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TRANSITION TOWARDS GREEN FINANCIAL SECTOR FOR GAINING NEWLY PERCEIVED COMPETITIVENESS BY ADOPTING A GREEN MANAGEMENT MODEL

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Abstract. The purpose of the article is to outline the relationship between the green management aspects in the financial sector that lead to the green competitiveness from the external stakeholders' perspective. The methodology used in this study is based on the Preferred Reporting Items for Systematic reviews and Meta-Analyses for Scoping Reviews (PRISMA-SCR) approach seeking to develop a greater understanding of relevant terminology, core concepts, and key factors affecting the transition process towards the green financial sector. The main outcome of this research is constructing a model of transition towards the green financial sector for gaining green competitiveness in which the external stakeholders' perspective hass been emphasized. This study creates a research tool that can be used for weighting green managerial aspects from the external stakeholders' point of view. While performing this study, the authors were focusing on the Middle East area which constitutes the main limitation of this research. Therefore, more attention and focus on other geographical areas might be necessary for more accuracy.

Keywords: transition; sustainable development; green competitiveness; green management; financial sector; stakeholders

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1. Introduction

In today's competitive world, firms and managers have to consider the market preferences and deliver goods and services that not only meet but also exceed the expectations of their stakeholders. “Green” orientation has become the new managerial shift towards the newly perceived competitiveness. In this sense, businesses have to create a green managerial strategy with enormous potential that can make the companies capable of locating and seizing green resources to offer and provide values to the public while additionally creating green competitive advantages.

Regarding the scope of this study, it stems from the research literature that the so-called “green shift” from the traditional management towards the green management has been a widely-debated subject. Some authors agree that it is a must to “go green” while others think that it is optional with some assuming that it is not significantly important. The discussion is presented further down in this paper.

In this paper, we adopt the following approach: nowadays, business and state companies alike should implement a green management system in order to survive and to be competitive. It is not a question anymore that the effect of the application of green management policy brings positive results for the company, since the perception of the company’s competitiveness has changed due to the green expectations of its customers.

Moreover, many recent studies are devoted to the analysis of factors and aspects of green management in a number of sectors, such as the financial sectors, educational sector, agricultural sector, and manufacturing sector. In general, as it was already mentioned above, there is almost unanimous agreement about the positive influence of the application of green management on all the above sectors.

Since the present paper focuses on a financial sector, we need to discuss separately the perception of various authors on the importance of green transition, specifically in this sector of economy. Hence, it has to be noted that some authors do not believe that the shift towards the “greener” performance has any sense in financial sector which is comprised of banks, credit and facilities companies, financial services companies, etc. The sceptics claim that the financial companies such as banks, in principle, are neither green nor polluting, since they provide services which do not require using of polluting resources. They state that at the current moment financial sector is not polluting the environment and even if it does, the scale of pollution remains very low. The authors belonging to this strand believe that the pollution or environmental damage caused by the financial sector is not significant. According to them, it is not an important topic for investigation. Here, we need to declare very clearly that the authors of the present paper belong to another strand of the scientists who believe that it is very important to give a momentum for the transition of the financial sector towards greener performance and even gain green competitiveness. The arguments supporting such attitude are presented below.

The financial sector plays an important role in economy and affects other sectors through providing financial services. The financial sector can facilitate evolving such sectors as Green Manufacturing sector, Green Agricultural sector, Green Trading sector, Green Educational sector etc. (Figure 1).

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Figure 1. Green management aspects in the financial sector
Source: created by the authors

Let us explain the impact of financial services on other sectors of economy. It is well known that the two main financial activities are depositing and lending of money. Any big or small project requires some funds to be executed. The financial resources are highly demanded and therefore the power of lending is in the hands of the financial institutions.

This power can be used by the financial sector for facilitation economies transition towards the greener state. By adopting the green lending policy (which will be called "green management") the financial sector by itself will also gain green competitiveness.

2. Previous studies on green management for green competitiveness in the financial sector

Many researchers have found that people are willing to switch from traditional finance to sustainable finance because they prefer green practices such as green awareness, green image, and green products (Shkodina et al., 2019; Khoshnava et al., 2019; Stock et al., 2018; Themistocleous et al., 2015; Asongu et al., 2019; Katta et al., 2019; Flögel & Beckamp, 2019; Strielkowski et al., 2021a; Maixé-Altés, 2015; Ling et al., 2016).

As it has been already mentioned above, the authors of this paper belong to the strand of authors who believe that it is important to facilitate the "greening" of financial sector. Nevertheless, there are still many unanswered questions, such as:

- Is it possible to gain a competitive advantage through the transition to the financial sustainability?
- Will the green lending through banks have an impact on stakeholders' decision-making?
- Is it possible to gain a bigger market share by using green finance?

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This study aims tackles the transition towards greener financial sector via green management activities. It aims to specify green management directions taking into account stakeholders' interests. In order to implement the formulated approach, which is a backbone of the adopted methodology, the task of building a model of green transition towards greener and more competitive financial sectors is set.

In order to build this model, the concept of sustainability is employed. Let us recall that the concept of sustainability embraces some well-known dimensions: economic, human, and environmental. To rephrase, we can say that three dimensions of sustainability state are a must: Economy, People, and Environment.

Since we focus on green management in financial sector, we need to reflect the indicated dimensions, specifically in this sector. Hence, a dimension of Economy is assessed via green products/services, a dimension of People we assessed through green human resources, and the dimension of Environment in the banking sector we assessed via technological specifics which, in our case, is a green lending platform.

In case we admit that the listed dimensions serve as management objects, we could construct a conceptual green management scheme for financial sector (see Figure 2 below).

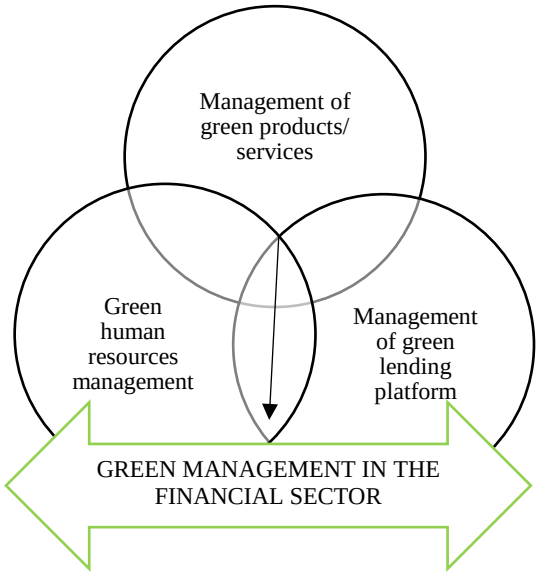


Figure 2. Green management scheme in a financial sector
Source: created by the authors

Relying on the classical definition of competitiveness formulated by Porter (1991), we claim, that the financial sector is able to provide a competitive advantage on the market through the practical use of the green economy management model directed towards environmental protection or healthy and sustainable development goals (Štreimikienė et al., 2014).

Green competitiveness has been widely discussed in some recent literature reviews in which many authors have linked it to the energy consumption and energy-saving competitiveness (Fu et al., 2017a; Tsai et al., 2015; Lu et al., 2019). Others have linked it to the infrastructure, construction and innovation, as well as the economic and

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social sustainable competitiveness (Cheng et al., 2018; Cheng et al., 2019; Barysienė et al., 2015; Abrham et al., 2015). Some scholars have linked it to the employees' skills and human resources competitiveness (Lin & Chen, 2017; Mishra, 2016). In their study, Konuk et al. (2015) claim that competitiveness has the meaning of ecological and environmental competitiveness. Mwesigwa Banya & Biekpe (2016) rather similarly underline economic and social sustainable competitiveness facets. Many researchers use both ecological and economic aspects (Khvesyk et al., 2018; Wang et al., 2016; Maitre et al., 2018; WESO Greening with Jobs, 2018). Some researchers linked it to the competitiveness of natural resources (Abdolvand et al., 2017). The literature on facets of green competitiveness and their interrelation with green management is systemized in Appendix 1, Table 1.

To conclude, three is no unanimous agreement in the recent literature where, specifically, a company has to focus in order to gain green competitiveness. A company could gain a green competitive advantage when improving its waste management, or developing green innovation, having green social impact, or, e.g. fostering green human resources. Although all authors pint to important facets of green competitiveness, a clear definition of green competitiveness is still missing. It is noticeable, that the recent literature links green competitiveness with sustainable management (again, see Appendix 1, Table 1). Green competitiveness embraces such facets as Energy consumption and energy-saving competitiveness, Ecological environment competitiveness (environmental protection), Natural resources competitiveness, Infrastructure, construction, and innovation competitiveness, Economic and socially sustainable competitiveness, or the Human Resources competitiveness.

2.1. Selection of mixed theories supporting the model of green management in the context of competition

After discussing facets of green competitiveness, we want to switch our attention to the green management which is structured into a model that could be used as a tool for the transition towards the newly perceived competitiveness in the financial sector.

In order to develop a scientifically grounded green management model, we use the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-SCR) approach. We focus on such terms as green environmental management, green innovation, research & development management, green socio-economic management, and green human resources management.

Hence, scholars investigated when and how multinational corporations incorporate sustainability and CSR principles into their business strategy (e.g. Belen & Nuria, 2017; Strielkowski et al., 2021b). The value of the intellectual capital has been highlighted in recent international literature, particularly in the research on the small and medium-sized enterprises, because they have intangible assets as a foundation for their competitiveness constituting a core element of the organizational performance (Moskalenko and Yevsieieva, 2015; Vinícius et al., 2020).

Many researchers attempted to employ the management theories that defined the intersection of sustainability and green competitiveness. The Transition theory (Huguenin and Jeannerat, 2017) defines the challenges and the scope of a general shift, while the innovation theory is also instrumental from the theoretical and practical point of view for the critical resource recognition. Resource-based view (RBV) (Kodama, 2017), Porter's Competitiveness theory (Dess & Davis, 1984; Bezerra et al., 2018), Dynamic Capabilities theory (e.g. Bleady et al., 2018), have extensively mentioned sustainable management for green competitiveness. Stakeholder theory provides an important ground for building green management model (Kennedy & Fess, 2009; Dubey et al., 2017; Nevárez & Féliz, 2019; Nasr et al., 2020). Many theories of social responsibility such as Corporate Citizen theory, Corporate Social Performance theory, or the Shareholder value theory are among those closely related to the Stakeholder theory. These theories take various approaches ranging from the viewpoint that the company's social responsibility is only in achieving

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economic benefits and its commitment is only to the shareholders, to the theory of Corporate Citizenship which postulates that any organization has rights and obligations towards society and is most relevant in this investigation.

But how could these traditional theories help in the modern green shift from the traditional competitiveness theories to the green competitiveness theories? Since it is a must to follow the green shift, it is also essential now to create models that help the enterprises to define their strengths and weakness and to have a guide for knowing how to gain a green competitive advantage.

The traditional strategic management of a company should be focused on either a low-cost strategy or a differentiation strategy. The management theories linked to green competitiveness based on the recent literature review were not only RBV theory, alas, Contingency theory and Administrative management theory, but also some others.

Based on the literature review and management theories, we build a green management model which can be instrumental for the transition towards the green financial sector in order to gain green competitiveness. The following arguments for green management model construction are highlighted.

Gaining a green competitive advantage will rely on applying a green differentiation strategy. Green differentiation strategy is a new concept inspired by the classical differentiation strategy. We claim that a company can become special when it becomes greener. Moreover, a company can gain green competitive advantages by being able to have a bigger green market share through its market expansion.

To go further, having green market share expansion means acquiring more specifically oriented stakeholders, such as green customers and green employees. Therefore, green competitiveness is gained when a company applies green management for gaining new stakeholders and expanding on the given market. This phenomenon is about acquiring green stakeholders for green market expansion. Hence, to repeat it again, that green competitiveness is closely interlinked with the green management.

Researchers have combined sustainable management and green competitiveness and defined it in the context of green competitiveness. Many authors linked sustainable management to green environmental management, while others linked it to green innovation and Research & Development management, socio-economy management, and human resources management.

As far as this study focuses on the financial sector, according to the authors of this paper, the definition of green management in the financial sector, is the intersection of three green managerial aspects: **Management of green products and services**, **Management of the green lending platform**, and **Management of green human resources** (as in Figure 2).

The definition designates green management instead of sustainable management because the exact word "sustainable" could encounter many other aspects such as social responsibility, etc. In order not to lose the loop, the main concern is the "go green" beyond the traditional social aspects. Hence, the authors of this research think thatthe definition of green competitiveness in the financial sector is be linked to sustainable management.

2.2. The importance, gap, originality, and novelty of the study

Any company can gain green competitive advantage by acquiring more green stakeholders which will eventually lead to its market expansion. It is important to distinguish the internal and external stakeholders. The selection of the external stakeholders was based on the authors' point of view about the importance of the players in the financial

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sectors. In this research, external stakeholders consist of green customers, green creditors, green suppliers, green shareholders, green governments, and green international groups.

The main focus and priority of this study is on the transition towards the newly perceived competitiveness. The financial sector does not have the privilege anymore to choose whether to be green or not because of the green national and international regulations that are increasing year after year due to the pressure of the green international bodies and green international goals such as the Sustainable Development Goals (SDGs). We believe that sooner or later the green shift will become a norm and will rule out all companies that will not adapt it. Any company should assess the competitiveness of its environmental performance in order to identify its competitive strengths and weaknesses which might help to assist the company in improving its performance.

Many researches show that the weight of the indices of sustainable management for the green competitiveness has always been a debate. Furthermore, there are two limitations of the previous studies covering the green competitiveness indices and green strategies. First, most studies assumed that competitive indices are independent of one another and not causally related. Second, in several studies, the weights of the evaluated indices were assumed to be the same (Tsai et al., 2015). The gap in the recent literature is that the question about significance of factors affecting green competitiveness via green management remains unanswered, while companies need to know which out of the three aspects related to the sustainable management concept is more significant. Moreover, very few studies considered the aspects of green management for green competitiveness based on a mix of theoretical backgrounds such as the Stakeholder theory and Resource-based View (RBV).

Surely, sustainable management leads to the green competitiveness but the question is how could a company know in what green managerial aspect should it improve the most? Should a company improve more in its green environmental management? Or should it improve in green human resources (people)? Or should it improve in green economy such as green products and services?

The question cannot be answered because we should define many points such as the investigated sector, the relationship between the independent and the dependent factors, the mix of adopted theories that supports green competitiveness, or the mix of green (sustainable) management dimensions. Many researchers have tried to measure the indices of green competitiveness and the sustainable management aspects but very few of them have studied this effect on the financial sector. Some researchers have investigated green lending in the financial sector and the sustainable banking sectors but have rarely investigated the degree of positivity between the sustainable management aspects and green competitiveness in the financial sector from the stakeholders' point of view. Theoretically speaking, many researchers have investigated gaining a competitive advantage using the Resource-based View (RBV), Dynamic Capabilities, Stakeholder theory of Organisational theory, Institutional theory, Upper Echelon theory, or the Porter's Diamond and Porter's Cluster theory. In addition, few researchers have created a research tool based on these theories that could help the companies to know which green managerial dimension leads to competitive advantage as market expansion.

Following the comprehensive literature review, many unsolved have been detected, such as:
-Lack of studies that measure the degree of green managerial aspects that affects green competitiveness;
-2nd -Rare research tools that help the companies to know from which perspective the weights of aspects have been calculated;
- The weighting system related to the competitiveness index that was largely discussed but not from the green management perspective;
- Most studies focused on weighting the competitiveness index linked to the regional competitiveness index but not to the green competitiveness index (Vasylchak and Halachenko, 2016; Niño-Amézquita et al., 2017; Fursov et al., 2018);

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-Few studies focused on the internal green competitiveness weighting system that can help the enterprise analyse its positioning regarding green competitive advantages.

In the authors' opinion and based on conducted literature review the following solutions have to be found:
1st - Redefining green competitiveness in the financial sector;
2nd - A model that helps the companies to know from which perspective the weights of aspects have been calculated;
3rd - Weighting the degree of green managerial aspects that affects green competitiveness.

3. The objective and object of the research

All in all, main objectives of this research are the following:
In the theoretical layer, the goal of this study is to find out which management theory is the most reliable in defining the intersection of management theories, sustainability, and the green competitiveness. Therefore, a new interpretation has to be presented covering all the sustainability aspects in the financial sector: people, economy, and the environment.

In the comprehensive layer, the second goal is to determine and study the most important factors that affect the organization's green competitiveness and to build a model of green management in the financial sector.

In the practical layer, the recent research emphasizes the role of green management in the banking sector to reach green competitiveness in the short run and sustain green competitiveness in the long run.

Thence, this study aims to explore the context of sustainable management for green competitiveness:

- The effect of green management on stakeholders' green decision-making.
- The effect of green decision-making on gaining green competitive advantages.
- The shift from the traditional management towards green management in the financial sector.
- The weight of the aspects of sustainable management for green competitiveness in the financial sector.

The novelty of the research will be a novel own research tool that could be used for weighting green managerial aspects from the external stakeholders' point of view. The creation of this tool will be based on the following logic grounded on the on the recent literature review and the theories listed above:

- Identifying the green managerial aspects related to the financial sector.
- Identifying the dependent factors related to green management in the context of competitiveness.

Practically, this research tool will help the financial sector to weigh its green managerial aspects.

4. Model of transition towards green financial sector for gaining green competitiveness

In order to explore the green competitiveness and green management in the financial sector, the authors adopted Preferred Reporting Items for Systematic reviews and Meta-Analyses for Scoping Reviews (PRISMA-SCR) with a purpose to develop a greater understanding of relevant terminology, core concepts, and key items to report for scoping reviews. In the first phase, it was necessary to redefine the concept of green competitiveness in the context of green management. In the second phase, the authors reselected the best theories supporting the model of green management in the context of competition. Regarding the redefinition of green competitiveness, the most selected factors defining green competitiveness and sustainable management were selected and filtered according to the authors' point of view (see Appendix 1). In the second phase, the authors reselected the best theories supporting the model of green management in the context of competition based on the recent literature review (see Appendix 2). The authors obtained the data from such databases as WOS, KJD, RSCI, and SCIELO for the timespan equal to the last 5 years (2015–2020) in English language.

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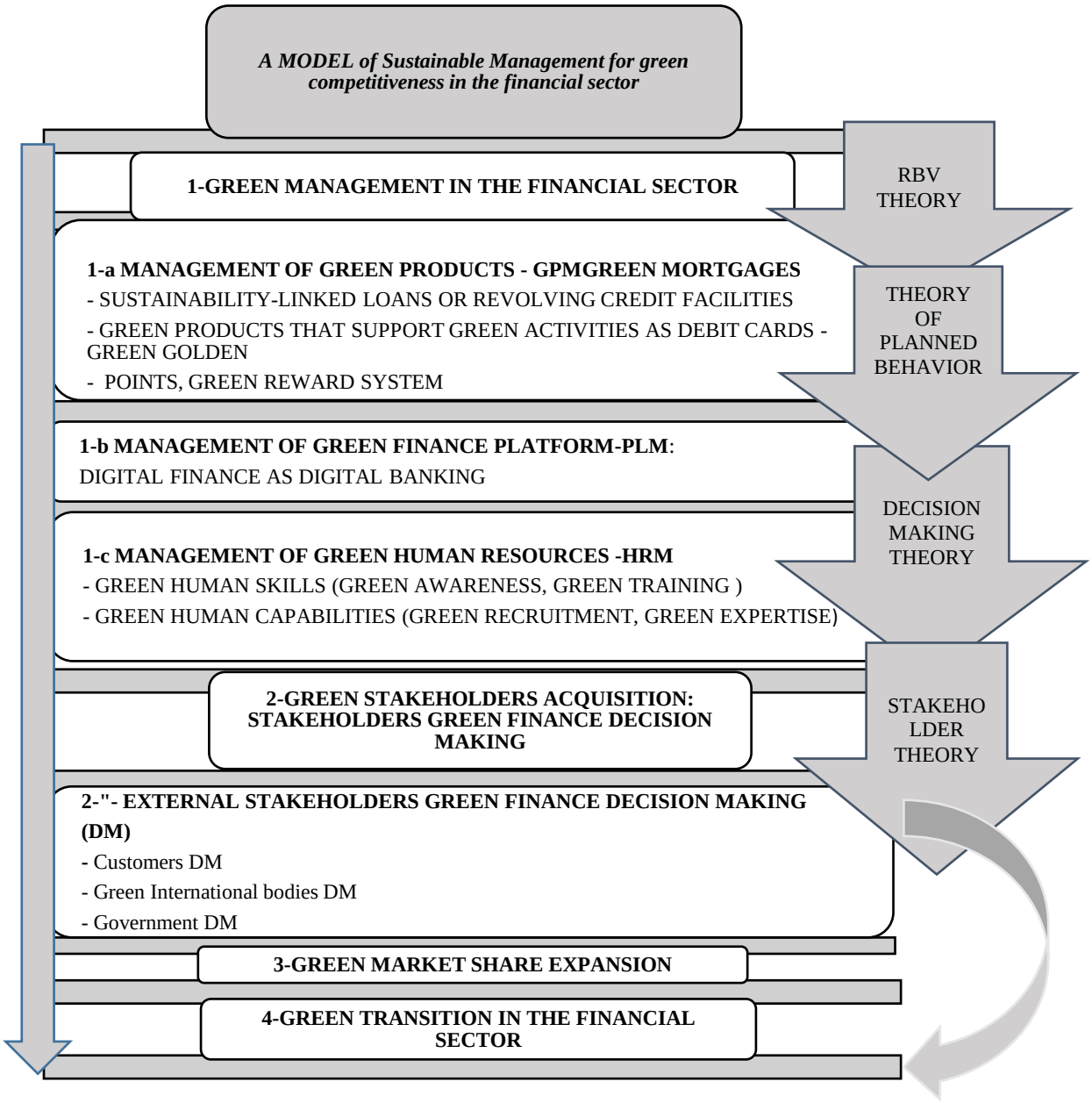


Figure 3. The map of the green management in the financial sector
Source: created by the authors

This study aims to assess two main relationships in the Mena Region banking sector:

1) The relationship between Green Management (GM) dimensions in the financial sector which characterizes the independent variables which consists of A-Management of green products in the financial sector, B-Management of green platform in the financial sector, and C-Management of green human resources in the financial sector. The external stakeholders' green decision-making characterizes the dependent variable which consists of green customers, international green bodies, and green government.

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2) The relationship between GM aspects in the financial sector and the green market share expansion leads to a green transition in the financial sector.

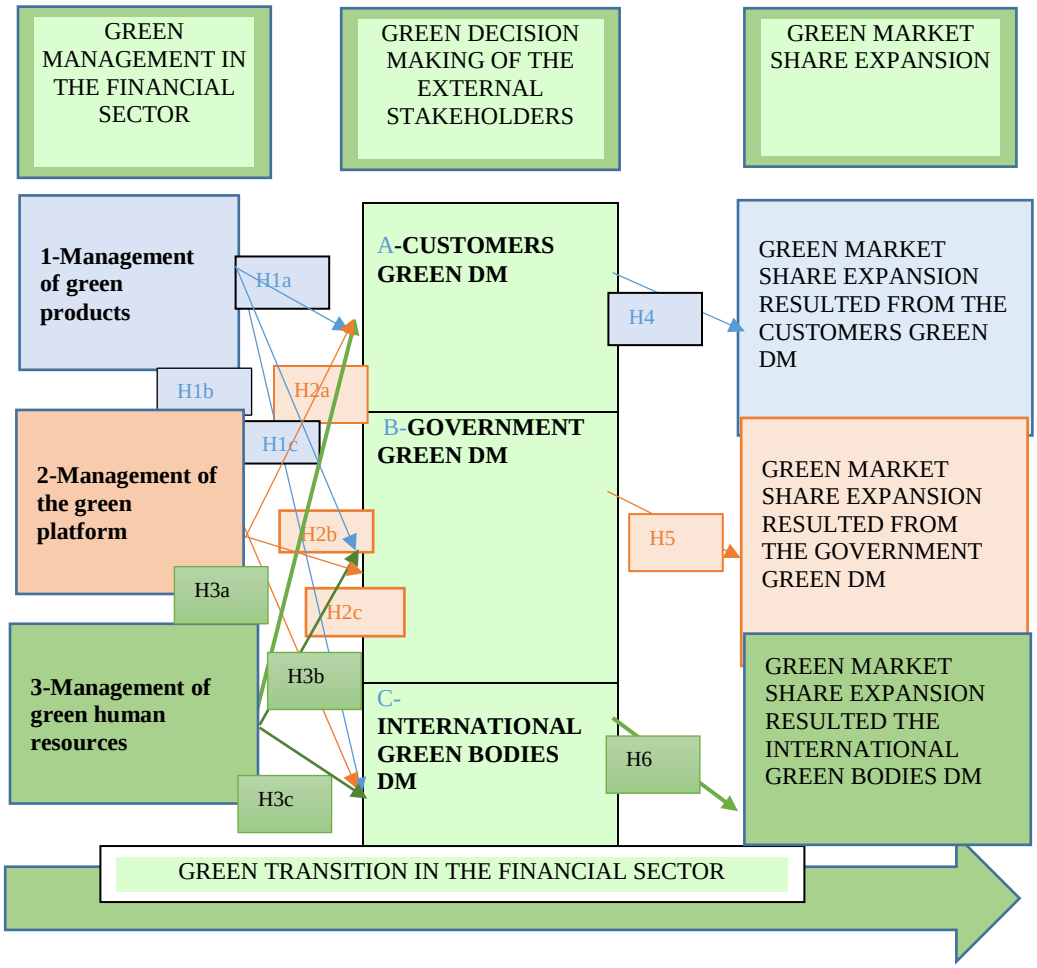


Figure 4. Hypotheses' model–Green transition in the financial sector
Source: Created by the authors, where:

1) H1a-The degree of influence of the management of green products on Decision making of the customers.
   H1b-The degree of influence of the management of green products on Decision making of the government
   H1c-The degree of influence of the management of green products on Decision making of the international green bodies.
2) H2a-The degree of influence of Management of the green platform on Decision making of the customers.
   H2b-The degree of influence of Management of the green platform on Decision making of the government.
   H2c-The degree of influence of Management of the green platform on Decision making of the international green bodies.
3) H3a-The degree of influence of Management of green Human resources management on Decision making of the customers.
   H3b-The degree of influence of Management of green Human resources management on Decision making of the government.
   H3c-The degree of influence of Management of green Human resources management on Decision making of the international green bodies.

In other words, this study investigates the degree to which the decision-making of the external stakeholders is affected by the management of green products and services, the management of the green platform, and the management of green human resources in the financial sector.

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It should be noted that in this model, DM represents the decision-making of the external stakeholders, and DM1 is the decision-making of the customer. DM2 is for the decision-making of the government; DM3 is for the decision-making of the green international bodies. The Degree of DM1 affected by A, B, and C:

DM1 is highly strong-strongly-neutrally-slightly-negatively affected by A, B, and C.
DM2 is highly strong-strongly-neutrally-slightly-negatively affected by A, B, and C.
DM3 is highly strong-strongly-neutrally-slightly-negatively affected by A, B, and C.

H1a- the Decision making of the customers is positively influenced by the management of green products/services.
H1b-The Decision making of the government customers is positively influenced by the management of green products/services.
H1c-The Decision making of the international green bodies customers is positively influenced by the application of the management of green products/services.
H2a-The Decision making of the customers is positively influenced by the Management of the green platform.
H2b-The Decision making of the government is positively influenced by the Management of the green platform.
H2c-The Decision making of the international green bodies is positively influenced by the Management of the green platform.
H3a-The Decision making of the customers is positively influenced by the Management of green Human resources management
H3b-The Decision making of the government is positively influenced by the Management of green Human resources management
H3c-The Decision making of the international green bodies is positively influenced by the Management of green Human resources management
H4-DM1 Customers' decision-making positively influences the market share expansion.
H5-DM2 Government decision-making positively influences the market share expansion.
H6-DM3 External green bodies' decision-making positively influences the market share expansion.

The degree of relationship is the following: DM is highly strong-strongly-neutrally-slightly-negatively affected by A, B, and C. the questions are based on a five-point Likert-scales ranging from "1" meaning "strongly disagree" to "5" meaning "strongly agree". The elements used to evaluate the variables were obtained from the scientific studies. The decision-making of the external stakeholders is affected by the management of green products and services, the management of the green platform, and the management of green human resources. The key questions are: How much weight does each relationship have? Which one weighs more?

The null hypotheses assume that all the aspects are equal as follows:
- The decision-making of the customer is positively affected by the management of green products and services, by the management of the green platform, and by the management of the green human resources.
- The decision-making of the government is positively affected by the management of green products and services, by the management of the green platform, and by the management of the green human resources.
- The decision-making of the international green bodies is positively affected by the management of green products and services, by the management of the green platform, and by the management of the green human resources.
The decision-making of the external stakeholders is considered to be a dependent variable, while the green managerial aspects are considered to be the independent variables.

Knowing the degree to which the green managerial aspect affects the decision making provide us with a tool for weighting green competitiveness.
A-The management of green products and services in the financial sector (GFP) is assessed through:
- Green mortgages;
- Sustainability-linked loans or revolving credit facilities;
- Green products that support green activities such as debit cards - green golden points - green reward systems.
B-Green finance platform (GFPL) is assessed through digital finance as the digital banking.
C-Green human resources management (GFHR) is assessed through green human skills (green awareness-green training) and green human capabilities (green recruitment - green expertise).

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The relationship degrees will positively or negatively affect the external stakeholders' green finance decision-making (DM) which is assessed by the customers' decision making (CDM), government decision-making (GDM), and green international bodies decision-making (IDM). The strongest obtained degree results in the highest green competitiveness degree a financial company will gain. The lowest obtained degree represents the lowest green competitiveness degree a financial company will gain.

Conclusions

Building a research model where the dimensions of green finance are elaborated in the context of green competitiveness will be the basis for the future research conducted by financial companies. The strength or weakness of the managerial aspects will provide the financial companies with a better orientation regarding how to shift for greener finance.

Switching to greener finance needs a green managerial decision in order to know exactly where to enhance and where to focus for gaining green market share and subsequently gaining green competitive advantages.

Weighting the green competitiveness gives a sense of direction to the financial companies and lets them know more about the green managerial structure and the green competitiveness structure of the company.

This study has evaluated the green financial dimensions based on both theoretical and practical perspectives which will be a good reference for further studies and a base for statistical tests done in the future by the financial companies and scientists alike.

Limitations

This study has the following limitations: First of all, the internal stakeholders as green employees, green managers, and green stockholders were excluded. It is recommendable to study the internal stakeholders in further research where the author can determine the impact of green management on internal stakeholders' decision-making. This model may not fit all the sectors because the authors cannot generate the result of a specific sector as the financial sector to other sectors as agricultural sectors.

Another limitation is that the authors focused on the external stakeholders only and excluded the internal stakeholders. Weighting the degree of green managerial aspects were limited to a geographical area which is the Middle East. Thence, another study covering larger or other geographical area might be necessary for providing better accuracy.

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Appendix 1

Table 1. Facets of green competitiveness and their interrelation with green management

The spectrum of green competitiveness	1-Energy consumption and energy-saving competitiveness+ 3-Ecological environment competitiveness (environmental protection) 5-Natural resources competitiveness		2-Infrastructure, construction, and innovation Competitiveness-	4-Economic and socially sustainable competitiveness	6-Employees' skills –Human Resources competitiveness
Green management	a=1+3+5 Green environmental management		b=2/ Green innovation research & development management	c=4/Green socio-economy management	d=6/ Green human resources management
Fu et al., 2017a	1	green environmental management	Wang et al. 2016	3	green environmental management
Fu et al., 2017a	1	green environmental management	Cheng et al., 2018	3	green environmental management
Fu et al., 2017a	1	green environmental management	Cheng et al., 2018	3	green environmental management
Guo, & Zhanwen, 2017	1 5	green environmental management			
Tsai et al., 2015	1 5	green environmental management	Cheng et al., 2019	3	green environmental management
Tsai et al., 2015	1 5	green environmental management	Cheng et al., 2019	3	green environmental management
Tsai et al., 2015	1 5	green environmental management	Cheng et al., 2019	3	green environmental management
Tsai et al., 2015	1 5	green environmental management	Cheng et al., 2019	3	green environmental management
Fu et al., 2017a	1	green environmental management	Cheng et al., 2019	3	green environmental management
Fu et al., 2017a	1	green environmental management	Konuk et al., 2015	3	green environmental management
Fu et al., 2017a	1	green environmental management	Konuk et al., 2015	3	green environmental management
Guo, & Zhanwen, 2017	1 5	green environmental management	Cheng et al., 2018	2	green innovation and research

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					&development management
Cheng et al., 2018	2	green innovation and research &development management	Abdolvand et al. 2017	4	green socio-economic management
Fu et al., 2017a	2	green innovation and research &development management	Abdolvand et al., 2017	5-4	green socio-economic management
Barysienė et al., 2015	2	green innovation and research &development management	Maitre et al., 2018	4	green socio-economic management
Barysienė et al., 2015	2	green innovation and research &development management	Maitre et al., 2018	4	green socio-economic management
Abdolvand et al., 2017	4	green socio-economic management	Maitre et al., 2018	4	green socio-economic management
Abdolvand et al., 2017	4	green socio-economic management	Maitre et al., 2018	4	green socio-economic management
Abdolvand et al., 2017	4	green socio-economic management	WESO Greening with Jobs, n.d.	6	green human resources management
Lin & Chen, 2017	6	green human resources management	WESO Greening with jobs, n.d.	6	green human resources management
Lin & Chen, 2017	6	green human resources management	Lin & Chen, 2017	6	green human resources management
Mishra, n.d. 2016	6	green human resources management	Lin & Chen, 2017	6	green human resources management

Source: created by the authors

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Appendix 2

Table 2. Management theory detection based on the PRISMA diagram.

Management (MNG) theories	TS= (Systems Management and Theories*) +	(Sustainable* Management) =266 results	+(Competitiveness*) =10 results	MNG theories +Sustainable Management +Competitiveness
1184 Management theories (100%)	All systems management theories	266 (46%)	10	=23
Competitiveness 146 (12%)	Contingency management theory	42	3	10 competitiveness – specified systems management theories
Sustainable management (SM) 574 (48%)	Theory X &Y	6	1	13 other management theories
Undetected management theories =308 (54%)	Administrative theory	110	1	
Detected SM theories=266 results (46%)	Bureaucratic theory	8	1	
	Human relations theory	73	1	
	Douglas theory	7	0	
	Mixed systems Management theories	20	31	

Source: created by the authors

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