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The impact of soft-skills on the success of innovative sustainable energy efficiency projects in the moroccan context: The case of the Noor Ouarzazate project

L'impact des soft-skills sur le succès des projets innovants d'efficacité énergétique durable dans le contexte marocain : Le cas du projet Noor Ouarzazate

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Abstract

Morocco, like many developing countries, faces growing challenges in energy efficiency and environmental sustainability. Social and responsible entrepreneurship emerges as a potential response to these issues, but its success depends not only on technical skills but also on soft-skills, such as leadership, team management, communication, and emotional intelligence. These skills are essential for overcoming the complex challenges of energy efficiency projects and ensuring their sustainability. Through an in-depth literature review and a qualitative study focused on the Noor Ouarzazate project, this paper highlights the importance of soft-skills in ensuring the environmental and social impact of entrepreneurial initiatives in this field. It also demonstrates that, for Moroccan social entrepreneurship in the energy efficiency sector to achieve its objectives, it is crucial to develop these skills to enable entrepreneurs to navigate a complex environment effectively and promote sustainable and inclusive energy solutions.

Keywords : Social Entrepreneurship; Energy Efficiency; Soft-Skills; Sustainability; Moroccan Context**.**

Résumé

Le Maroc, comme de nombreux pays en développement, fait face à des défis croissants en matière d'efficacité énergétique et de durabilité environnementale. L'entrepreneuriat social et responsable émerge comme une réponse potentielle à ces problématiques, mais son succès dépend non seulement des compétences techniques, mais aussi des soft-skills, telles que le leadership, la gestion d'équipe, la communication et l'intelligence émotionnelle. Ces compétences sont essentielles pour surmonter les défis complexes des projets d'efficacité énergétique et garantir leur durabilité. À travers une revue de littérature approfondie et une étude qualitative portant sur le projet Noor Ouarzazate, cet article met en lumière l'importance des soft-skills pour assurer l'impact environnemental et social des initiatives entrepreneuriales dans ce domaine. Il démontre également que, pour que l'entrepreneuriat social marocain dans le secteur de l'efficacité énergétique atteigne ses objectifs, il est crucial de développer ces compétences afin de permettre aux entrepreneurs de naviguer efficacement dans un environnement complexe et de promouvoir des solutions énergétiques durables et inclusives.

Mots-clés : Entrepreneuriat social ; Efficacité énergétique ; Soft-skills ; Durabilité ; Contexte marocain.

Introduction

Morocco, like many other developing countries, faces growing energy and environmental challenges. The country is heavily dependent on fossil fuels to meet its energy needs, which makes it particularly vulnerable to fluctuations in global prices and the impacts of climate change. According to the IPCC (Intergovernmental Panel on Climate Change) (2011), developing countries, including Morocco, are particularly vulnerable to the impacts of climate change due to their reliance on sensitive natural resources such as water and energy, and the rapid growth of their energy consumption. As Stern (2007) notes, developing economies are particularly susceptible to climate-related risks, which requires a rapid shift toward sustainable energy solutions.

This context, marked by increasing pressure on resources and a constantly growing energy demand, makes the transition to sustainable energy solutions imperative. Although Morocco has made significant efforts to improve its energy efficiency and develop renewable energy sources, it still faces major challenges in implementing these policies. The Moroccan government, as highlighted by the World Bank report (2015), has launched ambitious initiatives to diversify its energy sources, but the success of these policies will largely depend on the ability to overcome the institutional and social challenges associated with the energy transition.

In this context, social and responsible entrepreneurship emerges as a potential response to support the energy transition while addressing social challenges. As Yunus (2007) emphasizes, social entrepreneurship can be a powerful catalyst for solving social and environmental problems by combining innovation and social impact within a sustainable framework. Indeed, social entrepreneurship provides innovative solutions that can play a key role in promoting sustainable energy efficiency by mobilizing local resources and involving vulnerable populations in the transition processes. According to Prahalad (2005), inclusive innovation is essential for enabling social enterprises to address social challenges while ensuring economic and environmental viability.

However, the success of these projects relies not only on technical skills but also on human skills, commonly referred to as soft-skills. In this regard, Goleman (1995) argues that emotional and social skills are essential for the success of businesses and team management, particularly in complex environments where the ability to manage human relationships and navigate conflicts becomes crucial. This idea is also shared by Robbins and Judge (2013),

who emphasize that soft-skills, such as communication and emotional management, have become key skills for leaders in uncertain and changing contexts.

In the Moroccan context, marked by social, cultural, and economic diversity, soft-skills play a decisive role in managing energy efficiency projects. They enable social entrepreneurs to overcome financial obstacles, social resistance, and regulatory challenges. Furthermore, Cohen and Levinthal (1990) highlight that the ability to absorb new knowledge, which is essential for innovation, depends as much on social and organizational skills as on technical skills, demonstrating the importance of these skills in the success of projects.

From a theoretical perspective, Hockerts and Wustenhagen (2010) argue that sustainable business models require effective stakeholder management, a key skill for social entrepreneurs that enables them to overcome financial, social, and political challenges related to innovation

The objective of this article is to analyze the impact of soft-skills on the success of innovative sustainable energy efficiency projects in Morocco, using the Noor Ouarzazate project as a case study. This large-scale solar project, one of the largest in the world, is an iconic example of Morocco's energy transition.

In this context, the central issue of this article is: "To what extent can soft-skills play a crucial role in the success of energy efficiency projects, strengthen strategic partnerships, and maximize the social and environmental impact of these projects?"

To answer this question, this study adopts a qualitative research approach, analyzing the role of soft-skills through interviews, project reports, and other relevant documentation related to the Noor Ouarzazate project. Through this empirical approach, the research will investigate how the soft-skills of the project managers have influenced the management and success of this project.

In this context, the article is structured as follows: first, we will explore the theoretical background regarding the importance of soft-skills in managing sustainable projects. Second, we will present the Noor Ouarzazate project as a case study, focusing on the role of soft-skills in its successful implementation. Finally, we will discuss the practical implications of these findings for future energy efficiency projects in Morocco and similar contexts.

1. Conceptual Framework

1.1. Social and responsible entrepreneurship

Bacq and Janssen (2011) define this form of entrepreneurship as a set of processes ranging from identifying and evaluating to exploiting opportunities. Their approach aligns with the

classical conception of entrepreneurship according to Schumpeter and Kirzner, as well as the theory of market failures. According to these theorists, the goal of social entrepreneurship is to generate social value by engaging in market activities and mobilizing various resources. Social and responsible entrepreneurship aims to address social and environmental needs by combining the objectives of economic viability and collective benefit (Defourny J., Nyssens M., 2007).

Yunus (2007) defines social entrepreneurship as the creation and development of enterprises primarily aimed at addressing social and environmental needs, while ensuring their economic viability. This model is particularly well-suited to the contexts of developing countries, where challenges are diverse and social innovation can provide effective solutions. Dees (1998) emphasizes that social entrepreneurship is distinguished by its focus on social impact rather than profit maximization, seeking to solve social problems through entrepreneurial approaches.

Several researchers (Zahra et al., 2009; Janssen et al., 2013) argue that social entrepreneurship can be understood as a process involving the identification, evaluation, and exploitation of opportunities to generate social value through market activities while mobilizing a variety of resources.

In the Moroccan context, social entrepreneurs play a key role in providing sustainable solutions to local challenges. Bornstein (2004) states that social entrepreneurship is a powerful catalyst for social change, combining innovation and profitability to address poverty and inequality. This model is particularly relevant in developing countries, where social needs are pressing.

Hockerts (2015) specifies that social entrepreneurship in developing countries allows for bypassing market failures while addressing vital needs in contexts of institutional weakness. Moreover, Mair and Marti (2006) add that social entrepreneurs are agents of change, using innovative practices to transform neglected sectors.

1.2. Soft-Skills

Goleman (1995) defines soft-skills as a set of interpersonal competencies that enable individuals to better adapt, collaborate, and manage interactions with others. Hurrell (2015) considers soft-skills to be essential interpersonal and behavioral skills in the context of complex projects, particularly in social entrepreneurship, where stakeholder engagement is crucial. These skills include emotional management, effective communication, leadership, and the ability to resolve conflicts (Aamodt, 2016). According to Boyatzis (2008), soft-skills

are a prerequisite for success in complex and multicultural environments, thus facilitating the management of human relationships and large-scale projects.

Mayer and Salovey (1997), in their work on emotional intelligence, explain that emotional intelligence, which is an integral part of soft-skills, allows individuals to understand and regulate their own emotions as well as those of others, which is crucial for managing teams and partnerships in social projects.

Cohen and Levinthal (1990) highlight that soft-skills, particularly communication and empathy, are fundamental for mobilizing the resources necessary for the success of such projects.

In the context of sustainable energy efficiency projects in Morocco, these skills help build strong relationships with stakeholders and successfully negotiate strategic partnerships. As Cavallo et al. (2013) state, soft-skills, such as empathy and the ability to collaborate, help manage tensions between various actors in a project, which increases the likelihood of success

1.3. Sustainable energy efficiency

Sustainable energy efficiency refers to the rational and optimal use of energy, with a particular focus on reducing greenhouse gas emissions and preserving the environment (Stern, P. C., 2007).

The Ministry of Energy, Mines, and the Environment of Morocco (2020) defines sustainable energy efficiency as the effective and optimized management of energy, aimed at reducing greenhouse gas emissions and promoting environmental protection. This concept is fundamental in the context of the global energy transition, where the fight against climate change relies on more sustainable management of energy resources. According to Stern (2007), sustainable energy efficiency policies are key instruments in the fight against climate change, enabling a significant reduction in energy consumption and greenhouse gas emissions.

Ammar (2016) mentions that efforts towards sustainable energy efficiency in Morocco are crucial for ensuring the energy transition and reducing dependence on fossil fuels. Indeed, the adoption of eco-energy practices can play a determining role in reducing the country's carbon footprint.

Chahid (2017) emphasizes that the challenges related to the energy transition in Morocco are numerous, notably due to the high cost of clean technologies and the need for financing long-term projects.

However, Boudghène (2019) notes that local initiatives for sustainable energy efficiency, while facing obstacles, can provide innovative solutions while addressing the needs of vulnerable populations.

Moreover, Jochem et al. (2012) assert that energy efficiency projects, particularly in developing countries, are not only a response to energy needs but also a driver of sustainable socio-economic development.

2. Literature Review

2.1. Social entrepreneurship and its role in developing countries: The case of Morocco

Social entrepreneurship in developing countries is seen as an innovative response to persistent socio-economic and environmental challenges (Mair, J., & Marti, I., 2006). Social entrepreneurship projects not only address social needs but also stimulate local economic growth while providing ecological solutions.

Seelos and Mair (2005) highlight that social entrepreneurship is an effective way to combine social innovation with sustainability, addressing needs that are not met by traditional markets. They add that social entrepreneurship provides solutions to unmet needs in sectors neglected by traditional markets.

Santos (2012) goes further by stating that social entrepreneurs in these countries are essential for catalyzing sustainable changes, especially during times of crisis. Specifically, in Morocco, where initiatives in energy efficiency and natural resource management face an urgent need for social innovation, social entrepreneurship serves as a lever for sustainable energy solutions.

Bornstein (2004) emphasizes the key role of social entrepreneurs in achieving the Sustainable Development Goals (SDGs), particularly in reducing poverty and improving the living conditions of vulnerable populations.

Morocco, classified as a developing country, presents a unique potential to become, over the coming decades, the first non-oil-producing country in the MENA region to join the group of emerging countries (World Bank, 2017). However, despite significant economic progress, the country still faces numerous social challenges, including inequality, health, and education (El Aoufi, 2018).

Social entrepreneurship, although relatively new in Morocco, represents an innovative response to socio-economic and environmental challenges. According to the report by the Central Bank of Morocco (2013), this sector is still developing and lacks visibility, while facing the absence of an adapted legal framework.

However, Morocco benefits from a long tradition of solidarity, particularly in the agricultural and artisanal sectors, which creates a fertile ground for social entrepreneurship (Benadadi, 2014). These principles of solidarity and cooperation are indeed at the heart of social entrepreneurship, which is based on the idea of a business that creates both social and economic value (Zahra et al., 2009).

The National Initiative for Human Development (INDH), launched in 2005, has been a significant catalyst for the growth of social entrepreneurship in Morocco. It has facilitated the implementation of innovative projects, particularly in the sectors of education, health, and sustainable energy (Ammar, 2016). Furthermore, cooperatives have become the most widespread legal model in this field, as they allow for the reconciliation of social objectives and profitability. This status benefits from strong government support and a privileged tax framework, particularly through the Bureau of Cooperation for Development, making these initiatives more accessible (Goyal and Sergi, 2017).

However, despite these institutional supports, social and responsible entrepreneurship in Morocco remains limited to a small circle of entrepreneurs, often highly qualified or having networks with international organizations (Bornstein, 2004). Moreover, the majority of social projects concern areas such as education, vocational training, support for women, and socio-professional integration (Bornstein, 2004).

Nevertheless, the sector faces several challenges: lack of financing, absence of technical support, as well as legal and administrative barriers (Dees, 1998). That said, new support structures, such as the Moroccan Center for Innovation and Social Entrepreneurship (CISE) and its incubator Dare Inc., have emerged to assist social entrepreneurs and foster the development of projects with social impact (Cavallo et al., 2013).

2.2. The specific challenges of sustainable energy efficiency in Morocco

Morocco, although a pioneer in energy transition, faces several challenges in promoting sustainable energy efficiency at the national level. Koussou et al. (2018) indicate that the main difficulties include the slow adoption of modern energy technologies, high investment costs, and a lack of access to financing for local initiatives. Moreover, the integration of energy efficiency solutions requires coordination between various public and private actors, as well as strong institutional support.

Benali et al. (2016) highlight that the success of the energy transition in Morocco largely depends on the involvement of citizens and local communities, who must be integrated into the design and implementation of energy policies. Finally, Leconte et al. (2019) emphasize

the importance of social innovation in the energy sector in Morocco. Social entrepreneurship plays a crucial role here in introducing energy solutions tailored to local realities and ensuring participatory management of resources.

2.3. The impact of Soft-Skills on the success of social and environmental projects: Innovative sustainable energy efficiency projects

Soft-skills, often referred to as interpersonal or non-technical skills, are considered essential elements for the success of complex projects, particularly those in social entrepreneurship (Zhao et al., 2010).

Benabou (2019) emphasizes that these skills include emotional intelligence, leadership, communication, conflict management, and the ability to establish cooperative relationships, all of which are necessary in environments where social, economic, and environmental stakes are multiple. Indeed, these skills play a crucial role in stakeholder management, navigating uncertain contexts, and resolving conflicts (Boyatzis, 2008).

Boyatzis (2008) highlights that soft-skills, particularly emotional intelligence and leadership, are determining factors for the effective management of human relationships in social projects. Emotional intelligence enables social entrepreneurs to understand and manage their own emotions, as well as those of others, which is crucial for maintaining harmonious working relationships and dealing with stressful situations (Goleman, 1995).

This becomes particularly relevant in the context of social entrepreneurship, where projects are often confronted with tensions between various actors with divergent interests. Enlightened leadership, combined with proper emotional management, is therefore essential to maintain a balance between the social, economic, and environmental demands of the projects.

The work of Zhao et al. (2010) confirms this idea by emphasizing that social entrepreneurs often have to navigate uncertain and unstable contexts, where resources are limited and the stakes are high. Soft-skills, particularly conflict management and the ability to maintain effective partnerships with stakeholders, become essential assets to ensure the sustainability of social initiatives. In this context, the ability to maintain clear and open communication with all stakeholders is crucial to avoid misunderstandings and breakdowns in collaboration that could jeopardize the success of projects.

Stakeholder management is a fundamental aspect of social and responsible entrepreneurship, especially in areas such as sustainable energy, where the involvement of various stakeholders (governments, private companies, NGOs, local communities) is crucial for the success of

social impact projects. Cohen and Levinthal (1990), in the context of innovation management, emphasize that the ability to create and maintain collaborative networks with external stakeholders is essential for the success of social entrepreneurship projects. This skill enables social entrepreneurs to share knowledge and adapt to the changing needs of different stakeholders throughout the life cycle of the project.

Moreover, the work of Seelos and Mair (2005) on social entrepreneurship shows that the ability to forge strategic partnerships with local actors, as well as to leverage available external resources, is critical for projects aiming to meet unmet needs in sectors neglected by traditional markets. This ability to adapt, negotiate, and establish lasting relationships with different actors is an essential element for ensuring the long-term success of social projects. Soft-skills, such as diplomacy and negotiation, thus play a central role in aligning the objectives of all stakeholders and mitigating conflicts of interest.

The ability to establish strong partnerships and maintain collaborative networks is also vital for the sustainability of social entrepreneurship projects. Hockerts (2015) argues that the sustainability of social projects largely depends on the ability to maintain stable and strong relationships with stakeholders, and that social entrepreneurs must be capable of managing tensions and challenges during the project. This not only involves project management skills but also relational skills that facilitate problem-solving, strengthening partnerships, and seeking innovative solutions.

Furthermore, the importance of soft-skills in the success of social entrepreneurship projects is also addressed by Goleman (1995), who highlights that the ability to work in teams and inspire others is essential for achieving collective goals. In social projects, where collaboration is often the key to success, the ability to unite individuals around a common vision and manage group dynamics is a major asset. Social entrepreneurs who master these skills have a better chance of succeeding in complex environments and ensuring that their projects generate lasting impact, both socially and environmentally.

Thus, soft-skills are fundamental for social entrepreneurs, as they enable them to navigate complex and uncertain contexts, manage stakeholders with varied interests, and maintain partnerships essential to the success and sustainability of their projects. In sectors such as sustainable energy and social entrepreneurship, where social and environmental issues are crucial, these skills become key enablers for the success of projects and the achievement of sustainable development goals.

For sustainable energy efficiency projects, which constitute an important part of social and responsible entrepreneurship, these various soft-skills—leadership, communication, negotiation, emotional intelligence, etc.—represent a specific opportunity for the success of various innovative projects that are at the heart of Morocco's economic and environmental priorities, particularly in the context of the energy transition (Ahadi et al., 2020).

In the Moroccan context, where initiatives such as the Moroccan Solar Plan, the National Energy Transition Strategy, and the Green Morocco Plan are significant drivers of innovation in sustainable energy, the ability to mobilize various actors—ranging from the government to private companies, and including local communities—is crucial. According to Kamin (2013), the success of these projects largely depends on the ability of social entrepreneurs and project managers to maintain collaborative relationships and manage the challenges associated with the different interests of stakeholders. Furthermore, sustainable energy projects supported by institutions such as the Moroccan Agency for Energy Efficiency show that the most successful projects are often those that manage to establish strong partnerships with local actors while maintaining the flexibility and adaptability necessary for successful implementation. This type of project, often led by cooperatives or associations, requires skills in project management, negotiation, and leadership (Hockerts, 2015).

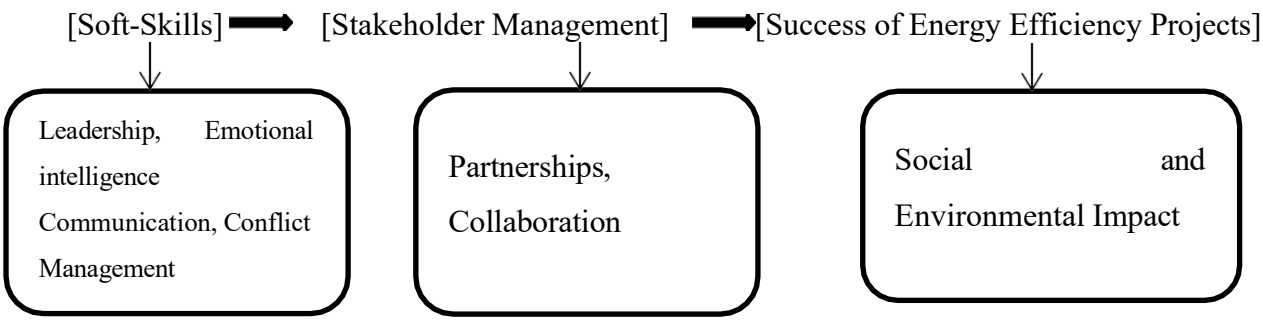
3. Research hypotheses and conceptual model

Based on our literature review, we propose the following research hypotheses:

- ✓ **Hypothesis 1:** Soft-skills (such as leadership, emotional intelligence, and communication) significantly contribute to the success of energy efficiency projects by enhancing stakeholder management and fostering collaboration.
- ✓ **Hypothesis 2:** The ability to manage conflicts and negotiate effectively plays a key role in establishing strategic partnerships, which in turn increases the social and environmental impact of sustainable energy projects.

These hypotheses will be tested through a qualitative study, based on interviews conducted with project managers and engineers involved in the Noor Ouarzazate project.

Our Conceptual Model :



This model shows how soft-skills influence stakeholder management, which directly impacts the success of energy efficiency projects.

4. Case Study: Noor Ouarzazate Project

4.1. Context

Morocco launched the Noor Solar Complex in Ouarzazate, which is the largest solar project in the country and one of the largest in the world. The complex, which is part of Morocco's Solar Plan, aims to generate clean and renewable energy to meet the country's growing electricity needs and reduce its dependence on fossil fuels. The project consists of several concentrated solar power plants and photovoltaic panels, with the goal of producing 580 MW of capacity, which represents about 20% of the country's energy capacity.

4.2. Objective of the Study

The objective of this study is to analyze the impact of soft-skills on the success of the "Noor Ouarzazate" project, one of the largest solar complexes in the world, with a focus on stakeholder management, collaboration between the involved actors, and the management of human relations in the context of its implementation. Specifically, this study seeks to understand how the social and emotional skills of project managers facilitated coordination between international companies, Moroccan authorities, and local communities, and helped overcome the social and cultural challenges encountered during the project.

To collect data, we conducted a series of semi-structured interviews with various actors of the project, such as project managers and engineers. The interviews allowed us to gather qualitative testimonies on how soft-skills influenced the project dynamics, particularly in conflict management, intercultural communication, and human resource management.

The data collection took place over a period of three months (from September to December 2023), with interviews conducted via Google Meet and telephone calls. The collected data were analyzed through an inductive approach, identifying recurring themes and key human skills that contributed to the project's success. This study highlights the importance of soft - skills in sustainable energy efficiency projects and provides practical recommendations for future similar projects in Morocco and other developing countries.

Key questions :

- What role did interpersonal skills (such as communication, conflict management, and leadership) play in managing relationships with other project stakeholders, particularly in resolving tensions or differences of interest?

- How did the soft-skills of project managers and engineers facilitate coordination and collaboration between the different stakeholders (private companies, local authorities, international actors) in the implementation of the Noor Ouarzazate project?
- How were soft-skills used to overcome cultural and organizational challenges encountered during the project's implementation, particularly in a rural context such as Ouarzazate?
- How did the human skills of project managers and engineers help integrate local competencies into the project and contribute to creating an inclusive and collaborative work environment?

4.3. Analysis of results

Based on qualitative testimonies, this analysis highlights how the interpersonal and emotional skills of managers facilitated collaboration and the resolution of challenges throughout the implementation process of the project.

We will explore four key themes here:

- **Collaborative Leadership**, based on Bass and Avolio's (1994) model of transformational leadership, which shows how leaders can inspire and motivate their teams by fostering an environment of trust and collaboration.
- **Effective Communication**, drawing on Grunig and Hunt's (1984) model of organizational communication, which demonstrates that two-way, transparent communication between stakeholders is crucial for the success of complex projects.
- **Conflict Management**, with Thomas and Kilmann's (1974) model of conflict management styles, which proposes five main approaches (competition, cooperation, compromise, avoidance, and accommodation) that help understand how project managers can navigate tensions and divergences between stakeholders.
- **Training and Development of Local Competencies**, based on Nonaka and Takeuchi's (1995) model of organizational knowledge creation, which illustrates that integrating local knowledge and sharing expertise between international and local actors is a key determinant of the success of an innovation project.

The choice of themes—collaborative leadership, effective communication, conflict management, and training and development of local competencies—drawn from theory, also reflects their direct relevance to the context of the "Noor Ouarzazate" project and the importance of soft-skills in the success of large-scale sustainable energy efficiency projects. These human skills have been identified by several authors (Pearce and Conger, 2003; Freeman, 1984; Bandura, 1977) as crucial levers for managing the various dimensions of

complex projects, particularly in an environment where coordination between different actors is essential. Each theme was therefore chosen for the specific challenges it helps overcome in such a project.

4.3.1. Collaborative leadership

Collaborative leadership played a decisive role in managing the Noor Ouarzazate project, particularly in ensuring smooth coordination between international companies and local stakeholders. Managers demonstrated flexibility and inclusivity in managing various multicultural and multidisciplinary teams. They facilitated the creation of an environment where cooperation and stakeholder engagement were essential.

Several managers emphasized the importance of collaborative leadership from the early phases of the project. One of them stated, "Collaborative leadership allowed us to create synergy between international and local teams. By overcoming the initial reluctance of local communities regarding the environmental impact of the plant, regular meetings were organized to involve them and help them understand the long-term benefits of the project." This approach helped overcome fears and establish a climate of trust with the local population.

Engineers also highlighted the importance of participatory leadership in resolving technical challenges. "We worked hand in hand with local engineers, which facilitated the integration of skills and allowed us to resolve some technical issues more quickly," said one engineer. Thus, the collaborative approach strengthened the resilience of the project in the face of technical and social challenges.

4.3.2. Effective communication

Communication was a central element in maintaining smooth and transparent relationships among all project stakeholders. It helped clarify the project's objectives, manage the expectations of local communities, and ensure transparency among the involved parties.

One of the managers recounted, "At the beginning, communication was a major challenge, especially due to misunderstandings about the environmental impact of the project. We organized interactive workshops to explain the benefits of renewable energy and its long-term positive impact on the local economy."

On the other hand, an engineer noted the importance of technical communication between teams: "Regular communication between engineers and local authorities was essential to anticipate technical issues. Weekly meetings and monthly reports helped maintain good coordination and action synchronization."

Communication played a key role, not only in managing perceptions and social expectations but also in understanding the technical aspects of the project, which was essential in an environment with significant environmental and social impact.

4.3.3. Conflict management

One of the main challenges encountered during the implementation of the project was managing tensions, often fueled by environmental and social concerns. Conflict management skills helped ease these worries and find solutions that were acceptable to the various stakeholders.

A manager recounted, "When local community members expressed concerns about the environmental impact of the project, we organized several meetings to openly discuss their concerns and explain the measures taken to minimize ecological impacts." This proactive approach turned a potential conflict into an opportunity for constructive dialogue.

On the technical side, an engineer explained, "We encountered a conflict over the location of some solar panels. Thanks to active listening and effective mediation, we found a solution that met both technical requirements and the concerns of local residents." This proactive conflict management helped maintain a climate of trust and facilitated the integration of the project into the local community.

4.3.4. Training and development of local skills

Integrating local skills and developing local human capacities were essential elements in ensuring the sustainability of the project and guaranteeing its long-term impact. The implementation of targeted training programs allowed local workers to gain expertise in new technologies, particularly in the renewable energy sector.

A manager explained, "We set up a training program for the young people in the region so that they could acquire the skills needed to work in the renewable energy industry. This strengthened their commitment to the project and allowed them to envision a sustainable future."

For their part, the engineers emphasized the importance of knowledge exchange. One engineer noted, "We organized practical workshops where local engineers worked side by side with international experts. This not only facilitated the acquisition of new technical skills but also reinforced the spirit of collaboration between local and international teams."

This collaborative approach, effective communication and conflict management, as well as the development of local skills, ensured the success of the "Noor Ouarzazate" project by aligning its technical and social objectives. The soft-skills of project managers and engineers

were thus essential levers in the integration and support for the project, while ensuring its sustainability and positive impact on the local community.

Confirmation of hypotheses

The findings from the qualitative analysis and interviews with project managers and engineers involved in the Noor Ouarzazate project provide strong evidence supporting the proposed hypotheses. Specifically, the results confirm **hypothesis 1**, as the soft-skills of leadership, emotional intelligence, and communication were identified as essential factors in enhancing stakeholder management and fostering collaboration throughout the project.

These interpersonal skills helped build trust, improve coordination, and ensure smooth interactions among various stakeholders, which significantly contributed to the project's success.

Furthermore, the analysis also validates **hypothesis 2**, showing that the ability to manage conflicts and negotiate effectively was key to establishing strategic partnerships, addressing social and environmental concerns, and increasing the overall impact of the project. Based on these findings, both hypotheses are confirmed, demonstrating the crucial role of soft-skills in the success and sustainability of energy efficiency projects like Noor Ouarzazate.

5. Discussion

The findings from this study on the Noor Ouarzazate project confirm the crucial importance of soft-skills in the management of sustainable energy efficiency projects, particularly in complex contexts involving multiple stakeholders. Each key skill identified—collaborative leadership, effective communication, conflict management, and local skills training—plays a central role in the overall success of the project.

Collaborative leadership helped overcome cultural and social challenges by facilitating cooperation between international and local teams. The active listening and flexibility of the project managers created an environment conducive to collaboration, allowing initial reluctance from the local community to be overcome. This inclusive leadership approach was particularly important for integrating local stakeholders into the decision-making process and project management.

Communication was essential for managing perceptions and expectations of the different stakeholders. Project managers used regular communication channels, such as workshops and community meetings, to inform local stakeholders about the benefits of the project and dispel misunderstandings. This process strengthened the local community's trust and fostered a better understanding of the environmental and economic issues surrounding the project.

Tensions related to the perceived environmental impacts of the project were managed through mediation skills and conflict management. By actively addressing the concerns of local communities and finding solutions to technical challenges, managers minimized resistance and ensured harmonious collaboration among stakeholders. This helped maintain a climate of trust throughout the project.

Training local workers was a critical lever in ensuring the project's sustainability. By providing training opportunities and integrating local workers into the technical processes, the project not only strengthened local expertise but also fostered a sense of ownership within the community. This approach facilitated the adoption of new technologies by the local population, ensuring the long-term sustainability of the project.

Overall, soft-skills played a decisive role in the management of the Noor Ouarzazate project. They enabled the project team to overcome social, technical, and environmental challenges while fostering effective collaboration between local and international stakeholders. The combination of human and technical skills was essential for the success of this large-scale project and can serve as a model for other sustainable energy efficiency initiatives in similar contexts.

Conclusion

This article explored the impact of soft-skills on the success of innovative sustainable energy efficiency projects in Morocco, through a literature review and a qualitative case study focused on the Noor Ouarzazate project. The analysis showed that while technical skills are essential, human skills such as collaborative leadership, effective communication, conflict management, and local skills development are equally crucial for ensuring the success of these projects. Project managers and engineers involved in the Noor Ouarzazate project highlighted the importance of these soft-skills in overcoming challenges related to financial constraints, regulatory obstacles, and community engagement.

The empirical findings confirmed that the ability to mobilize local and international stakeholders and establish strong partnerships was a key success factor. In particular, collaborative leadership facilitated coordination between technical teams and local communities, thereby strengthening project buy-in. Additionally, transparent and continuous communication helped dispel misunderstandings and maintain the trust of local stakeholders. Proactive conflict management, especially regarding environmental and social concerns, ensured the constructive resolution of tensions, promoting the project's sustainability.

Moreover, integrating soft-skills into the training of local entrepreneurs and workers contributed to the project's long-term viability. This approach not only enhanced the technical skills of local communities but also encouraged their active involvement in the energy transition process, fostering an inclusive and sustainable energy shift.

In conclusion, the results of this study emphasize that developing soft-skills in sustainable energy efficiency project managers is a strategic lever for maximizing the environmental and social impact of these initiatives in Morocco. These human skills are fundamental for navigating a complex environment, managing human relationships, and adapting strategies to local realities, thereby ensuring the success and sustainability of sustainable energy efficiency projects in the Moroccan context.

Perspectives and limitations

While this study provides valuable insights into the role of soft-skills in the success of sustainable energy projects, it is important to acknowledge its limitations. The focus on a single case study (the Noor Ouarzazate project) means that the findings may not be directly applicable to all energy efficiency projects in Morocco or other developing countries. Future research could expand the scope by examining additional case studies to verify the generalizability of these results.

Moreover, the study primarily focused on the perspectives of project managers and engineers, and future research could include the viewpoints of other stakeholders, such as local communities and government officials, to provide a more comprehensive understanding of the role of soft-skills in these projects. Additionally, while this study emphasizes the importance of soft-skills, further research could explore the development and training of these skills in the context of sustainable energy projects, particularly in developing countries.

Main Contributions

This research contributes to the growing body of literature on social entrepreneurship and sustainable energy by highlighting the importance of soft-skills in ensuring the success and sustainability of energy efficiency projects. The findings offer practical insights for project managers, policymakers, and social entrepreneurs in Morocco and other developing countries seeking to maximize the social and environmental impact of their initiatives. By emphasizing the need for collaboration, communication, and leadership, this study calls for a broader recognition of the human dimension in the implementation of sustainable energy solutions

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