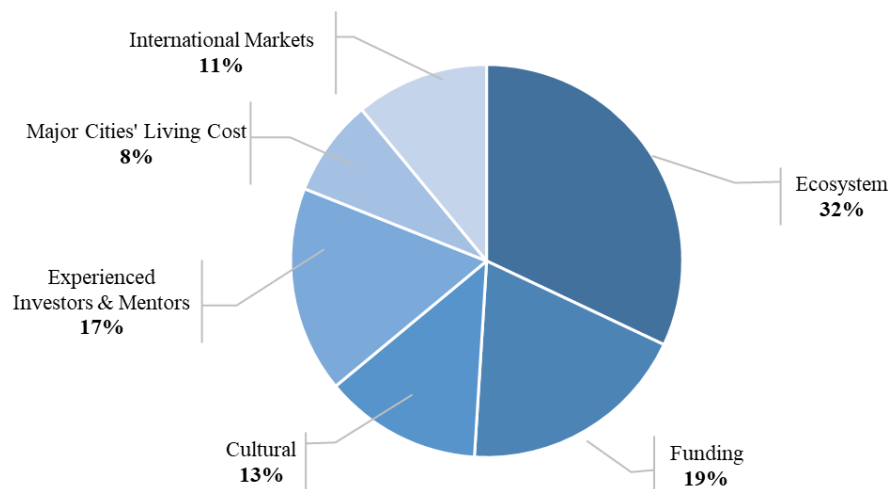


Figure 1. KEY TOPICS' VC AND AI NETWORKS CHALLENGES IN SAUDI ARABIA (BASED ON SURVEYS AND INTERVIEWS RESULTS)

7. Discussion & Recommendations

In order to further investigate on the government efforts to overcome the identified VC and AI networks challenges, Table 4 cites to most relevant initiatives and projects achieved by the Saudi government in the three last years to address these issues at their different levels.

As shown in Table 4, and with respect to the collected data results, the VC challenging topics in Saudi Arabia are varied and complex, and the government has taken a number

of initiatives to address them. These include establishing government-funded incubators and accelerators to stimulate early-stage startups, investing in capital to support deals, creating the Small and Medium Enterprises General Authority (Monsha'at) and the Saudi VC and Private Equity Association (VCPEA) to promote risk perception and provide experienced investors and mentors, decentralizing economic growth and creating new opportunities for businesses and job seekers in underserved areas and improving public transportation in major cities, and developing incubators and accelerators that focus on international expansion and investing in infrastructure and technology to improve connectivity (Abdulrab et al., 2022). All of these initiatives had helped to create a more vibrant and supportive ecosystem for VCs in Saudi Arabia (Abdulrab et al., 2022).

Table 4. SAUDI GOVERNMENT EFFORTS (INITIATIVES / PROJECTS) TO ADDRESS THE VC CHALLENGES

Topics	Government Efforts (Initiatives and Projects)
-1- Ecosystem	- The establishment of many government-funded incubators and accelerators.
-2- Funding	- 118M\$ amount of capital invested in the period 2016 - Q3 2021. - 80 deals in total . - +80% as 5-year growth in amount invested.
-3- Cultural	- The creation of the Small and Medium Enterprises General Authority (Monsha'at).
-4- Experienced Investors & Mentors	- The creation of the Saudi VC and Private Equity Association (VCPEA) with the objective of stimulating the VC and private equity ecosystem in Saudi Arabia.
-5- Major Cities' Living Cost	- Decentralizing economic growth and creating new opportunities for businesses and job seekers in underserved areas and by improving public transportation in major cities (i.e., Riyadh Metro project).
-6- International Markets	- The development of incubators and accelerators that focus on international expansion (TAQADAM Startup Accelerator, Flat6Labs and others...) - Investing in infrastructure and technology that improves connectivity and reduces the cost of doing business across borders by launching the National Strategy for Digital Transformation (NSDT) within 2030 Vision.

To address the key challenges facing VC and AI networks in Saudi Arabia and promote entrepreneurship, policymakers, investors, and entrepreneurs should consider the following recommendations:

- **Ecosystem:** To address the shortage of early-stage startups with promising business models and potential for growth, policymakers should incentivize entrepreneurship by offering tax breaks, grants, and other financial support. Investors and entrepreneurs can also promote ecosystem development by building networks and sharing resources and knowledge.
- **Funding:** Policymakers can support access to funding by creating policies that promote venture capital investment and public market development. Investors and entrepreneurs can leverage international networks and investors to access funding, and startup accelerators and incubators can provide mentorship and resources to support startups.
- **Cultural:** Policymakers and entrepreneurs can work to address cultural barriers by promoting education and awareness about the value of entrepreneurship, risk-taking, and innovation. This can be achieved by forming entrepreneurial universities

that prioritize innovation and entrepreneurship in their curriculum and culture. These universities provide students with the skills, resources, and networks necessary to start and grow successful businesses. through different channels like incubators and accelerators, entrepreneurship courses and programs, entrepreneurship competitions...etc. Likewise, a bachelor's program in finance including courses focusing on investment fundamentals, securities analysis, and portfolio management will be very helpful in bridging the knowledge gap in investment evaluation, management, and alternative financing, and supports the government's efforts through the Ministry of Education (MOE) in equipping students with the necessary skills and knowledge to effectively contribute to the finance sector, thus promoting economic growth and development. Examples of leading universities in this sector include Stanford University, Massachusetts Institute of Technology (MIT), and Babson College. These universities have produced many successful startups and entrepreneurs, including Google, PayPal, and LinkedIn.

- Experienced Investors & Mentors: To address the shortage of investors with the knowledge and expertise necessary to identify and nurture promising startups, policymakers can encourage the development of mentorship programs and offer incentives for experienced investors to participate. Investors can also work to build networks and share knowledge and resources to support entrepreneurship. At this level, Saudi universities can play a critical role in connecting students with experienced investors and mentors. By leveraging their alumni networks, offering entrepreneurship programs, hosting pitch competitions, and creating incubators and accelerators, Saudi universities can help students build the relationships and networks they need to succeed in the startup ecosystem.
- Major Cities' Living Cost: Policymakers can incentivize the development of affordable office spaces and co-working spaces, as well as create policies that support the growth of startups in smaller cities and regions. Investors and entrepreneurs can also consider remote work and virtual teams to address the cost of living in major cities.
- International Markets: To address limited access to international markets and investors, policymakers can create policies that promote international trade and investment. Investors and entrepreneurs can also leverage international networks and partnerships to access international markets and resources.

In summary, to further promote and support entrepreneurship in Saudi Arabia, policymakers, investors, and entrepreneurs should work together to address the challenges facing VC and AI networks. This includes promoting ecosystem development, supporting access to funding, addressing cultural barriers, encouraging mentorship and support for experienced investors, addressing the cost of living in major cities, and promoting international trade and investment.

8. Conclusion

In conclusion, this paper has examined the role of Venture Capital and Angel Investor networks in promoting entrepreneurship in Saudi Arabia. Through a mixed-methods approach of interviews and surveys, the paper has identified six (6) key challenges topics facing entrepreneurs in securing funding and mentorship from investors. It has also explored the benefits of VC and AI networks in providing early-stage funding and support, as well as their impact on the broader economy. The paper has provided valuable insights and recommendations for policymakers, investors, and

entrepreneurs looking to promote and support entrepreneurship in Saudi Arabia. These recommendations include measures to increase access to finance for startups, initiatives to promote entrepreneurship education and training, and efforts to attract more foreign investment and talent. In order to ensure the success of these networks, it is important to address the key challenges identified in this paper, such as access to finance, education and training, and foreign investment. It is also essential to promote an environment of collaboration and support between investors and entrepreneurs, as well as to create incentives for investors to invest in high-risk, high-reward startups.

Ultimately, to guarantee the long-term success of entrepreneurship in Saudi Arabia, it is essential that policymakers, investors, and entrepreneurs work together to address the challenges identified in this paper. By taking the necessary steps to promote and support entrepreneurship, Saudi Arabia will be able to create a more vibrant economy and a more sustainable society. With the right policies and investments, the country can be at the forefront of innovation and development in the region.

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