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Open Innovation and Entrepreneurship: Leveraging External Ideas and Collaborations to Drive Business Growth

Bushra Al Hasani^{1*}, Mohammed Ibrahim Hussein²

¹Senior Lecturer, Faculty of Business Management, Majan University College, Oman

²Assistant Professor, Faculty of Business Management, Majan University College, Oman

Abstract

Open innovation has appeared as a significant catalyst of entrepreneurial growth, facilitating firms to move beyond conventional boundaries and harness external knowledge, partnerships, and resources. Whilst showing considerable promise for business development, open innovation additionally showcases distinct challenges for entrepreneurs, including intellectual property (IP) rights management, partnership coordination, and the external incorporation of innovations into existing business models. Even with its surging popularity, there remains a shortage of empirical research investigating how entrepreneurs efficiently integrate and manage open innovation strategies, especially in small and medium-sized enterprises (SMEs) and startups. This paper examines this gap by investigating the enablers, barriers, and practical outcomes of open innovation from the entrepreneurial outlook.

The study adopts a qualitative research method, using semi-structured interviews with business owners and CEOs across a range of industries who have implemented open innovation practices. Purposeful sampling guarantees the inclusion of participants actively and deeply involved in external collaborations, like incubators, research institutions, and corporate partners. To intensify the depth and reliability of the findings, triangulation is accomplished through the combination of secondary data sources, comprising business plans, partnership agreements, and innovation-related documents, which supplement the primary interview data. The thematic analysis approach, as defined by Braun and Clarke (2006), is adopted to determine patterns and insights within the data.

Whilst qualitative research fundamentally entails smaller sample sizes, preferred participants are justified by their applicability to the research question, ensuring an in-depth study of open innovation dynamics. Possible constraints comprise self-reported biases and the subjective interpretation of qualitative data. To reduce these concerns, member checking and double - checking of data sources are implemented to boost the study's validity and reliability.

This paper expands the existing scholarship by providing an insightful understanding of how entrepreneurs manage the intricacies of open innovation, especially in resource-constrained environments. It offers implementable conclusions for entrepreneurs, policymakers, and investors working towards promoting innovative ecosystems that support sustainable business growth.

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Keywords

Open innovation, Entrepreneurship, External collaborations, Business growth, Intellectual property, Qualitative research.

1. Introduction

In the present, rapidly evolving world economy, multi-sector organisations confront unusual problems and opportunities conditioned by tech-centric globalisation and transforming customer expectations. While these changes are not circumscribed to the business world alone, their influence on entrepreneurial ventures is deeply felt. Within this frame of reference, open innovation has taken the shape of a transformative approach that is remodelling how firms innovate and sustain competitive advantage. Open innovation, described as the strategic integration of external knowledge, technologies, and partnerships into the innovation process (Chesbrough, 2003), symbolises a major deviation from the traditional closed innovation model, which depended exclusively on internal resources and capabilities. Nonetheless, rather than contending that open innovation has completely supplanted closed innovation, it is more accurate to assert that it correlates with and extends traditional innovation practices, opening new avenues for value creation and growth.

Studies show that open innovation allows entrepreneurs, especially those in small and medium-sized enterprises (SMEs) and startups, to mitigate resource scarcity by exploiting external competencies, networks, and technologies (Enkel et al., 2010). This trend is essential during a period where independent organisations – irrespective of the size or industry – can have absolute ownership of the totality of knowledge and resources crucial to succeed in highly complex and competitive markets. By teaming up with external organisations such as research institutions, suppliers, customers, and even competitors, entrepreneurs can jointly create value, expediting the product development process and optimising resource utilisation. These benefits are in line with the goals of business growth, enacting open innovation as a key device for strengthening market positioning, innovation capabilities, and perpetuity.

Irrespective of its potential, open innovation has its limitations. Entrepreneurs must deal with problems like intellectual property (IP) portfolio management, building confidence with collaborative partnerships, and unified incorporation of external ideas into existing business models (Vanhaverbeke et al., 2018). Furthermore, the fear of once-unified efforts breaking into parts or the unintentional release of confidential information calls for effective strategies for managing external communications while preserving competitive information. These complexities create basic problems about how entrepreneurs can make use of open innovation to promote business growth while alleviating associated risks.

This paper seeks to tackle these shortcomings by exploring how entrepreneurs conduct and oversee open innovation strategies to develop sustainable business growth. Capitalizing on insights from the Resource-Based View (RBV) and network theory, the paper investigates the enablers, hindrances, and practical results of open innovation in entrepreneurial contexts. The primary enquiry of this study is: What paradigm of open innovation can support entrepreneurs to exploit external ideas and collaborations while monitoring the risks and trade-offs involved? To approach this question, the study utilizes a qualitative research approach, adopting semi-structured interviews with entrepreneurs and corroborating findings from secondary data like business plans and partnership agreements.

The outcomes of this study are threefold. First, it provides insight into how open innovation operates in SMEs and startups, tackling a significant disparity in the literature. Second, offers practical suggestions for entrepreneurs, policymakers, and investors striving to promote innovation ecosystems that support entrepreneurial growth. Finally, unifies theoretical frameworks like RBV and network theory to enhance the discussion on open innovation and its role in driving business success. In doing so, this study strives to promote both scholarly knowledge and practical applications of open innovation in entrepreneurial settings.

1.1. Rationale of the Study

The increasing significance of open innovation as a motivator of entrepreneurial development emphasises the necessity for a more in-depth investigation into how entrepreneurs, especially those in small and medium-sized enterprises (SMEs) and startups, can effectively implement and manage this model. Even with its growing prevalence, observational evidence on the practical implementation of open innovation in entrepreneurial ventures remains limited. Existing research represents the nuances of how open innovation operates within SMEs and startups, specifically in contexts where scarce resources and increased vulnerability create unusual challenges. These

challenges consist of securing meaningful partnerships, managing partnership management, ensuring financial sustainability, and balancing openness with the protection of competitive information.

1.2. Aims and Objectives of the Study

The main goal of this study is to investigate how enterprising individuals can effectively channel open innovation to foster business growth, elevate market presence, and develop innovative potential. By concentrating on the integration of external ideas, technologies, and partnerships into their business models, this research endeavours to deal with the challenges encountered by entrepreneurs, specifically in resource-constrained environments such as small and medium-sized enterprises (SMEs) and startups.

To accomplish this main purpose, the clearly defined purposes are outlined below:

1. **Identify the enablers of successful collaboration for entrepreneurs across industries:** This objective concentrates on comprehending the main components that foster collaboration with external entities, comprising research institutions, corporate partners, and customers. Comprehension from this objective will support entrepreneurs in creating robust networks and leveraging external resources strategically.
2. **Examine the challenges associated with open innovation, particularly intellectual property (IP) rights, trust-building, and the integration of external ideas into existing business models:** Whilst open innovation offers substantial possibilities, it also poses threats such as IP leakage, conflicting objectives, and cultural resistance. This objective focuses on these challenges and investigates possibilities to mitigate them.
3. **Analyse risk management strategies adopted by entrepreneurs during the implementation of open innovation:** By investigating real-world examples and case studies, this objective seeks to offer operational guidelines on how entrepreneurs can manage risks while optimising the benefits of external collaborations.
4. **Evaluate the impact of open innovation strategies on business growth, market positioning, and innovation capabilities:** This objective aims to experimentally assess how open innovation contributes to quantifiable outcomes such as revenue growth, competitive advantage, and advanced innovation performance, especially in entrepreneurial ventures.
5. **To suggest practical advice for entrepreneurs, policymakers, and investors on promoting an innovative ecosystem:** Based on the results, this objective aims to provide targeted advice for creating nurturing environments that empower entrepreneurs to excel through open innovation, integrating with overall aims such as economic diversification and sustainable growth.

1.3. Justification and Contribution to Existing Knowledge

While previous studies have examined various features of open innovation, the dearth of sufficient empirical data persists in its application in entrepreneurial contexts, most notably among SMEs and startups in emerging economies. This study fosters a connection by providing an in-depth examination of how entrepreneurs can manage the dilemmas of open innovation to achieve sustainable business growth. Furthermore, it articulates theoretical frameworks like the Resource-Based View (RBV) and network theory to deepen the discussion on open innovation and its role in promoting entrepreneurial success.

2. Literature Review

2.1. Theoretical Framework: Open Innovation in Entrepreneurship

As suggested by Chesbrough(2023), open innovation represents a quantum leap from the traditional closed innovation model, which entirely relies on internal resources and research. Conversely, open innovation encourages organisations to source external knowledge and technologies, while simultaneously sharing their own innovations with external forces, encouraging reciprocal development. This proposition is exceptionally useful for entrepreneurs, especially those in small and medium-sized enterprises (SMEs) or startups, without the financial and technical resources to execute a broad-based investigation and development independently(Vanhaverbeke et al., 2018). By leveraging external collaborations with customers, suppliers, universities, and other stakeholders, entrepreneurs can surmount internal resource limitations and foster innovation.

The theoretical underpinning of open innovation is largely based on two streams: the Resource–Based View (RBV) and network theory. The Resource–Based View suggests that firms achieve competitive advantage by gaining and developing valuable, rare, and inimitable resources (Barney, 1991). Moreover, in the context of open innovation, this viewpoint is extended to include external resources, emphasising the importance of accessing capabilities outside the firm’s boundaries (Al Balushi & Anderson, 2020). Network theory supplements RBV by emphasising how external relationships and collaborations promote innovation and growth. As an example, partnerships enable firms to access external knowledge, markets, and expertise, crucial for sustaining a competitive advantage (West & Bogers, 2014).

Although both RBV and network theory are relevant, this paper embraces network theory as its key perspective. This choice demonstrates the growing emphasis on external relationships in entrepreneurial ecosystems, where partnership is crucial to overcoming resource limitations and fostering innovation. By incorporating perspectives from network theory, the study intends to investigate how entrepreneurs can oversee external partnerships to drive business growth and innovation.

2.2. Entrepreneurial Open Innovation Strategies

Entrepreneurs implement different approaches to incorporate open innovation into their business models, subject to factors such as firm size, industry, and market position. Two fundamental models - open inbound and open outbound innovation – have received considerable scholarly attention. Open inbound innovation entails gaining external knowledge, technologies, and ideas to promote internal capabilities. This mode is especially in vogue with startups seeking access to advanced technologies without incurring high R&D costs. For instance, university-industry collaborations allow startups to harness scientific breakthroughs while minimizing expenses (Grimpe & Kaiser, 2010). Such collaborations not only expand firms’ knowledge but also grant access to skilled talent and cutting-edge tools.

On the other hand, open outbound innovation concentrates on sharing internal innovations with external collaborations through licensing agreements, joint ventures, or strategic alliances. This perspective enables entrepreneurs to commercialize inventions that fall outside their core strategy, generating additional revenue streams. For example, firms may license their technologies to third parties or collaborate with larger corporations to penetrate new markets (Huizingh, 2011). Both inbound and outbound strategies are intertwined and frequently give rise to beneficial collaborations, as seen in platform- based industries such as software development and biotechnology (Bogers et al., 2017).

Nonetheless, these strategies come with their drawbacks. Critics contend that over-reliance on external collaborations may weaken or diminish a firm’s unique competencies or lead to conflicts of interest (Hagedoorn & Ridder, 2012). Furthermore, the validity of open innovation strategies depends on the unified vision of goals and expectations between partners, which requires delicate handling and management. These conflicting viewpoints highlight the need for a fair and even-handed approach to open innovation, specifically for resource–constrained entrepreneurs.

2.3. The Role of Collaboration in Driving Entrepreneurial Growth

Collaboration forms the basis of open innovation, underscoring the partnership management skills as critical for entrepreneurial success. Entrepreneurs often draw on outside parties such as universities, research institutions, and corporate partners to access advanced facilities, knowledge, and expertise (Spithoven et al., 2010). For instance, corporate venture capital (CVC) equips startups with financial resources, market access, and mentorship, whilst corporations gain from exposure to cutting–edge innovations (Drover et al., 2017). These partnerships not only foster growth but also contribute to alleviating risks associated with adopting new technologies.

International partnerships, to a greater extent, enhance the benefits of open innovation by empowering entrepreneurs to tap into global networks. Cross–border collaborations enable firms to access diverse markets, hire international talent, and implement innovative practices from different regions (Brunswick & Vanhaverbeke et al., 2015). For example, startups in developing markets often engage in international partnerships to mitigate the shortage of local infrastructure and scale their operations globally. Such international connections are increasingly crucial in today’s

interconnected economy, where expansion is an essential element enabling growth and scalability (Vanhaverbeke et al., 2018).

Nevertheless, critics express concern about external collaborations, contending that they may expose firms to intellectual property risks or conflicting objectives. These concerns stress the significance of strategic management in open innovation initiatives.

2.4. Challenges and Barriers in Entrepreneurial Open Innovation

Regardless of its potential, open innovation entails various problems for entrepreneurs. One primary concern is intellectual property (IP) management. Entrepreneurs must find a fine line between openness and safeguarding proprietary knowledge, often necessitating contractual agreements such as NDAs or IP-sharing contracts (Hagedoorn & Ridder, 2012). Another additional barrier is organizational culture, promoting a shared purpose within and outside the firm, which is critical for successful open innovation. Lack of goal alignment or clear communication structures can lead to partnership breakdowns and missed opportunities (Scuotto et al., 2017).

Moreover, resource limitations endure as a significant hurdle for SMEs and startups. Whilst open innovation provides access to external resources, it also requires time, effort, and expertise to effectively manage partnerships. These challenges underscore the need for customized strategies that cater to the unique needs of smaller firms, a gap that remains underexplored in existing literature.

2.5. Integrated Discussion of Gaps and Contributions

The existing body of knowledge on open innovation largely focuses on large multinational enterprises (MNEs), overlooking SMES and startups, especially in emerging economies (Du Chatenier et al., 2010). This is a major discrepancy because SMEs face distinct challenges compared to large firms, including limited access to capital, expertise, and global networks. Furthermore, research often neglects variations in open innovation practices in various industries and geographical contexts, which limits the external validity of findings (Bogers et al., 2017).

This paper resolves these issues by providing an empirical investigation of how entrepreneurs in SMEs and startups can make efficient use of external ideas and collaborations. By incorporating perspectives from network theory, the study investigates best practices and barriers in implementing open innovation strategies, providing feasible advice for entrepreneurs, policymakers, and investors. For instance, comprehending the role of cross-border partnerships can inform guiding policies that support international collaborations, while appreciation of IP governance can guide entrepreneurs in mitigating risks. These inputs ensure that the research is directly addressing the research question, which seeks to identify a model of open innovation that balances external collaboration with risk management for entrepreneurial growth.

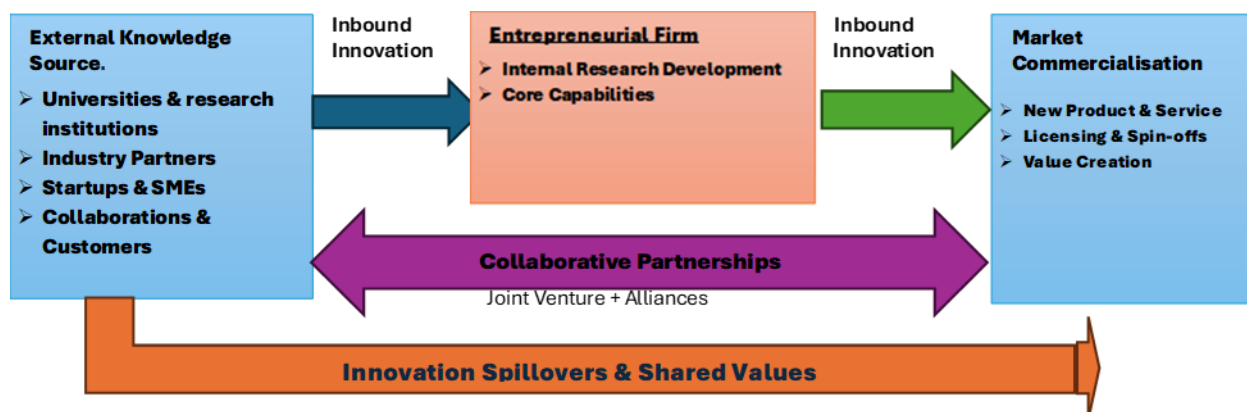


Figure 1. Coupled Open Innovation Model. Source: Chesbrough (2003)

The Coupled Open Innovation Model by Chesbrough (2003) and its extension by Henry Chesbrough and Marcel Bogers (2014) is used to explore the relationship between Open Innovation and Entrepreneurship. This model deviates from the commonly known inbound and outbound open innovation approaches and looks at open innovation as a

coupled process in which firms, at the same time, internalise external knowledge and commercialise internal knowledge (Andriyani *et al.*, 2024). The model is built on three assumptions. The first assumption is that open innovation requires that a significant portion of knowledge is distributed within a company, and that collaboration with suppliers, buyers, and other stakeholders, such as start-ups, is necessary (Chesbrough, 2003). The second assumption is that inter-organisational collaboration is a powerful means to transform the distributed knowledge into innovations that will generate business (West & Bogers, 2014; Pinhal *et al.*, 2025). The third assumption is that being part of a network can result in innovation spillovers, i.e., value that firms generate that goes beyond what individual firms could generate with their internal knowledge (Enkel *et al.*, 2009; Radicic & Alkaraan, 2024).

The model has a strength in providing a realistic and complete view of open innovation by approaching collaboration as the source of innovation rather than R&D (Chesbrough & Bogers, 2014; Sá *et al.*, 2025): The model is very useful for non-entrepreneurial firms, as they rely on external networks to overcome their inherent limited resources to search for, identify, and develop innovative opportunities to increase their performance and competitiveness. Empirical research shows that companies that seek and make use of external knowledge have better innovation performance and gain a competitive advantage (West & Bogers, 2014; Enkel *et al.*, 2009).

A major strength of the model lies in its realistic and integrative perspective, emphasising innovation through collaboration rather than isolated R&D (Usman *et al.*, 2024). This makes it particularly relevant for entrepreneurial firms, which often rely on external networks to overcome resource constraints and accelerate innovation (Mention, 2011). Empirical evidence shows that such firms achieve improved innovation performance and competitive advantage (West & Bogers, 2014; Enkel *et al.*, 2009).

However, the model also presents challenges, including knowledge leakage, intellectual property risks, and coordination complexities, especially for smaller firms (Xin *et al.*, 2026; Yun *et al.*, 2025; Zan *et al.*, 2024)

Despite these limitations, evidence suggests that with effective governance and trust, the benefits of collaboration outweigh the risks (Bogers *et al.*, 2017; West & Bogers, 2014). Thus, the Coupled Open Innovation Model remains a robust and contextually relevant framework for explaining how entrepreneurial firms leverage collaborative networks to achieve sustainable competitive advantage.

3. Research Methodology

This paper employs a qualitative approach to research to explore how Omani entrepreneurs implement open innovation strategies for business development. Qualitative research is particularly effective for this investigation as it permits a profound understanding of the experiences, motivations, and challenges faced by entrepreneurs in implementing open innovation practices. The complication and circumstantial nature of open innovation – particularly within the unique economic and cultural environment of Oman -requires a versatile strategy that captures rich, descriptive data rather than numerical generalizations (Bryman, 2016).

The Sultanate of Oman serves as the center of attention of this paper due to its deliberate emphasis on economic diversification through innovation under Vision 2040. This national initiative emphasizes the importance of promoting entrepreneurship, encouraging foreign direct investment, and taking advantage of external cooperation to reduce dependency on oil revenues. By analyzing Omani entrepreneurs' adoption of open innovation, this paper attempts to address the research question: "How can entrepreneurs in Oman effectively harness external ideas and partnerships to drive business growth while managing associated risks? This focus corresponds with the comprehensive understanding of how open innovation contributes to sustainable economic development in emerging economies.

3.1. Research Design: Multiple Case Study Approach

This paper adopts a multiple case study design, which involves investigating the experiences of diverse entrepreneurs across various sectors in Oman. A multi-site case study approach is chosen because it facilitates cross-case comparisons, enabling the identification of patterns and variations in how open innovation is implemented in various industries (Yin, 2018). The targeted sectors – manufacturing, information technology, renewable energy, and tourism – represent Oman’s economic diversification efforts under Vision 2040. Each individual instance (“case”) embodies a unique entrepreneurial venture that has successfully carried out open innovation practices, such as partnerships with universities, startups, corporate entities, or international organizations.

The utilization of purposeful sampling ensures that participants are selected based on their relevance to research questions. Categorically, the entrepreneurs involved in this study have been acknowledged for their ability to integrate external knowledge and resources into their business models, setting them as paradigms for exploring best practices and challenges in open innovation.

3.2. Data Collection Methods

3.2.1. Semi-Structured Interviews

Semi-structured interviews shape the primary data collection method, allowing freedom to investigate open-ended questions while remaining organized and focused on key themes related to open innovation. The interviews aim to tackle the following areas:

- **Motivations for Open Innovation:** The reasons for Omani entrepreneurs to adopt open innovation strategies. The role of government initiatives in encouraging practices such as Innovation Hubs and Public-Private partnerships.
- **Nature of Collaborations:** The types of external partnerships established (e.g., local universities, international firms, government-sponsored programs). The structuring of the collaborations.
- **Challenges and Opportunities:** The barriers entrepreneurs encounter while implementing open innovation, such as regulatory constraints, funding limitations, or ecosystem immaturity. The benefits they have observed in terms of growth, competitiveness, and market expansion.

The interviews are either conducted one-on-one or via web-based platforms, contingent upon participant availability and location. Each session has a duration of roughly 45 minutes to one hour and is transcribed word-for-word to facilitate detailed analysis. To maintain reliability, follow-up questions are used to clarify responses and investigate further into specific questions.

3.2.2. Case Studies

Along with interviews, case studies are developed around selected entrepreneurial firms to gain a better understanding of how open innovation is entrenched within organizational processes. These case studies highlight pragmatic examples from industries such as agriculture, technology, and logistics, which are in agreement with Oman’s strategic priorities. Core elements investigated:

- **Partnership Structures:** How inter-organizational relationships (e.g., joint ventures, incubators) are formally organized.
- **Technology Push vs. Market Pull:** How firms leverage open innovation to develop new products, services, or technologies tailored to the Omani market.
- **Long-Term Impacts:** The implications of open innovation for market expansion within the GCC region and the adoption of advanced technologies like artificial intelligence and blockchain.

These case studies not only demonstrate approved applications of open innovation but also clarify the constraints and solutions encountered in Oman’s entrepreneurial ecosystem.

3.2.3. Document Analysis

To reinforce the validity and reliability of the findings, an examination of documents on relevant secondary data is conducted, including business plans, innovation reports, partnership agreements, and government publications such as Oman Vision 2040. This complementary data assists in:

- Outline the progression of open innovation practices in Oman.
- Understand the official organization of inter-organizational relationships.
- Appraise the financial and operational influence of open innovation policies on firm performance and competitive advantage.

3.3. Data Analysis

The collected data are interpreted using thematic analysis, a prevalent methodology for identifying, organizing, and elucidating patterns of meaning (themes) across qualitative datasets (Braun & Clarke, 2006). Subject matters are derived from the following categories:

- Collaborative decision-making processes among entrepreneurs.
- Attributes of external connections and their variation industry-wide (e.g., technology joint ventures vs. traditional manufacturing).
- Prospects and perils associated with open innovation implementation, centering on regulatory, funding, and ecosystem-related challenges.
- Market consequences of open innovation, especially in growing markets or developing technologies within Oman's strategic sectors.

Comparative case analysis is performed to identify correlations and differences in how open innovation is implemented across industries and organizational scales. Related literature on qualitative data analysis, such as Miles, Huberman, and Saldaña (2014), is cited to uphold the analytical framework and guarantee thoroughness.

3.4. Justification of Methodological Choices

The selection of qualitative approaches, including semi-structured interviews, case studies, and document analysis, is grounded in securing the nuanced and context-sensitive nature of open innovation in Oman. According to Eisenhardt (1989), case studies are especially insightful for theory-building in areas needing more research, such as open innovation in emerging economies. Likewise, thematic analysis offers a systematic yet adaptable approach to interpreting qualitative data, ensuring that findings are both comprehensive and evidence-based.

By using Oman as a case study, this research advances to the larger academic field of open innovation by emphasising the opportunities and challenges encountered by entrepreneurs in resource - constrained environments. The knowledge acquired is expected to inform both academic discourse and practical recommendations for policymakers, investors, and entrepreneurs seeking to promote innovation-driven growth in Oman and similar contexts.

4. Limitations

This paper recognises inherent constraints that may influence the scope and generalizability of its findings:

1-Sample Selection Bias: The use of purposive sampling to recognise participants who have played an active role in open innovation practices may introduce sampling bias. By concentrating on entrepreneurs who have already embraced external collaborations, the study disregards those who have not yet interacted with external partners. This exclusion could give rise to an incomplete understanding of the challenges and barriers encountered by entrepreneurs who are reluctant or unable to engage in open innovation. As a consequence, the findings incompletely depict the broader population of entrepreneurs in Oman.

2-Geographical and Sectoral Variability: The profundity and experience of Oman's innovation ecosystems differ greatly across regions and industries. In an effort to ensure diversity in the sample by including diverse participants from different sectors and geographical locations, the small participation in open innovation initiatives within certain regions may constrain the study's ability to seize a comprehensive picture of open innovation practices nationwide.

3-Exploratory Nature of the Study: Given that this research is investigative in nature, it centers on understanding the enablers, barriers, and outcomes of open innovation practices among Omani entrepreneurs. While this method offers valuable perspectives into the phenomenon, the financial or operational impacts of open innovation are non – quantifiable. Future investigations could embrace a mixed–method approach to add to these qualitative findings with quantitative data, such as firm performance metrics or market growth indicators.

4-Limited Scope of External Collaborators: The study largely investigates collaborations including startups, research institutions, and corporate partners. Other alternative sources of external innovation, such as informal networks or international partnerships, are underrepresented. This concentration may restrict the breadth of insights into the full range of external collaborators available to entrepreneurs in Oman.

5-Generalizability to Other Contexts: The findings of this investigation are particular to the entrepreneurial ecosystem in Oman, especially within the context of Vision 2040 and its stress on economic diversification. While these insights are enlightening for understanding open innovation in Oman, they may not be pertinent to other countries or regions with different economic, cultural, or institutional contexts.

5. Findings

5.1. Insight Findings

This section outlines the main results derived from the empirical investigation of Omani entrepreneurs' adoption of open innovation strategies. The insights are well-founded insights in the data gathered via semi-structured interviews, case studies, and document analysis, maintaining a strong connection to the specific cases analysed. These findings are structured into thematic categories that directly answer the research question: How can entrepreneurs in Oman effectively harness external ideas and partnerships to drive business growth while managing associated risks?

5.2. Adoption of Open Innovation

The findings indicate that Omani entrepreneurs increasingly depend on open innovation as a strategic instrument to overcome resource constraints, access cutting–edge technologies, and sustain competitive advantages. This trend is particularly apparent in sectors prioritized under Oman Vision 2040, such as renewable energy, information technology, and logistics. For example:

- **Case Study Example 1:** A renewable energy startup in Muscat collaborated with a German research institution to jointly develop solar panel technologies customized to Oman's desert climate. This partnership not only expedited product development but also established the firm as a regional leader in sustainable energy solutions.
- **Case Study Example 2:** A logistics company partnered with an international corporation to deploy blockchain-based supply chain management systems, fostering accountability and operational efficiency.

These examples demonstrate how collaborations with universities, research institutions, and international organizations facilitate Omani firms to innovate and align with national economic diversification goals.

5.3. Motivations and Drivers

Entrepreneurs in Oman are inspired to embrace open innovation for several reasons, as presented by the participants:

- **Speeding Up Development Processes:** Large number of entrepreneurs cited limiting the use of time – to – time markets for new products and services. For instance, a fintech startup leveraged AI algorithms developed by a European university to introduce its mobile platform within six months, considerably faster than traditional development cycles.

- **Access to Scarce Knowledge:** Participants underscored the scarcity of specialized knowledge and expertise in Oman, especially in emerging fields like artificial intelligence and biotechnology. Partnerships with international partners help bridge this gap.
- **Government Support:** The Omani government is instrumental in fostering open innovation through endeavors such as Innovation Hubs and Public-Private Partnerships (PPPs). In addition, funding mechanisms like the Oman Technology Fund (OTF) provide vital financial assistance to startups, empowering them to pursue innovative projects.

These drivers reinforce the importance of both internal motivations and external enablers in enhancing open innovation among Omani entrepreneurs.

5.4. Challenges in Implementation

Notwithstanding its benefits, open innovation presents major challenges for entrepreneurs in Oman:

- **Limited Access to Funding:** Entrepreneurs often quoted challenges in obtaining venture capital, particularly for high-risk startups. Traditional financial institutions remain reluctant to fund innovation-driven ventures because of the estimated risks.
- **Intellectual Property (IP) Protection:** Ineffective enforcement of intellectual property rights discourages some entrepreneurs from revealing confidential information or engaging in collaborative ventures.
- **Regional Disparities:** Entrepreneurs in the countryside encounter major obstacles compared to those in Muscat, the capital. Restricted access to resources, networks, and funding opportunities aggravates these disparities. For example, a participant from Salalah pointed out that local startups often struggle hard to reach out to potential collaborators outside their immediate region.
- **Regulatory Bottlenecks:** Although the government backs innovation, certain established regulatory guidelines remain unmanageable, delaying project implementation. In addition, talent shortage in advanced technologies impedes progress in fields like AI and renewable energy.

These findings point to the need for targeted interventions to overcome systematic hindrances and create a more inclusive innovation ecosystem.

5.5. Outcomes and Benefits

Regardless of these challenges, the greater part of participants reported significant advantages from adopting open innovation approaches:

- **Accelerated Market Entry:** Alliances with outside entities empowered firms to bring products and services to market faster. For instance, a software development company shortened the product launch schedule by partnering with a regional tech incubator.
- **Enhanced Product Differentiation:** Entrepreneurs observed advancements in product quality and differentiation. A participant described how partnering with a European design firm brought about a unique user interface for their mobile application, leading to higher customer satisfaction.
- **Market Expansion:** International collaborations eased access into the regional and global markets. For example, a renewable energy firm scaled up its operations to neighbouring GCC countries after forming partnerships with multinational corporations.

These results illustrate the tangible value of open innovation in driving business growth and competitiveness.

5.6. Regional Disparities

The paper emphasizes considerable differences in access to innovation resources across Oman. Entrepreneurs in Muscat gain from being near government agencies, research institutions, and funding opportunities, while, in contrast,

those in rural areas encounter limited access to external networks. Initiatives to create regional innovation hubs outside the capital are in progress, but still inadequate to address these gaps fully.

5.7. Cultural Shift Towards Innovation

The results also portray a cultural shift towards engaging with innovation and entrepreneurship in Oman. Historically, there was suspicion about business ownership and reliance on external collaborations. However, younger generations are more amenable to entrepreneurial ventures and actively strive to seek international collaborations. Government projects, such as training programs and mentorship schemes, have reinforced conviction in local talent and encouraged risk-taking.

6. Implications

6.1. Theoretical Implications

This study furthers the literature on open innovation by providing experiential findings from an emerging economic context. It features the unique challenges and opportunities confronted by entrepreneurs in resource-constrained environments, enhancing existing theories such as the Resource-Based View (RBV) and network theory. Respectively:

- The findings accentuate the role of external partnerships in compensating for internal resource deficits, broadening RBV principles to include external ecosystems.
- The study emphasises the significance of trust and relationship-building in enhancing successful collaborations, aligning with network theory.

6.2. Managerial Implications

For proponents, the study offers implementable recommendations:

- **Policy Makers:** Improve intellectual property safeguards and simplify regulatory procedures to encourage open innovation. Boost funding programs like OTF to support startups in underprivileged regions.
- **Entrepreneurs:** Capitalise on government initiatives and international collaborations to vanquish resource constraints.
- **Investors:** Direct attention to funding innovation-driven ventures, especially those tackling societal problems such as renewable energy and digital transformation.

7. Conclusion

This study examines how Omani entrepreneurs manage to overcome the internal constraints that hinder their firm's growth by using open innovation. The findings show that local firms are effective in exploiting inbound knowledge and engaging in outward knowledge transfer with other firms, research institutions, and startups. Moreover, partnerships for value creation enhance Omani firms' ability to access new skills, technologies, and markets that foster innovation. The findings are aligned with Oman's efforts towards economic diversification and enhancing competitiveness as outlined in Oman Vision 2040, and have the potential to generate knowledge that can be generalised to other contexts.

Despite the many benefits of open innovation, there are several structural and institutional barriers that hamper its effective adoption. This is particularly true in Oman, where there is a lack of support mechanisms for venture financing, poor levels of intellectual property protection, and uneven development of the innovation infrastructure. These challenges are not unique to Oman and are faced by several emerging economies in terms of the governance of inter-organisational knowledge exchange.

This paper makes two key contributions to the literature. Firstly, it applies the Coupled Open Innovation Model empirically in a country context where there is currently a lack of evidence: Oman. Secondly, it provides practical

management insights for handling external collaborations and knowledge flows in a constrained environment. From a policy and research perspective, the paper suggests that improving key institutions, increasing access to funding for innovation, and pursuing inclusive innovation are key to the development of successful innovation ecosystems in Oman. Future research should be longitudinal, using a combination of qualitative and quantitative research methods in order to gain a deeper, longer-term understanding of open innovation and its effects on firm performance and economic diversification in Oman.

7.1. Future Research Directions

Future research should examine the long-term financial effects of open innovation on Omani enterprises, particularly regarding sustainability and firm performance, while also assessing the effectiveness of policy interventions in fostering innovation-driven growth. Additionally, comparative studies across the Gulf Cooperation Council countries would provide deeper insights into regional innovation dynamics and enhance the generalizability of findings.

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Ethics Approval

This study received ethical approval from the Research Ethics Committee of the University of Technology and Applied Sciences (UTAS), Oman, before data collection. No ethics approval reference number was assigned. The research was conducted in accordance with the ethical guidelines of the University of Technology and Applied Sciences for research involving human participants. All participants were informed of the purpose and procedures of the study before participation. Participation was entirely voluntary, and participants were informed of their right to refuse participation or withdraw from the study at any time without penalty. Informed consent was obtained from all participants before the interviews. Participants were also provided with the researcher's contact details and informed that the study involved minimal risk. No personal or sensitive information was collected, and participants' anonymity and confidentiality were maintained throughout the study. All data were used solely for academic research purposes.

Conflict of Interest

The corresponding author affirms, on behalf of all co-authors, that there are no conflicts of interest related to this publication.

References

- Ahmad, S. R., Arumugam, D. D., Bozovic, S., Degefa, E., Duvvuri, S., Gott, S., Gupta, N., Hammer, J., Kaluskar, N., Kaushik, R., Khanduja, R., Mujumdar, P., Malhotra, G., Naik, P. S., Ogg, N., Parthasarthy, K. K., Ramakrishnan, R., Rodríguez, V., Sharma, R., & Szymaszek, J. (2023). Microsoft Purview: A system for central governance of data. *Proceedings of the VLDB Endowment*, 16(12), 3624–3635.
- Alhassan, N., Bell, R., Andrews, S., Salifu, I., & colleagues. (2025). Learning of innovation opportunities: Sources and processes of open innovation for sustaining SME hotels. *The Learning Organization*, 32(5), 775–798. <https://www.emerald.com/tlo/article/32/5/775/1265704>
- Allen, T. D., et al. (2015). To understand what the local community knows about telecommuting in the workplace.
- Andriyani, Y., Yohanitas, W. A., & Kartika, R. S. (2024). Adaptive innovation model design: Integrating agile and open innovation in regional areas of innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(1), 100–118. <https://www.sciencedirect.com/science/article/pii/S2199853123002998>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Bogers, M., Zobel, A. K., Afuah, A., Almirall, E., Brunswicker, S., Dahlander, L., Frederiksen, L., Gawer, A., Gruber, M., Haefliger, S., Hagedoorn, J., Hilgers, D., Laursen, K., Magnusson, M. G., Majchrzak, A., McCarthy, I. P., Moeslein, K. M., Nambisan, S., Piller, F. T., & Ter Wal, A. L. J. (2017). The open innovation research landscape: Established perspectives and emerging themes across different levels of analysis. *Industry and Innovation*, 24(1), 8–40. <https://doi.org/10.1080/13662716.2016.1240068>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77–101.
- Brunswicker, S. and Vanhaverbeke, W. (2015) 'Open innovation in small and medium-sized enterprises (SMEs): External knowledge sourcing strategies and internal organizational facilitators', *Journal of Small Business Management*, 53(4), pp. 1241–1263. <https://doi.org/10.1111/jsbm.12120>.

- Bryman, A. (2016) *Social Research Methods*. 5th edn. Oxford: Oxford University Press.
- Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business School Press.
- Chesbrough, H., & Bogers, M. (2014). Explicating open innovation: Clarifying an emerging paradigm for understanding innovation. In H. Chesbrough, W. Vanhaverbeke, & J. West (Eds.), *New frontiers in open innovation* (pp. 3–28). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199682461.003.0001>
- Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A. and Dushnitsky, G. (2017) 'A review and road map of entrepreneurial equity financing research: Venture capital, corporate venture capital, angel investment, crowdfunding, and accelerators', *Journal of Management*, 43(6), pp. 1820–1853. <https://doi.org/10.1177/0149206317690584>.
- Du Chatenier, E., Verstegen, J.A.A.M., Biemans, H.J.A., Mulder, M. and Omta, S.W.F. (2010) 'Identification of competencies for professionals in open innovation teams', *R&D Management*, 40(3), pp. 271–280. <https://doi.org/10.1111/j.1467-9310.2010.00590.x>.
- Eisenhardt, K.M. (1989) 'Building theories from case study research', *Academy of Management Review*, 14(4), pp. 532–550. <https://doi.org/10.5465/amr.1989.4308385>.
- Enkel, E., Gassmann, O., & Chesbrough, H. (2009). Open R&D and open innovation: Exploring the phenomenon. *R&D Management*, 39(4), 311–316. <https://doi.org/10.1111/j.1467-9310.2009.00570.x>
- Grimpe, C., & Kaiser, U. (2010). Balancing internal and external knowledge acquisition: The gains and pains from R&D outsourcing. *Journal of Management Studies*, 47(8), 1483–1509.
- Hagedoorn, J. and Ridder, A.K. (2012) *Open innovation, contracts, and intellectual property rights: An exploratory empirical study*. UNU-MERIT Working Paper No. 2012-025. Maastricht: UNU-MERIT.
- Huizingh, E. K. R. E. (2011). Open innovation: State of the art and future perspectives. *Technovation*, 31(1), 2–9.
- Ispiryani, A., Pakeltiene, R., Ispiryani, O., & Giedraitis, A. (2024). Fostering organizational sustainability through employee collaboration: An integrative approach to environmental, social, and economic dimensions. *Encyclopedia*, 4(4), 1806–1826.
- Mention, A. L. (2011). Co-operation and co-opetition as open innovation practices in the service sector: Which influence on innovation novelty? *Technovation*, 31(1), 44–53. <https://doi.org/10.1016/j.technovation.2010.08.002>
- Miles, M.B., Huberman, A.M. and Saldaña, J. (2014) *Qualitative Data Analysis: A Methods Sourcebook*. 3rd edn. Thousand Oaks, CA: Sage Publications.
- Pinhal, R., Estima, A., & Duarte, P. (2025). Open innovation in the tourism industry: A systematic review. *Tourism and Hospitality*, 6(3), 124. <https://www.mdpi.com/2673-5768/6/3/124>
- Powell, W. W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly*, 41(1), 116–145.
- Radicic, D., & Alkaraan, F. (2024). Relative effectiveness of open innovation strategies in single and complex SME innovators. *Technology Analysis and Strategic Management*, 36(8), 1–15. <https://doi.org/10.1080/09537325.2022.2130042>
- Sá, T., Ferreira, J. J. M., & Jayantilal, S. (2025). Open innovation strategy: A systematic literature review. *European Journal of Innovation Management*, 28(2), 454–489. <https://www.emerald.com/ejim/article/28/2/454/1245720>
- Scuotto, V., Del Giudice, M., Bresciani, S. and Meissner, D. (2017) 'Knowledge-driven preferences in informal inbound open innovation modes: An explorative view on small to medium enterprises', *Journal of Knowledge Management*, 21(3), pp. 640–655. <https://doi.org/10.1108/JKM-10-2016-0465>.
- Spithoven, A., Clarysse, B. and Knockaert, M. (2010) 'Building absorptive capacity to organise inbound open innovation in traditional industries', *Technovation*, 30(2), pp. 130–141. <https://doi.org/10.1016/j.technovation.2009.08.004>
- Usman, M., Khan, M. I., & Khattak, A. N. (2024). The impact of open innovation on competitive advantage in the presence of knowledge coupling: An empirical study on small and medium enterprises. *Pakistan Journal of Humanities and Social Sciences*, 12(3), 1–18. <https://www.journals.internationalrasd.org/index.php/pjhss/article/download/2568/1733>
- Vanhaverbeke, W., Frattini, F., Roijakkers, N. and Usman, M. (eds.) (2018) *Researching Open Innovation in SMEs*. Singapore: World Scientific Publishing.
- West, J., & Bogers, M. (2014). Leveraging external sources of innovation: A review of research on open innovation. *Journal of Product Innovation Management*, 31(4), 814–831. <https://doi.org/10.1111/jpim.12125>
- Xin, C., Wang, Y., Li, Y., Zhang, F., & Xu, H. (2026). How do coupled knowledge flows impact value co-creation in the innovation ecosystem? An empirical study based on the open innovation theory. *Journal of Business and Industrial Marketing*. Advance
- Yin, R.K. (2018) *Case Study Research and Applications: Design and Methods*. 6th edn. Thousand Oaks, CA: Sage Publications.
- Yun, J. H. J., Zhao, X., Del Gaudio, G., & colleagues. (2025). Leveraging business model innovation through the dynamics of open innovation: A multi-country investigation in the restaurant industry. *European Journal of Innovation Management*, 28(4), 1342–1368. <https://www.emerald.com/ejim/article/28/4/1342/1246542>
- Zan, F., Leong, Y.C., Ismail, N.A., Chu, M., Saif, A.N.M. and Islam, K.M.A. (2024) 'Knowledge sharing and innovation performance: The mediating role of open innovation', *Global Business and Organizational Excellence*, 43(3), pp. 32–45. <https://doi.org/10.1002/joe.22235>.