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Pioneering excellence: How women's transformative leadership drives business excellence, and financial sustainability

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Abstract: This study delves into the dynamic realm of women's transformative leadership and its influence on the business excellence and financial sustainability of the Development and Consulting Services Institute DCSI at Princess Nourah Bint Abdulrahman University PNU, Riyadh, Saudi Arabia. Focusing on six strategic business excellence factors: Governance and Policies, Digital Transformation, Human Capital, Project Attraction and Management, Houses of Expertise, and Corporate Social Responsibility CSR, the research aims to explain the positive impact of women's transformative leadership on these critical dimensions. Data was primarily obtained through an exhaustive review of their achievement, annual reports, and thorough document analysis. Additionally, interviews were conducted with the Institute's Dean and her team to corroborate and delve deeper into the information gathered from secondary data resources. Employing the Data-Driven VRIO (Value, Rarity, Imitability, and Organization) Framework, the study highlights the Institute's core competencies and competitive advantages, offering insights into how these factors contribute to its long-term business sustainability. The study reveals a positive correlation between women's transformative leadership and enhanced business excellence and financial sustainability. This research contributes valuable insights to the ongoing dialogue on leadership dynamics, emphasizing women's pivotal role in leading institutions toward success and offering a fresh perspective on women leadership in a distinct context.

Keywords: transformative leadership; business excellence; financial sustainability; strategic excellence factors; VRIO framework

1. Introduction and purpose of the study

Women's empowerment is now a hot topic across the globe, and concerted efforts have been put in to achieve this noble cause. Saudi Arabia is no exception. Drawing on previous literature which presented different findings regarding women's impact in leadership roles in different settings, both in developed and developing countries (Kaiser and Wallace, 2016; Williams and Tiedens, 2016), this paper will contribute to the extended literature by providing a deeper exploration of women's leadership, emphasizing the use of qualitative methodologies to interpret the nature of women leaders' effectiveness in a new setting, more specifically, how women leaders can catalyze significant improvements in business efficiency and financial sustainability in Saudi Arabia. To achieve this, the study will leverage the Data-Driven Value, Rarity, Imitability, and Organization (VRIO) framework and compare the financial performance and business excellence before and after women's transformative leadership implementation. Transformative leadership has its moorings in justice and inclusivity. This leadership style derives inputs from Mezirow's (1991, 1996)

transformative learning theory, which presents a comprehensive process of bringing in the required positive changes in one's frame of reference. This style critiques inequitable practices and promises outstanding individual achievement and better lives (Shields, 2010) by enhancing psychological empowerment (Khan et al., 2020). It is linked to the broader social context, concerned with end values (like liberty, justice, fraternity, and equality), providing inclusive and socially ideal learning environments that are intimately related (Burns, 1978).

Transformative leadership is identified for this study as studies (Bilal et al., 2021) identified that women are perceived to exhibit style. This study found that transformative style fosters trust and connectivity among team members, influencing employees' creativity and innovative thinking. Since DCSI was founded to encourage development and research, to serve the women's community, and to assist them in achieving transformational objectives aimed at sustainable development goals under the Saudi Vision 2030, a transformative plan is necessary to fulfill those aims. Transformational leadership is best suited to achieve these benign objectives.

"Business excellence" captures organizational success and profitability over an extended period (Ghicajanu et al., 2015). It entails exceptional financial and economic results compared to other organizations in the same field, requiring a sustained commitment to multiple variables over the long term, extending beyond profit maximization or low pricing (Ghicajanu et al., 2015). While financial sustainability can be viewed in terms of value and continuity (Zabolotnyy and Wasilewski, 2019), its measures are varied, and those that allow comparison exist only in a fragmented manner in the literature

(Gleibner et al., 2022). The study will showcase how women's transformative leadership, coupled with the development and implementation of six strategic excellence factors, Governance and Policies, Digital Transformation, Human Capital, Project Attraction and Management, Houses of Expertise, and CSR, contributed to business excellence and financial sustainability of DCSI.

2. Contextual view of DCSI

DCSI was established in 2008 at Princess Noura University, Riyadh, as a distinguished governmental institution that fosters development, research, and consultancy services. It was founded to reflect PNU's role in serving the community and achieving sustainable development goals at all levels. It also serves as a means for the University to play a leading role in realizing the Saudi Vision 2030, a transformative plan to reduce the country's dependence on oil and diversify the economy. The vision document delineates three core pillars. The first pillar emphasizes fostering a "thriving economy" to bolster government effectiveness and promote social responsibility. The second pillar, "an ambitious nation," prioritizes providing citizens with a fulfilling and healthy life. Lastly, the third pillar, "vibrant society," is envisaged through various vision realization programs, which aim to cultivate a dynamic and inclusive societal fabric.

The study aims to elucidate the guiding principles of the Institute, emphasizing its key function and spotlighting the transformative moment that occurred in the past three years. Pivotal and pathbreaking developments have been initiated with the

appointment of the Institute's first female Dean. This change marked a profound shift in the Institute's practices, a transformation that this paper will explore in-depth. All the activities of the Institute perfectly align with the objectives outlined in Saudi Vision 2030 about women empowerment. This ambitious vision actively promotes the empowerment of Saudi women to assume leadership positions across diverse sectors and enjoys full support and endorsement from the university president.

2.1. Foundations of the institute: Mission, vision, and core functions

DCSI at PNU is a cornerstone of women's education, empowerment, and development in Saudi Arabia. The Institute's activities align with these key pillars of Saudi Vision 2030. By empowering faculty and employees to assume leadership roles in training and consultancy, DCSI enables them to participate more actively in the workforce and contributes to Vision 2030 by empowering women, promoting education, and supporting economic diversification.

The Institute's vision is "Leadership and excellence in the field of consulting and development partnerships through national expertise." Its mission is to leverage the expertise, competencies, capabilities, and human and material resources available within and outside the University to achieve sustainable development. The strategic goals of the Institute include contributing to the sustainable development of university revenue, achieving operational excellence in the Institute's services, and maximizing the investment in the competencies and expertise of the University. DCSI achieves these goals by securing training contracts, promoting research capabilities, and offering academic consultations. DCSI actively represents the University in various sectors, safeguarding rights and contributing to financial objectives. Through strategic partnerships aimed at women empowerment, it fosters knowledge exchange and secures funding for research, strengthening its ties with external sectors to enhance overall performance.

2.2. Empowering transformation in DCSI

Saudi Vision 2030, which has "The story of transformation" as one of its logos, strongly emphasizes increasing women's participation in the labor market, recognizing it as a crucial driver of economic growth and innovation. Within this vision, Saudi Vision 2030 is dedicated to empowering women to assume leadership roles at various levels within the country. This empowerment requires women to adopt a transformational approach to leadership that engages employees with the 2030 vision and motivates them to achieve more than they initially thought possible, ultimately leading to greater organizational performance.

Three years ago, empowered by the university president's support, the Dean initiated a profound transformation within the Institute, aiming to elevate it into a more robust and sustainable business entity. Collaborating closely with her dedicated team, they comprehensively reviewed the Institute's mission, vision, and strategic objectives. Subsequently, they identified six pivotal factors for achieving strategic excellence that have undergone careful evaluation and enhancement. These encompassed Governance and Policies, Technological Transformation, Human Capital, Project Attraction and Management, Houses of Expertise, and Corporate

Social Responsibility. The resolute determination and the empowerment initiated by the leadership were pivotal in driving progress across critical strategic areas, including significant transformation. The Institute's strategic goals were also diligently aligned with the esteemed "King Abdulaziz Quality Framework (The framework is found in <https://kaqa.org.sa/en/Pages/default.aspx>)," building upon the University's success in winning accolades in 2022. Through this, the Institute achieved notable progress in critical strategic areas. The leadership displayed a remarkable sense of protectiveness and sensitivity throughout the Institute's transformative journey, ensuring their needs were considered and met. Although the King Abdulaziz Quality framework may include more specific components that are not explicitly mentioned in the Institute's factors, it's worth highlighting the precise alignment between the King Abdulaziz Quality Award's national framework mentioned above and the Institute's six strategic excellence factors, as both prioritize a broad spectrum of elements contributing to institutional excellence.

The primary objective of this paper is to highlight the Institute's background, objectives, and contributions through the lens of a women's transformational leadership approach. It aims to establish a connection between the Institute's achievement levels and the Institute's six strategic excellence factors and to delve into the impact of women's transformational leadership on business excellence and financial sustainability.

The objectives of this study are to:

- **Examine the Influence of Women's Transformational Leadership on Business Excellence and Financial Sustainability:** This objective involves a comparative analysis of the financial performance and business excellence of DCSI before and after the implementation of women's transformative leadership. This objective is to evaluate the tangible and intangible benefits of women's transformational leadership in achieving financial sustainability and business excellence, drawing insights from quantitative financial data and qualitative organizational improvements.
- **Demonstrate the Institute's Achievement Levels (2021 to 2023) across Strategic Excellence Factors:** This objective aims to showcase the Institute's performance and progress over the period of women's transformational leadership from 2021 to 2023 by focusing on the strategic excellence factors. This objective systematically showcases the Institute's achievements across a variety of critical areas, correlating these successes with the leadership style introduced between 2021 and 2023, and providing a comprehensive narrative of progress, resilience, and strategic excellence.
- **Highlight the Core Competencies of the Institute Using the Data-Driven VRIO Framework:** the VRIO framework will be utilized to reflect the Institute's core competencies and competitive advantage, showcasing how they contribute to the institution's long-term financial sustainability and excellence based on data-driven analysis. This objective is to demonstrate how a data-driven VRIO framework can provide a detailed and objective analysis of the Institute's core competencies, revealing how these competencies could contribute to long-term financial sustainability and strategic excellence. The Institute can solidify its

competitive position and excel in the dynamic educational landscape by focusing on value, rarity, imitability, and organizational capacity.

3. Theoretical anchoring

3.1. Value, rarity, imitability, and organization (VRIO) framework

It is imperative to highlight the suitability of the VRIO framework (Barney, 1991) in analyzing leadership impacts in the Institute's context, which is presented in the following section:

The VRIO framework was chosen for the study as it can assess how organizational resources and capabilities contribute to sustained competitive advantage. VRIO presents a broader organizational view, analyzing how leadership impacts core competencies and strategic goals, such as financial sustainability and excellence. The framework also directly aligns the leadership behaviors with the Institute's strategic objectives, evaluating whether leadership practices provide the required value (Murcia et al., 2022). Further, focusing on resource utilization and long-term outcomes makes the framework relevant in assessing the Institute's excellence. While transformational leadership explains how leaders inspire change, VRIO offers a strategic, resource-based perspective, examining whether leadership behaviors are sustainable and valuable from a long-term performance standpoint (Amaya et al., 2022). In addition, for an institution aiming for financial sustainability and strategic excellence, VRIO is ideal for analyzing how leadership capitalizes on core competencies, optimizes resources, and inspires innovation and engagement, which transformational leadership theory may not address as effectively. By choosing VRIO, which could enhance the analysis, the Institute's leadership can be evaluated for its long-term strategic impact.

3.2. Women transformational leadership

Transformational leadership is defined as establishing oneself as a role model by obtaining the followers' trust and confidence; transformational leaders aim to make followers consciously aware of the significance of shared organizational goals and values (Bass, 1990). Transformative leadership brings justice and inclusivity. This style promises outstanding individual accomplishments and better thriving (Shields, 2010) by enhancing individual psychological empowerment (Khan et al., 2020). It brings in values like liberty, justice, fraternity, and equality, providing inclusive learning environments and development (Burns, 1978). The ability of transformational leadership to enhance individual ability and deal with all kinds of circumstances through inspirational motivation and confidence levels is recorded in the empirical literature (Bilal et al., 2021; Diebig et al., 2017; Khan et al., 2020; Zwingmann et al., 2014). A recent study by Bilal et al. (2021) asserted that women are perceived to exhibit more significant levels of transformational leadership, fostering trust and connectivity among their team members, thereby influencing employees' innovative thinking.

Silva and Mendis (2017) concluded in their study that women leaders show more transformational leadership qualities than male leaders. The study even argued that

transformational leadership qualities such as communicating, caring, supportive, and considerate behaviors are more natural to women leaders than male leaders. Another study by (Aymen et al., 2009) supported this view by indicating that the transformational leadership style is more fit for women leaders, and that women leaders are more empathic, sensitive, and humble. Scholars showed that women's transformational leadership positively affected employees' trust and connectivity (Berson et al., 2001; Bilal et al., 2021), which fostered employees' innovative behavior at work (Bilal et al., 2021). Other scholars also found a positive correlation between women executives or leaders and financial and firm performance (Chadwick and Dawson, 2018; García-Meca et al., 2015; Mateos de Cabo et al., 2012). Birindelli and colleagues in 2019 discovered significant findings in their research. Their analysis revealed that a critical mass of around 30% of women on the board of directors, determined endogenously, had a noteworthy impact. Furthermore, the mere presence of women CEOs independently positively influenced the environmental outcomes banks achieved.

Numerous studies examining the impact of women's leadership roles have yielded various outcomes across diverse settings, spanning both developed and developing nations (Kaiser and Wallace, 2016; Williams and Tiedens, 2016). Conversely, an alternative body of research suggests that women in leadership positions can positively influence financial and organizational performance. Notable studies in this vein include the works of Chadwick and Dawson (2018), Khalili et al. (2016), García-Meca et al. (2015), and Mateos de Cabo et al. (2012). These studies collectively demonstrate the potential effectiveness of women leaders in driving positive outcomes within firms and financial domains.

While there has been notable progress in prior research addressing women and gender-related issues, exploring working women's experiences, particularly within women's leadership, remains limited (Bilal et al., 2021). Existing literature has presented a diverse array of findings regarding the impact of women in leadership roles, thereby necessitating a deeper examination of the role of women leaders in organizational performance (Bilal et al., 2021; Hoobler et al., 2018). Bilal et al. (2021) recently underscored the need for an in-depth exploration of women's transformational leadership, emphasizing qualitative methodologies to interpret the nature of women's leadership effectiveness. The focus of such inquiry would revolve around deciphering the fundamental mechanisms underpinning women leaders' functioning (Bilal et al., 2021). The forthcoming research investigation aims to advance our comprehension of how women leaders can catalyze significant improvements in financial sustainability and business excellence.

3.3. Business excellence

Business excellence is characterized by exceptional financial and economic results compared to other organizations in the same field, even when facing similar opportunities and resources. Achieving business excellence requires a sustained commitment to multiple variables over the long term, extending beyond profit maximization or low pricing (Ghicajanu et al., 2015). From a theoretical and practical standpoint, business excellence involves a multi-layered approach, considering

economic, technical, and social dimensions. It goes beyond short-term gains and involves maintaining success, profitability, and adaptability to socio-economic demands over an extended period. In business environments, organizations increasingly prioritize elements that contribute to achieving a business excellence level. An organization characterized as having “business excellence” is one that consistently maintains an exemplary situation, demonstrating success and profitability over an extended period. Therefore, the term captures sustained excellence rather than short-term success (Ghicajanu et al., 2015). There are different models of business excellence, the most well-known are Deming Model which is the Japanese Model of Total Quality Management TQM, Baldrige Criteria for Performance Excellence, and the European Foundation for Quality Management EFQM. Many countries are establishing national excellence awards based on international ones, such as the “King Abdulaziz Quality Award,” which is based on the European model. As PNU obtained this local award, DCSI decisively aligned its strategic excellence factors. In practice, awards are granted based on models of excellence in business, which rely on specific assessment criteria and sub-criteria, by employing the strategic excellence factors to achieve business excellence and, thus, financial sustainability.

3.4. Financial sustainability

Lamsa et al. (2023) posited that the concept of sustainability has evolved to encompass various facets over time. They highlighted the significance of the Brundtland Report 1987, which served as a roadmap by emphasizing three crucial dimensions for achieving sustainable development within organizational settings: social, economic, and environmental sustainability. These dimensions underscore the importance of aligning efforts across all three spheres. However, despite this holistic framework, businesses have typically prioritized the economic dimension and profit generation as their primary focus within sustainability initiatives. The term “Financial sustainability” is suggested to have its roots in CSR literature, with CSR often viewed as the independent variable influencing financial sustainability (Gleibner et al., 2022). Conversely, Zabolotnyy and Wasilewski (2019) illustrate financial sustainability in terms of value and continuity, which aligns with the focus of our study. However, the literature on financial sustainability lacks clear operationalization. Financial sustainability measures are scattered across various indicators without a unified theory, whereas financial sustainability measures that tolerate comparison only exist in a fragmented way in the literature (Gleibner et al., 2022).

Therefore, the study will contribute to this area by examining the model of financial sustainability and business excellence used by DCSI leadership, which considers the measurement of six strategic excellence factors, including CSR. This exploration offers insights into a more comprehensive approach to financial sustainability.

4. Methodology

To delve deeply into the topic, a single instrumental case study was conducted, which means we used DCSI as the primary setting for the study, particularly as it is led by a woman situated within PNU, the largest women’s University in the world,

operating as a governmental institution to study the phenomenon (Bell et al., 2015). We selected this case due to its setting in a predominantly female environment, providing an ideal opportunity to explore the phenomenon of women's transformational leadership.

This study uses a qualitative approach. The data collection technique uses interviews, document review, and observation. Interviews and informal interactions with the Dean of the institute and her team were conducted from September 2023 to December 2023 to corroborate and expand upon the insights gleaned from secondary data sources. Several internal staff members from key departments within the DCSI hierarchy were selected for interviews. These departments (Business excellence, Projects and Business, and Shared Services) were chosen as they represent the core operations and statistics of DCSI. The number of staff members interviewed was 20 people who were in charge of primary operations related to stakeholders' projects and business excellence. The interviews were designed to include specific research questions and open-ended responses, allowing participants to elaborate on key themes relevant to the research objectives. Interviews were conducted both in person and virtual. To ensure accuracy in capturing participants' responses, thematic analysis was performed by coding the data and organizing it into distinct themes. This process not only validated common themes but also enhanced the depth of the findings. During the same period, official access to documents was obtained from DCSI, primarily through a comprehensive review of their achievement and annual reports, internal policies, and meeting minutes with stakeholders. Documents were selected for their relevance to the research objectives and for offering critical insights into specific aspects of the research questions. Each document was carefully examined to extract meaningful information for this study through data grouping and pattern identification. Data triangulation techniques were employed to enhance the reliability of the findings, and interviews were cross-verified through subsequent follow-up visits, the acquisition of documents, and observation.

Official access to data was obtained from DCSI, primarily through a comprehensive review of their achievement and annual reports, complemented by meticulous document analysis. The qualitative analysis of the data was utilized for doing the VRIO framework analysis of DCSI. The themes identified for the analysis were extracted from the six strategic excellence factors and their sub-factors from the published reports and the financial reports of DCSI. Furthermore, field visits, informal interviews, and interactions with the Dean of the Institute and her team were conducted from September 2023 to December 2023 to corroborate and expand upon the insights gleaned from secondary data sources. To enhance the reliability of the findings, interviews were documented and validated through subsequent follow-up visits or the acquisition of additional documents.

Following the same study approach of (Lin and Tsai 2016; Lee 2023), the study employed the VRIO framework to identify and emphasize the Institute's core competencies based on data-driven analysis. The VRIO framework was chosen because it provides a comprehensive and structured approach to assessing an organization's core competencies. By evaluating competencies based on these four dimensions, the framework offers a more holistic understanding of the organization's competitive advantage and strengths (Lee,2023). The VRIO framework also highlights

areas where an organization can create value that is aligned with the study’s focus on business excellence and financial sustainability.

Table 1. Case research plan.

Activity	Number	Description
Number of face-to-face interviews with the DCSI dean	1	Lasted 2 hrs Conducted by both researchers
Number of face-to-face interviews with the DCSI team	1	Lasted 2 hrs Conducted by both researchers
Number of online interactions with DCSI dean and team	12	Conducted by both researchers
Internal institute documents being evaluated	yes	Conducted by both researchers
Field visits to the Institute	yes	Conducted by both researchers

Source: The authors.

5. Real data-driven analysis of DCSI: Findings

Data-driven analysis of the financial performance of the Institute has been based on different sources of data collected via annual reports, interviews, and discussions with the leader and her team. The analysis was done in line with the study’s objectives and focused on comparing the Institute’s financial performance before and after the implementation of women’s transformational leadership.

5.1. Financial analysis of DCSI before and after implementing women’s transformational leadership

The financial analysis of DCSI reveals a remarkable trend: costs have notably reduced in the last three years, while revenue experienced substantial growth during the same period of women’s leadership. This contributed to a significant enhancement in the net profit from 2021 to 2023, presented in **Figure 1**. This impressive outcome can be attributed to the effective integration of strategic excellence factors into the organizational system. The financial sustainability and business excellence model implemented by the Institute has been represented in the form of a model by incorporating all six strategic excellence factors developed by the Institute in 2021, which clearly shows their interconnectedness toward the achievement of financial sustainability and business excellence as is depicted in **Figure 2** in the following section 5.2. These findings underscore the transformative impact of women’s leadership within the Institute, as evidenced by the tangible improvements in financial performance and strategic integration.

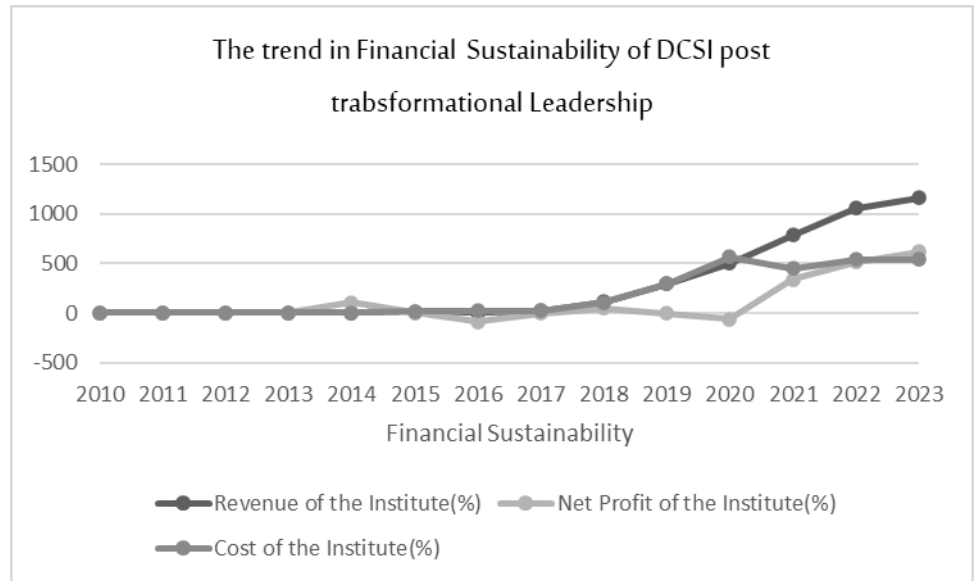


Figure 1. Financial analysis of DCSI prior and post the implementation of women’s transformative leadership and its impact on business excellence and financial sustainability.

Source: Analyzed representation of DCSI financial data from 2010 to 2023.

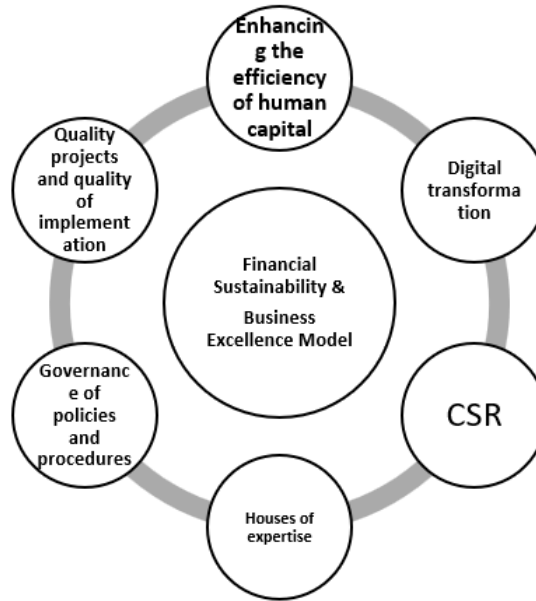


Figure 2. Financial sustainability and business excellence model implemented by the institute to achieve institutional excellence.

Source: Primary data.

5.2. Business excellence and financial sustainability: Achievement levels 2021 to 2023

Their cost volume profit percentage analysis depicts the achievement level of business excellence and financial sustainability during the three years of women leadership (2021–2023). A notable increase in the net profit of the Institute has been evaluated, rising from 336 percent in 2021 to 617 percent in 2023. This remarkable improvement can be attributed to effective revenue generation, which surged from 782

percent in 2021 to 1158 percent in 2023, respectively, as presented in **Figure 3**. The quantitative representation of the contribution of women’s transformational leadership on the enhancement of the excellence factors gives a clear indication of a clear trend in the cost, revenue, net profit, impact on spending efficiency due to ERP implementation, impact on financial control, impact on revenue monitoring, impact on raising the quality of service, the return on investment, assessment of projects turnover ratio and the impact of houses of expertise, analysis of return on revenue monitoring, return on investment in quality, return on investment in time and the cost of revenue ratio, as is depicted in **Table 1** which offers a comprehensive overview of these factors, elucidating their significance in driving business excellence and financial sustainability, as discussed in the subsequent section 5.3.

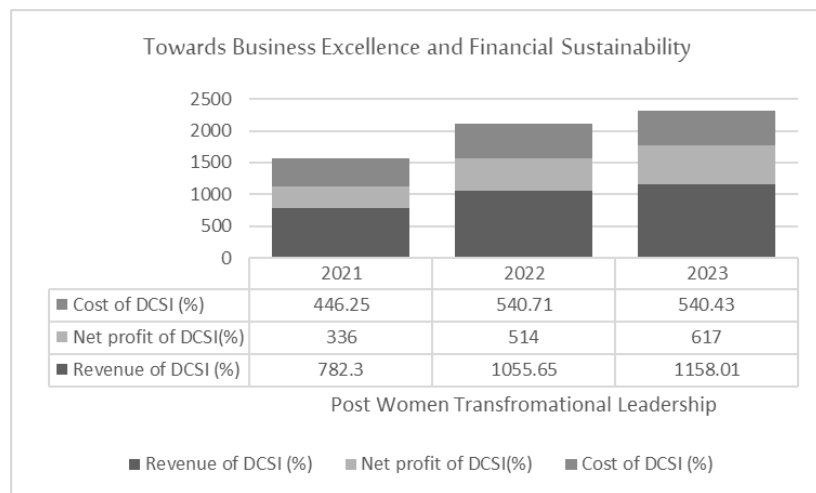


Figure 3. Business excellence and financial sustainability achievement levels 2021 to 2023.

5.3 Business excellence and financial sustainability: Quantitative representation of the contribution of women’s transformational leadership in DCSI

The influence of women’s transformational leadership on business excellence and financial sustainability is assessed through the turnover ratio analysis of six strategic excellence factors and their impact on the financial and business sustainability of DCSI. The positive impact of the strategic excellence factors on the financial sustainability of DCSI is visible in the increasing trend in the cost-efficiency ratio from 2012 to 2023, the remarkable 130.55 percent improvement in revenue in 2023, and the notable 83.76 percent improvement in net profit in 2023. The impact of digital transformation on financial performance is evident through the astonishing 98 percent improvement in spending efficiency, 80 percent improvement in financial control, 70 percent achievement in revenue monitoring, 94 percent improvement in time plan, and 98 percent enhancement in the quality of services in 2023, respectively. The financial achievements through its houses of expertise collaborations are evaluated by assessing the return-on-investment ratio of DCSI, which has been increasing from 75.29 percent in 2012 to 114.16 percent in 2023. This notable improvement can be attributed to the revenue generated from the qualitative CSR

projects. The project turnover ratio depicts the effective contribution of the CSR projects in generating revenue for DCSI. The turnover ratio analyzed for DCSI during the study period depicts the strong contribution of women leadership in effectively implementing the strategic excellence factors and the success story of their achievements, as presented in **Table 1**. The researchers have analyzed and presented the core competencies of the Institute, showcasing how they contribute to the institution’s long-term financial sustainability and excellence based on data-driven analysis in section 5.4.

5.4. The core competencies of the institute: Data-driven VRIO framework

The VRIO framework, based on the analysis of the financial data and the effective implementation of the six strategic excellence factors and the sustainable competitive advantages of the Institute, have also been analyzed and represented in **Table 2**.

Table 2. Quantitative representation of the contribution of women’s transformational leadership on the enhancement of the excellence factors and, consequently the overall business and financial sustainability of DCSI.

Financial Sustainability of DCSI								
Year	Cost efficiency of the Institute (%)	Improvement in Revenue of the Institute (%)	Improvement in Net Profit/Loss ratio (%)	Spending efficiency-ERP (%)	Financial Control (%)	Revenue Monitoring (%)	Time plan implementation (%)	Raising the quality of service (%)
2021	20.9%	55.76%	33%	40%	20%	30%	40%	40%
2022	4.1%	110.17%	53.21%	95%	30%	50%	90%	95%
2023	4.23%	130.55%	83.76%	98%	80%	70%	94%	98%
Year	Return on Investment by DCSI (%)	Projects Turnover Ratio (%)	Return on Digital Innovation (%)	Return on Revenue Monitoring (%)	Return on Investment in Quality (%)	Return on investment in time (%)	Cost of revenue ratio (CRR) (%)	Net worth of projects in % (house of expertise)
2021	75.29%	84.78	54%	11%	54%	57%	0.57:1	18.88
2022	95.06%	110.52	64%	10%	62%	65%	0.51:1	33.20
2023	114.16%	145.42	84%	88%	84%	84%	0.46:1	47.92

Source: Analyzed representation of DCSI financial data.

6. Analysis and discussion

6.1. Financial analysis of DCSI before and after the implementation of women’s transformative leadership

The differentiation of the cost database during the two periods of study, 2010–2020 and 2021–2023, clearly shows the efficiency of the Institute in reducing its cost through its implemented strategies that contributed to achieving financial sustainability, as is depicted in **Figure 1**. The various financial restructuring measures adopted by the Institute from 2021 onwards to control costs have been through measures like the submission of tax reports related to value-added tax and benefits derived from the exemption period in connection, which increased revenue and profit.

The reduction in costs has been attributed to decisions like having the first approved budget for the Institute for 2023 and establishing the audited financial statements from an accredited external audit office etc. The positive impact of cost savings, as per the evaluation of the six strategic excellence factors, stems from the Institute's significant improvements in financial control (80 percent), revenue monitoring (70 percent), transaction time efficiency (94 percent), service quality (95 percent), and overall spending efficiency (98 percent) through digitization. Governance and policies, part of administrative restructuring, directly influence cost control and reduction, with a normal increase from 446 percent in 2021 to 540 percent in 2023 compared to pre-2021 costs. The role of governance and policies is instrumental in the success of the other five strategic excellence factors, as quantified in **Table 1**. Return on investments has risen from 75 percent in 2021 to 114 percent in 2023, showcasing the successful implementation and evaluation of strategic excellence factors contributing to institutional excellence and financial sustainability. The analysis of revenue depicted a noticeable improvement in revenue figures post-women leadership. The revenue enhancement can be attributed to improvement in financial control from 2021 to 2023 as presented in **Figure 3**, which results from the positive impact of automation and process through digital transformation. The improvement in revenue highlights the practical project management strategy adopted by the Institute through its houses of expertise, which focuses on fewer but more impactful projects. An important highlight in the achievement of cost reduction has been the positive impact of implementing the performance management system operational models, procedures, and the development of their designs, respectively, on the Institute's development. The Institute's profitability ratio of 741 percent during the period 2021–2023 highlights the prominent achievements of strengthening and building partnerships, which have significantly impacted the increase in returns through compelling project attraction and management skills structured through the houses of expertise. The analysis of an increase in the return on digital innovation from 54 percent in 2021 to a significant 84 percent in 2023, an increase in return on revenue monitoring from 11 percent in 2021 to a noteworthy 88 percent in 2023, an increase in the return on investment in quality from 54 percent 2021 to 84 percent 2023 all highlights the successful implementation of excellence factors due to the stronger governance and policies framework. The analysis of the cost-of-revenue ratio clearly indicates that the revenue has been significantly decreasing from 2021 onwards, which is attributed to its effective interconnectedness between the strategic excellence factors in generating revenue, the major contribution being from the houses of expertise. The effective contribution of the houses of expertise in utilizing its human capital for the successful implementation of the projects is depicted in the enhancement of the project turnover ratio from 55.8 percent in 2021 to 134.3 percent in 2023, as is shown in **Table 1**. The analysis of the Institute's Achievement Levels (2021 to 2023) across Strategic Excellence Factors showcasing their performance and progress over the period of women's transformational leadership from 2021 to 2023 by focusing on the strategic excellence factors have been discussed further in section 6.2.

6.2. Business excellence and financial sustainability model: Achievement levels 2021 to 2023

The financial achievement of DCSI from 2021 to 2023 has been attributed to its transformation in quantifying VAT tax reports, budget management, and accreditation of audited financial statements. The positive revenue and net profit trend are attributed to the effective adoption of the six strategic excellence factors. The interrelationship between the three major financial parameters suggests the stronger orientation of institutional success to its innovative revenue-generating resources, which predominantly prioritized the economic dimension of projects and profit generation of sustainability as their primary focus, Lamsa et al. (2023). The achievement of business excellence requires a sustained commitment to multiple variables over the long term, and it adds to the study by Ghicajanu et al. (2015). The resources are human capital, stronger governance, and policies, and through their effective integration, the Institute has effectively enhanced its revenue through its houses of expertise. Here, it aligns with the study by Zabolotnyy and Wasilewski (2019), which represents financial sustainability in terms of enhancing the value and continuity of the business organization through its sustainable integration. The representation of business excellence and financial sustainability achievements from 2021 to 2023 through women's transformational leadership is presented in **Figure 3**. Implementing and evaluating the six strategic excellence factors within DCSI under the women's transformational leadership has contributed to business excellence and financial sustainability (Gleibner et al., 2022). In the area of governance and policies, the effective linking of the vision and mission of DCSI with the University's strategic plan and its administrative restructuring has contributed to cost control and cost reduction. The impact is depicted in the following section 6.3.

6.3. Analytical representation of the contribution of women's transformational leadership on business excellence factors and financial sustainability in DCSI

With the implementation of the second strategic excellence factor-digital innovation, the impact was effective in the form of a significant 80 percent enhancement in financial control, approximately 70 percent accuracy in revenue monitoring, an outstanding 95 percent improvement in operational service quality, and around 98 percent achievement in spending efficiency. These results confirm previous studies that found a positive correlation between women leaders and the financial and performance of the firms (Chadwick and Dawson, 2018; García-Meca et al., 2015; Mateos de Cabo et al., 2012). The focus on strengthening partnerships has increased revenue for the Institute in 2023. Additionally, the analysis of CSR initiatives from 2021 to 2023 indicates a strong emphasis on the economic aspect compared to social, environmental, and health aspects. The impact of the effective implementation of human capital effectiveness in DCSI is attributed to the strategic focus, documentation focus, developmental focus, organizational maintenance focus, administrative focus, and informational focus, and its evaluation is related to the achievement of 90% of financial control, 90% revenue monitoring, 90% time plan implemented, 90% achievement of automated processes and procedures, achievement of 95% spending

efficiency in the Institute through e-transactions. The enhancement in the profitability ratio of DCSI to an astonishing 741 percent through the project consultancy initiative—house of expertise is another successful contribution of this strategic excellence factor. The impact of CSR initiatives of the Institute have contributed towards diversification of the social aspects of CSR (56 percent of total CSR projects), the environmental aspect of CSR (14 percent of total CSR projects) to ensure sustainable natural resources, the economic aspects of CSR (23 percent of total CSR projects) to support digital transformation for national economic development and the health aspects of CSR (46 percent of total CSR projects) that focuses on participating in a healthy society. These findings validate previous studies, such as those by Birindelli et al. (2019), who showed that the presence of women CEOs in firms or on the board of directors had a noteworthy impact on the environmental outcomes achieved by these firms. **Table 1** presents a comprehensive representation of the analyzed areas.

Bilal et al. (2021) asserted that women are perceived to exhibit greater levels of transformational leadership, fostering trust and connectivity among their team members thereby influencing employees' innovative thinking.

The calculated quantitative turnover/efficiency ratios demonstrate the Institute's continuous improvement in the work environment, enhancement of human capital efficiency, progress in governance and policies, strategic investments in digital and administrative transformation, expertise houses, and system governance. These efforts, effectively embraced by all stakeholders, create a fair work environment aligned with the labor market and the demands of the 4th industrial revolution.

The visual depiction of CSR-integrated projects illustrates their positive impact on cost savings and net profit. Aligning institute CSR activities with Vision 2030 further enhances this impact. The visual depiction of cost savings and their impact on CRR ratios provides insightful implications, signaling increased efficiency through a notable reduction in CRR. The representation of the same is made in **Figure 2**. Thus, the journey of the Institute towards financial sustainability is evident post-2021, reflected in the Institute's financial outcomes. The effective coordination by the women leader and her team across the initiation, planning, execution, monitoring, and control, and closure phases of implementing the 6 strategic excellence factors has played a transformative role. These findings align with the studies of (Aymen et al. 2009, Silva and Mendis 2017) who showed how women leaders show more transformational leadership qualities than male leaders and how transformational leadership style is more fit for women leaders.

The visibility of the same is represented in **Figure 2**. The following section 6.4 highlights the Core Competencies of the Institute, showcasing how these factors contributed to the institution's long-term financial sustainability and excellence. **Figure 4**. represents the comprehensive integration of the 6 strategic excellence factors and their contribution towards the financial sustainability of the Institute post-women transformational leadership that clearly depicts the analytical representation of the contribution of women's transformational leadership on business excellence factors and financial sustainability in DCSI.

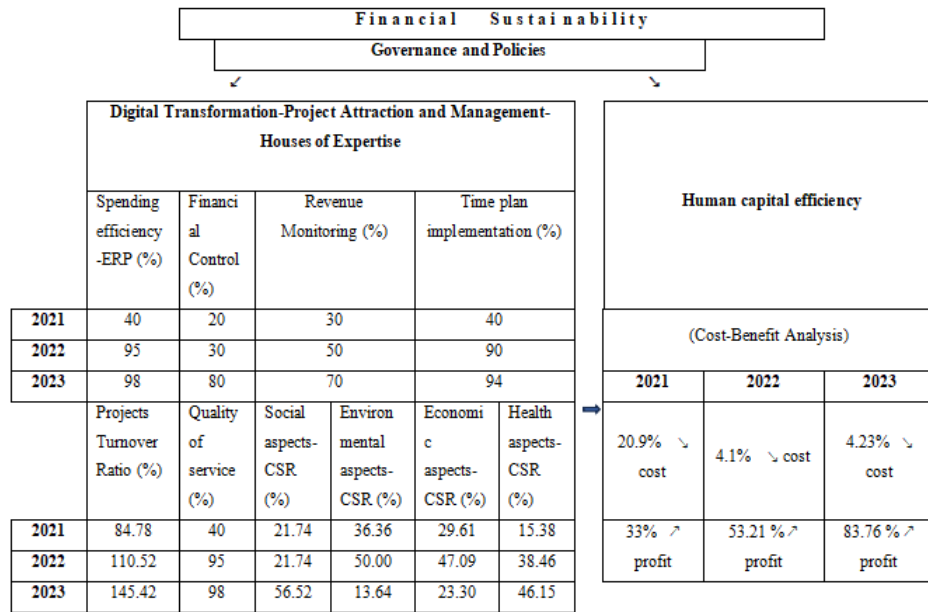


Figure 4. The integration of the 6 strategic excellence factors and their contribution towards the financial sustainability of the Institute post-women transformational leadership.

Source: DCSI reports.

6.4. Competitive advantage of DCSI: Data-driven VRIO framework

A Data-Driven VRIO analysis of the Institute’s core competencies examined their utilization for competitive equality, temporary advantage, unused advantage, and long-term advantage. This analysis, which focused on value, rarity, imitability, and capacity exploitation, scrutinized 20 core competencies contributing to institutional excellence. The findings revealed that five competencies foster competitive equality, five provide temporary advantage, three remain unused advantages, and seven generate long-term competitive advantage. This evaluation serves as a roadmap for DCSI, outlining their long-term competitive advantage competencies and areas for further strengthening and effective resource/capacity utilization, as detailed in **Table 2**. The study validates the feasibility of the VRIO framework in providing a comprehensive understanding of the organization’s competitive advantage and strengths (Lee, 2023) which has been presented in **Table 3** showcasing the core competencies of DCSI using the Data-Driven VRIO Framework and the contributions of the resources and capabilities of DCSI that exhibits competitive equality, temporary competitive advantage, unused competitive advantages and the long-term competitive advantages of DCSI. This shall help them devise strategies to convert the unused competitive advantages to long-term competitive advantages in the long run.

Table 3. The core competencies of DCSI using the Data-Driven VRIO Framework.

Resource or Capability	Value	Rarity	Inimitable	Organized to Exploit	Result
Governance and policies	√				Competitive equality
Human Capital	√				Competitive equality
Houses of Expertise	√				Competitive equality
Project Attraction and Management	√				Competitive equality

Table 3. (Continued).

Resource or Capability	Value	Rarity	Inimitable	Organized to Exploit	Result
Corporate Social Responsibility CSR	√				Competitive equality
Digital Transformation	√	√			Temporary Competitive advantage
HR strategies that improve a firm’s efficiency and effectiveness by exploiting opportunities	√	√			Temporary Competitive advantage
Social complexity of DCSI -strength of its social network, interpersonal relations, DCSI’s culture and its reputation among stakeholders	√	√			Temporary Competitive advantage
DCSI’s formal reporting structure, strategic planning and budgeting systems, management control systems and compensation policies have been able to create value for the Institute	√	√			Temporary Competitive advantage
Houses of expertise investment is financially sustainable as the institutes’ profitability from projects are higher	√	√	√		Temporary Competitive advantage
Cost strategies	√	√	√		Unused Competitive Advantage
Quality focus/improvement initiatives/TQM/Six Sigma tools	√	√	√		Unused Competitive Advantage
Operational focus	√	√	√		Unused Competitive Advantage
Ability of DCSI to offer great resources by adding value to clients and exploiting opportunities through internal capability	√	√	√	√	Long-term competitive advantage
Propensity for innovation	√	√	√	√	Long-term competitive advantage
Relationship with clients	√	√	√	√	Long-term competitive advantage
Client experience	√	√	√	√	Long-term competitive advantage
Women corporate leadership and vision	√	√	√	√	Long-term competitive advantage
Financial sustainability strategies	√	√	√	√	Long-term competitive advantage
Business Excellence	√	√	√	√	Long-term competitive advantage

Sources: Secondary data analysis of DCSI.

The study’s findings regarding the financial and operational developments in DCSI are closely linked to the context of Saudi Vision 2030, which focuses on economic diversification and societal transformation. The study aligns with a few other leadership studies (Bilal et al., 2021; Khan et al., 2020; Sulphrey and Jasim, 2022). The study presents the positive impact of women’s transformative leadership, highlighting the potential for inclusive leadership to enhance organizational performance, which could be pertinent to other sectors looking to improve governance, culture, or financial outcomes through leadership diversity, irrespective of economic or political contexts. Aspects like trust-building, transformative leadership, and innovation-fostering generated from inclusive approaches are also applicable across sectors. Successful digital transformation has improved operational efficiency, and cost-reduction has broad applicability across different sectors and regions. As organizations prioritize digitization, the inputs gained from DCSI’s successful digital

transformation could be implemented elsewhere. Other organizations can benefit from the inputs provided in this study about strategic and practical steps to integrate technology-driven solutions.

Limitations

The study has a few limitations that could influence the findings that must be addressed. The first limitation is the potential bias related to the data used for the study. This study has used both quantitative financial data and qualitative assessments. There could be biases in data collection and interpretation as stakeholders with vested interests could have influenced the evaluations in the study. The study period's broader economic and environmental factors may have influenced the Institute's financial performance. Though the success could be due to internal strategies, external factors could have influenced some gains. This study focused on several strategic excellence factors to evaluate financial performance and operational efficiency improvements. However, there may be other unknown factors in this framework that could have influenced the outcomes. In addition, the weight assigned to the factors could vary across different institutions or contexts, limiting the findings' generalizability.

7. Conclusion

This paper has comprehensively explored the transformative leadership approach implemented by the Dean at DCSI, Princess Noura University, Riyadh, Saudi Arabia. The study began by contextualizing the Institute within the broader framework of Saudi Vision 2030, emphasizing its role in fostering women's empowerment and contributing to the nation's economic diversification goals. By aligning its mission, vision, and strategic objectives with the overarching vision of Saudi Vision 2030, DCSI has positioned itself as a key player in driving sustainable development and excellence. This paper has demonstrated significant progress and achievements over the past three years through a detailed analysis of the Institute's strategic excellence factors and the implementation of women's transformative leadership. The collaboration between the Dean and her team, coupled with a focus on strategic alignment and enhancement, has resulted in tangible improvements in various areas, including governance, technology adoption, human capital development, project management, expertise utilization, and corporate social responsibility.

Moreover, the study has highlighted the impact of women's transformative leadership on business excellence and financial sustainability at DCSI. By leveraging the Data-Driven VRIO framework, the paper has identified core competencies that contribute to the Institute's long-term competitive advantage and financial viability. These competencies and the strategic excellence factors have enabled DCSI to enhance its operational efficiency, achieve business excellence, and contribute to its financial sustainability. This work underscores the importance of transformative leadership, strategic alignment, and continuous improvement in driving organizational success and sustainability. By showcasing the achievements and contributions of DCSI under the leadership of the first female Dean, this study provides valuable insights into the transformative potential of women's leadership in the Saudi context and its implications for organizational excellence and societal advancement. The study provides valuable insights into the transformative leadership approach at DCSI, and

several avenues for future research could build upon these findings. One potential area for further investigation is the long-term impact of women's transformative leadership on organizational performance and financial sustainability. Future research could extend the time frame of analysis to evaluate whether the positive trends identified in this study are sustained over a more extended period. Additionally, comparative studies across different industries or institutions within and outside the country could provide a broader understanding of the unique elements of women's leadership in diverse organizational contexts. This study, thus, opens the door for further exploration of the broader implications of women's transformative leadership on business excellence and sustainability across various sectors and regions.

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