SUSTAINABLE BANKING-A QUANTITATIVE CASE IN THE MIDDLE EAST USING MCDM AND SEM METHODS

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ABSTRACT

Purpose: This study aims to explore the influence of green management standards on decision-making in the Lebanese banking sector. It seeks to uncover the dynamics of decision-making among key stakeholders as businesses navigate the challenge of aligning with environmentally conscious frameworks.

Theoretical reference: The theoretical framework underpinning this research is rooted in the imperative for businesses to undergo a transformative shift towards sustainability, colloquially referred to as the ‘green shift.’ This shift is anticipated to be an unavoidable phenomenon, exerting pressure on businesses, including those in the Lebanese banking sector, to align their operations with environmentally sustainable practices.

Method: Mixed methods Multi-criteria decision-making (MCDM) via the Analytic Hierarchy Process (AHP) and Structural equation modelling (SEM) via AMOS software were employed.

Results and Conclusion: The results suggest internal stakeholders play a significant role in decision-making regarding green management in the banking sector. In contrast, external stakeholders rank second in their significance to green management in the banking industry. We note green products are significant to most top bank stakeholders.

Implications of research: Researching the banking sector limits the possibility of generalizing the results to other types of business sectors as well as other geographical areas. The results could be improved by including additional stakeholders. The results help the Managers, CEOs, and strategic thinkers in the banking sector to target green managerial practices to the right stakeholders to maximize their green competitive advantage.

Originality/value: This research investigated one of the rare studies in the banking sector where we could calculate the significance of the managerial parameters that govern the decision-making of bank stakeholders.

Keywords: green competitiveness, sustainable management, the analytic hierarchy process (AHP), multi-criteria decision-making, banking sector, internal and external stakeholders.

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BANCO SUSTENTÁVEL — UM CASO QUANTITATIVO NO ORIENTE MÉDIO USANDO MÉTODOS MCDM E SEM

RESUMO

Objetivo: Este estudo tem como objetivo explorar a influência dos padrões de gestão ecológica na tomada de decisões no setor bancário libanês. Ele busca descobrir a dinâmica da tomada de decisões entre as principais partes interessadas, à medida que as empresas enfrentam o desafio de se alinhar com estruturas ecológicamente corretas.

Referência teórica: A estrutura teórica subjacente a esta pesquisa está enraizada no imperativo de as empresas passarem por uma mudança transformadora em direção à sustentabilidade, coloquialmente referida como a "mudança verde". Prevê-se que esta mudança seja um fenômeno inevitável, exercendo pressão sobre as empresas, incluindo as do setor bancário libanês, para que alinem as suas operações com práticas sustentáveis do ponto de vista ambiental.

Método: MCDM (Multi-criteria decision-making) através do Processo de Hierarquia Analítica (AHP) e Modelagem de Equação Estrutural (SEM) através do software AMOS foram empregados.

Resultados e Conclusão: os resultados sugerem que as partes interessadas internas desempenham um papel significativo na tomada de decisões relativas à gestão ecológica no setor bancário. Em contraste, na indústria bancária, os intervenientes externos ocupam o segundo lugar em termos da sua importância para a gestão ecológica. Observamos que os produtos ecológicos são importantes para a maioria das principais partes interessadas do setor bancário.

Implicações da investigação: A investigação do setor bancário limita a possibilidade de generalizar os resultados a outros tipos de setores de atividade, bem como a outras áreas geográficas. Os resultados poderiam ser melhorados com a inclusão de outras partes interessadas. Os resultados ajudam os gerentes, CEOs e pensadores estratégicos do setor bancário a direcionar as práticas de gerenciamento ecológico para as partes interessadas certas a fim de maximizar sua vantagem competitiva ecológica.

Originalidade/valor: Esta pesquisa investigou um dos raros estudos no setor bancário, onde poderíamos calcular a importância dos parâmetros de gestão que regem a tomada de decisões das partes interessadas do banco.

Palavras-chave: competitividade ecológica, gestão sustentável, processo de hierarquia analítica (ahp), tomada de decisão multicritérios, setor bancário, partes interessadas internas e externas.

INTRODUCTION

The financial sector's forced transformation toward environmentally friendly practices, pushed by strict international rules and the Sustainable Development Goals (SDGs), poses a clear threat to organizations trailing behind in sustainability. Debates centre on the efficacy of sustainable management indices, which have been limited by assumptions and limitations identified in prior studies.

The need for firms to examine their environmental performance becomes clear when identifying strengths and weaknesses (Brodowska-Szewczuk, 2019); (Castagna et
al., 2020); (Somogyi & Nagy, 2022); (Rezk et al., 2022). However, research on the effects of green competitiveness in the Middle East, notably in Lebanon, must be more extensive, highlighting the need for new scientific insights. Despite the region's tremendous growth, Resource-Based View (RBV) models remain an untapped domain (Daily & Huang, 2001); (Huguenin & Jeannerat, 2017).

The financial sector's landscape is continually changing, driven by technological breakthroughs and changing consumer behavior. The importance of tackling global environmental crises has prompted banks to embrace and advocate sustainability projects. Surprisingly, the viewpoint of financial players on green competitiveness receives less consideration (Belen and Nuria, 2017); (Ling et al., 2016). This disparity extends to finance stakeholders' perceptions of sustainable management.

2 REVIEW OF LITERATURE

This research examined the relationship between competitiveness and sustainability, focusing on major management philosophies. In conjunction with stakeholder theory, the Resource-Based View (RBV) paradigm emerged as crucial in the sustainable management of green competitiveness. It emphasized the importance of RBV in sustainable management and its impact on green competitiveness. The inquiry looked into the impact of ICT management on green competitiveness in the banking sector, namely digital banking. The study found a substantial correlation between sustainable management and increased green competitiveness in banking and digital banking. This exhibits sustainability commitment and appeals to conscientious stakeholders while fostering environmental and societal improvement.

Summarizing the green competitiveness concept, studied recently by (Cheng et al., 2019); (Cheng et al., 2018); (Fu et al., 2017a); (Tsai et al., 2015); (Duffett et al., 2018); (Fu et al., 2017b), (Lin & Chen, 2017); (Mishra, n.d.); (Konuk et al., 2015); (Mwesigwa Banya & Biekpe, n.d.); (Wang et al., 2016); (Barysiené et al., 2015); (Khvesyk et al., 2018), (Barysiené et al., 2015); (Maitre et al., 2018); (Khalatur et al., 2022). It was found that the majority of researchers are looking into different aspects of green competitiveness, such as energy consumption and energy-saving competitiveness (16.66%), infrastructure, construction, and innovation competitiveness (16.66%), ecological environment competitiveness related to environmental protection (33.33%), economic and social sustainable competitiveness (33.33%), natural resource
competitiveness (16.66%), and employees’ skills and human resource competitiveness (14.66%). (Nassar & Tvaronavičienė, 2021); (Nassar & Strielkowski, 2022).

A recent literature analysis identified two essential factors: ecological environment competitiveness (environmental conservation) and economic-social sustainable competitiveness. These elements serve as the framework for broader investigations, which may include a variety of hypotheses and organizational contexts, to confirm their significance and influence on organizational performance. Previous study has also shown the importance of sustainable management principles for environmentally friendly competitiveness. These include competitiveness in energy consumption and energy savings, competitiveness in infrastructure and innovation, competitiveness in natural resources, and competitiveness in human resources, all of which contribute to the desired benefits of green competitiveness in organizational performance (Chehabeddine et al., 2022); (Fleacă et al., 2023).

3 GAP

The lack of thorough study addressing the impact of unique qualities on this notion in the banking sector shows the need for additional exploration. This initiative may provide significant insights to banks looking to increase their financial competitiveness by improving their performance in specific sustainable areas. Let us start by delving into the continuing research landscape surrounding green competitiveness, revealing emerging areas of interest. Academics are aggressively investigating the delicate relationship between green practices and bank financial success. Furthermore, the lack of a standardized assessment methodology complicates the assessment of banks' environmental performance. Again, there is an increasing emphasis on appreciating the long-term ramifications of green policies on the overall sustainability of the financial system. The level of green competitiveness's influence varies according to regional characteristics and legal frameworks (Aigner et al., 2022).

Furthermore, experts are investigating the extent to which banks integrate green efforts into their core operations. Furthermore, fully understanding green competitiveness necessitates considering a broader range of stakeholder perspectives. Likewise, a clearer picture emerges when scholars investigate how sustainable practices affect banks' risk management strategies. Furthermore, identifying and reducing barriers to the widespread adoption of green practices is receiving increased attention.
4 RESEARCH AIM AND RESEARCH QUESTIONS

This study dives into the complexities of the financial sector, attempting to thoroughly investigate the extent to which various aspects of green management influence the decision-making processes of external and internal stakeholders. It thoroughly investigates the influence of expertly managed green products and services, effective administration of green platforms, strategic management of green human resources, environmentally conscious management techniques, and expert handling of green financial management procedures. The study intends to identify the nuanced relationships that contribute to the sector's sustainable growth and competitiveness by examining the interplay between these management characteristics and the decision-making paradigms of both external and internal stakeholders.

A more holistic understanding of the dynamic interconnections between green strategies and stakeholder-driven decisions within the financial domain is sought through this multifaceted analysis, ultimately shedding light on pathways for fostering environmental consciousness and achieving long-term success.

4.1 EXPLANATION OF THE RESEARCH QUESTIONS BASED ON THE SYSTEM OF INDICATORS AND PREVIOUS RESEARCH

Before elucidating all following the Green hypotheses (Hypotheses 1-2-3-4-5-6), it is worth noting that the conception of the overall green management in the banking industry that refers to the environmentally conscious practices implemented by the bank's upper echelon, specifically those in strategic management roles across various bank departments, including the management department, the project management department, the planning department, the marketing department, the sustainable development department, the law department, the compliance department, the finance department, the IT department, the human development department, and the overseas department.

Hypothesis 1: Green Products Management (GP)

H1A1 - Green product management positively influences bank stakeholders' decision-making in the financial sector

The first definition of Green product management in the financial sector is the environmentally conscious administration of various banking goods. Green Mortgages, which incentivize environmentally friendly building purchases or renovations; Green Home Modernization Loans for energy-saving property upgrades; Sustainability-Linked
Loans, which tie variable interest rates to verified ESG goals; Green Debit/Credit Cards that contribute to reforestation and Green Reward Systems, such as Green Golden Points for environmentally friendly purchases, are examples of low-cost premiums for eco-conscious activities, such as driving electric or hybrid vehicles are being discussed (Shlikhter, 2020); (IFC, 2014); (Duffett et al., 2018); (Alshebami, 2021); (Bilan et al., 2019); (IFC, 2014); (Iqbal et al., 2018); (Ali et al., 2022). The first hypothesis asserts that green product management is founded on GP-a-green environmental management (Sukirman, 2018); (Baietti et al., 2012); (Aizawa & Yang, 2010). The study defines competitive indices using characteristics such as Green manufacturing, environmental management, Green management, and Green product performance (Yuan & Gallagher, 2018); (Manolas et al., 2017); (Battiston et al., 2017); (Wang & Zhao, 2022); (Alshebami, 2021). A rapid transition to green products, market share acquisition, and strategic integration of environmental activities are critical success elements for achieving green competitiveness (Duffett et al., 2018); (Bag et al., 2020); (Tsai et al., 2015); (Konuk et al., 2015).

Green brand equity, trust, purchase intentions, and word-of-mouth intents for green products (Wagdi et al., 2022); (Samašonok & Išoraitė, 2023), all show a positive association. Wang underlines the significance of R&D and innovation in sustaining a competitive edge in the green business (Wang et al., 2021); (Streimikiene & Kaftan, 2021); (Khorshid et al., 2023).

**Hypothesis 2: Green Platform Management (GPL)**

**H2A1 - There is a positive influence of Green Platform Management on bank stakeholders decision-making in the financial sector**

The first definition of Green Platform Management contains some terms that characterize this idea. Digital Finance and Digital Banking are two phrases that stress the shift to online financial services. Similarly, ICT aptitude refers to bankers’ capacity to understand and implement technological software. In contrast, ICT capabilities include a wide range of technological systems such as contact/call centers and online banking solutions (Igbudu, Garanti, Popoola, et al., 2018); (Iqbal et al., 2018); (Ellahi et al., 2021); (Caruso, 2018). Furthermore, FinTech development entails developing apps for easy financial transactions, and R&D Green Innovative Activities investigate the possibilities of Robotic Process Automation in increasing operational efficiency and customer service. Furthermore, upcoming banking technology trends include predictive AI, ATM, robotic
assistance, and an increase in the demand for digital transactions (International Telecommunication Union (ITU), 2014); (Oduor et al., 2017); (Stock et al., 2018); (Fajar & Soeling, 2017); (Wang et al., 2018); (Khvesyk et al., 2018); (Arezki et al., 2016); (Ardizzi et al., 2019); (Seyfang & Gilbert-Squires, 2019); (Kodama, 2017); (Makarchenko et al., 2016); (Flögel & Beckamp, 2019); (E-Commerce | BLOM Bank Retail, 2016).

**Hypothesis 3: Green Human Resources Management (GHR)**

**H3A1 - Green human resources (HR) management positively influences bank stakeholders' decision-making in the financial sector.**

The notion of GHR Green Training leads to various related terminology. Green Human Skills by Green Awareness (C317), for example, includes essential competencies, values, and attitudes for a sustainable society (Zaid et al., 2018); (Fajar & Soeling, 2017); (Nevárez & Félix, 2019). On the other hand, Green Training (C318) provides staff with strategies to promote resource efficiency and environmental protection. Green Recruitment (C319) refers to hiring people who support an organization's environmental management systems. Green Expertise (C320) also focuses on key competencies in quality assurance, environmentalism, and sustainable development (Deslatte & Stokan, 2020); (Bag et al., 2020); (Arulrajah & Opatha, 2016). These principles are also linked to Green Socio-Economic Management and Green Human Resource Management (Table 2). Workplace productivity, equitable compensation, social welfare, and skill development are examples. Lin and Chen (2017) conducted an insightful analysis that illustrates the favorable impact of communicating green knowledge on competitive advantage and service innovation (Okyere-Kwakye & Md Nor, 2021); (Ali et al., 2022).

Furthermore, the development of capacities is emphasized as being critical for building competitive arenas within businesses (International Labour Office (ILO), 2018); (Fajar & Soeling, 2017). Empowering Green staff is critical to increasing a company's profitability. All of these aspects illustrate the growing significance of incorporating green ideas into numerous aspects of organizational operations (Zhixia et al., 2018); (Okyere-Kwakye & Md Nor, 2021); (Ali et al., 2022); (Zikhali et al., 2023).
Hypotheses 4: Environmental Management (EMG)

H4A1- Environmental Management positively influences bank stakeholders' decision-making in the financial sector.

The first terms introduced in the idea of EMG cover a wide range of practices. Energy Saving Goals entail reducing energy consumption with modern lighting solutions such as LEDs (Sharma & Choubey, 2022); (Weber & Remer, 2011); (Song et al., 2019). Similarly, Paperless Banking denotes a move to electronic documentation in preparation for digital transformation. Furthermore, policies such as refusing to support polluting businesses and utilizing renewable energy enhance sustainability. Green Annual Reports collect eco-friendly financial data, whereas Green Community Activities include tree planting and biogas plant installation (Pereira & Vence, 2012); (Makarchenko et al., 2016); (International Labour Office (ILO), 2018); (Gü Ner, 2018); (Kokkonen & Ojanen, 2018).

Banks also participate in People's Green Awareness Programs through webinars and events, cooperating with other industries to achieve green goals. Green campaigns support eco-friendly projects through commercials, social media, and marketing (Okyere-Kwakye & Md Nor, 2021); (Beck & Demirguc-Kunt, 2006); (Nevárez & Félix, 2019); (Scholtens & Dam, 2007); (World Employment and Social Outlook 2018 – Greening with Jobs, 2018); (Zhixia et al., 2018); (Bank, 2018); (Kumar & Prakash, 2015).

Hypothesis 4 investigates the beneficial cost-cutting relationship between Green Environmental Management and Lean Production, contrasting existing study assumptions on competitive indices and evaluation measures (Baietti et al., 2012); (Shlikhter, 2020); (Sukirman, 2018).

Hypothesis 5: Green Financial Management (GFI)

H5A1-There is a positive influence of GREEN FINANCIAL MANAGEMENT on bank stakeholders' decision-making in the financial sector.

GFM tactics include Green Venture Capital (C530), which directs investments to sustainable tech startups, and Green Private Equity Funds (C531), which prioritize funding sustainable enterprises. Green Brokerage (C532) allows eco-friendly investing, and Green Bonds (C533) facilitate green securities trading (Akomea-Frimpong et al., 2022); (Shlikhter, 2020); (Park & Kim, 2020); (Konuk et al., 2015); (Caruso, 2017); (Flögel & Beckamp, 2019).
The examination focuses on ecological competitiveness, changing from outmoded economic models to future paradigms while investigating the technical revolutions of Industry 4.0 and the Fourth Industrial Revolution (Konuk et al., 2015); (Battiston et al., 2017); (V. Wang & Carayannis, 2012); (Aizawa & Yang, 2010); (Ambec & Lanoie, 2008); (Makarchenko et al., 2016); (Wang et al., 2018). The study investigates elements influencing eco-friendly competitiveness in contemporary banking outside traditional institutions, implicit knowledge in loan decisions and the advantage of ICT management for regional banks. It advises that regional banking consortia and FinTech enterprises work together to improve their competitive situations (Lin et al., 2017); (Arezki et al., 2016); (Wyższa Szkoła Finansów i Zarządzania w Warszawie., 2011); (Masud, Hossain, et al., 2018). Scholars also contend that Supply Chain Management (SCM) favourably impacts Sustainable Supply Chain Management (SSCM) by providing financial incentives and loans for energy-efficient practices. This demonstrates the relationship between financial incentives and sustainability in SCM (ING Green Bond | ING, 2018); (Wang et al., 2020); (Akomea-Frimpong et al., 2022).

**Hypotheses 6: STAKEHOLDERS DECISION MAKING (DM)**

H6-The bank stakeholders' green decision-making (internal and external stakeholders) positively influences the market expansion and, therefore, green competitiveness in the financial sector.

Green management at a bank substantially affects the decision-making processes of internal and external stakeholders. Adoption of environmentally responsible practices and sustainability projects has a variety of consequences for stakeholders (Pinillos & Fernández Mateo, 2018); (Masud, Nurunnabi, et al., 2018); (Kaïum Masud et al., 2018); (Beck & Demirguc-Kunt, 2006); (Lafuente & Szerb, 2021); (Wang, 2016).

Green strategies influence the decisions of internal stakeholders, such as employees, shareholders, and the board of directors. The unity of a bank's green strategy with its core values may influence board decisions. Furthermore, such initiatives can impact external stakeholders, including clients, building trust and strengthening the bank's brand (Hermans, 1861); (Themistocleous et al., 2015); (Maixé-Altés, 2015); (Bilan et al., 2019).

Decision-making (DM) by both internal and external stakeholders is included in the model, with specific categories such as employees (DM-A1), shareholders (DM-A2),
boards of directors (DM-A3), individual clients (DM-A4), SME clients (DM-A5), large corporate clients (DM-A6), and suppliers (DM-A7) in the financial sector.

5 METHODOLOGY AND RESULTS

The study investigates how green management criteria influence the decision-making of internal and external stakeholders in Lebanese banking to determine the significance of these factors. This interaction of dependent and independent variables adds to green competitiveness. Green Products, Platform Management, HR Management, Environmental Management, and Green Financial Management are all extensively detailed and discussed. A mixed method is used to examine relationships: Multi-criteria decision-making (AHP) and SEM-AMOS are used as calculating approaches.

The study examines the impact of green management criteria on decision-making among internal and external stakeholders in Lebanese banking to determine their importance in developing green competitiveness. To evaluate relationships, the study adopts a mixed methodology that includes Multi-criteria Decision Making (AHP) and SEM-AMOS (Khwanruthai, 2012); (Soebandrija, 2019). The findings uncover minor criteria while highlighting two important ones for green competitiveness and market expansion (Zangoueinezhad et al., 2011a).

The criteria and alternatives are chosen subjectively, and the expert opinions of ten experienced financial professionals are gathered and quantified on an ordinal scale. Cross-tabulation, rank, weighted score, and AHP are among the MCDM methodologies used, with the Analytic Hierarchy Process supporting consistency assessment. The labor-intensive method of the study results in the formulation of appropriate weights for each criterion via pair-wise comparisons, which contributes to a comprehensive evaluation (Zangoueinezhad et al., 2011b).

5.1 THE FIRST STEP: THE USE OF AHP- MULTI-CRITERIA DECISION-MAKING METHOD

Step 1 entails employing the AHP multi-criteria decision-making process, which entails building a decision-problem hierarchy, making pair-wise comparisons, assigning precedence to hierarchy members, combining judgements for total weights, and ensuring consistency. This basic method leads to Step 2, where alternative ratings for each criterion
are generated by building pair-wise comparison matrices, normalizing them, averaging row values for ratings, and ensuring consistency. Criteria weights are similarly produced using pair-wise comparison matrices, normalization, averaging, and consistency ratio testing. In Step 3, a weighted average rating is calculated for each choice, assisting in selecting the one with the greatest score (see Table 1, Table 2).

Table 1. Weighed average rating for each decision alternative

<table>
<thead>
<tr>
<th></th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
<th>TOTAL</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>0.25</td>
<td>0.5</td>
<td>13.8</td>
<td>2.75</td>
</tr>
<tr>
<td>C2</td>
<td>0.11</td>
<td>1</td>
<td>3</td>
<td>0.20</td>
<td>1</td>
<td>5.31</td>
<td>1.06</td>
</tr>
<tr>
<td>C3</td>
<td>0.33</td>
<td>0.333</td>
<td>1</td>
<td>0.50</td>
<td>0.25</td>
<td>2.42</td>
<td>0.48</td>
</tr>
<tr>
<td>C4</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>21</td>
<td>4.2</td>
</tr>
<tr>
<td>C5</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>0.1111</td>
<td>1</td>
<td>8.11</td>
<td>1.62</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7.44</td>
<td>16.33</td>
<td>13</td>
<td>13.8578</td>
<td>2.061111</td>
<td>42.5</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Table 2. Normalized matrix and average matrix–steps 1 and 2 of AHP–MCDM

<table>
<thead>
<tr>
<th></th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
<th>TOTAL</th>
<th>AVERAGE</th>
<th>CONSISTENCY MEASURE</th>
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<tbody>
<tr>
<td>C1</td>
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<td>0.25502</td>
<td>0.1842</td>
<td>0.1104857</td>
<td>0.2</td>
<td>0.1563751</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>0.0012</td>
<td>0.02834</td>
<td>0.0614</td>
<td>0.2209714</td>
<td>0.1</td>
<td>0.0812071</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>0.0037</td>
<td>0.00945</td>
<td>0.1228</td>
<td>0.4419429</td>
<td>3.9</td>
<td>0.9457142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>0.0446</td>
<td>0.14168</td>
<td>0.2456</td>
<td>0.0491047</td>
<td>0.4</td>
<td>0.7169297</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>0.0223</td>
<td>0.02834</td>
<td>0.5527</td>
<td>0.8617888</td>
<td>4.7</td>
<td>1.3321261</td>
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<td>TOTAL</td>
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<td>0.43448</td>
<td>1</td>
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<td>1</td>
<td>5</td>
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<table>
<thead>
<tr>
<th></th>
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<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
<th>TOTAL</th>
<th>AVERAGE</th>
<th>CONSISTENCY RANK BY CIx</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>0.01</td>
<td>0.019</td>
<td>0.013</td>
<td>0.008</td>
<td>0.021</td>
<td>0.0718</td>
<td>0.01437</td>
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<tr>
<td>C2</td>
<td>0.02</td>
<td>0.028</td>
<td>0.035</td>
<td>0.017</td>
<td>0.107</td>
<td>0.2039</td>
<td>0.04078</td>
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<tr>
<td>C3</td>
<td>0.05</td>
<td>0.05</td>
<td>0.061</td>
<td>0.091</td>
<td>0.059</td>
<td>0.3131</td>
<td>0.06261</td>
<td>5.4388</td>
</tr>
<tr>
<td>C4</td>
<td>0.61</td>
<td>0.752</td>
<td>0.297</td>
<td>0.442</td>
<td>0.244</td>
<td>2.349</td>
<td>0.46979</td>
<td>6.0076</td>
</tr>
<tr>
<td>C5</td>
<td>0.31</td>
<td>0.15</td>
<td>0.594</td>
<td>0.442</td>
<td>0.569</td>
<td>2.0622</td>
<td>0.41245</td>
<td>5.0895</td>
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<tr>
<td>TOTAL</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>26.726</td>
</tr>
</tbody>
</table>

Source: created by the authors
The results show that the ranks of C2, C3, and C5 related respectfully to Green Platform Management GPL, Green HR Management-GHR, and Green Financial Management-GFM had the same weight.

Criteria C1 and C4 related respectfully to Green Products-GPM and Environmental Management-EMG rated slightly higher than the others.

We conclude that the rank of all the criteria -Green Products-GPM, Green Platform Management-GPL, Green HR Management-GHR, Environmental Management-EMG, and Green Financial Management-GFM–weighted almost the same.

Therefore, we need an additional method to identify the rank of each criterion significantly.

We can use the method and the experts’ opinions to discover the rank of internal and external stakeholders’ decision-making by combining the AHP-MCDM with the Next method SEM so we can conclude a better view (Zangouinezhad et al., 2011b) (see the following results)

5.2 SECOND QUANTITATIVE METHOD: AMOS / SEM-STRUCTURAL EQUATION MODELING

5.2.1 Sample Size

The sample size should range between 100 and 200, with 5 to 10 questions for every parameter, or 10 questions for each sub-variable (Wolf et al., 2013). This research has 12 variables, with 33 sub-variables multiplied by 10, yielding a required sample size of 330. The sample size was 403, which is more than sufficient for valid results. (Maury, 2018)

Moreover, we carefully chose the criteria for selecting candidates. After that, it did a descriptive statistic to explain better the results obtained (Gallego-Álvarez, 2012). Then, to better validate the answers, 10 experts' opinions were taken into consideration using the multi-criteria decision-making assessment using the AHP method. In this methodology, it performed 2 rounds to ensure consistency, consensus, and validity. Finally, the multi-criteria scoring method was used to determine how the identified green factors affect stakeholders’ decision-making in the financial sector. (Tsai et al., 2015)
6 INTERPRETATION OF RESULTS

6.1 RELIABILITY ANALYSIS

The reliability test represents the extent to which a measure is consistent with a concept and is related to data constancy. In our study, we will use Cronbach's alpha to test the reliability of each scale and their relative items. Based on a five-point Likert scale, Cronbach's alpha coefficient above 0.7 is acceptable, which shows very good internal consistency (Benites-Lazaro et al., 2018); (Ahmad et al., 2015).

The data results show that all constructs are reliable since Cronbach's values were computed above 0.7, except for the decision-making scale. The GPM with 6 items offers good internal consistency with Cronbach's alpha of 0.895. In comparison, the GPL with 10 items also shows a very good internal consistency with a Cronbach's alpha of 0.954, and the GHR scale with 4 items shows a perfect internal consistency with Cronbach's alpha of 0.894. The EMG scale with 9 items also shows very good internal consistency, with a Cronbach's alpha of 0.891. The GFM scale with 4 items shows excellent internal consistency, with a Cronbach's alpha of 0.837.

Only the DM with 3 items shows a poor internal consistency with Cronbach's alpha of 0.565.

After editing question 14 of the DM scale as a low item, we collected the data, and we obtained a very good internal consistency of the scale DM with Cronbach alpha 0.721 (see Table 3, Table 4).

| Table 3. Reliability of constructs (before editing question 14 of DM) |
|-----------------------------|--------|----------|
| Scale         | Cronbach's alpha | Number of items |
| GPM           | 0.895       | 6        |
| GPL           | 0.954       | 10       |
| GHR           | 0.894       | 4        |
| EMG           | 0.891       | 9        |
| GFM           | 0.837       | 4        |
| DM            | 0.565       | 3        |

Source: created by the authors

| Table 4. Reliability of constructs (after editing question 14 of DM) |
|-----------------------------|--------|----------|
| Scale         | Cronbach's alpha | Number of items |
| GPM           | 0.898       | 6        |
| GPL           | 0.962       | 10       |
| GHR           | 0.909       | 4        |
| EMG           | 0.907       | 9        |
| GFM           | 0.872       | 4        |
| DM            | 0.721       | 3        |

Source: created by the authors
Cronbach alpha- Reliability analysis

\[ \alpha = \frac{k}{(k-1)} \times (1 - \frac{\sum s^2}{S^2}) \]  

Where:

- \( \alpha \) is Cronbach's alpha coefficient
- \( k \) is the number of items in the test
- \( s^2 \) is the variance in each item score
- \( S^2 \) is the variance of the total test score (i.e., the sum of scores across all items)

Cronbach's alpha is a measure of internal consistency reliability, which assesses the degree to which items on a test are correlated with one another. Higher alpha coefficients indicate greater consistency or reliability of the test. A Cronbach's alpha of 0.70 or above is considered acceptable for most research purposes.

6.2 EXPLORATORY FACTOR ANALYSIS

An EFA was conducted to confirm the relationship between the statements and the factor they loaded on. The suitability of the data for factor analysis can be tested by Kaiser-Mayer-Olkin (KMO) coefficient and Barlett sphericity test. KMO=0.777 ranges between 0 and 1. Bartlett's test tests the null hypothesis that the original correlation matrix is an identity matrix. As for Bartlett's test, the observed significance levels are sig<0.05; thus, the relationship among variables is strong. The results show that all commonalities are above 0.5.

The minimum factor loading criteria was set to 0.6 (MacCallum et al., 1999, 2001). All factor loadings are found to be above 0.6.

7 PRESENTATION OF FINDINGS
7.1 DESCRIPTIVE STATISTICS

The sample contains females (51.4%) and males (48.6%). 30.3% of participants were aged between 35-45, 24.3% were aged between 18 and 25 years old, 22.1% were above 45, and 23.3% were between 25 and 35. Most participants (82%) have bachelor's or master's degrees. 28.0% of the participants have a middle-level job position, 25.8% at the senior level, 21.6% at upper management, and 24.6% at the junior level. 20.6% of the participants have less than 2 years of overall work experience, while 19.4% have between
5 and 10 years of experience, and 39.5% have more than 10 years of general work experience. 19.1% of the participants have more than 10 years of experience in financial companies, 17.9% as less than 2 years of experience, 9.9% between 2 and 5 years, and 13.4% between 5 and 10 years of experience in financial companies. Most participants (85%) deal with the bank headquartered in Lebanon. Around 70% of participants said the bank they deal with has other branches outside Lebanon. The majority of participants have dealt with banks (86.1%).

We deduced that the mean of decision-making DM1 has the highest mean of 3.73 with a standard deviation of 1.185, followed by DM3 with a mean of 3.61 and standard deviation of 1.163 followed by the lowest DM2 with a mean of 3.38 and standard deviation of 1.085.

For green products management, the highest mean was for GPM2 with a mean of 3.68 and standard deviation of 1.005, followed by GPM4 with a mean of 3.67 and standard deviation of 1.025, followed by GPM6 with a mean of 3.63 and standard deviation of 1.001, followed by GPM5 with a mean of 3.63 and standard deviation of 1.025, followed by GPM3 with a mean of 3.62 and standard deviation of 0.991, while the lowest mean was for GPM1 is 3.50 with a standard deviation of 1.001.

The descriptive statistics for the green platform management are as the highest mean was for GPL6 with a mean of 3.92 and a standard deviation of 1.011, followed by GPL7 with a mean of 3.89 and standard deviation of 1.001, followed by GPL9 and GPL2 AND GPL5 with a mean of 3.83 and standard deviations of 1.039 and GPL8 followed by GPL4 with a mean of 3.84 and standard deviation of 1.058, followed by GPL3 and GPL10 while the lowest mean was for the GPL1 with a mean of 3.71 and standard deviation of 1.021.

The highest mean for green human resources management was for GHR1 and GHR2 at 3.64 with a standard deviation of 1.066 and 1.040, respectively, while the lowest mean was for GHR4 and GHR3 with a mean of 3.57 and a standard deviation of 1.004 and 1.042 respectively.

The highest mean for the Environmental management Green financial was for EMG1 and EMG3 with a mean of 3.68 and standard deviation of 1.010 and 1.027, respectively, while the lowest mean was for EMG5 with a mean of 3.48 and standard deviation of 1.061. Finally, for the Green financial management, the highest mean was
for GFM2, with 3.58 and a standard deviation of 1.025, while the lowest mean was GFM4, with a mean of 3.33 and a standard deviation of 1.146.

7.2 RELIABILITY OF CONSTRUCTS AND THEIR EQUATIONS

The reliability test represents the extent to which a measure is consistent with a concept and is related to data constancy. In our study, we will use Cronbach's alpha to test the reliability of each scale and its relative items. Based on a five-point Likert scale, Cronbach's alpha coefficient above 0.7 is acceptable, showing good internal consistency (Zangoueinezhad et al., 2011b).

The data results show that all constructs are reliable since Cronbach’s values were computed above 0.7. The decision-making with 3 items shows very good internal consistency with Cronbach’s alpha of 0.753. The green products management with 6 items also indicates a perfect internal consistency with a Cronbach's alpha of 0.881 (Sachitra, 2016).

The green platform management with 10 items shows a very good internal consistency with a Cronbach’s alpha of 0.940. In comparison, the green human resources management with 4 items shows a good internal consistency with Cronbach’s alpha of 0.895. The environmental management with 9 items shows very good internal consistency with a Cronbach's alpha of 0.906 and the green financial management with a Cronbach alpha of 0.872 with 4 items. (Zangoueinezhad et al., 2011a)

The average variance extracted: 

\[ AVE = \frac{\sum K^2}{n} \]

Composite reliability: 

\[ CR = \frac{(\sum K)^2}{[(\sum K)^2 + (\sum 1 - K^2)]} \]

(K= factor loading of every item and n= number of items in a model) (2)

Chi-square ($\chi^2$): It measures the difference between the observed and predicted covariance matrix. A low chi-square value indicates a good fit.

Root Mean Square Error of Approximation (RMSEA): It measures the discrepancy between the model and the population covariance matrix, considering the degrees of freedom. A low RMSEA value (less than 0.05) indicates a good fit.
Comparative Fit Index (CFI): It compares the hypothesized model with the null model, which is the model with no relationships among the variables. A CFI value of 0.95 or higher indicates a good fit.

Tucker-Lewis Index (TLI): It also compares the hypothesized model with the null model. A TLI value of 0.95 or higher indicates a good fit (Horváthová, 2010).

The IFI compares the fit of the hypothesized model to the fit of the null model, which represents a model with no relationships among the variables. A higher IFI indicates a better fit for the hypothesized model than the null model. Realiability of constructs is presented below in Table 5.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach's alpha</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision making</td>
<td>0.753</td>
<td>3</td>
</tr>
<tr>
<td>Green products management</td>
<td>0.881</td>
<td>6</td>
</tr>
<tr>
<td>Green platform management</td>
<td>0.940</td>
<td>10</td>
</tr>
<tr>
<td>Green human resources management</td>
<td>0.895</td>
<td>4</td>
</tr>
<tr>
<td>Environmental management</td>
<td>0.906</td>
<td>9</td>
</tr>
<tr>
<td>Green financial management</td>
<td>0.872</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: created by the authors

7.3 CONFIRMATORY FACTOR ANALYSIS: DRAWING AND VALIDATING THE MODEL

7.3.1 Measurement model

Structural Equation Modelling (SEM) is the basis of a Confirmatory Factor Analysis (CFA). It evaluates the model of the study by comparing real and theoretical data using factor analysis, model measurement, and path analysis. The results were provided using IBM AMOS 24.0. The Confirmatory factor analysis (CFA) was conducted to assess the model fitness validity and reliability of the measurements for each construct before testing the relations using the structural model. The results of CFA showed a good model with a factor loading above 0.5, and an acceptable fit model (CMIN/df=2.634, TLI=0.900, RMSEA=0.064, CFI=0.907, IFI=0.908) and the construct validity was met (Khvesyk et al., 2018).

The convergent validity was also met by calculating the average variance extracted (AVE), AVE for all constructs was above 0.5 and also the construct reliability for all constructs was met as the CR for all constructs is above 0.7 (Igbudu, Garanti, & Popoola, 2018).
Finally, the Discriminant Validity is measured to detect any redundant statements in the measurement model, and it was established for all factors; the results show that AVE was greater than the squared correlation between each pair of constructs, thus providing evidence for discriminant validity (Dubey et al., 2017).

The formulas for these fit indices are as follows:

Chi-square ($\chi^2$) formula:

$$
\chi^2 = \Sigma \left[ \frac{(\text{observed covariance} - \text{predicted covariance})}{\text{estimated standard error of covariance}} \right]^2
$$

Root Mean Square Error of Approximation (RMSEA) formula:

$$
\text{RMSEA} = \sqrt{\left[ \frac{(\chi^2 - \text{pdf})}{n(n-1)} \right] * \frac{\sqrt{2(n-2)}}{2}}
$$

Comparative Fit Index (CFI) formula:

$$
\text{CFI} = \frac{(\chi^2_{\text{null}} - \chi^2_{\text{model}})}{\chi^2_{\text{null}}}
$$

Tucker-Lewis Index (TLI) formula:

$$
\text{TLI} = \frac{(\text{CFI} - 1)}{(\text{df} / n - 2)}
$$

IFI stands for Incremental Fit Index

$$
\text{IFI} = \frac{(\chi^2_{\text{null}} - \chi^2)}{\chi^2_{\text{null}}}
$$

Where:

$\chi^2$ is the chi-square value of the fitted model

$\chi^2_{\text{null}}$ is the chi-square value of the null model (i.e., a model with no paths or parameters specified)

Standardized regression coefficients
\[ \beta_j = \frac{\operatorname{cov}(X_j, Y)}{\operatorname{var}(X_j)} \]  

(8)

Where:

\( \beta_j \) is the regression coefficient for the jth predictor variable
\( \operatorname{cov}(X_j, Y) \) is the covariance between the jth predictor variable and the response variable
\( \operatorname{var}(X_j) \) is the variance of the jth predictor variable

The standard error (S.E.)

\[ \operatorname{SE}(\beta) = \sqrt{\frac{1}{n-p} \times \frac{1}{1 - R_{AB}^2} \times \frac{(1 - \beta^2) \times SSY}{SSX_B \times SSY}} \]  

(9)

Where:

\( n \) is the sample size
\( p \) is the number of estimated parameters in the model
\( R_{AB} \) is the correlation between latent variables A and B
\( \beta \) is the estimated path coefficient
\( SSX_B \) is the sum of squares for latent variable B
\( SSY \) is the sum of squares for the dependent variable (or response variable)

Results of the Measurement Model Assessment

Disciminant validity are provided below in Table 6 and Table 7, respectively.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Item</th>
<th>Factor loading</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision making</td>
<td>DM1</td>
<td>0.756</td>
<td>0.771</td>
<td>0.532</td>
</tr>
<tr>
<td></td>
<td>DM2</td>
<td>0.805</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DM3</td>
<td>0.612</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green products management</td>
<td>GPM1</td>
<td>0.690</td>
<td>0.881</td>
<td>0.554</td>
</tr>
<tr>
<td></td>
<td>GPM2</td>
<td>0.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPM3</td>
<td>0.734</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPM4</td>
<td>0.758</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPM5</td>
<td>0.761</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPM6</td>
<td>0.771</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green platform management</td>
<td>GPL1</td>
<td>0.720</td>
<td>0.940</td>
<td>0.611</td>
</tr>
<tr>
<td></td>
<td>GPL2</td>
<td>0.812</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL3</td>
<td>0.781</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL4</td>
<td>0.756</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL5</td>
<td>0.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL6</td>
<td>0.812</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL7</td>
<td>0.782</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL8</td>
<td>0.816</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL9</td>
<td>0.794</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GPL10</td>
<td>0.771</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.4 HYPOTHESIS TESTS (SEM)

SEM is a second-generation multivariate analysis technique developed due to some limitations in the traditional Ordinary Least Square (OLS), especially when dealing with latent constructs. This study tested the hypotheses to verify the causal relationship between independent and dependent variables. The alpha values were set at the level of
5%. The standardized coefficients were used to assess the causality and the method of estimation: Maximum likelihood for SEM.

<table>
<thead>
<tr>
<th>Table 8. Regression coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct</td>
</tr>
<tr>
<td>DM ← GPM</td>
</tr>
<tr>
<td>DM ← GPL</td>
</tr>
<tr>
<td>DM ← GHR</td>
</tr>
<tr>
<td>DM ← GFM</td>
</tr>
<tr>
<td>DM ← EMG</td>
</tr>
</tbody>
</table>

***<0.0001; **<0.05
Source: created by the authors

We can conclude that GPM has a positive significant influence on decision making (DM); this shows that a 1 percent increase in GPM would cause the rise of decision making by 0.797 with a standard error of 0.153, p-value=0.000001<0.0001 (Table 8).

Also, we found a positive influence of EMG on decision-making; this shows that a 1 percent increase in EMG would cause an increase in decision-making by 0.295 with a standard error of 0.151; p-value=0.032<0.05.

We accept both hypotheses, while we failed to reject the hypothesis of the influence of GPL, GHR, and GFM on decision-making as p-value>0.05.

We found that the order of P-value indicates the order of importance of constructs as follows: GPM >EMG>GHR>GPL>GFM. We can summarize the ranking results in the table below (Table 9).

<table>
<thead>
<tr>
<th>Table 9. The order of importance of constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranking per criteria</td>
</tr>
<tr>
<td>DM</td>
</tr>
<tr>
<td>GPM</td>
</tr>
<tr>
<td>GPL</td>
</tr>
<tr>
<td>GHR</td>
</tr>
<tr>
<td>EMG</td>
</tr>
<tr>
<td>GFM</td>
</tr>
</tbody>
</table>

Source: created by the authors

Final Research Model illustration via SEM –AMOS is presented below in Figure 1.
7.5 DETAILED RESULTS OF MIXED METHODS

Table 10. Conclusion of MCDM-AHP and SEM-AMOS methods

<table>
<thead>
<tr>
<th>Criteria</th>
<th>RANK BY AHP METHOD</th>
<th>RANK BY SEM METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 GREEN PRODUCTS-GPM</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>C2 GREEN PLATFORM MANAGEMENT-GPL</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>C3 GREEN HR MANAGEMENT-GHR</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>C4 ENVIRONMENTAL MANAGEMENT-EMG</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>C5 GREEN FINANCIAL MANAGEMENT-GFM</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: created by the authors

From the SEM method, we could rank all the criteria based on all the external and external stakeholders' decision-making, which is a general view of the importance of the criteria (Khwanruthai, 2012).

While in the mixed method, we could specify the exact importance of each stakeholder, whether internal or external (Zangoueinezhad et al., 2011b).

We have used the rank of SEM and mixed it with the MCDM-AHP method to get the final following Mixed method results:

a-we could rank all the criteria in relevance to each stakeholder
b-we could rank the importance of each stakeholder's decision-making, whether internal or external, in relevance to the green ban (Akomea-Frimpong et al., 2022) (see Table 10).

The detailed results related to each stakeholder are as follows (see Table 11).

Table 11. Rank Related To Each Stakeholder

<table>
<thead>
<tr>
<th>INTERNAL STAKEHOLDERS GREEN DECISION MAKING</th>
<th>EXTERNAL STAKEHOLDERS GREEN DECISION MAKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>C634-A2: EMPLOYEES (NUMBER 1)</td>
<td>C637-A4: INDIVIDUAL CLIENTS (NUMBER 3)</td>
</tr>
<tr>
<td>C635-A2: SHAREHOLDERS (NUMBER 4)</td>
<td>C638-A5: SMES CLIENTS (NUMBER 5)</td>
</tr>
<tr>
<td>C636-A3: BOARD OF DIRECTORS (NUMBER 2)</td>
<td>C639-A6: BIG CORPORATES CLIENTS (NUMBER 6)</td>
</tr>
<tr>
<td></td>
<td>C640-A7: SUPPLIERS (NUMBER 7)</td>
</tr>
</tbody>
</table>

Source: created by the authors

Results show that the employees ranked first, which is related to the internal stakeholders:

Green products were the most important to them, followed by environmental management green HR and later green platform and waste management were less important them (Ibe-enwo et al., 2019).

2-Results also found that the internal stakeholder "board of directors" ranked second:

Green products also ranked as their most important factor, followed by green platforms and waste management (Apostoaie, 2019). We noticed that green management and Green HR were less important to them (Dikau & Volz, 2018).

3-Results show that the individual clients ranked 3 as important among the internal and external stakeholders and ranked first among the external stakeholders (Battiston et al., 2017).

We noticed that environmental management, waste management, and green products were equally important to the individual clients, while the other factors ranked less important.

4- the shareholders ranked fourth regarding all the internal stakeholders but ranked third regarding the internal stakeholders (Kumar & Prakash, 2017).

The green products were the most important to the shareholders' Decision-making, followed by environmental management, waste management, and other criteria (Baietti et al., 2012).
5-the rest of the external stakeholders’ decision-making was ranked 5th, 6th, and 7th, indicating that the top DM were related to internal stakeholders except for the individual clients that ranked third (Oliver, 1997).

SMEs ranked 5th in importance, green products ranked first, and environmental and waste management ranked 2nd and 3rd (Beck & Demirguc-Kunt, 2006).

6-Big Corporate DM ranked 6th in importance, noticing that green products were the most critical criteria followed by environmental and waste management (Barclift, 2011).

7-Suppliers were the latest regarding their importance in the DM affecting the financial sector's green management. Waste management was their most important factor, followed by green platform and environmental management (Lee et al., 2015).

The findings show that internal stakeholders play a significant role in green management decision-making in the financial sector, with employees and the board of directors taking the lead. Individual clients are ranked third, followed by external stakeholders. Notably, green products emerged as a high priority and were critical in influencing all internal stakeholders' decision-making (Ruggerio, 2021). We notice that green products are relevant to most top DM of internal and external stakeholders (A1-A2-A3-A5-A6).

8 NOVELTY

Investigating sustainable management for green competitiveness within the Lebanese banking sector, focusing on internal and external stakeholders' decision-making, yields various possible innovations and contributions. By setting the research within the context of the Lebanese banking industry, the research addresses the country's particular economic, political, and environmental challenges, potentially leading to customized strategies for sustainable management. Furthermore, the stakeholder-centered approach used recognizes the crucial role that diverse actors have in defining a bank's sustainability practices. Employees, executives, customers, investors, regulators, and others' decision-making processes are being evaluated. The model's incorporation of green managerial characteristics from internal and external stakeholder viewpoints makes this approach original and novel.
A unique instrument to aid the financial sector in evaluating its green managerial aspects is also envisaged. Furthermore, significant ideas for implementing sustainable management practices are discovered by diving into internal decision-making processes, notably the attitudes of bank executives and workers regarding green competitiveness. Simultaneously, the research of external stakeholders such as customers, investors, and regulators adds complexity to the study, allowing for an assessment of how their expectations affect banks' sustainability efforts and market expansion prospects. Furthermore, the research has the potential to serve as a benchmark for comparing Lebanese banks' sustainability initiatives to international best practices, thus contributing to the literature on sustainable finance, green competitiveness, and stakeholder decision-making in emerging economies.

Significantly, the findings have policy implications for the Lebanese banking sector and beyond, providing insights into future green competitiveness legislation, incentives, or support systems. Finally, because of its contextual relevance, stakeholder-oriented methodology, and potential policy repercussions, this study significantly contributes to academics and practitioners interested in sustainable finance and banking in Lebanon.

9 ORIGINALITY

The originality of this study originates from its focus on "sustainable management for green competitiveness in the Lebanese banking sector," focusing on "decision-making of internal and external stakeholders." Notably, it reveals distinct aspects such as the critical geographical context, leveraging emerging market dynamics, thorough stakeholder analysis, the symbiotic relationship between sustainability and competitiveness, policy implications, global knowledge contribution, and its implications for academia and industry. It fills a vacuum in the literature and provides actionable insights for both policymakers and industry practitioners by investigating the specificities of Lebanon's banking sector.
10 DISCUSSION: PRACTICAL VALUE AND THEORETICAL SIGNIFICANCE OF ACHIEVED RESULTS

According to the data, employees, a crucial internal stakeholder group, are given the highest priority. Their primary interests are environmentally friendly products, eco-management, and green HR. Green platform and waste management were ranked lower in importance. In addition, the "board of directors," another internal stakeholder body, was ranked second. Green products were the most important to them, followed by green platforms and waste management, while green management and Green HR were less important.

Individual clients emerged as the top influencers among external stakeholders, placing third overall among internal and external stakeholders. Their main focus areas were environmental management, waste management, and green products, with other factors taking a back seat. Shareholders ranked fourth among internal stakeholders and third among internal stakeholders in general. Their top priority was green products, environmental and waste management, and other factors.

External stakeholders' decision-making influence ranked fifth, sixth, and seventh, emphasizing the importance of internal stakeholders, except for particular clients, who ranked third. Small and medium-sized businesses came in fifth, focusing on green products, environmental management, and waste management. Meanwhile, the importance of Big Corporate DM ranked sixth, stressing green products, the environment, and waste management. (Maixé-Altés, 2015) (Bilan et al., 2019).

The findings underscore the importance of internal stakeholders in green management decisions in the banking sector. Supplier influence on decision-makers is growing, with essential concerns including waste management, green platforms, and environmental management. Internal stakeholders, particularly the board of directors and workers, wield the most power, followed by external stakeholders, such as individual clients and shareholders (Cheng et al., 2018).

These findings provide valuable insights for banking industry managers, CEOs, and strategic thinkers to match green managerial practices with the right stakeholders, strengthening their competitive advantage in sustainability. The impending transition toward green practices will undoubtedly present issues for non-green enterprises. As a result, this study looks into the potential impact.
As a result, this study looks into the possible impact of green management standards on the decisions of internal and external stakeholders in the Lebanese banking sector (Song et al., 2019).

While this study sheds light on the unique elements of the banking sector, its narrow scope limits its applicability to other businesses and countries. Increasing stakeholder participation could improve the results by guiding ecologically sound practices suited to stakeholders and enhancing the banking industry's sustainability edge. Finally, this study provides valuable insights into the decision-making processes of the banking sector, albeit within a specific context, supporting a strategic approach to green management practices for better sustainability.

11 LIMITATIONS

As limitations, the sample size of 403 includes mostly individual clients-employees-big corporates-SME's-suppliers-shareholders-employees-board of directors (Rahman & Barua, 2016).

The selection of these internal and external stakeholders can be considered a limitation of this study because other stakeholders can also be added to this study, which will give a broader and more transparent view of more detailed results (Lafuente & Szerb, 2016).

This can be a base study for other researchers to include more stakeholders and compare their results to the current outcome. This study has another limitation: the geographic area that has been studied, which is related to the Lebanese financial sector (Wang & Zhao, 2022). This gap can be treated by other researchers who can use the same study model and apply it to another geographical area, such as Europe or GCC (Baietti et al., 2012).
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