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Women Stem-up

Building a STEM Start-Up, STEM Entrepreneurship, Stimmuli for Social Change

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STIMMULI
for social change

NTNU
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Science and Technology



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Course Introduction & Objectives

Welcome to ***Entrepreneurship for Women in STEM!***

We'll explore how your STEM knowledge can be translated into entrepreneurial success. Whether you have an idea or are just curious about starting a business, this course will help you develop skills to make it a reality. Let's get ready to dive into the world of startups with a focus on women empowerment in STEM.

Course Objectives:

- A. Provide background knowledge on entrepreneurship specifically for women in STEM.
- B. Highlight the importance of women's participation in the entrepreneurial ecosystem within STEM fields.
- C. Offer practical exercises designed to inspire women STEM students and educators to pursue entrepreneurial careers and contribute to bridging the gender gap in STEM professions.

What to Expect: We'll explore entrepreneurial fundamentals tailored to STEM fields, focusing on real-world application and interactive activities to help women build business skills.





Entrepreneurship & female entrepreneurship

	<ul style="list-style-type: none">• Entrepreneurship has been defined as “how, by whom and with what effects opportunities to create future goods and services are discovered, evaluated and exploited.” (Shane & Venkataraman, 2000:218)• An example of the process definition is Elia et al. (2020:3) who defined it as “process of identifying potential business opportunities and exploiting them through the recombination of existing resources or the creation of new ones to develop and commercialize new products and services.”
	<ul style="list-style-type: none">• Female entrepreneurship: Ratten (2017:116) define it as “women who start a business, are involved in managerial decisions, and own a majority of the business.”



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Introduction to the concept of Entrepreneurship

Definitions

Entrepreneurship: Creation and management of a new enterprise to accomplish some objective

Entrepreneurs are those persons (business owners) who seek to generate value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.

(Blundel, et al., 2018, p. 3)

Key Questions

- What are the different approaches to entrepreneurship and the different types of new enterprises?
- How do I identify opportunities?
- How do I select the most promising opportunity?
- How do I develop a solution concept?
- How do I test my concept?
- How do I resolve the risk and uncertainty surrounding the opportunity?
- How do I persuade others about the promise of the opportunity?



Introduction to the concept of Entrepreneurship

Definitions

Entrepreneurs are defined by their actions (not the size of organization they work for*). They create and/or exploit change for profit, by innovating, accepting risk and moving resources to areas of higher return.

Enterprise is an alternative term for a business or firm, as in the widely used term 'small and medium sized enterprise' (SME). They include 'social enterprises' which are trading organisations that serve a primary social purpose, and which can take a variety of legal forms....

*An intrapreneur is a salaried employee in a larger company and the profits and risks of their work go to their employer.

(Blundel, et al., 2018, p. 4)



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Key Traits of Successful Female Entrepreneurs in STEM

What makes a successful entrepreneur?

It's a combination of resilience, adaptability, creativity, and leadership.

You already have key problem-solving skills as STEM students, but now it's about learning to pivot quickly, take risks, and inspire a team.

Think about the traits you already possess:

- ❖ Are you a natural problem solver? A critical thinker?

Let's reflect on these and figure out where you can strengthen your entrepreneurial mindset



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Key Traits of Successful Female

Entrepreneurial Traits



Take 5 minutes to list three traits you already possess that align with entrepreneurship.

Then, list two traits you'd like to improve in a nearly future.

The traits listed on the table you see here are traits needed and/needed in entrepreneurship.

1- Creativity	11- Passion
2- Resilience	12- Communication
3- Risk Taking	13- Financial Acumen
4- Vision	14- Networking
5- Leadership	15- Self-Motivation
6- Adaptability	16- Empathy
7- Confidence	17- Time Management
8- Problem Solving	18- Customer Focus
9- Resourcefulness	19- Competitiveness
10- Decisiveness	20- Curiosity

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Where do business ideas come from?

Some possible sources of business ideas are listed below:

- ❖ spotting an opportunity (e.g. a gap in the market)
- ❖ experiencing **a problem and looking for a solution** for it (e.g. an invention)
- ❖ being able to do something that others can't (e.g. using a talent)
- ❖ being prepared to do something others don't want to or can't do (e.g. cleaning)
- ❖ having something that others might need or want (e.g. investing in plant or machinery for hire).



To find out more about how to get business ideas check out the **Other Resources** section of this module. There are videos and other resources with inspirational stories of women entrepreneurs to inspire you!





Identifying Opportunities for Women in STEM

- ❖ One of the biggest challenges is **identifying the right opportunity**.
- ❖ You don't need a revolutionary idea to start – often, **the best opportunities come from solving everyday problems**.
- ❖ In STEM, your expertise can help address **real-world challenges** in health, sustainability, tech, or manufacturing.
- ❖ What are some problems you see in your field? Remember, **every gap or inefficiency is a potential opportunity**





Turning problems into solutions



Take few minutes to brainstorm on challenges you have observed or even encountered in your STEM field of studies. Focus on your own passions and where there might be some space for innovation.

Some tips:

- ✓ Write down your ideas freely without censoring yourself
- ✓ Be open minded and apply a diverse perspective
- ✓ At the beginning focus on quantity of ideas and not on quality
- ✓ Explore mind mapping tools such as [Miro](#) or [ClickUp](#)
- ✓ Consider brainstorming or discussing your ideas with peers





1.2 Entrepreneurship in STEM

- ❖ Why should women in STEM consider entrepreneurship?
- ❖ The landscape is changing!
- ❖ Women are underrepresented in both STEM and entrepreneurship, but this also means there's a huge opportunity for you to disrupt industries.
- ❖ Think about women like Natalia Tomiyama, co-founder and CEO of NÜWIEL, and Elena García Armada, co-founder and CEO of Marsi Bionics. They've turned their STEM backgrounds into innovations with a large impact on society and the environment.
- ❖ I encourage you to see your technical expertise as the foundation for building something bigger.





Turning an idea into a Business Plan

- ❖ After exploring opportunities and ideas, it is time to focus on transforming those ideas into a business plan.

What is a business plan?

A business plan serves as a roadmap, detailing your business model, target market, revenue generation strategies, and cost management. It compels you to critically evaluate every aspect of your startup. Even the most brilliant idea is ineffective without a solid plan.

- ❖ Take the business idea you came up with, and use the Business Plan template to create a mini business plan. Focus on three key elements: **(1)** your **value proposition** (what makes your idea unique), **(2)** your **target market**, and **(3)** how you'll generate **revenue**

What to include in your business plan

- Executive Summary
- Business Description
- Market Analysis
- Product Service Description
- Marketing and Sales Strategy
- Operations Plan
- Management and Organization
- Financial Plan
- Risk Analysis



Market Research for STEM Start-Ups

Once you have a business idea, you need to validate it through market research.

Who is your customer?

What does the competition look like?

In STEM, your market may be very **niche** or **specific**, which can be a strength, but it requires understanding exactly where your product fits.

A niche market example: <https://www.orcam.com/en-us/pressroom>

Steps for Market Research

1. Define Objectives:
 - Clearly state the purpose and goals of your research.
2. Develop a Plan:
 - Choose your research methods (e.g., surveys, focus groups).
 - Identify your sample and tools.
3. Collect Data:
 - Gather information systematically using your chosen methods.
4. Analyze Data:
 - Interpret the data to find patterns and insights.

5. Present Findings:

- Organize and visualize the data in a report.

6. Make Decisions:

- Use the insights to inform business strategies.

7. Monitor and Adjust:

- Continuously evaluate and refine your strategies based on new data.



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Building a Team

- ❖ Successful teams are those with diverse strengths but shared vision!
- ❖ Building a strong team is one of the most important things you'll do as an entrepreneur.
- ❖ In STEM startups, you'll need **diverse talents** : technical expertise, marketing skills, financial knowledge, and leadership.
- ❖ The best teams are made of people who bring something different to the table. However, you all need to **share the same vision** .
- ❖ **Different roles** include a CEO, a head of engineering, a marketing lead, and a financial officer.



Tips

- ✓ Identify what roles you would need to make your business successful.
- ✓ Assign roles within your team and explain why each is critical for your idea



Financial planning, Funding, Building a Minimum Valuable Product

- ❖ Let's talk about money!
- ❖ Startups need **financial planning** , whether it's bootstrapping or securing investors.
- ❖ Women in STEM also have access to specific **grants** and **funding** opportunities.
- ❖ Understanding your funding needs and managing costs is essential for long-term success
- ❖ Before launching a full product, you need to test your concept with a **Minimum Viable Product (MVP)**.
- ❖ A MVP is a **basic version** of your product that allows you to gather feedback and test the market.
- ❖ It's important to launch your MVP quickly, so you don't waste resources developing something nobody wants. Once you get feedback, you can iterate and improve.”

- ✓ Sketch out or describe what your MVP would look like.
- ✓ Focus on the core features and how it solves the problem you've identified



Marketing & Branding

- ❖ **Marketing and branding** are often overlooked by STEM entrepreneurs, but they're essential.
- ❖ Your brand tells your story, and your marketing communicates the value of your product. Even if you have the best tech, it won't sell itself."
- ❖ **Building a Brand:** What message do you want your brand to convey? Why will people trust you?
- ❖ **Discuss online platforms** (social media, digital marketing, SEO), and how they can be used effectively in STEM businesses.
- ❖ **Design a simple logo and create a slogan** for your startup. Consider how you want to be perceived by your customers!

Intellectual Property and Legal Considerations

As STEM entrepreneurs, protecting your intellectual property (IP) is crucial. You don't want someone else to steal your idea, so patents and trademarks are your shield.



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Pitching your Idea



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- ❖ Pitching is one of the most important skills for any entrepreneur.
- ❖ You need to communicate your vision clearly and persuasively to investors, customers, and even potential employees.
- ❖ Here are some tips!

- **Keep It Concise:** A pitch should be brief and focused. Aim for 5-7 minutes.
- **Use Visuals :** Support your presentation with clean, easy-to-read slides or demos.
- **Practice Delivery:** Confidence and enthusiasm are key. Practice until your delivery feels natural.
- **Be Prepared for Questions:** Investors and partners will want to dive deeper. Prepare answers for potential questions about risks, competition, and scalability.

1. Sample Structure of a 5-Minute Pitch:
2. Hook/Problem (30 seconds)
3. Solution (1 minute)
4. Value Proposition and Market (1 minute)
5. Business Model (30 seconds)
6. Traction (30 seconds)
7. Team (30 seconds)
8. Financials and Ask (30 seconds)
9. Call to Action (30 seconds)



Following the sample structure, try to pitch your idea! Be careful with timing!



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Networking & Mentoring

- ❖ Success in entrepreneurship isn't just about your skills—it's also about your **network** .
- ❖ The right connections can lead to partnerships, investments, and mentorship opportunities.
- ❖ **Finding mentors** , especially in male-dominated fields, is a crucial way to get support and advice.

- These are the essential steps of starting a STEM-based business: from identifying opportunities to creating a business plan and pitching your idea.
- Your next step is to take action — refine your plan, seek feedback, and continue building. The entrepreneurial journey is ongoing, so stay connected, keep learning, and most importantly, keep going!





Inspirational Stories of Female Entrepreneurs

Profile

UoE ENT 003 is a white ethnic entrepreneur who is between 35 to 50 years old, living in a rural area and with caring responsibilities. She is a jewellery maker and is self-employed. She had prior entrepreneurial experience in the craft industry before creating her current company in 2017

Obstacles

- Geographical Location: Being in a rural area creates challenges in accessing social capital, networks, and trade fairs, which negatively influences the visibility of her venture, access to suppliers, and markets.
- Caring Responsibilities: Maintaining a work-life balance is challenging, as devoting time to achieving business goals means less time for family.
- Visibility and Access: Limited visibility and access to suppliers due to the rural location complicate business operations.

Motivation

Her current business is motivated by the desire to make a living from her talent and passion. However, the type of products offered are influenced by her current location, adapting to the local clientele's income and preferences.

Business Idea & Growth

Initially, UoE ENT 003 aimed to work with both metal and glass but adapted her offer to the local clientele by focusing on more affordable, fancy jewellery rather than precious metals. The Covid-19 pandemic provided an opportunity to reflect on her business and restructure it for better work-life balance. She now works with resellers and is developing an e-commerce solution to reach a broader market.



Inspirational Stories of Female Entrepreneurs

STRATEGIES FOR OVERCOMING CHALLENGES

Family Support: Drawing support from her immediate family, particularly her husband, who helps with child care.

Gender-Specific Networks: Participating in formal gender-specific networks to share experiences and gain insights from other women entrepreneurs facing similar challenges.

Pandemic Reflection: Using the Covid-19 pandemic as an opportunity to restructure her business for better work-life balance.

E-commerce Development: Developing an online presence to reach a more diverse market and overcome place-related challenges.



Leadership Overview

- Developing leadership skills among female agritourism entrepreneurs is of paramount importance as it not only empowers individual women but also strengthens the entire agritourism industry. Female entrepreneurs play a crucial role in the sector, contributing to economic growth, community development, and sustainable agricultural practices.
- Leadership skills enable women to effectively navigate challenges, make informed decisions, and inspire their teams and communities.





Introduction to the concept of Leadership

Definition

Leadership skills enable women to effectively navigate challenges, make informed decisions, and inspire their teams and communities.

Key elements

Effective leadership fosters business growth facilitates successful communication of its mission and objectives, and supports both leaders and team members in achieving their goals. Its importance becomes even more prominent in the agritourism sector, as it builds entrepreneurs resilience to navigate unpredictable factors such as weather, seasonality, and economic fluctuations.





Introduction to the concept of Leadership

Leadership & Entrepreneurship

Effective leadership equips
businesses to weather
challenges and thrive over time.

Impact

Being a good leader means embodying a unique blend of qualities and positions that not only drive business results but also inspire people working in the business and customers to make a positive impact.

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Importance of Leadership Skills

Empowerment

By fostering leadership qualities, female entrepreneurs can advocate for gender equality, promote inclusive business practices, and mentor the next generation of agritourism leaders.



Challenges & Decision-making

These skills enhance their ability to engage with stakeholders, negotiate partnerships, and drive innovation, thereby creating a positive impact on the sector's overall productivity and competitiveness. Cultivating strong female leaders in agritourism entrepreneurship not only fosters individual success but also paves the way for a more diverse, equitable, and thriving industry that benefits society as a whole.

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Main Characteristics of Great Leaders

Vision

A great leader has a clear and inspiring vision of their mission, goals and future of their business.

Decisiveness

Timely decision-making, even in the face of difficult choices, is a hallmark of a great leader.

Communication

A leader communicates openly and effectively to others their vision and ideas. This also means the ability to listen attentively to others and remain receptive to feedback.

Confidence

Their self-assuredness in both their capabilities and choices is vital, as it cultivates trust and fosters a sense of confidence among team members.



Main Characteristics of Great Leaders

Entrepreneurial Spirit

Leaders often need to be entrepreneurial, identifying new revenue streams and diversifying their offerings to maximize profitability. In case that leaders are already entrepreneurs and business owners, entrepreneurial spirit and leadership go hand in hand for a successful entrepreneurial journey.

Strategic Thinking

A great leader thinks strategically, setting long-term goals and developing plans to achieve them.

Conflict Resolution

Meaning the ability to address conflicts constructively, seeking solutions to problems to benefit the team and the organization.

Courage

Leaders are willing to take calculated risks and challenge the status quo, when necessary, in order to move their business forward.



Main Characteristics of Great Leaders

Empathy

Empathy, understanding and inclusion are important traits of a great leader, thus enhancing the overall workplace culture within a company.



Successful leaders understand who they are and who they are not, enabling them to lead successfully. Encourage your employees to bring new ideas and unique perspectives to the table. In doing so, you motivate your team to cultivate innovation and a deeper commitment to the business' growth.

Commitment to Quality

A commitment to providing high-quality products, services, and experiences is essential for maintaining a positive reputation within the industry, especially in high-competitive fields, like agritourism and rural entrepreneurship in general.

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2.2 Understanding Women's Leadership Barriers

While some leadership qualities transcend gender, the landscape for female entrepreneurs can reveal unique challenges that require a distinct set of skills and attributes. Female leaders often exhibit exceptional motivation and empowerment, because they navigate an entrepreneurial patriarchal world that historically has been more exclusive and less supportive of women.

Thus, the journey of becoming a successful leader presents a challenging road for aspiring female entrepreneurs looking for a chance in sectors that were for centuries male-dominated, as the rural entrepreneurship and agritourism sectors are.





Understanding Women's Leadership

Barriers

Challenges in the Workplace



Stereotypes

In many industries, male leadership has historically prevailed, leading to the perception that the qualities of an effective leader are inherently masculine. When women display these traits, they are sometimes unfairly judged. Conversely, if women do not exhibit these conventional leadership characteristics, they may face doubts about their suitability for leadership roles. Furthermore, certain roles and industries are still seen through the lens of traditional patriarchal gender norms, with some considered more suitable for women and others for men.

Discrimination

Work environments influenced by gender-specific biases can create unwelcome environments for women. This can result in women being overlooked for opportunities and subject to instances of sexual harassment, workplace misconduct, and other unprofessional behaviors.

Lack of networking opportunities

Despite a diminishing presence of bias in the professional sphere, its effects can still present hurdles for women seeking to establish connections. As a result, there may be a reduced availability and access of mentorship and support systems aimed at facilitating women's progression into leadership roles.

Inadequate work-life balance

Traditional notions of gender roles can restrict women to effectively manage their professional and personal responsibilities. Many women pursuing professional paths encounter the unfair presumption that they cannot fully devote themselves to their jobs. This unfounded belief can result in missed opportunities, overlooked promotions, and a lack of recognition for their dedication and capabilities even in their own enterprises.





2.3 Leadership Types

1

Autocratic leadership

One of the most stringent leadership styles. Necessary in situations demanding swift decision-making, this leadership approach relies on the team's confidence in the leader's decision-making abilities and necessitates minimal or no team participation. However, it is important to note that while this leadership approach brings rapid outcomes and goals, it can impede communication in the long run and overlook opportunities where collaborative efforts could unveil alternative avenues for achieving results.

2

Bureaucratic leadership

Bureaucratic leaders still exhibit a strong commitment to enforcing rules and adhering to hierarchical structures within a business. This leadership style finds effectiveness in settings related to healthcare and safety. This approach is considered as one of the most frequently employed leadership styles.

3

Charismatic leadership

Leaders with charismatic qualities possess a compelling aura that inspires their team to follow behind their steps. Their likability contributes to their own and their team's achievements in the business realm. This leadership approach can prove effective in high-energy work environments with positive morale.





2.3 Leadership Types

4

Democratic leadership

A democratic leader frequently encourages the involvement of subordinates in the decision-making process. This leadership approach garners admiration and can be highly effective in creative work environments where swift decisions are not a pressing necessity. This approach can foster a motivated and highly driven team, but it may also introduce delays in processes as individuals require time to consider their options before proceeding.

5

Laissez-Fair leadership

These leaders require team commitment to attain results, particularly in situations where there is minimal short-term pressure to deliver. However, they remain responsible for establishing employee expectations and overseeing performance. This leadership style proves effective when collaborating with seasoned and self-assured employees.

6

Servant leadership

These leaders distribute power and decision-making authority among their subordinates, often shaping the organization's direction based on the team's collective interests. This leadership approach can yield positive results in humanitarian organizations, non-profits, and teams striving to foster diversity, inclusion, and team morale.





2.3 Leadership Types

7

Transactional leadership

Leaders following a **transactional** style of “rewarding and punishing” based system to motivate employees toward achieving success and deter them from encountering failure. This leadership approach can prove fruitful for teams that find motivation in the prospect of rewards.

8

Transformational leadership

Transformational leaders utilize their inspirational energy and personal charisma to cultivate a positive and high-energy work environment. This leadership style often surpasses charismatic leadership, as it not only fosters motivation but also encourages teams to develop confidence, a real sense of passion and responsibility. It can be particularly effective within organizations of team members who thrive in collaborative and dynamic work environments.



Successful entrepreneurship often hinges on the ability to flexibly adapt these leadership styles to inspire and guide teams toward achieving shared goals. By understanding and weighting the strengths of each style, aspiring entrepreneurs can effectively navigate the multifaceted landscape of business leadership and drive their ventures toward success.



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Activity: What kind of leader are you?



After developing a solid understanding of the different types of leadership styles, determine which one feels most **authentic** to you by asking yourself these questions:



Before answering each question, consider the vision, needs and goals of your business or the business that you aspire to establish.

- What do I value more – goals or professional relationships?**
- What kind of a leader would I like to be?**
- Do I believe in total control/structure or freedom of choice?**
- Would I rather make a decision on my own or collectively with a team?**
- Do I focus on short- or long-term goals?**
- Does motivation derive from empowerment or direction?**
- What does a healthy team dynamic look like to me?**

There is no right or wrong answer to these queries; many individuals find their leadership style through trial and error

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Key attributes of visionary leaders

Empathy

- ❖ Visionary leaders should also be able to show empathy and an understanding of the emotional states of other people. This acute awareness of how the vision and mission will impact others empowers the visionary leader to cultivate a sense of mindfulness, awareness and empathy while striving to achieve their vision.

Collaboration

- ❖ Adopting the visionary leadership style entails working alongside their teams to achieve goals and promote growth. Collaboration allows leaders to align the skillsets of those they collaborate with to the goals and objectives that foster growth and advancement. Collaboration involves further developing the potential of one's relationships and creating opportunities for others to showcase their finest abilities and attitudes.

Emotional Intelligence

- ❖ Visionary leaders must possess self-awareness, the ability to recognize their own emotional cues and nurturing their inherent positive mindset. Additionally, they should be self-sufficient and intrinsically motivated. These characteristics are then enhanced by their ability to comprehend and influence the emotional well-being of others, compelling them to embrace the visions and missions essential for propelling the company towards progress.



Key attributes of visionary leaders



Insight and Clear Vision

Visionary leaders must possess a clear vision. This enables them to recognize the current challenges confronting your team and business, understand the significance of these challenges, and determine the most effective approaches to address both present and future circumstances. These leaders thrive on challenging both themselves and others to break free from conventional thinking and stretch the limits of the prevailing norms.

Communication

Visionary leaders possess the capability to articulate the vision and mission with precision and impact. The vision communicated by a visionary leader exudes inspiration, captivation, and motivation. If the vision fails to push the team forward and secure their enthusiastic endorsement through effective communication, the leader runs the risk of rendering their message ineffectual.



Activity: Visionary Leader Interview: Role-playing and Discussion (30 minutes)



✓ Participants will act as visionary leaders in a simulated interview setting by getting into pairs of 2. One acts as the interviewer and the other as an aspiring visionary leader. The interviewer should ask questions about the leader's vision, how they inspire their team, and their long-term goals. The visionary leader should envision and communicate a bold, future-oriented idea or project. Some possible questions to ask during this activity:

- Can you describe your vision for the future of our organization or project?
- How do you communicate your vision to your team or stakeholders?
- What strategies do you use to inspire and motivate your team to work towards the shared vision?
- Can you share an example of a specific challenge you faced in realizing your vision? How did you overcome this challenge?
- What long-term goals have you set to align with your vision?
- How do you foster creativity and innovation within your team to support the vision?

After the completion of the interview, participants engage in discussion. Emphasize the importance of visionary leadership in driving innovation and growth.



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References

Cardella, G. M., Hernández-Sánchez, B. R., & Sánchez-García, J. C. (2020). Women entrepreneurship: A systematic review to outline the boundaries of scientific literature. *Frontiers in psychology*, 11, 1557.

Elliott, C., Mavriplis, C., & Anis, H. (2020). An entrepreneurship education and peer mentoring program for women in STEM: mentors' experiences and perceptions of entrepreneurial self-efficacy and intent. *International Entrepreneurship and Management Journal*, 16(1), 43-67.

Gaweł, A., & KRSTIĆ, M. (2021). Gender gaps in entrepreneurship and education levels from the perspective of clusters of European countries. *Journal of Developmental Entrepreneurship*, 26(04), 2150024.

Kuschel, K., Ettl, K., Díaz-García, C., & Alsos, G. A. (2020). Stemming the gender gap in STEM entrepreneurship—insights into women's entrepreneurship in science, technology, engineering and mathematics. *International Entrepreneurship and Management Journal*, 16(1), 1-15.

Neumeyer, X., Santos, S. C., & Morris, M. H. (2019). Who is left out: exploring social boundaries in entrepreneurial ecosystems. *The Journal of Technology Transfer*, 44, 462-484.

Poggesi, S., Mari, M., De Vita, L., & Foss, L. (2020). Women entrepreneurship in STEM fields: literature review and future research avenues. *International Entrepreneurship and Management Journal*, 16, 17-41.

Ratten Vanessa, Entrepreneurship: Definitions, opportunities, challenges, and future directions,
<https://onlinelibrary.wiley.com/doi/full/10.1002/joe.22217>

Shahin, M., Ilic, O., Gonsalvez, C., & Whittle, J. (2021). The impact of a STEM-based entrepreneurship program on the entrepreneurial intention of secondary school female students. *International Entrepreneurship and Management Journal*, 17(4), 1867-1898.

Sharma, L. (2022). Assessing the “entrepreneurship as emancipation” perspective among women in STEM. *Management Decision*, 60(6), 1585-1605.

Treanor, L. (2022). Gender, STEM women and entrepreneurship: a review and future research directions. *International Journal of Gender and Entrepreneurship*, 14(4), 499-520.

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<https://www.open.edu/openlearn/money-business/entrepreneurship-ideas-reality/content-section-overview?active-tab=content-tab>



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Other Resources

Female Entrepreneurs (non-European Context)

1. Seven Women Entrepreneurs Share their Startup Stories at Roar 2019 | Events | Feministaa

<https://www.youtube.com/watch?v=sa6bUyrQdFU>

2. <https://www.entrepreneur.com/eu/leadership/15-inspiring-female-european-leaders-to-follow-in-2025/488139>

TED Talks by Female STEM Entrepreneurs

1. Reshma Saujani: Teach Girls Bravery, Not Perfection

Reshma Saujani, founder of *Girls Who Code*, delivers a powerful talk on encouraging young women to be brave in their pursuit of STEM careers and entrepreneurship, instead of striving for perfection.

2. Linda Diana Sierra: Empowering Women Through Design

Diana Sierra, a social entrepreneur, discusses her journey designing sustainable products for women in developing countries, focusing on innovation and entrepreneurship to address social issues.

3. Liukas: A Delightful Way to Teach Kids About Computers

Linda Liukas, the founder of *Rails Girls*, talks about the importance of introducing young girls to coding and computer science in an engaging, creative way.

4. Emily Pilloton: Teaching Design for Change

Emily Pilloton talks about using design and technology to empower girls to solve problems in their communities and take charge of their future through entrepreneurship.



* [Society of Women Engineers \(SWE\)](#)

- * SWE offers extensive resources for women engineers, including networking opportunities, mentorship, conferences, scholarships, and advocacy programs.

* [Women 2.0](#)

- * A global network and community platform that connects women entrepreneurs in STEM and tech with investors, partners, and peers. Women 2.0 offers educational content, events, and a supportive network for female founders.

* [Women in STEM \(WiSTEM\)](#)

- * A resource hub and community for women in STEM fields, offering educational content, mentorship opportunities, and career development resources to support women in tech and entrepreneurship.

* [Girls in Tech](#)

- * A nonprofit that empowers and educates women in technology and STEM fields. Girls in Tech provides professional development, mentorship programs, and events to help women grow in their careers and start businesses.

* [Women Angels for STEAM \(WA4STEAM\)](#)

- * WA4STEAM is a growing international community of women angel investors seeking to expand women led entrepreneurial presence in the STEAM fields. Science, Technology, Engineering, Arts & Architecture and Mathematics. It counts with a rich network of strategic partners and other angels' groups, which reinforces our scope of support and increases our investment capability by connecting the companies in our angels' portfolios to other ecosystems

MOOCs

[Syllabus](#) | [Managing Innovation and Entrepreneurship](#) | [Sloan School of Management](#) | [MIT OpenCourseWare](#)

[Entrepreneurship – from ideas to reality](#) | [OpenLearn - Open University](#)

[First steps in innovation and entrepreneurship: Introduction](#) | [OpenLearn - Open University](#)



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Venture Capital Funds & Entrepreneurial Support

* Female Founders Fund

- * A venture capital fund that invests in early-stage female-led startups. The platform offers financial backing, resources, and a community for women entrepreneurs in various industries, including STEM.

* Women Who Tech

- * This organization provides resources, funding, and support for women-led tech startups. It offers pitch competitions, funding grants, and mentorship to help women scale their STEM ventures.

* Backstage Capital

- * A venture fund dedicated to investing in underrepresented founders, including women, people of color, and LGBTQ+ entrepreneurs. Backstage Capital has invested in several women-led STEM companies.

* Golden Seeds

- * An investment firm focused on empowering women entrepreneurs by providing funding and mentorship. Golden Seeds invests in female-founded companies with a strong focus on innovation and technology.
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* Women TechEU

- * Women TechEU is a 2-year EU-funded project supporting women leading deep tech startup companies from Europe. Their mission is to create a more gender-balanced entrepreneurship ecosystem. We believe that diversity drives innovation, and we are here to provide women in deep tech with more opportunities, resources, and support to thrive.



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