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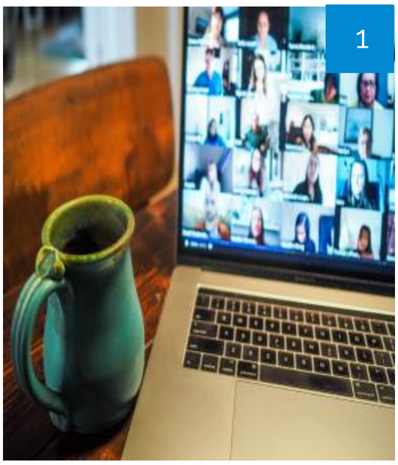

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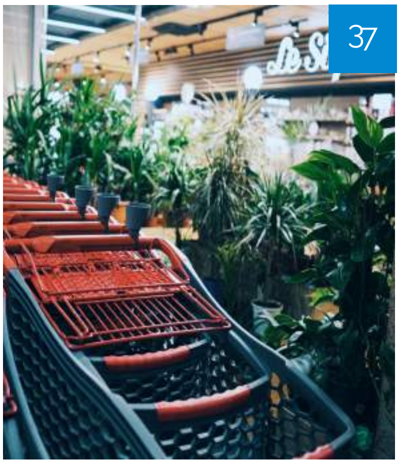

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The Essential Roles of Organisational Structures in the Installation of Management

Odashev Ikboljon Mashrabjonovich

ABSTRACT

Every economic unit of the market economy tries to organize effectively and suitable competitive products and services. For this purpose, they make decisions on how to optimally build the activities of economic, social, and financial alternative ways of organizing. Because it is so changeable, any type of process in the market economy, and top managers should find the mechanisms to get ready to troubleshoot economic situations. In this footfall of the market economy, companies and business units should build their management system's organizational structure.

Keywords: organizational management, fundamental structure, mission and strategy, opened and closed models, global, regional, and local structures, integration, elements of construction, the value of organization, formation and reformation.

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The Essential Roles of Organisational Structures in the Installation of Management

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"Warren Buffett was able to turn $100,000 into $30 billion. The effect of using various types of assets and instruments allows you to turn $10,000 into millions of dollars. Once you learn how to organize it, it will appear to be fairly straightforward."

Robert Kiyosaki

ABSTRACT

Every economic unit of the market economy tries to organize effectively and suitable competitive products and services. For this purpose, they make decisions on how to optimally build the activities of economic, social, and financial alternative ways of organizing. Because it is so changeable, any type of process in the market economy, and top managers should find the mechanisms to get ready to troubleshoot economic situations. In this footfall of the market economy, companies and business units should build their management system's organizational structure. They should advance current management systems into much more fruitful and useful organizational structures, managerial behaviours, and modern management methods of developed ones. This paper has learned about organizational structures, their influences on business activities, and compared traditional organizational structures with modern ones. The investigation also discusses the emergence, formation and reformation of management mission, strategic activities and assesses the role of organizational structures in it, and evaluates the modern appearance of management structures using vivid examples. In the conclusions and recommendations, we offer scientifically and practically sound approaches to solving existing organizational problems.

Keywords: organizational management, fundamental structure, mission and strategy, opened and closed models, global, regional, and local structures, integration, elements of construction, the value of organization, formation and reformation.

Author: Odashev Ikboljon Mashrabjonovich.

I. INTRODUCTORY

The basis and content of the management activities of companies and organizations are reflected in their organizational management structure. The scope, goals, and objectives of management activities, their relationship with other management structures, integration, and appropriate selection of management elements that are part of the structure are reflected in its daily activities.

Historically, at the time of the emergence of primitive society, the unification of the wild peoples in the struggle for survival led to the emergence of a primitive society. The formation and development of this society led to the transition of people to a new stage of life. Because primitive society leads to the development of typical and basic rules that should be obeyed by all people who are part of it, it is not difficult to determine whether a particular primitive society's organizational system consists of subordinates and society. Hence, from the historicity perspective, governance structures are considered a unique form of humanity's evolutionary formation. In the future, the combination of several primitive communities led to the emergence of nations and peoples. The management of such vast countries and communities, their consolidation and protection, leads to the emergence of complex governing structures such as authority, government, state.

The organizational structures have been learned for more than two centuries. During the Industrial Revolution, business units and individuals engaged in economic activities were organized to add parts to the manufacture of the product moving down the assembly line. Frederick Taylor was one of the scientists of organizational structures whose scientific management theory optimized the way tasks were performed, so workers performed only one task most efficiently. In the 20th century, General Motors pioneered a revolutionary organizational design in which each major division made its cars.

Nowadays, organizational structures of economic activities are changing swiftly from virtual organizations to other flexible structures. As companies continue to integrate and increase their global presence with their business partners, future organizations may embody a fluid, free-forming organization, member ownership, and an entrepreneurial approach among all members.

While we work on organizational structures, we should answer important questions that can give us the ability to create effective and fruitful organizational structures in management systematical development activities.

Why do companies, business units, and entrepreneurs need to create effective organizational structures for their everyday activities? What do they do if they create a misaligned organizational structure? How can they assess their organizational structure's problems? What kinds of difficulties do top managers need to know about during the reorganization process?

Problems created by inconsistent and ill-considered organizational structures.

Unplanned and rapid reorganization of business units, departments or functions can lead to ineffective, incompatible organizational structures that do not support the business. Improper thinking reorganization can result in serious organizational issues, such as division of labor, workloads, accountability, and systemic gaps in significant information flow.

- Problems with organizational capacity, talent, and flexibility can arise in the following situations: can result in a sufficient level of performance incompatibility;
- If senior managers are to take on more tactical responsibilities, the value of their leadership qualities can be minimized.

This means that poorly organized organizational structures negatively affect poor employee performance, financial cash flows, and the company's ability to deliver goods or services. Decreased employee participation in organizational structures results in decreased employee retention, decreased customer loyalty, limited organizational effectiveness, and limited stakeholder interest.

II. LITERATURE REVIEW

Every organization has its organizational structure. Now, we can review a tremendous amount of literature on organizational structures. Because, the organizational structure is the most effective, and most contributing part of business and non-business organizations.

The author of numerous scientific articles hanged organizational structure, Hall divided the organizational structure into two basic functions, each of which is likely to affect individual behaviour and organizational performance: "First, structures are designed to minimize or at least regulate the influence of individual variations on the organization," and "structure is the setting in which power is exercised ..., decisions are made ..., and ... the organization's activities are carried out" [3]

There is a large body of literature about organizational design, and since there are several integrative summaries (e.g., Mintzberg, 1979; Galbraith, 1977; Hax & Majluf, 1981), we will only briefly review here several of the most important schools of thought in this work.

All the classical theories of organizational structure (e.g., Weber, 1947; Fayol, 1949; Taylor, 1911; Gulick & Urwick, 1937) are based on the idea that certain universal principles must be followed for an organization to be successful. For example, Fayol's "unity of command" principle says that each person should have one and only one boss. Largely as a reaction to this approach, three essential schools of thought emerged in the middle of this century. [7]

- The human relations school (e.g., Mayo, 1933; Roethlisberger & Dickson, 1939; Likert, 1967a, b) emphasized the importance of informal relationships among people and of individual needs, motivations, and attitudes.
- The organizational decision-making school (e.g., Simon, 1976; March & Simon, 1958; Cyert & March, 1963) emphasized the information processing that occurs when individuals with "bounded rationality" make decisions in a context of organizational goals, conflicts of interest, and standard procedures.
- Finally, the contingency theory school emphasized the conditions under which different organizational structures are appropriate.

Based on these schools, there are some conditions and approaches investigated which include the nature of the production technology (e.g., mass production, batch production, or process production [Woodward, 1965]), the nature of the interdependencies among production tasks and their steps of realization (e.g., pooled, sequential, or reciprocal [Thompson, 1967]), and the nature of the environment, factors inside and outside the organizations (e.g., stable or turbulent [Lawrence & Lorsch, 1967]). The work by Galbraith (1973, 1977) begins to integrate the latter two schools by using an information processing model to analyze alternative organizational coordination strategies such as teams, task forces, and vertical information systems. Finally, an approach for the production chain of the transaction cost approach (e.g., Coase, 1937; Williamson, 1979) analyzes alternative organizational structures based on their costs for the transactions necessary to coordinate activities. This approach explicitly considers coordination between firms through markets, as well as coordination within a single firm. [2, 9, 11]

Chester Barnard (1886–1961) was one of the most prominent system-based approach representatives, studying enterprises as a social system. For twenty years, he served as President of The Bell Telephone Company in New York. He expressed his ideas in his books "The Functions of an Administrator" (1938), "Organization and Management" (1948), and others. The activities of organizations and their managers were analyzed based on a system-based approach. [1] Ch. Bernard believed that the physical and biological constraints inherent in human beings force them to unite into groups (social systems) of coordinated action, and that people's subsequent collaboration within their capacity depends on results (achievement) and efficiency (cost minimization). Such a system can be divided into two parts: organizational, which involves only the interaction of people, and all other elements. "When people come together and formally decide to unite their efforts to achieve familiar goals, they create an organization," - Bernard said.

The emergence of organizational theory in the 1940s-1950s brought together R. Merton (Columbia University) and G.Simon. It also has the idea that it is related to Simon's activities. In 1956, a group of psychologists, economists, and political scientists under his leadership (now Carnegie Mellon University) published the first issue of the "Quarter of Administrative Sciences" at the Carnegie University of Technology.

Simon Herbert Alexander (1916–2001) was an American scientist who studied the principles and processes of decision-making in human activity fields, achieved immediate results in many sciences and humanities, mathematics and economics, and was awarded the 1978 Nobel Prize. [1]

In 1947, Simon published his first book on classical administrative behaviour. In addition to studying the principles of organization, he set the boundaries of the concept of "limited rationality". He won the Nobel Prize thirty years later.

The works of the famous Austrian-American scientist Karl Ludwig von Bertalanffy (1901–1972), the theory of general systems, and the theory of open systems, greatly contributed to the development of organizational theory.

Some modern researchers argue that organizational theory did not exist as a separate scientific theory until the late 1960s. All the well-known research in the field of organizations belongs to schools of organizational sociology or scientific management. By the late 1960s and early 1970s, management gradually replaced the social aspect of organizational theory, and the discipline itself began to be taught in business schools focused on training professional managers. Since then, organizational theory has come to be seen as a discipline that allows organizations to understand, predict, and manage their behaviour. Today, we can rightly say that the Russian scientist, the famous thinker-encyclopedic of the twentieth century, Alexander Alexandrovich Bogdanov, laid the foundations of modern ideas about organization theory. Alexander Alexandrovich Bogdanov (Malinovsky) (1873–1928), - one of the famous Russian scientists, economists, philosophers, doctors, science fiction writers, founders, and heads of the world's first blood transfusion institutes.

A.Bogdanov's ideas on organizational structures are described in such works as "Essays on General Organizational Science" (1921), "Organizational Science and Economic Planning" (1921), "Economic Technologies and Organizational Foundations of Economics" (1923). The main work of the scientist is "Tectology," which is a fundamental monograph. It was written in 1910 and is called "General Organizational Science." This work's starting point teaches the need to approach any event from its organization's perspective.

III. VALUE ADDED TO THE LITERATURE

By reading the kinds of literature mentioned above, we can conclude and assess their value to the formation or reformation of organizational structures; its historical influence on creating and forming every type of organization. If the classical school of management added some basic types of organizational structures, the human relations school emphasized the integration of every department and unit of organizational structures and additionally developed the organizational structures by the elements of human behaviours, such as motivation, sociology, and health care, comfortable conditions.

IV. METHODS AND MATERIALS

A management structure based on a system-based approach allows the organization to be considered a system consisting of several interrelated elements. Initially, the theory of organizational management structures was applied in the exact sciences and technology. It has been used in management sciences since the late 1950s, which can be considered a unique management science school achievement. As the founder of the new direction, Ludwig von Bertalanffy is worth mentioning as a scientist. The system-based approach's main content is based on purpose, reflecting the organization's most important feature, through which this system differs from others.

No system-based approach is a set of principles for managers, but a way of systematizing organizations and management. A system is a type of integrity that consists of contributing to the properties of any integrity (systems managed by all organizations) composed of interconnected separate parts (elements).

4.1 Modelling of organizational systems

There are two types of modeling the organizational systems that are famous: a closed system and an open system. All of them are characterized by their dependent and independent factors, elements.

Closed systems - have strictly defined boundaries; the method of their actions does not depend on the external environment. Opened systems are a form of organizational structure characterized by their interaction with the surrounding (external) environment and can adapt.

At the step of modelling the organizational structures, top managers need to find the main goals and objectives of the activities. Goals should be realized, concerned with the mission of overall activities, productive, economically effective. Using goals, we can construct visions and strategies for the company, which can have a much greater influence on the formation and reformation of the organizational structure. A strategy is a long-term plan that we create for our company to reach the desired, future state you envision. A strategy includes our company's goals and objectives, the type of products/services that we plan to build, the customers to whom we want to sell, and the markets that we serve to make profits.

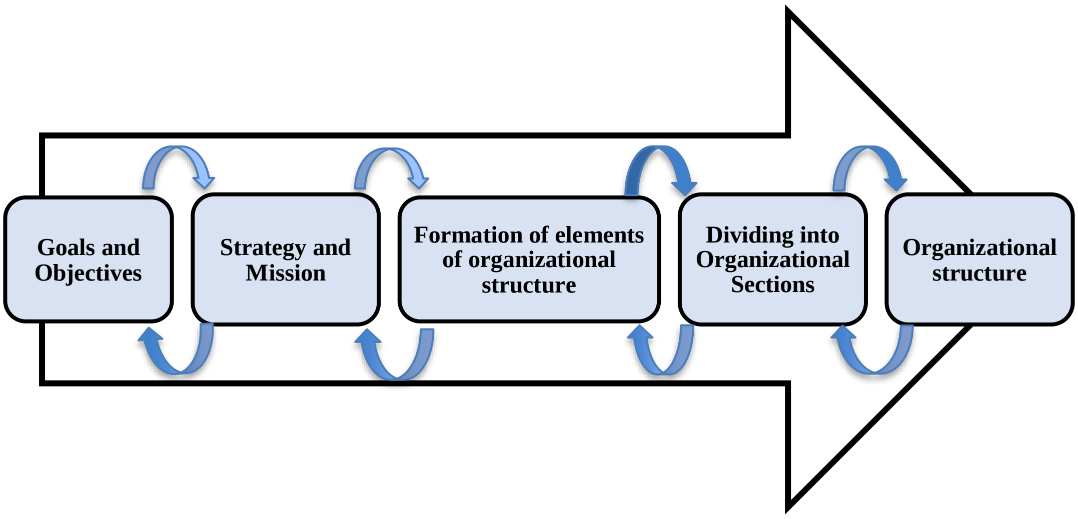

Figure 1: Stapes of the formation of the organizational structure of companies and institutions

Once the goals and objectives are clear, its current state's performance indicator is analyzed in depth. The prime purpose of the analysis is to devise a strategy for the future development of the enterprise. Because the current goals and objectives require the implementation of strategic plans for the next few years, in line with the directions and accordance. Strategies are also adopted for the short, medium, and long term. It depends on the type of activity of the enterprise or institution, its customers' size, and the state of the competitive environment.

4.2 The importance of aligning the structure with the business strategy

The importance of integrating the organizational structure of management with the business strategy of enterprises is characterized by the importance of combining of following four elements of doing business as the key to profitability:

- Leadership denotes responsibility for matters related to the development and implementation of a company management strategy and monitoring of results.
- The organization is the existence of an organizational structure designed to implement the developed management strategy that presupposes consistency of processes and operations.
- Jobs are the development of the optimal distribution of the necessary tasks and responsibilities.
- People. Including the experience, skills and competencies required to implement the strategy, it is important to understand the interdependencies of business elements and the need to adapt them to rapid and strategic changes, and to achieve success in all processes of the organization. This increases the likelihood of efficient operation by ensuring that the four elements fit together.

An understanding of the interdependencies of these business elements and the need for them to adapt to change quickly and strategically are essential for success in a high-performance organization. When these four elements are in sync, outstanding performance is more likely.

Achieving alignment and sustaining organizational capacity requires time and critical thinking. Organizations must identify outcomes the new structure or process is intended to produce. This typically requires recalibrating the following:

- Which work is mission-critical, can be scaled back, or should be eliminated.
- Existing role requirements must be met while new or modified roles must be identified.
- Key metrics and accountabilities.
- Critical information flows.
- Decision-making authority by organization level.

In figure 2, we can see why it is important to align the structure with the business strategy of the organization, and how it is effective role plays in the process of mission and strategy formation concerning the goals and objectives of any organizational unit.

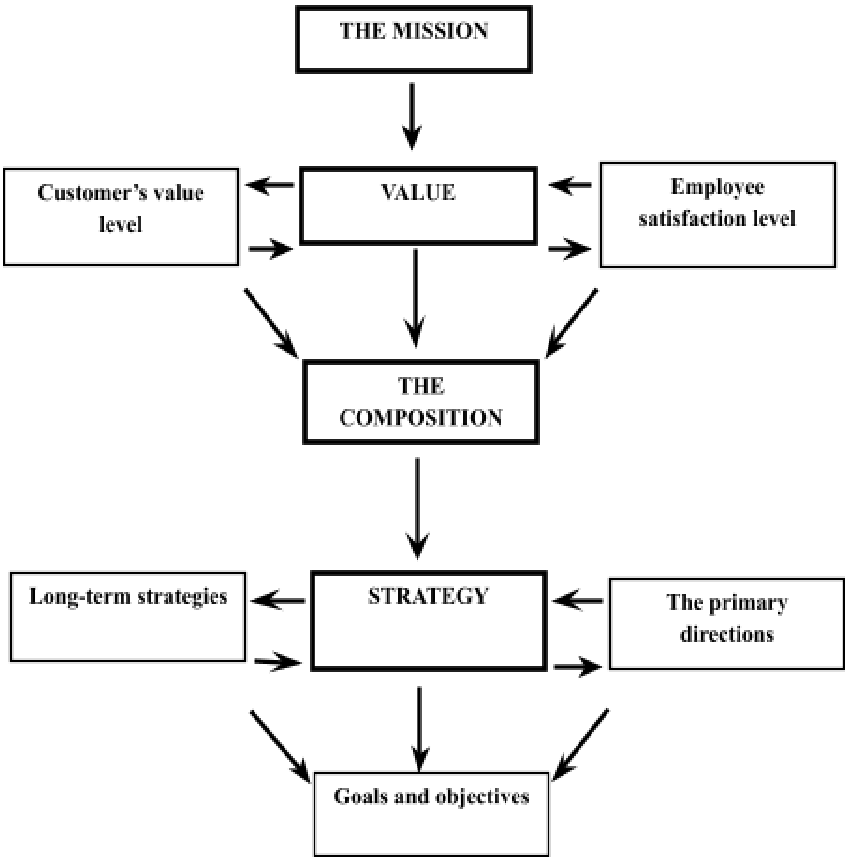

Figure 2: The process of mission and strategy formation concerning goals and objectives

Once the goals and objectives, their main direction, and final strategies have been developed, the next step is to assess their level of value and their internal and external environment. A strategy's value is primarily determined by customers and employees of the enterprise's value. Suppose the system has value for both situations. In that case, a mission will be developed in the future to ensure that this strategy is implemented perfectly and sustainably.

The main difference between a mission and a strategy is that it embodies the psychology of the organization.

The following are examples of the missions of world-renowned companies:

A Facebook Mission:
"It is about empowering people to connect more openly and faster with the world."

Mission of the Alibaba Group:

"Make it easier to do business anywhere."

Mission of the BBC:

"Enrich people's lives with informative, educational, and entertaining programs and services."

Microsoft's Mission:

"To allow people and business people worldwide to realize their full potential."

Mission of Walmart:

"We save people money, so they can live better."

Mission of the L'Oréal:

"Offering the best cosmetic breakthroughs in terms of quality, effectiveness, and safety for all women and men worldwide."

Un Mission:

"Ensuring international peace and security."

The organization and institutions require a unique management structure to achieve its effective and uninterrupted operation. That's why we should know key elements of organizational structures. Every kind of business activity has its internal and external elements through which the organization can complete its planned objectives and goals.

Fundamental Elements of Organizational Structures:

There are five elements of the formation of an organizational structure: departmentalize, job design, delegation, a span of control, and chain of command rules. These elements comprise an organizational chart and create the organizational structure itself. "Departmentalize" refers to the way an organization structures its jobs to coordinate work. "Span of control" means the number of individuals who report to a manager. "Chain of command" refers to a line of authority.

The company's strategy of managerial centralization or decentralization also influences organizational structures. "Centralization" is a constructional degree of organizational structure using which decision-making authority is restricted to higher levels of management, typically leading to a pyramid structure. Centralization is generally recommended when conflicting goals and strategies among operating units create a need for a uniform policy. "Decentralization" is also a constructional form and degrees of organizational structure using lower levels of the hierarchy to have decision-making authority, typically leading to a leaner, flatter organization. Decentralization is recommended when conflicting strategies, uncertainty or complexity require local adaptability and decision-making.

The organizational management structure's effectiveness is a relative indicator, which is assessed depending on the system's capabilities, the degree of realization of the system capabilities, and ultimately, the factors of satisfaction of specific needs. We can summarize it using the following formula:

$E = f(P_d - P_y) \longrightarrow \max_n Y_n$, there [1]

P_d - The capacity of the system;

P_v - The degree to which the system uses its capabilities

Y_n - Satisfaction of needs

The main task of the company's management is to maximize the (Y_n). Gaining for (Yn), it is necessary to create an integrated, optimally linked chain of its organizational structure to give it a reliable assessment. Because any company or institution is an integrated open system, it directly impacts its life cycle, requiring that it be organized in a continuous connection with external environmental factors. Here, the goals and objectives, strategy, and mission of forming the organizational management structure should be defined as the most pressing management issue. These factors play an essential role in expressing the life cycle as the first and most relevant and decisive link. It is inconceivable that any organization, whose goals, objectives, strategy, and mission are unknown, will start operating and be managed.

4.3 It is appropriate that the requirements and conditions for the formation of the goals and objectives of the organization should be as follows

- The set goals and objectives should be achievable and should not interfere with the coherence of the elements of the system.
- It should be time-limited; that is, it should represent the work that must be completed at a specific time interval.
- Goals and objectives should be explained by the socio-economic status of the enterprise, the availability of financial resources.
- It should be concise and concise, understandable and clear to be.
- The strategy and mission of the enterprise should not contradict.
- Goals and objectives should not be refused by laws, government decrees, and orders.

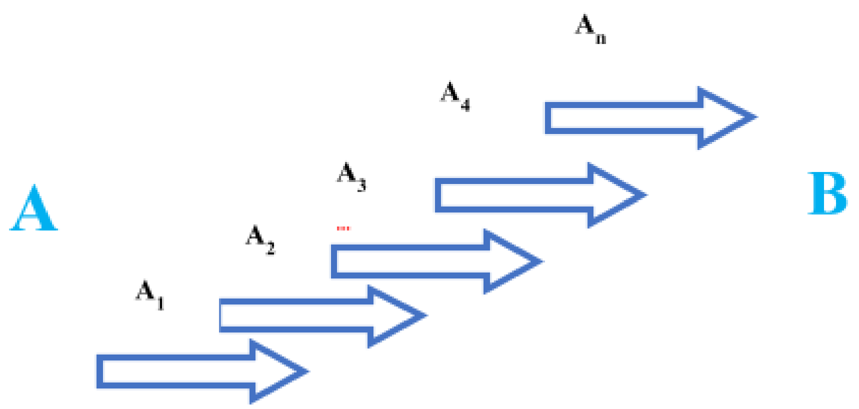

Figure 3: The order of the growth of the duration of the formation of organizational goals

It is impossible to imagine the formation of an organizational mission without top managers, CEOs, and their leaders. Because the mission is the central part of all organizing activities. It integrates all the enterprise or organization's goals and objectives, strategic plans, tactical actions and is clearly and quickly understandable. The most significant part is that the enterprise's values can be assessed as the principal, the highest element of the organizational management structure, understanding its relationship with the internal and external environment. In the following tables, some world scientists have developed coefficients and intervals for evaluating the effectiveness of organizational structures in quantitative and qualitative terms.

Table 1: Systematic indicators for assessing organizational structure effectiveness

The name of the coefficient	Formulation	Parameters of coefficients	Value
The degree of accuracy of the target	$K_1=m_1/m_o$	m_1 - the number of units whose goals are defined and interrelated m_o - the total number of units	1
The level of coverage of the target	$K_2=T_n/T_{ch}$	T_n - the number of normative goals of the department T_{ch} - the number of purposes of the division reflected in the charter rules	1
Level of coverage of functions	$K_3=F_{an}/F_{dn}$	F_d - the actual number of functions performed in the organizational structure F_n - the default number of tasks	1
Coefficient of repetition and independence of functions	$K_4=(F_{da} – F_n)/F_n$	F_{di} - the amount of duplication and unrelated tasks in the system	1
The coefficient of specialization of the j-function	$K_5= m_o/(m_o+\Sigma mtj)$	maj- the number of sections that repeat the j-normative functions	1
j-target specialization coefficient	$K_6= m_o/(m_o+\Sigma mtj)$	mgj-j-number of repeating units of the target	1
The proportion of employees whose rights and responsibilities are defined	$K_7=E_{nem}/E$	E_{nem} – the number of employees whose rights and responsibilities are defined D is the total number of employees	1
An average assessment of the degree to which the rights of subordinate employees to perform their duties are secured	$K_8 = 1/((\Sigma(an+ap)/2)/n)$	an and ap j-Assess whether the rights of the team member and his supervisor are secured	0.33

It can be seen from the data in this table that the evaluation of the effectiveness of organizational structures is based on the assessment of the goals and objectives assigned to functional units about the system purpose, legal security, and level of specialization of functions, accuracy, and transparency.

Table 2: Organizational structure efficiency matrix

Koef-t	Value	Recommended Value	Rejection rate	Quality assessment	Score
K_1	0.80	1.00	0.20	Satisfactory	8
K_2	1.10	1.00	0.10	Fits	7
K_3	0.64	1.00	0.36	Low-level compatibility	9
K_4	0.70	1.00	0.30	Satisfactory	5

K_5	0.35	1.00	0.65	Low-level compatibility	6
K_6	0.22	1.00	0.78	Unsatisfactory	8
K_7	1.00	1.00	0.00	Fits	4
K_8	0.40	0.33	0.07	Fits	6

The quality of the organizational management structure is also assessed. The target structure of the organizational structure is evaluated based on appropriate intervals.

Table 3: Qualitative Assessment Intervals of Organizational Structures

The limit of rejection in the integral assessment of the target structure of the system	0–0.15	0.15–0.35	0.35–0.65	> 0.65
Evaluate the quality of the organizational structure	Fits	Satisfactory	Satisfactory at the lower level	Incompatible

V. ANALYSIS AND OUTCOMES

The introduction of all types of business entities, enterprises, and institutions operating in Uzbekistan into the diversified enterprises' organizational structures will lead to higher economic and social activities.

Organizational structures have evolved from rigid, vertically integrated, hierarchical, autocratic structures to relatively boundary-less, empowered, networked organizations designed to respond quickly to customer needs with customized products and services.

5.1 Today, organizations are usually structured vertically, and horizontally, or with open boundaries. Specific types of structures within each of these categories are the following

- Vertically functional and divisionally structured;
- A vertical and horizontal matrix;
- Boundary-less (also referred to as "open boundary") - modular, virtual, and cellular;
- Emergent organizational structures (new structures).

The last two organizational forms known to every manager of companies and organizations are about these organizations, we will talk fluently below. But, there are some new kinds of organizations that are not able to show off, because their emergent structures are used in unplanned social interactions, but they evolve and emerge as activities unfold. There are many unplanned factors of the market economy which no one can predict in their everyday activities. At this moment, organizational structures cannot work effectively as planned. And it could make some changes as the new economic realities pressure our organization to change from stable to emergent, new practices for IT support are required. The current frenzied pace of organizational change is being driven by the rapid development of commercial technology, global markets and reengineered quality-oriented organizations, and global instability of ecology, COVID-19. This constant need to change gives rise to a recognition that organizations in the present era are no longer stable, but are continuously adapting to their shifting environments. These organizations can be said to be in a state of constantly seeking stability, while never achieving it. Such organizations are said to be "emergent," and include many of today's commercial and governmental organizations.

According to Wikipedia, such an emergent organization (alternatively, en emergent organization) is an organization that spontaneously emerges from and exists in a complex dynamic environment or marketplace, rather than being a constructor copy of something that already exists. The term first appeared in the late 1990s and was the topic of the Seventh Annual Washington Evolutionary Systems

Conference at the University of Ghent, Belgium in May 1999. Emergent organizations and their dynamics pose interesting questions; for example, how does such an organization achieve closure and stability?[1]

Alternatively, as suggested by James R. Taylor and Elizabeth J. Van Every in their 2000 seminal text, The Emergent Organization, all organizations emerge from communication, especially from the interplay of conversation and text.[1] This idea concerns human organizations, but is consistent with Leibniz or

Gabriel Tarde's monadology, or with Alfred North Whitehead's process philosophy, which explains the macro-both in human and non-human "societies"-from the processes taking place between its constituent parts.

Organizational management structures can also be divided into national and international, regional, international-regional, inter-regional organizational structures. The above formation conditions and principles are fully applicable even when working with these structures.

The foremost is that the description of organizational structures corresponds to the organization's goals and objectives, serves to implement long-term strategic plans and does not cause complications in its life cycle. Also, there should be no redundant elements in the management structure of the organization.

In the following examples, we give an individual assessment of its organizational management structures using an organization specializing in product production.

For export-only activities, the Export Department requires the following organizational elements to be considered.

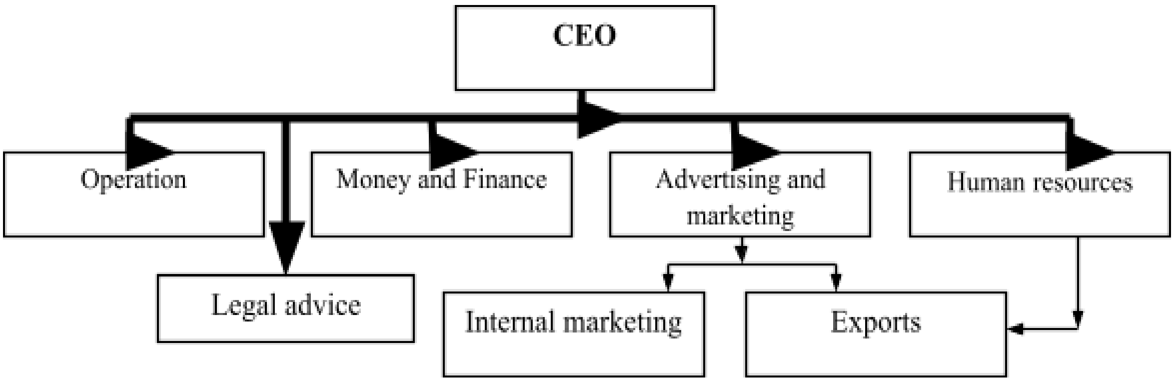

Figure 4: Elementary Organizational Structure of the Export Department

This structure is a view of a linear-functional management structure. Because this type of organizational structure can be seen in both functional and linear control elements. A characteristic feature of the linear structure is that all functional departments receive assignments from a single manager directly one step above. That is, the self-management of each applicable department does not apply. Nevertheless, the tasks that need to be done are performed independently by each available unit. Such structures can be observed mainly in enterprises and organizations' management structures, exporters, and importers, specializing in providing small types of products and services. This type of enterprise allows you to control the products and services produced. Hence, the figure above's management structure is more specific to enterprises and organizations with less functional responsibilities.

However, enterprises and organizations, international holdings, international associations, and cartels where the production scales are branched and expanded, and their organizational structure will look complicated.

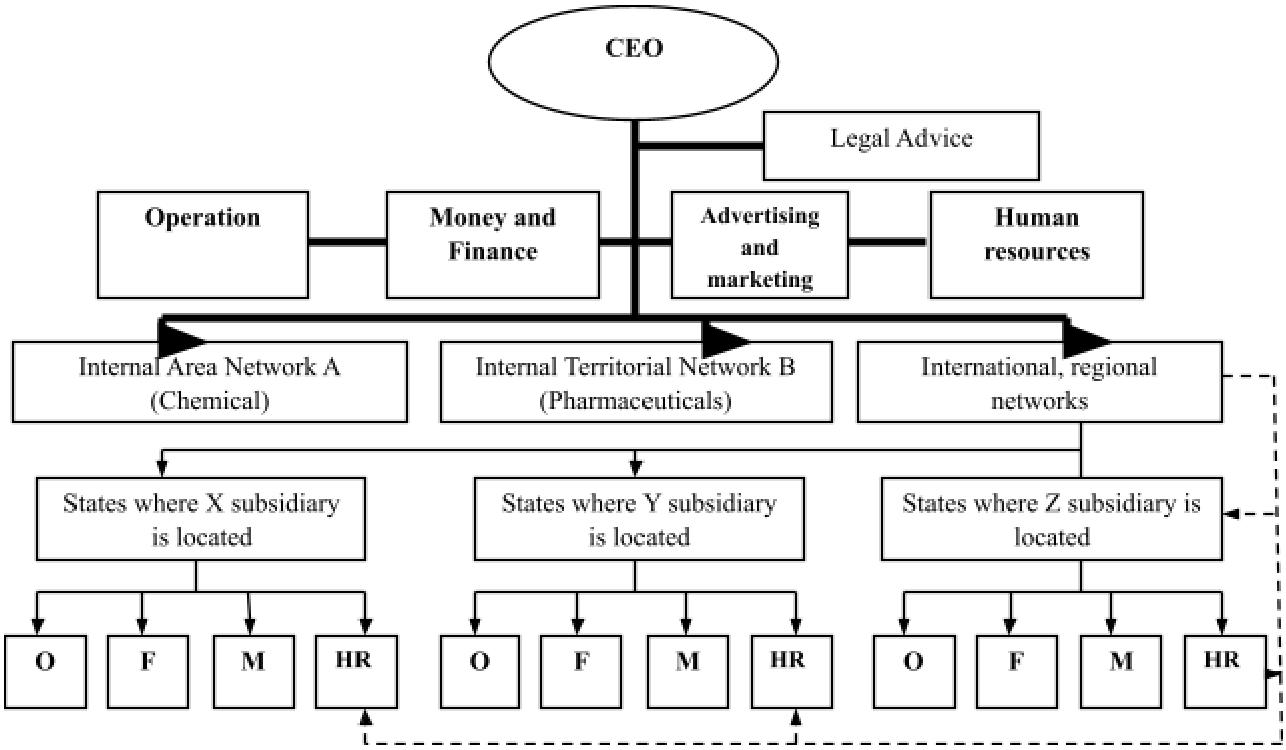

Figure 5: The systematical division of the organizational structure of an international company

Nevertheless, it will be organized based on management elements inherent in traditional organizational structures because it is impossible to create multi-branch management structures without the usual control elements. As proof, the international companies' organizational structures shown in Figure 2 are characterized by the executive, traditional functional units, departments serving to cultivate multi-sectoral products, international regions, and subsidiaries' distribution in them. The management of such international organizations is the classification of the units' geographical location in the regions, the types of products and services grown in them, and the general administrative management procedure with subsidiaries' help. The role and place of subsidiaries in the direct impact on the development of this organization are invaluable.

As prominent representatives of the international organization in the regions, they perform all the main structure's tasks and responsibilities, make decisions based on joint missions and strategies, and develop goals. They work extensively with clients. Companies can also be formed as diversified units based on customers' needs and requirements in the subsidiaries' regions. Alternatively, in adopting one-year plans, of course, based on the regions' geographical location, considering customers' needs and desires. While the organizational structures of subsidiaries are similar, their chief goals and objectives will be different. The strategic plans, mission, form, and level of international competition were developed by the global regions' business entities.

To avoid complicating international organizations' management, each traditional organizational management can also be described as a distribution of structure-based components in international regions. It is reflected in the system-based approach to the management of complex managed international organizational structures. For instance, in the study and management of the state of trade in the territories in the global system, in the development of strategic plans, strategic goals for each, in-depth analysis of the economic and financial situation in the regions, in further improving the marketing capacity of the areas; more applicable in detection. Also, the organizational management structures of multidisciplinary, international companies such as Coca-Cola, Nike, and Oriflame can be studied as a basis.

Example 1. Oriflame was founded in 1967 by two brothers and a friend and is now an international direct-selling cosmetics company with operations in more than 60 countries. The company offers various Swedish natural cosmetics produced using the most modern technologies. About 3 million consultants work with Oriflame, and the company's annual turnover is about 1.4 billion euros.

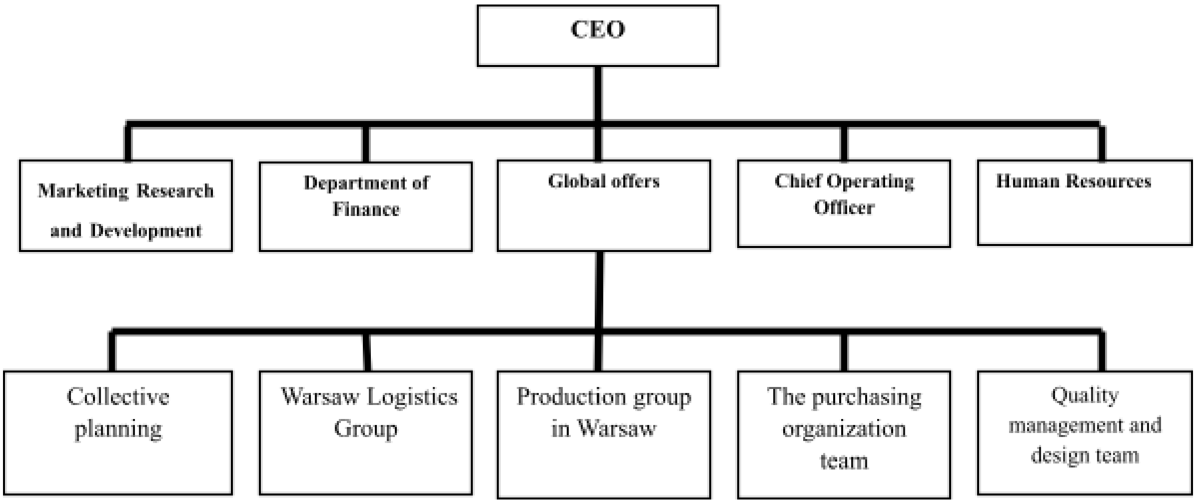

Figure 6: Oriflame's international organizational and managerial structure

Oriflame offers a business for people worldwide who want to start making money and pursue their dreams and plans, an excellent opportunity to start their own business. The company's unique business concept is "Earn today and make your dreams come true tomorrow." The fundamental principle of our work is respect for people and nature, which is enshrined in the social and environmental policy of Oriflame. The company is also a co-founder of the World Children's Fund and is proud to be involved in numerous charitable projects worldwide. These results are based on the effective international organizational structures of the activities of the company. With their effective administrative system, they give the highest marks: around 1.4 billion euros in annual turnover, about 3 million Oriflame consultants, representatives in more than 60 countries, about 7,500 Oriflame employees, several products with about 1000 brands of natural, innovative Swedish cosmetics and catalogues.

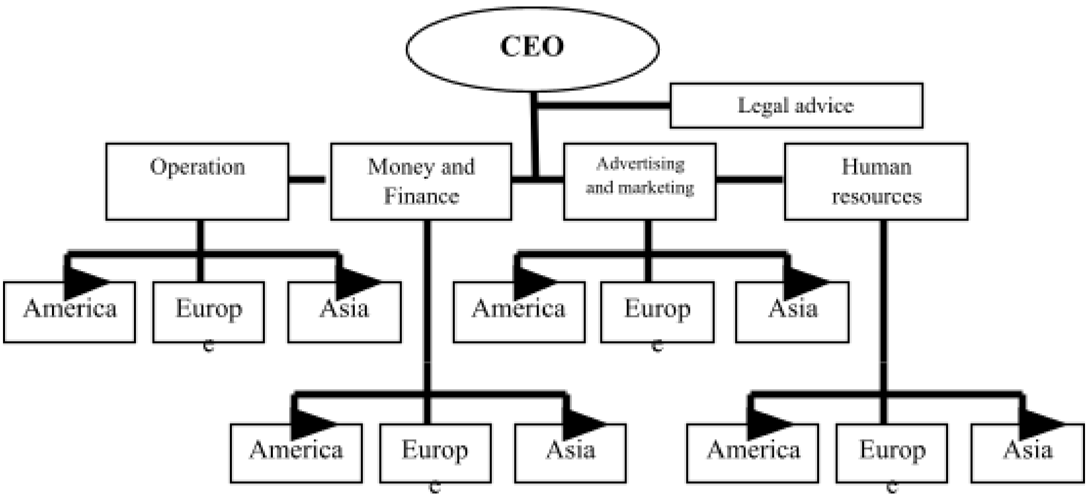

Figure 7: The inter-regional organizational structure of the foreign company

We can review the organizational structure of Oriflame by looking at Figures (7, 8, 9, and 10) below. The focus of international organizations' inter-regional governance structures is to facilitate an in-depth analysis of factors such as regions, geographical location, specific characteristics, mentality, and clients' income in these regions.

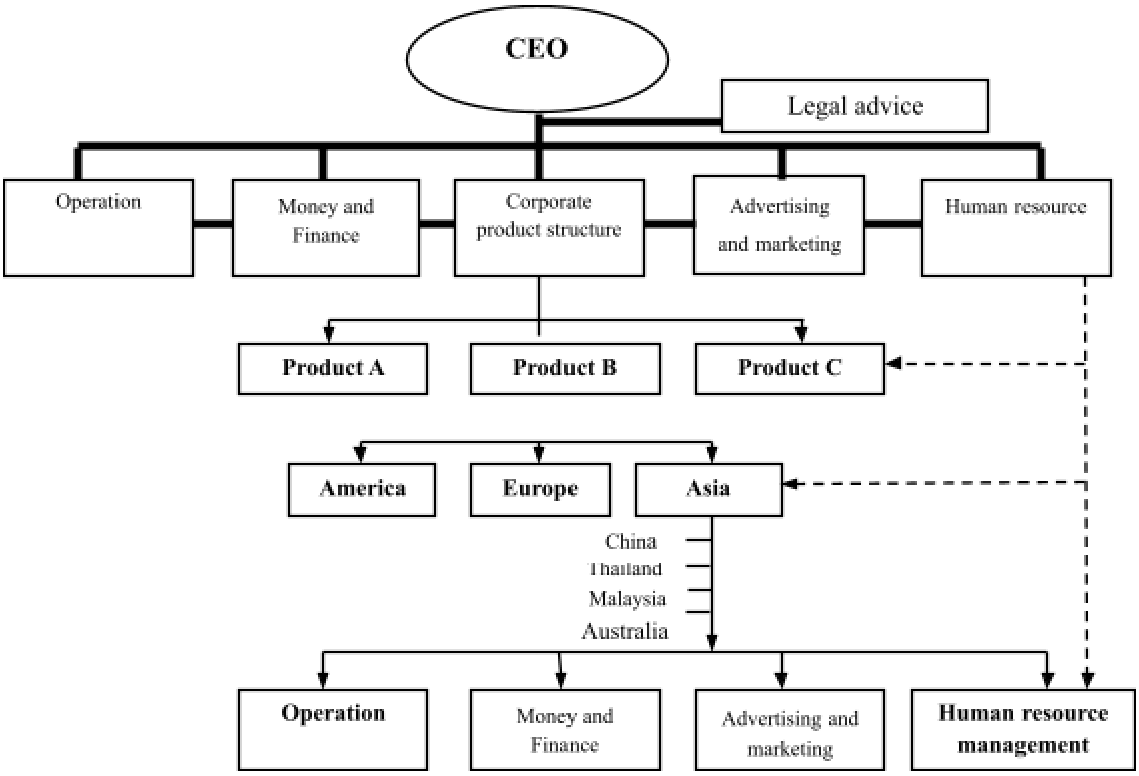

Figure 8: The organizational structure of the global production process

The international inter-regional organizational structure shown in Figure 5 above focuses on local offices, branches, and networks of enterprises and organizations operating in the Americas, Europe, and Asia to show you what I mean. It specializes in regulating the existing management process in the departments of Management in these three regions. It is characterized by analyzing specific aspects of sales, finance, marketing, and human resources for the Americas, Europe, and Asia, based on which management decisions are made, to find optimal solutions to problems.

Another example is the management structure in Figure 5 in the analysis and organization of international or inter-regional management of products and services. Because there is a need for such an organizational structure for the global Management of the production, goodwill, trade, marketing, or economic and financial performance of types A, B, C in America, Europe, and Asia. The organizational management structure is essential in successfully managing multidisciplinary, international enterprises and organizations to construct its unique management structure. Here, the perfect depiction of each type of product in selected regions of all elements, from sales to work with employees, directly impacts organizing such complex structures at the international level. The composition of the corporate product should be at the heart of a complex management structure.

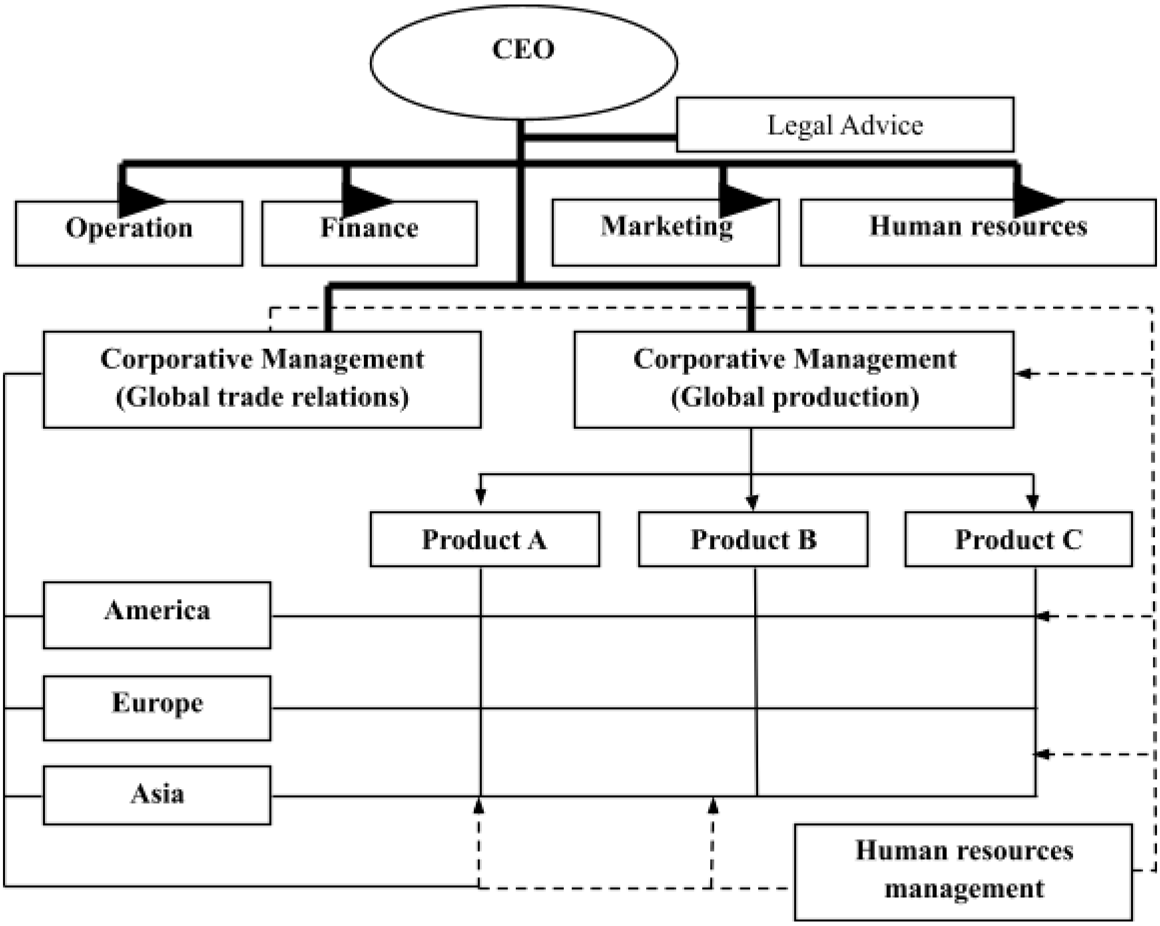

Figure 9: The organizational structure of global matrix management

An example of a more efficient global management of international products and services is the matrix management structure of the products shown in Figure 6 below. This structure is a more complex management structure, which will be necessary to realize the distribution and management of hundreds of products in many international regions. It also allows for an optimized distribution of costs for all manufactured products and services through a matrix management structure. Imagine, by evaluating, the efficiency of the production of types A, B, and C products in the American region, it becomes possible to conduct a comparative analysis of them.

Determining the intensity of the same product's production in different regions allows for severe competition and control, even within branches within the same organization but operating in different regions. Here, forming personnel in the regions also leads to the implementation of the global distribution and redistribution of personnel based on the procedures in force in the regions and serves the company's strategic goals.

Another distinct feature of the matrix management structure is its broad application of global corporate governance principles and corporate governance tools, distinguished from other management structures. That is, the use of the most actively used forms of management allows for implementation.

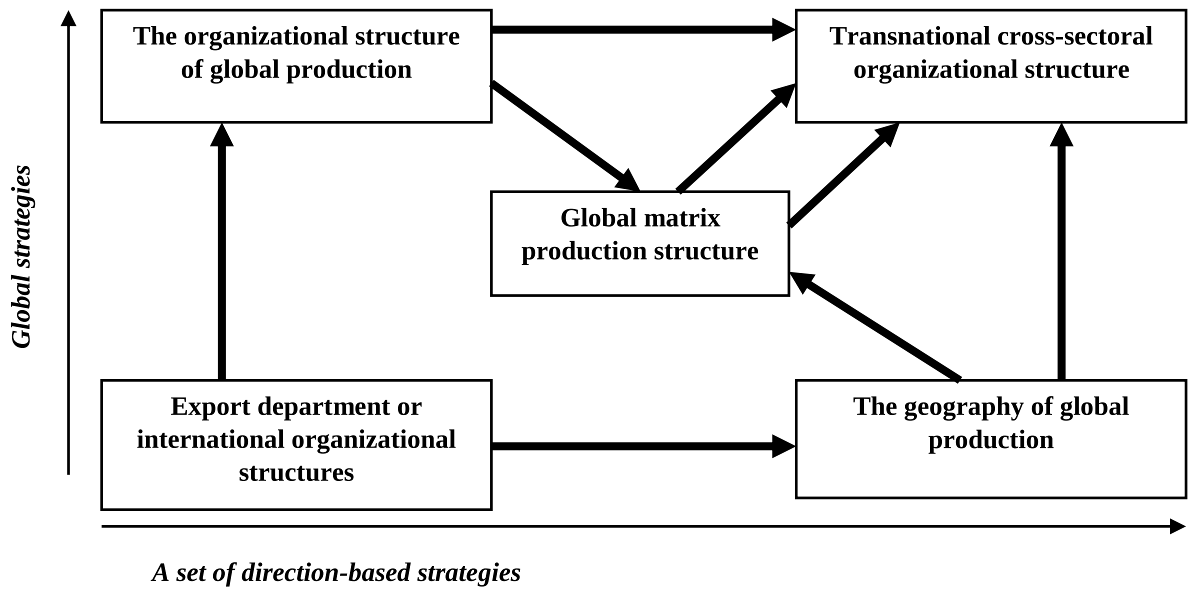

Figure 10: Evolution of the organizational structure of globalized companies

The diagram shown in Figure 7 can also be used in multidisciplinary enterprises and organizations by introducing those, as mentioned above, international organizational structures of management in individual cases or by combining the features of all of them. Multi-sectoral conglomerates, concerns, and multinational companies develop organizational management structures and strategies for different areas. Senior representatives of the top management team, forming a complex management chain, do it by themselves. Such international organizations are developed because of coordinated, situational governance principles of global governance. These forms of globalized control are based on strategies with directions and implementing a global strategy in a coordinated way. Here, it is also possible to organize management by polarization following international organizations' product geography, partners and competitors. Because the factors that pose the most significant risk to international organizations can hurt the entire management system and ultimately lead to many financial losses in the short term. Therefore, a central emphasis is placed on the management structure designed to organize global matrix production. Through a worldwide matrix management structure, the management process of conglomerates can be maximized. Rapid decision-making is not unique to such facilities. Leaders of such systems try organizing management mainly by developing long-term decisions, goals, and strategies. Economic and financial analysis of the production or provision of services is also conducted regularly because of agreements with organizations with a high level of audit certification and license at the international level. The results can be presented to the organization's top managers and international stakeholders because changes in such giant and globalized companies' financial performance can affect the competitive environment and the entire economic system, some international indices.

VI. MANAGERIAL IMPLICATIONS OF APPLE INC.'S ORGANIZATIONAL STRUCTURE

While creating and realizing the organizational structure, there is the main element that the manager influences directly. It has managerial implications. Every managerial implication concerns managerial styles. But every organizational structure is not ideal, and there should be some changes from time to time. Let's see the example of managerial implications of Apple Inc.'s organizational structure below. I would be assessing the organizational structure of Apple Inc. as one of the democratic and behavioral organizational systems of modern, innovative organizations.

Apple Inc. was established in 1977 in California, and nowadays, as one of the global designers, manufacturers, and marketers of mobile communication and media devices, personal computers, and portable digital music players, can be the largest example of creating organizational structures. As the largest IT company in the world by revenue and total assets, and the second-largest mobile phone manufacturer, the company also sells a variety of related software, services, accessories, networking solutions, and third-party digital content and applications.

The leadership style of this company is known to be democratic. CEO Tim Cook practices "quiet leadership" and he is widely recognized as an effective leader of innovative and global organizations in the world. But not every organizational structure is original and optimal for realization. Because, nowadays, several industry watchers and analysts on management innovative genius his predecessor, the legendary Steve Jobs, used to possess. Let's see some individual characteristics of the managerial implications and organizational structure of Apple Inc. in figure 11 below.

6.1 Spoke-and-Wheel Hierarchy characteristics

A bird's-eye view of Apple's organizational structure shows the considerable hierarchy. In the past, everything went through Steve Jobs. Jobs made all the major strategic management decisions. However, under Tim Cook's leadership, this hierarchy in Apple's corporate structure has slightly changed. The company now has more collaboration among different parts of the organization, such as software teams and

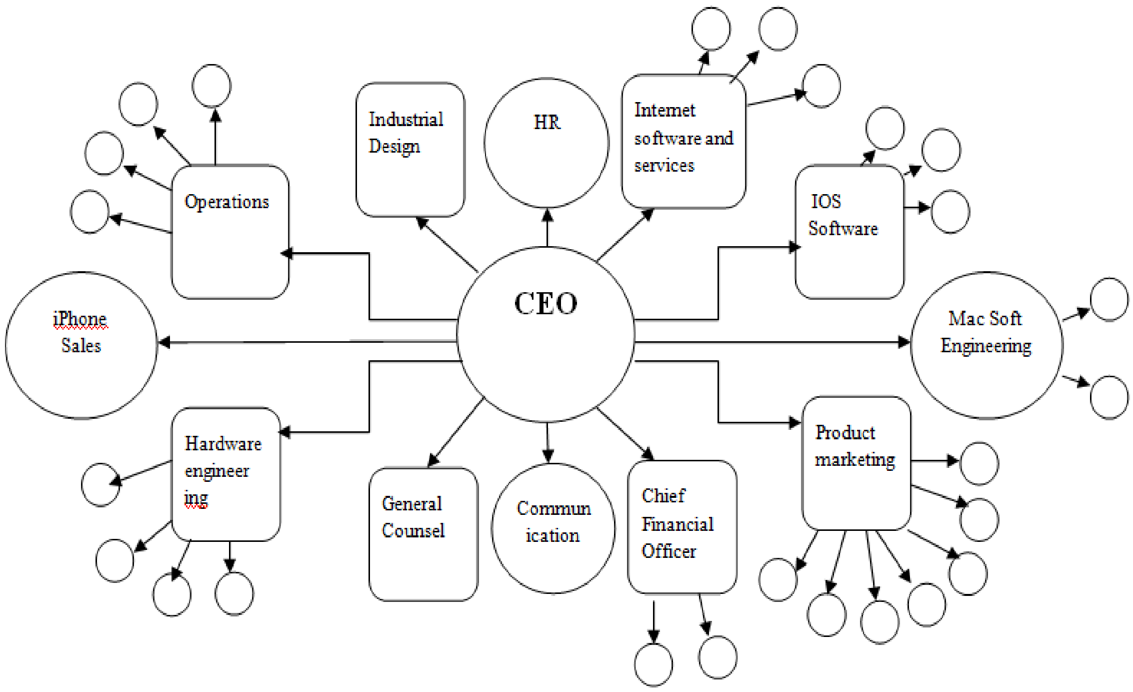

Figure 11: Apple Inc.'s Organizational Structure

By reviewing the managerial implications of this company, we can see its individual characteristic properties. For example, despite a democratic organizational structure, vice presidents have more autonomy, which was limited and minimal under Jobs. Thus, the company's organizational structure is now less rigid, but still has a spoke-and-wheel hierarchy where Tim Cook is at the centre. The upper tier (innermost tier in the spoke-and-wheel circle) of the corporate structure has function-based grouping, in which an element is derived from the functional type of organizational structure. Senior vice presidents who report to Tim Cook handle business functions. And it has a senior vice president for retail and a senior vice president for worldwide marketing. In this structural feature, the company's top leaders address business needs in terms of business function areas.

6.2 Product-based Divisions characteristics

The upper and lower tiers of its organizational structure have product-based divisions, which is an element that derived from the divisional type of its organizational structure. There are senior vice presidents and vice presidents for different outputs or products. For example, it has a Senior Vice President for Software Engineering (iOS and macOS), a Senior Vice President for Hardware Engineering (Mac, iPhone, iPad and iPod), and a Senior Vice President for Hardware Technologies. The Company's marketing mix or 4P is linked to this structural characteristic. This aspect of the corporate structure is used to manage specific products or product components that the company delivers to its target customers.

The collaborative interactions among various components of the business are referred to as the company's weak functional matrix. In a weak functional matrix, top management determines project direction, while project heads have limited authority and control. For example, the corporate structure allows hardware teams to collaborate with software teams.

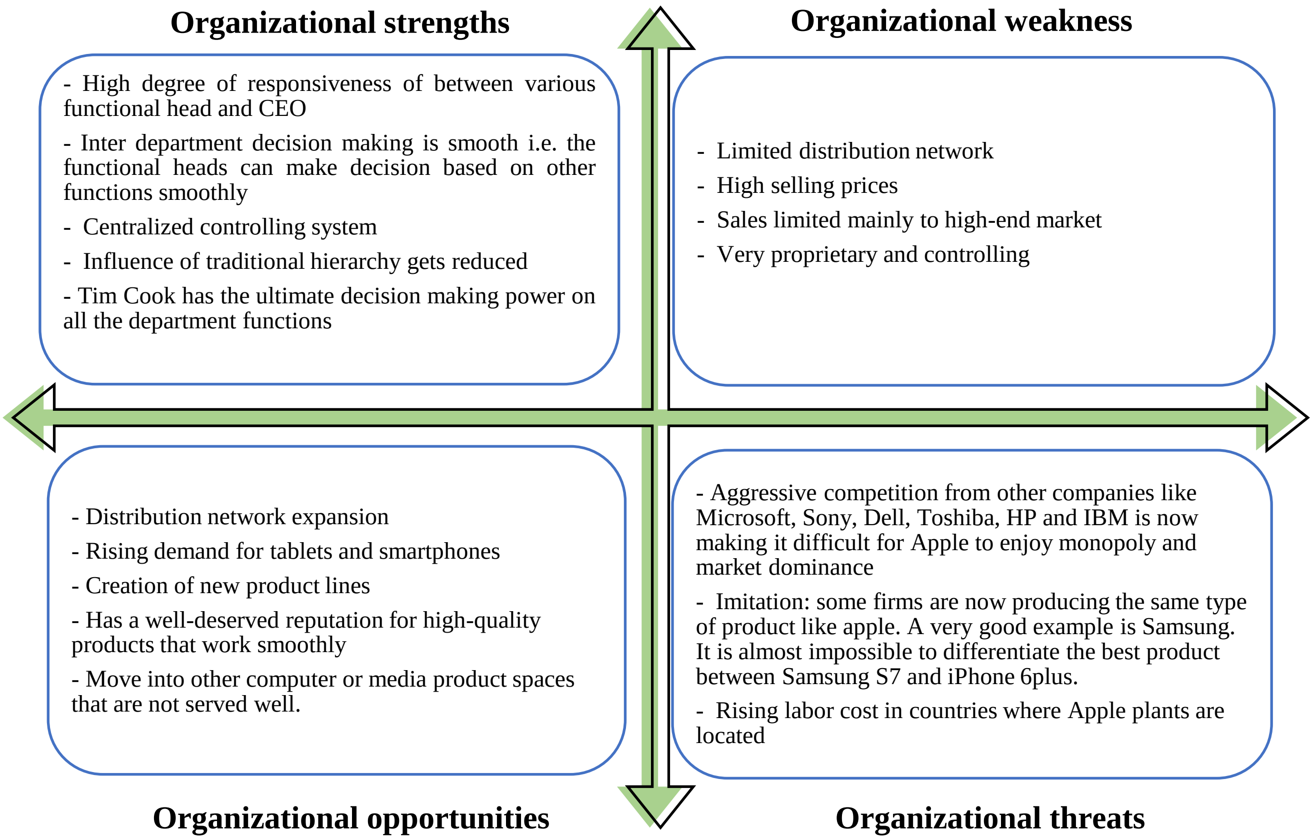

Figure 12: SWOT analysis of Apple Inc.' organizational structures.

VII. PROBLEMS AND DISCUSSION

While learning how to effectively organize organizational structures, we found some problems that top managers should know about. The difficulties of organizational structures could be divided into some types for learning and assessing them accurately. They are problems of

7.1 The formation of the mission and strategies of companies and organizations.

While top managers begin the formation of the mission and strategies, they make decisions like grabbing all sectors of the market, revolutionizing production planning, realizing decisions in a short time, not concerning the strategies of all competitive partners, boring ways to solve a problem, not knowing the values of mission and strategy for the clients and employment of each other, etc.

7.2 Restructure of management vision and functions

When top managers review the company's organizational structures, they can make restructuring management professional errors. Mistakes of unsupported elements of the organization, fundamental mistakes and illogical steps in growth planning, not knowing how to effectively divide the visions, goals, and functions correctly, the problems of optimization of business processes, etc.

7.3 Finding behavioral manners in personal organizations

Behavioural Management is an effective way of managing and working with people in the most advanced companies and organizations. They influence the business process using human behavioral qualities. Top managers work their best with personals and solve many human behavior problems through their communication etiquette.

7.4 Optimization of elements of organizational structures

Optimization of organizational structures plays the highest role in forming and reforming these systems. By making optimizations, top managers can staff cuts in any direction of the design. For now, there are not any practical ways of optimizing organizational structures for every company. However, we can find some subjective approaches to solve it. For instance, there are so many problems between integrating companies' activities in developing countries with developed ones.

7.5 Integration with international organizational structures

Integration of organizational structures is the main problem for products and services of export-import companies, international conglomerates, and some international organizations. The leading causes are legal inconsistency, behavioural differences, personals, and differences in the population's living conditions and income degrees. I think these are the most objective factors for integration with international organizations.

7.6 Finding legalization formation of managerial structures

Top managers' most necessary vision for the formation or reformations of organizational structures is choosing the most legal forms of organizational structures. Any illegal form of structure can destroy all administrative systems. Therefore, while working with formation and reformation, top managers should attract qualified lawyers.

a) Rejection of illegal types of departments and units
b) Liberalization between the elements of organizational structures

VIII. SUGGESTIONS AND CONCLUSIONS

The essence of organizational management structures' content, their role in management activities, and enterprises' and organizations' role in improving daily activities' efficiency are enormous. Because the management systems, its elements together represent all the organization's specific organs, are the basis of the factors that highly affect its continuity and coexistence with the external environment.

Based on the results obtained from the examples analyzed above, it is proposed to generalize Management's organizational structures into three main links, i.e., higher-level governing bodies. These include the Board of Directors, the President and the Executive Director, and the Administration

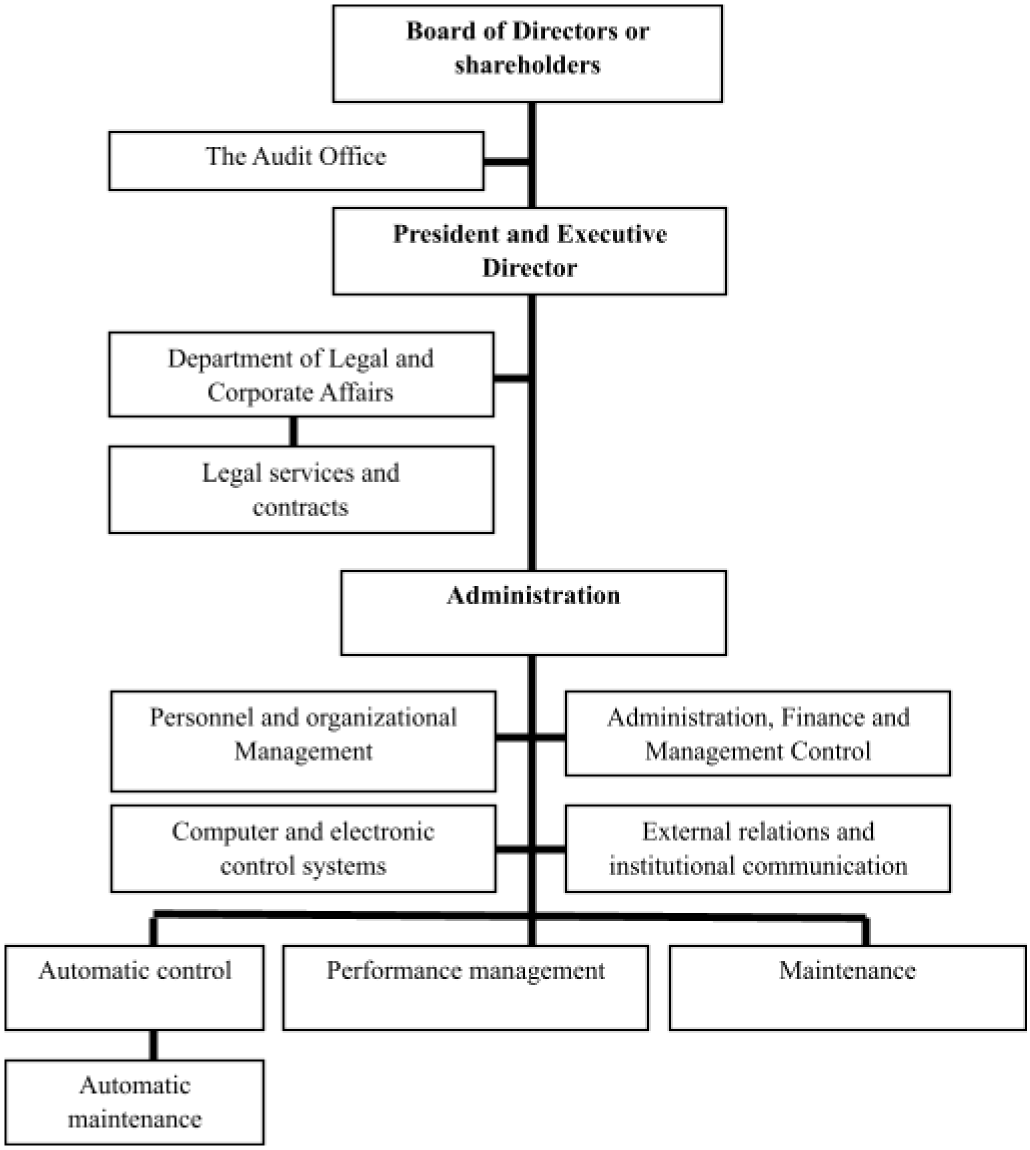

Figure 13: The traditional scheme of the organizational structure of multinational companies

Such a senior management structure is mainly typical of multidisciplinary, large-scale production or service companies, multinational companies, concerns, conglomerates, etc. Depending on the type of activity's size or scope, the number of these joints will decrease.

The board of directors or shareholders is reflected in the company's charter in implementing corporate governance management with shareholders' participation. Suppose the company has organized its activities in several countries worldwide, in that case, the president and CEOs conduct the post-shareholder management in such enterprises. While the board of directors or shareholders is directly involved in developing the company's main directions, goals, strategies, and mission, the President and the Executive Director directly impact the legal formation, planning, implementation, and coordination of their decisions and tasks, and responsibilities. Subsequent managers are of administrative importance; they directly from the staff develop personnel policy, address the company's economic and financial problems and establish external relations, considering the company's internal and external environmental factors and advanced means of communication. Are they representatives of the management unit, which is directly responsible for the implementation of the formation of computer and electronic control systems? It should not be allowed to become more complicated in the shape of management structures. The simpler the management structure, the more influential the management can be.

Based on the general concepts and conclusions developed above in the formation of the organizational structures, the relevant findings and recommendations for the economy of Uzbekistan are

- In the more profound application of the principles of a market economy, it is suitable for business entities and entrepreneurs to use functional organizational structures in the formation of organizational structures of their activities;
- It is necessary to functionalize the rules of administrative discipline further and liberalize directive regulation;
- A deep understanding of the fact that linear management structures do not fully comply with the rules of a market economy, pay great attention to the formation of systems that can operate independently of the principle of leadership in organizational structures;
- Frequent monitoring of foreign experience, the formation of a leadership structure in the management structures of enterprises and organizations that can make tactical decisions aimed at developing strategy and mission, monitoring its regular implementation, ensuring healthy competition with competitors;
- transfer of enforcement mechanisms in enterprises and organizations to more simplified and democratized systems;
- Achieve the formation of the organizational structure because of a perfect division of labor; avoid duplication within its constituent elements, the appearance of personnel in the division of delivery according to the number, scope, relevance;
- formation based on the fact that there are no conflicts between the links of the organizational structure;
- In the formation of the organizational structure, the main emphasis should be on creating a management system that can provide quality feedback between departments and managers, from ordinary staff;
- One of the main requirements of today is to form the elements of the organizational structure in such a way that it does not interfere with easy integration with other systems, to meet the tactical and strategic decisions of competing organizations and enterprises;
- It is necessary to express all the system's essential elements, not duplicate each other, and be easily linked.

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Undergraduate Engagement in Online Learning: A Case Study of a State University in the Western Province in Sri Lanka

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University of Sri Jayewardenepura

ABSTRACT

Background: With the COVID-19 pandemic disrupting the education sector, globally, online learning has gained popularity to continue the education process both amongst students and teachers. Undergraduates in Sri Lanka have embraced the move with mixed reactions. Whilst some are economically stable to pursue their education using technology, there is a segment of the undergraduate population that is unable to afford devices due to their economic status. The aim of this study was to assess students' attitudes towards online learning as well as their ability to engage with and adapt to the new normal educational developments that have been imposed on them.

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Methods: A descriptive, cross-sectional, correlational web-based survey design was used to recruit eligible participants from the University of Sri Jayewardenepura, which is a state university situated in the Western province in Sri Lanka. A questionnaire with open ended questions was emailed to all the participants to collect data.

Results: The total population of 4761 Management Faculty students belonging to a plethora of management disciplines consented to take part in this online survey. This study revealed a significant correlation between undergraduates' attitudes and online learning behaviour. In addition to that, it showed that their gender, living area, university level, prior experience and devices available have significant impact on the effectiveness of their online learning. The main obstacles to online learning were identified as unstable Internet connection, the lack of motivation, the lack of instructions and the lack of devices.

Conclusion: Most undergraduates had mixed feelings about online learning whilst being supportive of conventional classroom teaching and learning. Additionally, they were pessimistic about their chances of learning professional skills and core competencies online. Their inability to have uninterrupted access to data and their helplessness in being unable to purchase electronic devices, thus affecting their engagement ability, were seen as major impediments to the success of online learning. More research is required to determine whether undergraduates, especially in developing countries such as Sri Lanka, are ready and able to make greater use of online education in order to access high-quality learning opportunities.

Keywords: online education, undergraduate engagement, covid-19 pandemic.

Author α σ: Business Communication Unit, FMSC, University of Sri Jayewardenepura, Sri Lanka (lishanthi@sjp.ac.lk).

I. INTRODUCTION

The outbreak of the COVID-19 pandemic brought schools and higher educational institutions to a grinding halt, rendering academic calendars ineffective. It is in this backdrop that online learning emerged as a saviour to pick up the broken threads of education and enable students and undergraduates to pursue their education to some extent and many educational administrators are pushing online education as the only solution in these uncertain times. In the scenario of undergraduates being unable to attend lectures at their institutes of higher learning, and the COVID-19 pandemic causing challenging changes to the lifestyles of people, a 'new normal' to conduct lectures, came into being where there was a shift from face-to-face lecture delivery to the online mode of instruction. In the arena of education and higher education, the 'lecturing mode' pendulum swung from face-to-face delivery to the online platform (Wijewardene, 2021).

In Sri Lanka many undergraduates who enter state universities are able to continue their higher education due to the free education system, and the University of Sri Jayewardenepura is no exception. Being termed as the local university which has the highest intake of Management undergraduates, the Faculty of Management Studies and Commerce, of the University of Sri Jayewardenepura, which is the largest management faculty in Sri Lanka, https://mgt.sjp.ac.lk/student/international-affairs/undergraduate/ has broadened its horizons and widened its scope to providing online education to undergraduates who are the future business leaders of the country.

Thus, it is necessary for these undergraduates to be able to benefit from the online methodologies adopted by the faculty to broaden their knowledge horizons. Yet the gap between those who can afford and those who cannot afford devices to engage in online learning is quite considerable and this study brings out this aspect through the data collected. However, the reality is that, even as we appreciate the role conventional classrooms have played in creating a sense of equality among students, the pandemic urges us to re-evaluate some of our assumptions whilst adapting to the new normal brought about by the COVID-19 pandemic.

Sri Lanka has enjoyed a free public education system encompassing the entire education span from primary up to tertiary levels. This has provided access and created educational opportunities for many students from economically marginalized families by enabling them to pursue their education. At the heart of this system is the traditional classroom which, despite the many institutional and regional disparities, has functioned as a leveler to some extent, bringing students from different economic and cultural backgrounds to a common, shared space (ft.lk, 2020). However, the COVID-19 pandemic, has shifted the teaching and learning venue from classroom to home, whilst switching the learning mode from face-to-face to the online platform. Whilst this could be seen as a more convenient plan for learning for the main stakeholders which include teacher and student, it brings with it a whole new set of problems hitherto not encountered.

Whilst many have hailed the benefits of online learning, it has its downside as well. Online teaching eliminates those students who do not have the economic wherewithal to purchase the technology tools required to follow online classes and to connect with their peers and teachers. The COVID-19 pandemic has deprived many of their income due to the numerous lockdowns and many low-income families are eking out a hand-to-mouth existence. Similarly, many working-class families are struggling to find money to feed themselves. In this backdrop, it is questionable as to whether these students can have access to online tools to pursue their education.

Many homes from where our students come do not have electricity and undisrupted internet connectivity, and their monthly income does not permit them with the ability to purchase internet data for their children's education which is an additional responsibility and burden on the family income. How many of our students have a learning environment within their homes that is free of disturbance from other members of their families? (ft.lk, 2020). Thus in the process of shifting to online education, these factors and realities need to be considered.

No online platform can ever replace the vibrant classroom dynamic. The classroom is not just a space for learning, but it is also a site where students interact with one another across the social and cultural boundaries that separate them and build lasting bonds, friendships, and solidarities (ft.lk, 2020). Additionally, the measures taken today to address the challenges caused by the pandemic should in no way damage this shared physical space in universities in Sri Lanka that have nourished their ideas and conversations over the decades.

While the COVID-19 pandemic is an unusual impetus for encouraging online learning, it is still uncertain if students believe they are ready and willing to use online education to access high-quality learning, and whether their attitudes, expectations, behaviors, and, as a result, the general themes of online education will change [Watkins et al (2004) in Muflih *et al*, (2021)]. Engagement is a very important activity connected to student learning, especially in online courses. (Martin 2018). Student engagement in online learning is very important as online learners have fewer opportunities to be engaged with their institution of higher learning. Hence, it is essential to create multiple opportunities for student engagement in the online environment. The need for engagement has resulted in the development of guidelines for designing effective online courses (Roblyer and Ekhaml, 2000).

The present study investigated the correlation that exists between the undergraduates online learning engagement and the factors associated with their future learning engagement.

II. LITERATURE REVIEW

The temporary closure of educational institutions during the coronavirus disease (COVID-19) pandemic has abruptly transformed the global education landscape in favor of distance learning (United Nations Policy Brief, 2020). This radical shift saw a surge in the use of various digital platforms and applications, including digital learning management systems, collaboration platforms for live-video communication, massive open online courses (MOOCs), and tools for creating learning content (UNESCO. Distance Learning Solutions, 2020).

In Sri Lanka, access to higher education is already very limited (Hayashi *et al*, 2020). The government ordered all educational institutions closed from 12 March 2020, including higher education institutions - 15 state universities and about 40 other state and nonstate tertiary education institutions. Such disruptions in tertiary education by COVID-19 could delay the creation of the leaders and skilled workforce the country needs to successfully make the transition to upper-middle-income status (Hayashi *et al*, 2020).

The glaring inequalities among students, now more visible as we move to online education platforms, should propel us into reflecting on the ways in which student participation in the traditional classroom even under normal circumstances is shaped by the socio-economic conditions of their homes and other social spaces they occupy (ft.lk, 2020). Their participation depends on nutrition they can afford, the time and space available for them in their homes to read, do their homework, relax and engage in recreational activities, the convenience created by transportation between home and school and their place in a society divided along lines of caste, class, gender and ethnicity.

Thus, the pandemic makes it even more evident that free education has had its wings clipped as a result of the COVID-19 pandemic hurricane that has wreaked havoc in the education sector globally as in many other sectors (ft.lk, 2020).

In order to continue their education, school students and undergraduates were forced to embrace Information and Communication Technology (ICT), which soon became an inevitable medium to engage in. This was a global shift (ft.lk, 2020). Hence, today, especially in the education sector, ICT plays a leading and immeasurable role. Especially in countries such as Sri Lanka, the need to make a transition from face-face education to online education was a huge leap, which entailed advanced technology, trained teachers and above all, the ability to own technological devices suitable for the facilitating of online lecture (ft.lk, 2020). According to many researchers, online and blended educational approaches are equivalent to conventional classroom models (Ali and Ahmed, 2011).

Other scholars, on the other hand, indicated that students had negative attitudes toward online learning, implying that they did not prefer it over traditional classroom learning (Abbasi *et al*, 2020).While the COVID-19 pandemic is an unusual impetus for encouraging online learning, it is still uncertain if students believe they are ready and willing to step out to engage with the new methods of higher education delivery (Muflih *et al*, 2021).

When teaching and learning activities are obtained primarily via the Internet, this is referred to as online learning, or eLearning (Ali and Ahmed, 2011; Simonson *et al*, 2019; Watson, 2005). Online learning is founded on the principle of utilizing information technology to enhance educational quality (Muflih *et al*, 2021). Online learning is currently widely employed in undergraduate education, sometimes in conjunction with more traditional ways of learning (Muflih *et al*, 2021). While online learning provides enhanced convenience and accessibility to information regardless of location or time, it also has limitations, including challenges with Internet access, poor Internet connection quality, and respondents' limited digital abilities (Howlett *et al*, 2009; Sadeghi *et al*, 2014; Niebuhr *et al*, (2014); Bączek *et al*, 2021).

With online education being the only way-out, and with the imperative shift towards online learning, teachers are often struggling to cope with methodologies that they are unfamiliar with, as they are not tech-savvy, and the issue at hand is acquiring new technological skills (ft.lk, 2020). This could be an impediment to the student engagement percentage. Distance learning need not be restricted to digital platforms alone. The curricula designed for traditional classrooms under normal circumstances cannot be superimposed on teaching practices undertaken online during a pandemic. An education that fails to resonate with our everyday life, especially when we are facing a crisis of momentous proportions, will only become an additional burden for the student, his/her parents and teachers, thereby shrinking the chances of student engagement in an online environment (ft.lk, 2020).

However, it was necessary to evaluate the appropriateness of the online platforms and the curricula taught to the vision of education that guides our activities as teachers and learners. Education is not simply about serving individualistic, market-dictated beliefs. At a fundamental level, education must equip us to make sense of the world, by critically processing our histories and current experiences, to make it better and more just for all, particularly those on the margins of our societies. (ft.lk, 2020).

According to a study conducted by Wijewardene (2021), on the results of a questionnaire distributed among undergraduates randomly selected at the University of Sri Jayewardenepura, more than 50% indicated that they did not have a suitable device and/or internet connection at home to follow lectures online, although they preferred the online method of lecture delivery. Thus, they were unable to access lecture notes, and videos uploaded, as part of their method of study (Wijewardene, 2021).

The lack of suitable technological facilities was an impediment to some for the furtherance of their education online. Internet connectivity is a crucial requirement for online learning (Rameez et al., 2020); however, students who lived in remote parts of the country faced severe connectivity issues and problems with network coverage (Wijewardene, 2021). Accessing well-equipped telecommunication equipment for students in poverty is challenging, and a lack of a suitable device such as a laptop, desktop, tablet or smartphone becomes a hindrance to students who have no option but to continue their education online (Rameez et al., 2020).

Engagement is an important aspect for student learning and satisfaction, especially, in online courses. Student engagement is defined as "the student's psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote" (Newmann, Wehlage, and Lamborn, 1992). Hence, student engagement in online learning is vital as online learners have fewer opportunities to be engaged with the institution, and therefore, multiple opportunities need to be formed in order to facilitate student engagement in the online setting (Martin and Bolliger, 2018). The need for engagement has resulted in the development of guidelines for designing effective online courses (Roblyer and Ekhaml, 2000).

Engagement strategies are intended to provide positive student experiences and active learning opportunities, such as facilitating participation in collaborative group work, encouraging active contributing in presentations and discussions, sharing resources, creating course assignments with hands-on components, and integrating case studies and reflections. Engagement is the key solution to the issue of learner isolation, dropout, retention, and graduation rate in online learning (Banna, Lin, Stewart, and Fialkowski, 2015).

Student engagement to online learning is important because student engagement can be shown as evidence of students' effort needed for their cognitive development and their given ability to create their own knowledge, leading to a high level of student success (Meyer, 2014; Banna *et al.*, 2015; and Britt, 2015). According to Banna *et al.* (2015), if content played a central focus in the past, engagement plays an important role in stimulating online learning today. To boost student engagement, three basic engagement techniques of online learning have been identified: student-content, student-instructor, and student-student (Bernard *et al.*, 2009). Interactions with content, peers, and instructors help online learners become active and more engaged in their courses (Lear, Ansorge, and Steckelberg, 2010)

Mature students prefer online education, but their biggest challenge is the use of technology (Mather and Sarkans, 2018), and a majority of students have encountered many problems on account of adaptability (Alsaaty, Carter, Abrahams, and Alshameri, 2016). In this new normal system of education, instructors should motivate students to engage in online learning and use e-learning by providing training to those who have poor IT skills users and by providing interesting contents through e-learning systems (Nafrees *et al,* 2020). Concurrently, universities need to assist students by negotiating with the authorities to provide internet and handheld devices at affordable prices (Nafrees *et al,* 2020).

Furthermore, students' behavioral intentions to use e-learning systems are influenced by factors such as, exertion anticipation, social impact, performance hope, work-life quality, internet experience and Hedonistic motivation (Sabraz and Rusith, 2019), and also writer suggested that, government should provide free internet and online learning devices to the students as many of them are from poor families, also, teachers need training on online platforms as many of them are unaware about it, and furthermore, it's not good to fully depend on online platform since classroom learning create opportunities for interact one with another across the social and cultural boundaries and most of the students doesn't have a learning environment at their home even in this COVID-19 pandemic (Ft.lk, 2020).

COVID-19 brought a "second wind to higher education in India." So, using this opportunity to improve the internet speed across remote areas, teacher training for online education and increase the number of tech-savvy educational institutes (Observer Research Foundation, 2020). Lack of technical knowledge, poor planning of online lectures and the expensiveness of internet causes the majority of the students to have negative perceptions on online learning. It was also noticed by the researchers that the imbalance in lecture and assignments make the students not to involve in online learning process effectively. The researcher recommends to implement online learning with proper planning and training as it is unavoidable in a situation like COVID-19 pandemic (Rohman, Marji, Sudjimat, Sugandi, and Nurhadi, 2020).

The need of online learning in higher education institutes is apparent as the future is unforeseeable. The online learning is highly depending on how convenient the Online learning to be used by students and the courage they get from their lecturers (Ali, 2020).

The type of e-learning adopted during an emergency is not necessarily synonymous with high-quality, carefully designed web-based online learning that has been practiced in the field of higher education for decades (Hodges *et al*, 2020;

Means *et al*, 2020). Due to this, Hodges *et al* (2020) propose Emergency Remote Teaching (ERT) as a more accurate term to refer to the mode of teaching that many education institutions have adopted during the COVID-19 pandemic. ERT, unlike pre-planned online education, is "a temporary shift of instructional delivery" the goal of which "is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis" (Hodges *et al*, 2020).

One context in which such ERT has successfully been implemented in Asia during the pandemic is universities and other higher education institutions in Sri Lanka (Hayashi *et al*, 2020). The successful implementation of ERT in the country's higher education is especially noteworthy since online learning was not a term that had commonly been associated with Sri Lankan universities before the pandemic hit the country in March 2020 (Hettiarachchi *et al*, 2021). Until then, in the 15 public universities and other institutions involved in tertiary level education in the country, online learning had largely been limited to the exchange of materials and conducting selective assessment tasks via their Learning Management Systems (LMS) (Hayashi *et al*, 2020). This is also evident from the fact that before the pandemic, no public university in Sri Lanka had a single program of study online, except some distance education programs offered by the Open University of Sri Lanka—that had at least been partially conducted online Commission, U.G. Undergraduate Handbook. However, in response to their sudden closure due to the pandemic, many universities and other higher education institutions in Sri Lanka managed to establish an effective system of ERT in their respective institutions (Hayashi *et al*, 2020).

Like in other contexts in the world, the transition to online learning in Sri Lankan universities during the pandemic was sudden and abrupt: both lecturers and students had a very limited time to prepare for the new mode of teaching and learning (Hayashi *et al*, 2020). However, this transition was facilitated by several initiatives taken by respective universities as well as the University Grants Commission (UGC) of Sri Lanka (Hettiarachchi *et al*, 2021)

Various challenges associated with online education in Sri Lanka were identified, some of which included the poor Internet connection, stressful nature of e-learning, difficulty in online assessments and/or exams, inadequate faculty student interaction, poor quality of video collaboration software, and inadequate access to devices, which are reported as common challenges associated with online learning around the world too (Hettiarachchi *et al*, 2021; Means and Neisler, 2020; Zeng, X. and Wang, T., 2021). The poor Internet was the most common among Sri Lankan students as 70% of the students had identified it as a challenge.

Engaging undergraduates in online learning or Electronic learning (E-Learning) is the major modern concept in education which has converted the traditional educational shape into a new form that transforms in person or physical learning into a virtual approach of learning, where students or teachers do not need to be available all the time, but the learning resources can be obtainable 24/ 7 in the form of video or audio or any other file formats. Furthermore, there are tools accessible to conduct classes online and offline such as Moodle, Zoom, Google Classroom, YouTube, and many countries have introduced new systems and websites in collaboration with World bank such as Educ.ar, Eduthek, and many more (The World Bank, 2020). Meanwhile, there are negative perspectives of these new technologies in terms of internet connectivity, device compatibility, adapting to technological tools, and immediate response from the lecturers or instructors (Nafrees *et al* 2020).

Online education would remain an important means for delivering tertiary education. Against this backdrop, it is important to understand emerging issues and challenges in the radical shift toward online education (Hayashi *et al*, 2020). Sri Lanka has made a remarkable, quick shift to online tertiary education post-pandemic. However, the lack of consistently stable, high-speed internet access was the most significant challenge for students and faculty in continuing tertiary education during the early onset of COVID-19 (Martin and Bolliger, 2018). Some students had to access online education through smartphones, using mobile data packages that many could scarcely afford. Students from low-income households suffered disproportio nately, and gaps grew in access to tertiary education (Hayashi *et al*, 2020).

Online education accessed through smartphones limits access to reading materials, writing assignments, and solving quizzes through learning management systems. In addition to challenges in internet connectivity, tertiary education in Sri Lanka needs to revisit curriculums, pedagogy, and assessment for blended learning (Hayashi *et al*, 2020) as providing online education using offline curricula is not suitable; for example, practical laboratory training is challenging to complete and student engagements are limited through online education (Hayashi *et al*, 2020). Responding to COVID-19 has provided opportunities for Sri Lanka's tertiary education system to become more resilient against unforeseen future challenges and it is imperative to create more open mindsets and attitudes toward blended learning if Sri Lanka continues to build on the lessons learned in this crisis (Hayashi *et al*, 2020).

III. METHODOLOGY

An online survey was conducted during the period of 11 to 30 in May in 2020. Therein, a Google form was developed, and sent to the FMSC undergraduate population which consists of 4785 active students (excluding 93 dropout students). The survey was promoted through LMS, Facebook, WhatsApp groups and email. A total of 4761 FMSC undergraduates (99.5% of the population) responded while 24 students (0.5%) did not. The descriptive data was analyzed and interpreted in detail in the results and discussion section below.

IV. RESULTS AND DISCUSSION

The total population of 4761 Management Faculty students participated in this online survey. The data analysis shows a clear correlation between undergraduates' attitudes and online learning behaviour. Also, it shows that the participants' gender, living area, university level, prior experience and devices available have significant impact on the effectiveness of their online learning. The main obstacles to online learning were identified as unstable Internet connection, the lack of motivation, the lack of instructions and the lack of devices.

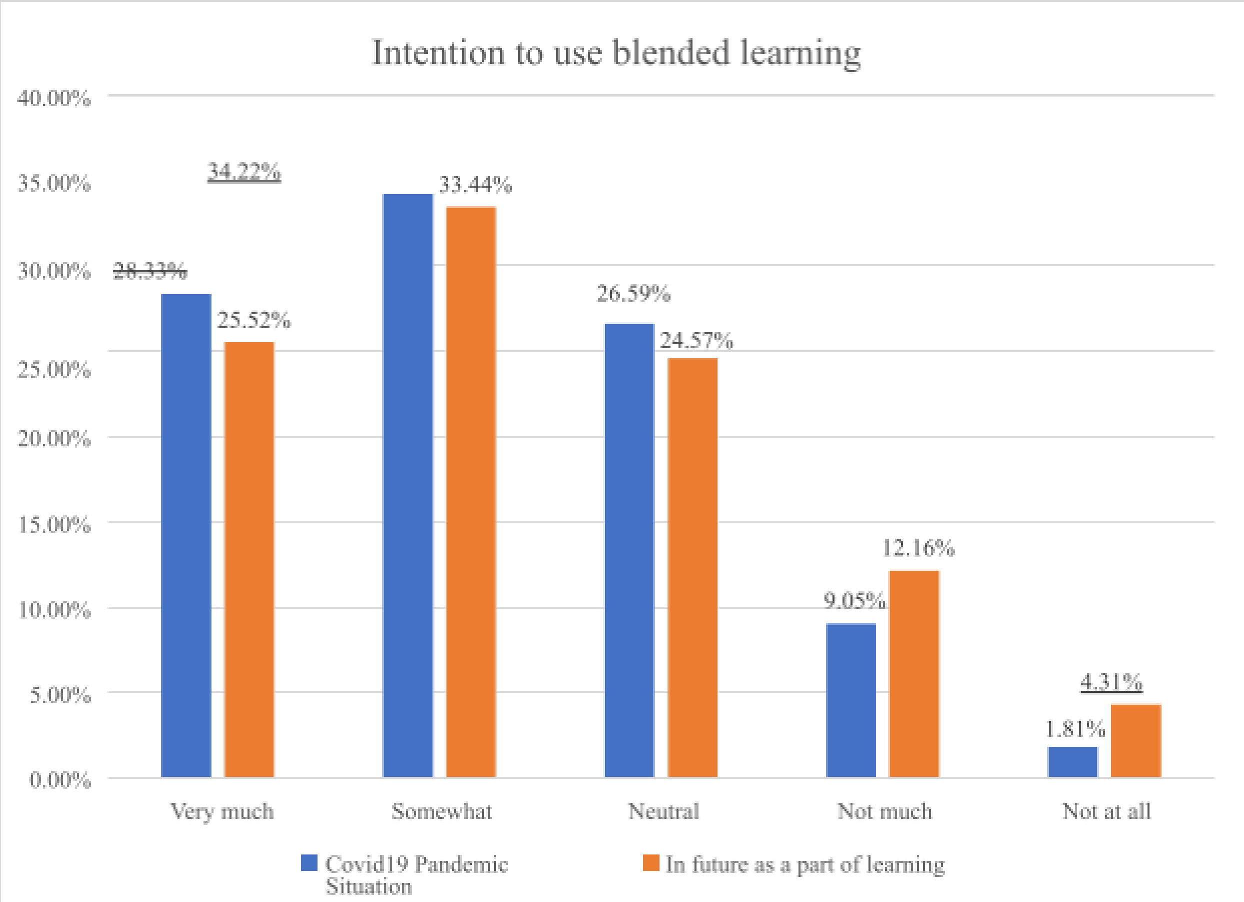

Figure 1: Students' intention to use blended learning in future as part of learning

Figure 1 above shows that the majority (66%) of the participants prefer learning online during the pandemic but their intention to use blended learning in the future shows a declining pattern.

Table 1: Intention to Use Blended Learning among Undergraduates

Intention to use blended learning	Pandemic Situation		In future	
	Responses	%	Responses	%
Very much	1349	28.33	1215	25.52
Somewhat	1629	34.22	1592	33.44
Neutral	1266	26.59	1170	24.57
Not much	431	9.05	579	12.16
Not at all	86	1.81	205	4.31
Total Responses	4761	100.00	4761	100.00

Table 2: Availability of Computing Devices among undergraduates

Computing Device	Responses	%
Desktop Computer or / and Laptop Computer	3182	66.83
Desktop Computer or / and Laptop Computer or / and Smart Phone	4724	99.22
Do NOT have any Device	37	0.78
Total Responses	4761	

Table 3: Availability of Computing Devices with a broadband connection among undergraduates

Computing Device and Broadband Connection	Responses	%	%
Desktop or Laptop Computer with EXCELLENT Broadband Connection	216	4.54	30.52
Desktop or Laptop Computer with GOOD Broadband Connection	1001	21.02	
Desktop or Laptop Computer with POOR Broadband Connection	236	4.96	
Table or Smart Phone with Broadband Connection	283	5.94	5.94
Desktop or Laptop Computer with NO Broadband Connection	1729	36.32	63.54
Table or Smart Phone with NO Broadband Connection	1259	26.44	
NO Device and NO Broadband Connection	37	0.78	
Total Responses	4761	100.00	100.00

Table 4: Availability of Broadband connection among undergraduates

Broadband connection	Responses	%	%
Broadband (fixed/Fiber/ADSL etc) with EXCELLENT Connection	225	4.73	29.36
Broadband (fixed/Fiber/ADSL etc) with GOOD Connection	1173	24.64	
Broadband (fixed/Fiber/ADSL etc) with POOR Connection	338	7.10%	7.10
Do NOT have broadband connection	3025	63.54	63.54
Total Responses	4761	100.00	100.00

Table 5: Availability of pre-paid mobile connection among undergraduates

Pre-Paid Mobile Data connection	Responses	%	%
Pre-Paid Mobile Data with EXCELLENT Connection	277	5.82	57.76
Pre-Paid Mobile Data with GOOD Connection	2473	51.94	
Pre-Paid Mobile Data with POOR Connection	1418	29.78	29.78
Do NOT have Pre-Paid Mobile Data connection	593	12.46	12.46
Total Responses	4761	100.00	100.00

Table 6: Availability of post-paid mobile connection among undergraduates

Post-Paid Mobile Data connection	Responses	%	%
Post-Paid Mobile Data with EXCELLENT Connection	88	1.85	11.93
Post-Paid Mobile Data with GOOD Connection	480	10.08	
Post-Paid Mobile Data with POOR Connection	243	5.10	5.10
Do NOT have Post-Paid Mobile Data connection	3950	82.97	82.97
Total Responses	4761	100.00	100.00

According to Table 7 below, when the subjects are taught in the blended mode, no significant dropout rate was observed amongst the students in the Faculty of Management Studies and Commerce.

Table 7: Response summary by degree program.

	Degree Program	Enrolled	Drop out	Active	Responses	%
1	B.Sc in Accounting (Special)	615	5	610	610	100.00
2	B.Sc in Business Administration (Special)	677		677	676	99.85
3	B.Sc in Business Administration (Business Economics) Special	231	1	230	230	100.00
4	Bachelor of Commerce	502	19	483	483	100.00
5	B.Sc. in Operation and Technology Management (Special)	164	2	162	160	98.77
6	B.Sc in Entrepreneurship (Special)	53		53	53	100.00
7	B.Sc in Estate Management and Valuation (Special)	236	14	222	222	100.00
8	Management Common Programe	932	27	905	888	98.12
9	B.Sc. in Finance (Special)	475		475	472	99.37
10	B.Sc. in Human Resource Management (Special)	199	3	196	196	100.00
11	B.Sc in Business Information Systems (Special)	192	7	185	185	100.00
12	B.Sc in Marketing Management (Special)	287	6	281	281	100.00
13	B.Sc. in Management (Public) (Special)	315	9	306	305	99.67
	Total Responses				4761	99.50
	Non-Responses				24	0.50
	Total no of enrolled undergraduates	4878	93	4785	4785	100.00

Table 8: Intention to use blended learning during the Covid19 Pandemic

Degree Programme	Very much	Some what	Neutral	Not much	Not at all	Grand Total
B.Sc in Accounting (Special)	215	215	140	32	8	610
B.Sc in Business Administration (Business Economics) Special	79	80	48	20	3	230
B.Sc in Business Administration (Special)	213	245	161	52	5	676
B.Sc in Business Information Systems (Special)	59	58	59	8	1	185
B.Sc in Entrepreneurship (Special)	13	18	13	9		53
B.Sc in Estate Management and Valuation (Special)	54	73	79	11	5	222
B.Sc in Marketing Management (Special)	65	88	103	18	7	281
B.Sc. in Finance (Special)	131	162	128	42	9	472
B.Sc. in Human Resource Management (Special)	45	66	56	23	6	196
B.Sc. in Management (Public) (Special)	86	97	84	32	6	305
B.Sc. in Operation and Technology Management (Special)	47	43	47	18	5	160
Bachelor of Commerce	140	165	115	52	11	483
Management Common Programe	202	319	233	114	20	888
Grand Total	1349	1629	1266	431	86	4761

A similar study conducted analyzing the degree of using communicative approach (Dharmawardene, 2021) to explore the blended learning effectiveness in Sri Lanka produced the findings consistent with the findings of the present study while the study conducted by Hayashi et al. (2020) has showed contradictory findings to those of the present study.

V. CONCLUSION

This study explored the correlation that exists between the undergraduates' online learning engagement and the factors associated with their future learning engagement. Most undergraduates had mixed feelings about online learning whilst being supportive of conventional classroom teaching and learning. Additionally, they were pessimistic about their chances of learning professional skills and core competencies online.

Participants' interrupted access to data and their helplessness in being unable to purchase electronic devices, thus affecting their engagement ability, were seen as major impediments to the success of online learning.

More research is required to determine whether undergraduates, especially in developing countries such as Sri Lanka, are ready and able to make greater use of online education in order to access high-quality learning opportunities.

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ABSTRACT

The paper analyzes the key aspects of consumers' decision making while selecting financial services with the focus on respecting the duties of financial institutions to provide their consumers with the timely and comprehensive information on the content and effects of financial services by means of a standard information form. The aim of the research presented in the paper are: a) to identify the criteria guiding the consumers when selecting financial services, b) to ascertain the availability of the standard information form that financial institutions need to provide for their consumers of financial services, c) to establish the structure of the respondents in terms of their understanding of the content of the agreement on the usage of financial services, d) to define the correlation between the availability of the standard information form and the participants' satisfaction with their decisions on using financial services. The research results indicate that the data on the amount of effective and nominal interest rate and the amount of monthly instalment are the key criteria that guide the participants when they decide to use financial services. In addition, the results show that financial institutions do not fulfill the duty to correctly and appropriately inform prospective consumers prior to signing the agreement and point to the low level of consumer financial literacy when it comes to understanding the content of the agreement on using financial services. The results of discriminant analysis confirm how important the need is for financial institutions to provide their consumers with comprehensive information in the process of negotiating and signing the agreement on using financial services. As the result of discriminatory analysis for the year 2020, 48.02% of the variations (changes) in consumer satisfaction by their decisions on selecting financial services is explained by the availability of standard information that financial institutions should provide in the process of negotiating and signing the agreement on using financial services.

Keywords: financial services, consumer decision making, requirement to inform, standard information form, consumer satisfaction.

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I. INTRODUCTION

Financial services in general and especially retail banking (for end users) are a crucial but also highly sensitive segment of economy. Financial services such as bank account, credit cards, consumer and mortgage loans, etc., are a part of life for many individuals, which raises a question of the position of the users of financial services, who have the status of consumers in relation to financial services. The key reason lies in the fact that consumers act from the position of satisfying their private needs and sign the agreements on financial services outside the scope of their business or professional activity. This makes them a weaker side of the contractual relationship (Hondius, E., 2004:245-250), bearing in mind their economic position, negotiating position, expert knowledge, and available information. Due to insufficient financial literacy in deciding on the selection of a financial product, an average consumer of financial services mainly relies on and reposes trust in financial institution. As the sector of financial services rests on consumer trust, it is important that financial institutions respect the legal framework and mechanisms of consumer protection among which is the duty of pre-contract information. On the other hand, consumers are expected to be proactive on the market in terms of collecting pre-contract information, analyzing, and comparing different offers so as to reach a quality decision on the usage of a given financial service.

Consumers however are often not cautious, rational and careful enough when they decide to use financial services. They are not aware and do not consider the risks associated with financial services. Consumers naturally give more attention to long-term commitments related to mortgage loans but are less rational when it comes to spontaneous usage of credit cards while shopping. Hence, various objective circumstances, motives, and needs for financial service define consumer behavior on the financial services market. Certainly, we cannot ignore the fact that consumers, when signing standard agreements prepared in advance by providers of financial services, largely act with trust in their conscientious, honest and loyal conduct. Consumers start from the premise that when they formulate standard agreement provisions, financial institutions take into account the protection of consumers' interests and legitimate expectations related to the scope and content of agreements. When they negotiate and sign agreements with financial institutions, it is important that, apart from other things, users of financial services focus on the obligations they take and the risks accompanying financial transactions so as to recognize the provisions that are not favorable for them and weaken their contractual position by an unequal distribution of transaction risk.

In order to ensure consumer protection which would practically enable a consumer to sign the agreement on financial service with trust, knowing that financial institutions act in a professional and responsible manners, it is important to set up a regulatory framework. Failures and weaknesses in protecting consumers of financial services happen in developed countries as well but they are particularly evident in developing countries such as Bosnia and Herzegovina (BiH). Aimed at improving the current conditions as well as the position of financial service consumers, a legal framework was established following the standards of the European Consumer Credit Directive (CCD)[1]. In Republic of Srpska, the status of consumer of financial services consumers modeled after the CCD is regulated by the amendments to the Law on Banks and Microcredit Organizations[2], while in BiH Federation (FBiH) the legislator opted for passing the *lex specialis* regulation, the Law on Protection of Financial Services Consumers in FBiH.[3] This legal framework is supposed to: a) build consumer confidence in the financial sector, b) empower consumers by providing detailed information thus making them a more equal contractual party in terms of their rights and obligations, c) provide responsible credit financing and responsible borrowing by introducing the requirement to inform and assess creditworthiness, d) ensure an equitable treatment of consumers.

The duty of pre-contract information is recognized as an instrument of protecting and empowering consumers of financial services. This is a unilateral obligation of financial institutions, fulfilled by timely submission of standard information form to consumers so that they can get to know the content, effects and risks of financial service and make responsible financial decisions. The purpose of pre-contract information is to empower consumers by providing them with an instrument that can make them responsible and active market participants rather than passive subjects that need to be

[1] Directive 2008/48/EC of the European Parliament and of the Council of 23 April 2008 on credit agreements for consumers and repealing Council Directive 87/102/EEC, OJ 2008, L 133/66

[2] Law on Banks of Republic of Srpska ("Official Gazette of Republic of Srpska", no. 3/16), Law on Microcredit Organizations ("Official Gazette of Republic of Srpska", no. 116/11)

[3] Law on Protection of Financial Services Consumers in FBiH ("Official Gazette of FBiH", no. 31/14).

protected against themselves (Garcia Porras, C., Boom, W.H. van, 2012:24-25).

II. THEORETICAL ASPECTS OF INFORMATION PARADIGM

If we start form a well-known premise that information is power, it is quite expected that information is recognized as an instrument of protection of financial services consumers, which also guarantees private autonomy and freedom of choice according to one's own needs and abilities. Some authors question the fact that information rules should be imperative as such arrangement leads to paternalism, which deprives consumers of their sovereignty (Hartlief, T, 2004:259 et seq.). On the other hand, there are those who believe that imperative rules on information may function to strengthen the autonomy of consumer willingness and promotion rather than to limit the freedom of contracting (Grundman, S., 2002:279-281). In reality, consumer laws tend to vary between the empowerment of consumers and a paternalistic approach (Mak, V., 2012:4).

The process of consumer decision making includes several stages: recognizing the problem, searching for and collecting information, evaluating alternatives, and choosing the product (Solomon, M. et. al. 2015:313). From consumer perspective, in order for consumers to make a decision with minimum risk, it is important how they recognize the problem or need for the product, how they search for information on product diversity, and in what ways they evaluate the alternatives so as to reach the decision (Veljković, S., 2006:73-74). Some decisions on purchase are made almost automatically, while some more important take a lot of time, search for information, analysis of information, and decision making (Solomon, M. et. al. 2015:314), which is the case with financial services. Consumer behavior can be cognitive and affective (Veljković, S., 2006:324), but when it comes to financial services, cognitive behavior should be dominant, along with the need for consumer to undertake all decision making stages. This is because services are usually intangible and there is no space and time distance between the occurrence and consumption of services, which would allow consumers a detailed analysis of individual aspects of their consumption. The need for consumers' cognitive behavior is particularly emphasized when it comes to financial services as these services are relatively abstract and to a certain extent incomprehensible to average consumer. Precisely due to their complexity, the most important facts for consumers are those regarding conditions, content and effects of financial services they intend to use. That is why more timely and comprehensive information for consumers of financial services is used for high quality assessment of available offers and making decisions on the selection of the most favorable financial services.

Consumers need to be aware that the decision on the selection of financial services such as credit, is very important and requires much more information and consideration as the implication of such financial service of long-term character may be negative and lead to unnecessary expenses and ultimately to over-indebtedness. Consumers should not make decisions on complex financial products as a routine based on scarce information and without the real understanding of the risks associated to these products. Besides, such decisions should not be instant and based on advertising, recommendation given by an acquaintance, friend or employer of financial institution, degree of the current need for a given service, etc. However, precisely these factors often affect consumer decision making in the financial services market. This is why the duty of pre-contract information is highly placed in the hierarchy of consumer legislation and legislators impose the obligation for financial institutions to provide consumers with detailed information prior to signing the contract, by means of standard information form. It is necessary for consumer protection that financial institutions comply with this obligation duly and honestly and, if necessary, provide more detailed advice to consumers, so as to assist them in making a high-quality decision, which should be in the interest of the very financial institutions.

While specifying the number and content of the information, the domestic legislator, as well as the

European ones, used the criteria of well informed, rational and consequently active consumer who is willing, able and competent to use the provided information, make high-quality decisions and thus protect his rights. The concept of empowered consumer is dominant in EU consumer financial law, which is why legal protection is given only to "average consumer" who is "reasonably well-informed and reasonably observant and circumspect".[4] In reality, this normative image of user of financial services is not viable. Bearing in mind that these complex products are difficult for average consumer to understand, average consumer of financial services has incomplete information, limited cognitive abilities and insufficient financial and legal expertise so as to use the full potential of the given information (Mak, V. 2012:11-14). Current information paradigm is a normative paradigm. It builds on a specific assumption of human behavior and on a legal system which is designed to enforce this normative concept (Micklitz, H. W., Reisch, L. A., Hagen, K. 2011:271 et seq). The prevailing information paradigm, can be twofold. On the one hand, the goal is that 'average consumer' receives adequate information that is easy to understand and readily comparable, so he could make informed choice. On the other hand, it is known that even 'average consumers' have cognitive limitations in decision making process (Garcia Porras, C., Boom, W.H. van, 2012:28-29).

Over the years, the duty to inform has significantly evolved, at the same time becoming more complex and stricter. The number of data increased, information was becoming more complex, which is why it ultimately became standard, and other form-related requirements changed. This is why formal requirements became the instrument for increasing transparency with the ultimate goal to protect the weaker contracting party (Mankowski, P. 2005:781-782). Formalities here play the role of "wrapping" for the information, making it approachable for the average consumer (Grochowski, M. 2017: 56). The duty to inform, which was given the status of a paradigm over time, from the economic point of view has the goal to remove information asymmetry as one of the key market shortcomings (Hadfield, Howse, Trebilcock, 1998:141, Grundman, S., 2002:279). Hence, formal requirements are used as an easy and evident means to help overcome informational asymmetry as the basic short coming in B2C contracts. Informational deficiencies on the consumers' part are believed to generate inefficient choices (Mankowski, P. 2005:781-782).

When all this is transferred to the segment of financial services, for consumers of financial services to be protected, it would be enough to provide them with the information on all the elements of the contract and potential risks. This would level the negotiating power of consumers and service providers, whereby no relevance should be given to consumers' individual traits such as the level of professional knowledge required for appropriate understanding of complex financial terminology, experience, economic power, etc. However, when it comes to financial services, consumer information as the protection mechanisms is largely overestimated, bearing in mind the complexity of financial services and financial (il)literacy of the majority of consumers. For a long period of time, consumers used to face the problem of information deficit, while due to information paradigm the opposite extreme occurred, which is information overload (Ebers, M., 2004:8; Nordhausen Scholes, A., 2009:214; Cartwright, P., 2011:21). Consumers cannot easily distinguish important from less important information, they are not able to process them and activate in rational decision making, which may result in a wrong choice. From the point of view of behavioral economics, by giving consumers more information, the quality of consumer decision making does not necessarily improve. Consumers are individuals and therefore not identical, their cognitive skills and indeed their subjectively felt need for cognition may differ (Boom, W.H. van, 2011:360-361).

A large amount of information does not necessarily mean that individual consumers have

[4] See Case 210/96 Gut Springenheide [1998] ECR I–465, par. 31-32; Case 470/93 Mars [1995] ECR I–1923, par. 24; Yves Rocher [1993] ECR I–2361, Schott-Zwiesel [1994] ECR I–3879, Sektkellerei Kessler [1999] ECR I–513, Lancaster [2000] ECR I–117, Cidrerie Ruwet [2000] ECR I–8749.

a faster or easier choice, which points to the complexity of consumer decision making process in which consumer behavior often differs from the predictions of rational decision making models. The traditional, rational approach of consumer behavior while making a decision on buying a product or service assumes that consumers would collect information as long as it takes them to make a high-quality decision. Consumers would first collect the most valuable information, while they would consider additional information only if such information adds to the existing knowledge. In other words, consumers would collect as much information as possible provided that the process of collecting it is not too difficult or time consuming (Solomon, M., et. al. 2015:315). For decision making on financial services to be easier, consumers do no longer need to waste time and collect information, it is now placed by means of information forms. The domestic legislator, following the standards of the CCD, made a broad regulation of the duty to inform in the advertising stage prior to signing the contract as well as the type of information contracts need to include. The duty of pre-contract information is fulfilled by means of information form. Due to a complex nature of financial services, the legislator defined the content and layout of the information form which includes a list of 16 facts referring to: identity of the provider of financial service, basic characteristics and conditions of financial service, costs, rights and obligations of the contracting parties, and warnings in case of contracting obligation breach. Its purpose is to summarize all the key elements of the contract in a noticeable, clear and understandable manner, which would help consumers to understand more easily and compare the offers of various financial institutions. This means that consumers are still expected to invest cognitive effort in terms of analyzing and understanding the provided information. Thus, they would actively process the information and assess their alternatives for making a rational decision in line with the real needs and objective possibilities.

On the other hand, it should be kept in mind that no matter how understandable and clear the language in information forms is, the terminology is still specialized and complex and requires a certain level of financial and legal literacy to be properly understood, which is something that cannot be expected from the majority of consumers. Given the fact that information is formulated based on the knowledge, skills, and experience of "average consumer", it is not expected that all consumers would benefit from the given information. Retail consumers may find it difficult or costly to obtain sufficient information about their financial purchases or understand complex financial products even when relevant information is disclosed. In other words, the information that consumer cannot understand can be seen as the total lack of information, as reading obviously does not mean the understanding of complex terms (Garcia Porras, C., Boom, W. H. van, 2012:41). This means that regardless of the scope and content of information, the majority of consumers would still have the problem to choose the best offer if they do not have a certain level of financial literacy. Financial literacy is knowledge and understanding of complex financial products and skills to navigate the financial market (Mak, V., Braspenning, J., 2012:307). Hence, consumer empowerment through the duty to inform would make sense only if consumers have a high level of financial literacy, as only then would they be able to make responsible financial decisions. Therefore, the idea that an "empowered consumer" can safeguard his or her own interests, is perhaps simply a myth (Mak, V., 2012:4), as many studies on financial literacy conducted in various financial markets and in different countries showed that the level of consumer financial literacy is generally rather low.[5]

[5] The World Bank studies aimed at establishing the level of financial literacy (regardless of the lack of a standard test) confirmed that the majority of the participants did not understand certain financial terms. See World Bank (2010) "*Good Practices for Consumer Protection and Financial Literacy in Europe and Central Asia: A Diagnostic Tool*", ECSPF Working Paper, No. 1, August, Washington, DC, http://siteresources.worldbank.org/INTECAREGTOPPRVSECDEV/Resources/GoodPractices_August2010pdf. It is important to mention that the OECD created a questionnaire for measuring financial literacy, see OECD INFE (2011) Measuring Financial Literacy: Core Questionnaire in Measuring Financial Literacy: Questionnaire and Guidance Notes for conducting an Internationally Comparable Survey

III. RESEARCH METHODOLOGY

The aims of the research: 1) To identify the criteria guiding the consumers when selecting financial services, 2) to ascertain the availability of the standard information form that financial institutions need to provide for their consumers of financial services, 3) to establish the structure of the respondents in terms of their understanding of the content of the agreement on the usage of financial services, 4) to define the correlation between the availability of the standard information form and the participants' satisfaction with their decisions on using financial services.

Data collection: The data presented in the following part of the paper are the result of the primary research. The primary data are collected by a structured questionnaire on a sample of 330 respondents. The data were collected on the territory of Bosnia and Herzegovina, from end users of financial services (retail consumers, persons), during the years 2018 and 2020, using the same form of data collection. In this way we attempted to register the changes of the given features among the consumers of financial services between two periods during which the data were collected (2018 and 2020). The consumer protection associations in Bosnia and Herzegovina provided assistance during the data collection process.

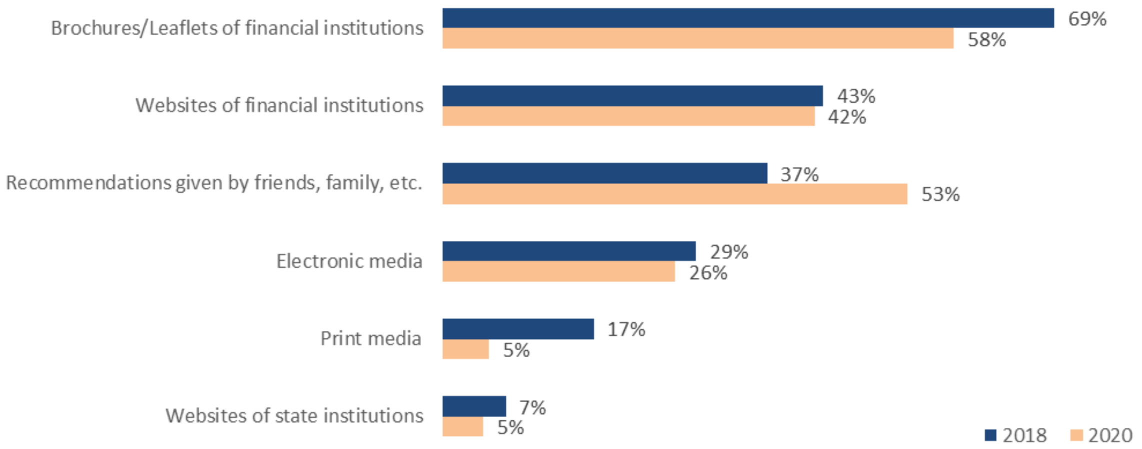
Apart from descriptive analysis, the data were processed by discriminant analysis so as to see potential differences in respondents' satisfaction by their selection of financial services between those who were given the standard information form by the financial institutions and those who were not informed this way.

IV. ANALYSIS AND DISCUSSION

4.1 Sources of information and key criteria guiding the consumers when selecting financial services

The results of the analysis presented in Graph 1 show that brochures/leaflets published by financial institutions were the leading source of consumer information while selecting certain financial services both in 2018 and 2020. The percentage of the respondents who used these brochures as the source of information on certain financial services in 2018 was 69% while two years later it reduced to 58%. The second source of information for the respondents in 2018 were the websites of financial institutions used by 43%, followed by the recommendations given by friends and family with 37%. The situation in 2020 was the opposite, as the recommendations given by friends and family were registered in 53% of the respondents while the websites of financial institutions were used by 42% of the respondents. As the respondents were able to mark multiple sources of information, the sum of all the modalities within this questions is not 100%. What is rather worrying and needs to be pointed out is that the websites of state institutions are rarely or not at all used when the information on financial services are collected by consumers. Only 7% of the respondents in 2018 and 5% of them in 2020 used the websites of state institutions in this process. It is obvious that the respondents believe their friends and acquaintances more than print and electronic media and official websites of state institutions. A detailed structure of the sources of information on financial services is given in Graph 1.

of Financial literacy. Paris: OECD. http://www.oecd.org/finance/financial-education/49319977.pdf



Source: Authors' research

Graph 1: Share of individual sources of information on financial services

The key criteria guiding the respondents when selecting financial services are given in Table 1. This table shows that the leading criterion guiding the respondents in 2018 were the effective interest rate (EIR) and the nominal interest rate (NIR). The respondents ranked the criteria guiding them while making decisions on the selection of financial services on a 1 to 6 scale, where rank 1 was the most important criterion, rank 2 was second most important, etc. The final ranking of these criteria was made according to the data given in the last column – rank sum. As rank 1 marks the most important criterion, according to the results of the research the criterion with the lowest value in the rank sum column is actually the most important criterion for the respondents. Following this principle, the rank sum column was used to rank other criteria the respondents used when making their decisions. According to the data given in Table 1, the respondents had the same order of the criteria in both time periods (2018 and 2020), when they made their decisions on the selection of financial services. The third in order of importance is the amount of annuity, followed by repayment term in the fourth and collateral (credit security) in the fifth place. A detailed structure of the respondents by the observed criteria is given in Table 1.

Table 1: Structure of criterion guiding the respondents when making decisions on the selection of financial services

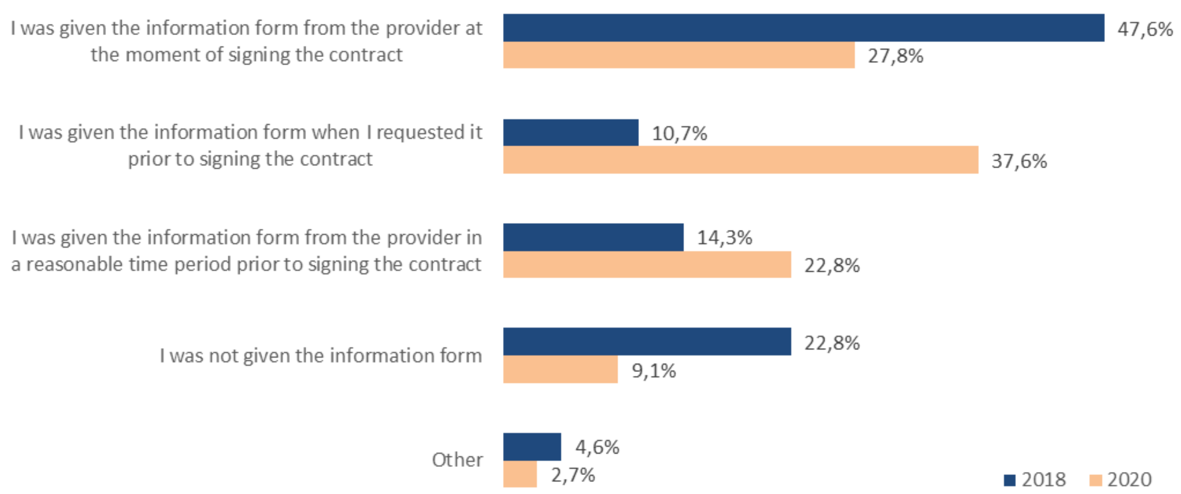
	Total	100%	100%	100%	100%	100%	100%	
Amount of annual effective interest rate (EIR)	2020	5%	43%	14%	24%	9%	4%	446
Amount and variability of nominal interest rate (NIR)		48%	14%	9%	9%	14%	6%	449
Monthly expenses (monthly costs, monthly annuity, etc.)		9%	24%	28%	19%	10%	9%	518
Time frame (credit repayment term, etc.)		9%	9%	24%	28%	19%	10%	581

Security (collateral) for using financial service (banker's draft, mortgage, co-debt, etc.)		19%	5%	9%	14%	43%	9%	602
Other		10%	5%	16%	6%	5%	62%	806
	Total	100%	100%	100%	100%	100%	100%	

Source: Authors' research

4.2 Respondents' experience regarding the availability of the standard information form and understanding the contract on using financial services

Since appropriate and timely information is rather important for making any decision, the following part of the paper brings the analysis of the extent to which the consumers of financial services are aware of the obligation of financial institutions to provide pre-contract information in the process of concluding the contract. The results of the primary research show that less than a half of the respondents (47.6% in 2018) were given the legally required standard information form at the moment of signing the contract while in 2020, the number of the respondents with such an experience was lower (27.8%). The results of the research show improved practices of financial institutions in 2020, compared to 2018, regarding the timely information to the clients on all the specific aspects of the services they provide. More than a fifth of the respondents (22.8%) in the year 2018 were not given the legally required standard information form prior to concluding the contract on financial services and the number of the respondents per this segment was reduced in 2020 to 9.1%. The detailed data on other experiences of the respondents in terms of the availability of the standard information form prior to concluding the contract on using financial services are given in Graph 2. The data show the fact that in 2020 the respondents were more in a position of having the standard information form available prior to their contract with the financial institution. This, among other things, may be the consequence of the increased cautiousness in making financial decisions in crisis (in the context of the COVID-19 pandemic) on the one hand, as well as of increased efforts of financial institutions in maintaining clients' dedication and trust on the other hand.

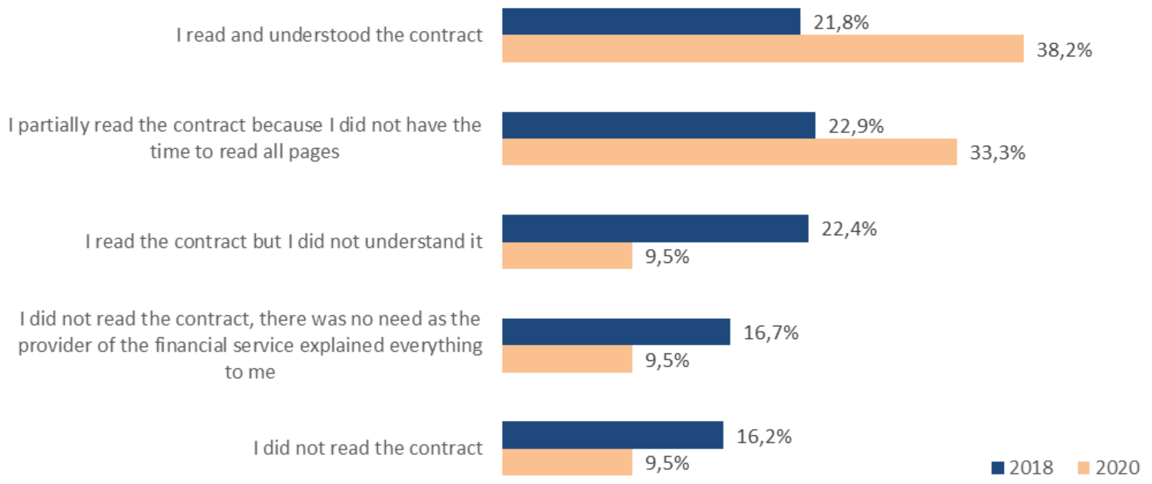


Source: Authors' research

Graph 2: Structure of respondents regarding the obtaining of the standard information form from the providers of financial services

Pre-contract information is a legally required unilateral obligation of the providers of financial services but the need for the active participation of consumers is often left out as information implies that consumers read and analyze information. The primary research was aimed at establishing to what extent consumers individually get informed on the rights and obligations they take when signing the contract and to what extent they read and understand the information specified in the contract. The structure of the respondents' behavior regarding reading and understanding the contract on using financial services is given in Graph 3. As the results show, in 2018 only one fifth of the respondents (21.8%) read and understood the provisions of the contract on using financial services while their number in 2020 increased to somewhat above 38.2%. Similar data were registered regarding the number of the respondents who partially read the contract on using financial services as they did not have the time to read the entire contract. It is illustrative to mention that in 2018, one third (32.9%) of the respondents did not at all read their contracts on using financial services. In 2020, we registered an improvement on this issue, as the number of the respondents who did not read their contracts on using financial services was 19%.

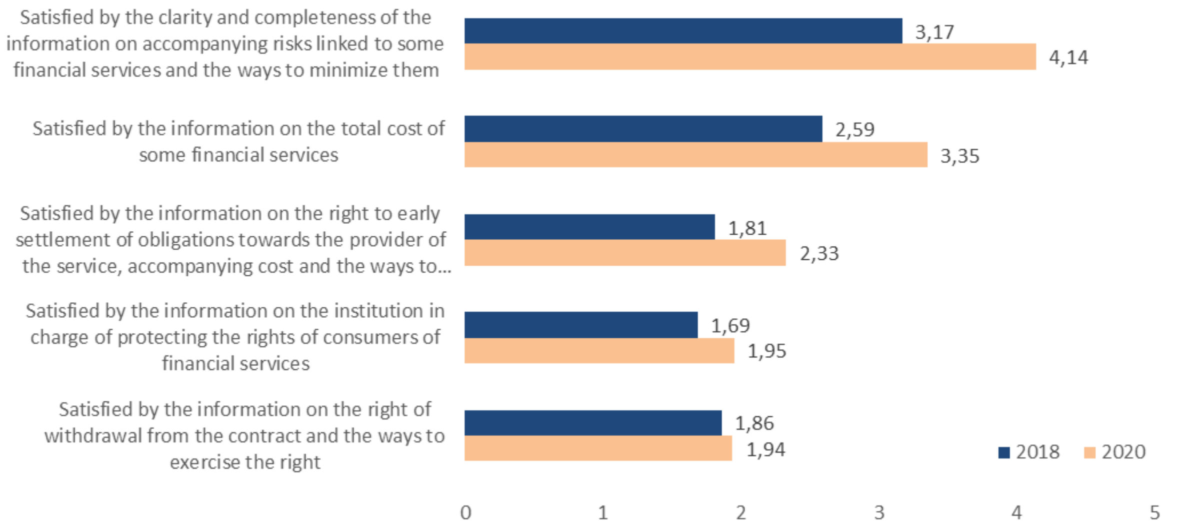
Bearing in mind the importance of decisions on financial services, this fact comes as a surprise as it is expected that a significantly higher number of the respondents pay much more attention to a detailed reading and demanding clarification of some elements so as to better understand all the aspects of the financial decisions they make.



Source: Authors' research

Graph 3: Structure of respondents regarding the understanding of the contract on using financial services

If we analyze the respondents' satisfaction by the pre-contract information they obtained from financial institutions, we may say that the average rates in 2020 are significantly higher when compared to the average values in 2018 (Graph 4). In 2018, the respondents were most satisfied by the clarity and completeness of the information on accompanying risks linked to some financial services. The average rate (on a scale from 1 – completely dissatisfied to 5-fully satisfied) given to this segment of pre-contract information was 3.17 while in 2020 it increased to 4.14. Less satisfaction of the consumers of financial services was registered for the information on the total cost of some financial services, with the average rate of 2.59 in 2018 and 3.35 in 2020. in 2018, the respondents were least satisfied by the information on the institutions in charge of protecting the rights of financial services consumers (the average rate 1.69) and in 2020, apart from this segments, the respondents were dissatisfied by the information on the right of withdrawal from the contract and the ways to exercise that right.



Source: Authors' research

Graph 4: Average assessment of respondents' satisfaction by pre-contract information they obtained from financial institutions

4.3 Analysis of correlation between the availability of the standard information form and the respondents' satisfaction by the decisions on using financial services

Discriminant analysis was used to determine if there is a difference in the respondents' satisfaction by the decisions on using financial services between the respondents who were given the standard information form required by the law and those who were not informed in that way on the financial services that they decided to use. The availability of the standard information form was the independent variable for the respondents (the modalities were: a) the respondent received the information form from the financial institution at the moment of signing the contract, b) the respondent received the information form from the financial institution in a reasonable time period prior to signing the contract, c) the respondent received the information form from the financial institution upon his/her request prior to signing the contract, d) the respondent did not receive the information form, and d) other situations on behalf of the respondents related to the availability of the standard information form). The respondents rated their satisfaction by the financial services on a 1 to 5 scale and their satisfaction is the dependent variable. Table 3 shows the values of *Wilks' Lambda* (for both observed period) to test the hypotheses on statistical significance of the model of discriminant analysis. The obtained results point to the fact that the models of discriminant analysis for both observed years are statistically significant as the Sig. indicators are 0.003 for 2018 and 0.009 for 2020 (less than 0.05).

Table 3: Values of Wilks' Lambda

year	Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
2018	1	.948	15.988	4	.003
2020	1	.520	11.458	3	.009

Source: Authors' research

Table 4 brings the values of canonical correlations used for the measurement of the correlation between the discriminant function and the category variable. Canonical correlation was 0.227 for 2018 and 0.693 for 2020. Particular attention was made to the value of square canonical correlation whose value for 2018 was 0.0515 (=0.227^2) while for 2020 it was significantly higher with the value of 0.4802 (=0.693^2). According to the data, 5.15% of the variance of the dependent variable is explained by the discriminant model for the year 2018, while 48.02% of the variance of the dependent variable is explained by the discriminant model for the year 2020. It can be assumed that a significant increase in the observed values in 2020 is, among other things, the result of specific circumstances under which the consumers conclude their contract on using financial services, which come as the consequence of the COVID-19 pandemic. It is expected that in new, rather difficult conditions of earning and living in general, consumers pay much more attention to obtaining useful information while concluding contracts on using financial services. However, this assumption should be tested in a new study.

Table 4: Values of canonical correlation

Year	Function	Eigenvalue	% of Variance		Cumulative %	Canonical Correlation
2018	1	.055[a]	100.0		100.0	.227
2020	1	.925[a]	100.0		100.0	.693
a. First 1 canonical discriminant functions were used in the analysis.						

Source: Authors' research

The results of the classification (Table 5) show moderate ability of the discriminant model to predict group membership of the consumers of financial services and their satisfaction based on the availability of the standard information form while signing the contract with the financial institution. According to the data for 2020, this ability of the discriminant model was somewhat higher (47.6%) compared to 2018, where the so called *hit ratio* was 31.8%.

Table 5: Classification results

	2018	2020
% of original grouped cases correctly classified:	31.8	47.6
a. First 1 canonical discriminant functions were used in the analysis.		

Source: Authors' research

The outbreak of the COVID-19 pandemic affected the changes of numerous habits of consumers, including their understanding of the importance of proper information when deciding on the usage of financial services. Consumers are now much more cautious when they select financial services and are more prone to opt for those financial institutions that provide comprehensive and more understandable information during negotiation and conclusion of the contract.

V. CONCLUSION

Summary of the findings – The research results point to the importance of financial institutions providing comprehensive information to consumers while they negotiate and conclude the contract on using financial services. Discriminant analysis indicates that variations (changes) in the respondents' satisfaction by their decisions regarding the selection of financial services are, among other things, the consequence of the availability of information that the respondents should be given by financial institutions. This is particularly evident in the analysis of the data for

2020 where 48.02% of the variations in the respondents' satisfaction by their decisions on the selection of financial services is explained by the availability of standard information prior to concluding the contract on using financial services.

Bearing in mind the research goals, we bring the summary of the key research results. According to them, the major source of information for the consumers of financial services are: 1) brochures/leaflets published by financial institutions, 2) recommendations given by friends and family, and 3) websites of financial institutions. The criteria that guide the respondents (users of financial services) when they make decisions on using financial services are ranked by importance as follows: 1) amount of annual effective interest rate, 2) amount of nominal interest rate, 3) monthly expenses (monthly costs, monthly annuity, etc.), 4) time frame (credit repayment term, etc.), and 5) security (collateral) for using financial service

As the research results show, in 2020 9.1% of the respondents did not actually receive the standard information form, 27.8% of them received this form at the moment of signing the contract, 37.6% of the respondents received the form prior to concluding the contract but upon their request, and 22.8% of the respondents obtained the standard information form from financial institution in a reasonable time period prior to concluding the contract. The data indicate that in somewhat over one fifth of the cases (22.8% of the respondents), the financial institutions strictly implemented their legal obligations to timely deliver the standard information form to potential consumers, which is a rather worrying practice from the perspective of the implementation of legal regulations

The results of the research for the year 2020 show that somewhat over one third of the respondents (38.2%) fully read and understood the contract on using financial service. All the other respondents either read the contract partially or did not read it at all. This points to the need of wider education of the consumers of financial services on the importance of responsible behavior while signing the contract on financial services. This is particularly important as bad decisions in the field of financial services may have negative effects on sociodemographic elements of the society. Special responsibility in this process is placed on financial institutions as it is their long-term interest to have reliable and financially competent clients.

Discriminant analysis shows that there is a significant correlation between the availability of the standard information form and the respondents' satisfaction by their decisions on using financial services. The value of square canonical correlation for 2018 was 0.0515 while for 2020 it was significantly higher with the value of 0.4802. This means that 5.15% of the variance of the dependent variable is explained by the discriminant model for the year 2018, while 48.02% of the variance of the dependent variable is explained by the discriminant model for the year 2020. In addition, the results of the classification show moderate ability of the discriminant model to predict group membership of the consumers of financial services and their satisfaction based on the availability of the standard information form while signing the contract with the financial institution. According to the research results for 2018, the so called *hit ratio* was 31.8%, while for 2020 it was 47.6%.

Managerial implications – The results of this research are primarily valuable for the management of financial institutions as it is important for them to understand the specificities of behavior of consumers of financial services in the negotiating process. The value of the research results for the management of financial institutions is primarily evident in the following: 1) sources of information most often used by consumers of financial services, 2) criteria they use when deciding on the selection of financial services, 3) necessity of comprehensive and timely information for potential consumers of financial services in the negotiating process, as the results of discriminant analysis show a significant correlation between this element and the satisfaction of the consumers of financial services, which is the main assumption of long-term relationship between financial institution and consumers. Furthermore, the research results may help the regulatory bodies in Bosnia and Herzegovina in terms of taking actions to increase the level of fulfilling the legal obligations of financial institutions related to the protection of rights of financial services consumers.

Research limitations and recommendation for further research – The research limitation is primarily related to the need to link certain aspects of experiences of the consumers of financial services to certain financial institutions, so as to identify the financial institutions that least respect the rights of financial services consumers in terms of timely and comprehensive information. This research was limited to defining the changes of the observed features among the consumers of financial services between the two time periods in which the data were collected (2018 and 2020), but it did not address the causes of such changes. This can be the recommendation for future research. In addition, one of the recommendations for future research is the identification of the effect of the COVID-19 pandemic on the changes in the behavior of consumers of financial services in the process of negotiating and concluding contracts with financial institutions.

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An Analysis of the Relationship between the Internet and Export: Evidence from Madagascar's Manufacturing Firm

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ABSTRACT

The Internet has radically changed the business world and become increasingly central to our economic life. As the opportunities created by the Internet are growing rapidly, new trading companies sprung up overnight at a similar pace. For the case of manufacturing firms in developing countries however, the awareness campaign of the advantages of the Internet usage is still undervalued. As for Madagascar, the country has been saddled with timid access to internet, added with the high cost of the Internet, which seem to occlude firms from reaping the benefits.

Keywords: internet, export, manufacturing firm, madagascar, technology, trade.

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ABSTRACT

The Internet has radically changed the business world and become increasingly central to our economic life. As the opportunities created by the Internet are growing rapidly, new trading companies sprung up overnight at a similar pace. For the case of manufacturing firms in developing countries however, the awareness campaign of the advantages of the Internet usage is still undervalued. As for Madagascar, the country has been saddled with timid access to internet, added with the high cost of the Internet, which seem to occlude firms from reaping the benefits.

This study empirically analyzes the relationship between the Internet and manufacturing firm's exports, using data from the World Bank. Deploying an OLS model to examine the connection, the result has shown a positive and significant relationship between the access to the Internet and manufacturing firm's export in Madagascar. Besides, the results are robust, it is more pronounced when firms export to developed countries than developing countries.

Keywords: internet, export, manufacturing firm, madagascar, technology, trade.

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I. INTRODUCTION

Besides labor skills, logistic issues and development of an internationally competitive product quality, the challenges faced by companies are linked to the knowledge and clear understanding of the market. To meet these challenges and sustain the export performance, manufacturing companies can adopt an innovative scheme of competitive intelligence. Information and Communication Technology (ITC) can serve as an engine to gather necessary information on the market. According to N. Tamilselvan et al. (2012), Samara et al. (2014) ICTs is defined as information that has its impact in development. It offers plenty of options that companies can take advantage of and grab new opportunities.

However, though the hectic revolution of the Internet has been subject to the academic research extensively carried out with the fact that today's technology is more complex than when it first started in the 60s, the study on the influence that the Internet has on international trade is yet underrated. Precisely, research works have been more focused on the impact of the Internet on other variables such as the unemployment rate, company's productivity and salary than anything else (Bertschek et al. (2016). This study will then emphasize on the impact of the Internet on international trade, precisely on manufacturing firm's exportation.

Being the most revolutionized of our days, the Internet holds a very important place as one of the most successful examples of the benefits sustained in research and development of IT

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infrastructure both in investment and commitment. Thanks to the Internet, both individuals and firms can benefit from this fascinating technology, (Caroline F. and Diana W., 2004). According to the survey conducted by Therese Wood (2020), companies have significantly increased their resource allocated to online activities including search optimization and social network, around $299 billion allocation in 2019 against $156 billion in 2015 (Therese Wood, 2020). Seeing the benefits from the use of the Internet, developing countries have started to allocate resources to reinforce their export activities. However, there is still a gap between the relative importance of the different media and the spending. Prior studies suggest that the technological infrastructure and internet capabilities of the firm significantly have some impact on export revenues, as seen in the Greek SMEs, (Yannis A. and Albertos C., 2009). Thus, the main question is:

- *Does Madagascar access to the Internet positively relate with the firm's export?*
- *Is the relationship between access to the Internet in Madagascar and manufacturing firm's exports more pronounced in developed countries than developing countries?*

For our observation, there has not been any empirical investigation that dealt with the impact of the Internet on export, using manufacturing firm's data for Madagascar or any African country. The motivation hidden behind this investigation is to provide empirical evidence of how the Internet has impacted the export rate of the manufacturing firms in Madagascar. In the present research is hoped to promote the use of the Internet at the manufacturing firm level, not limited to Madagascar but also to other developing countries that represent the same challenges.

II. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Previous literature has shown different aspects on the impact of the Internet on international trade. Many researchers believe that the Internet stimulates international trade (Behzad S. et al (2013), Alberto O., Shawn W. (2016)) by at least 0.2% increase in export per 10% increase in internet access (Caroline F., Diana W. (2004)). Crifo (2001) however, mentioned that the Internet, which constitutes a third industrial revolution, is the cause of persistent inequalities in most industrialized countries.

In a nutshell, the Internet is arguably the most powerful tool available today, and how it touches every most area can be proven. The Internet partakes in reducing the expense for manufacturing firms in terms of marketing and communication across borders (Caroline F. and Diana W., 2004). Proven necessity of the Internet is the pandemic situation in 2020, firms were forced to adopt new strategies in response to the situation to adequately address the unpredictable. The Internet affects the operational effectiveness and strategic positioning in a very different way (Michael E., 2001). Some emphasize on the role of the Internet in business strategy and its impact on the business profit (Soegoto and Rushaminidiwinata (2018) while some on the marketing capabilities, which has an impact on the international market performance (Liu et al., 2020). Either way, both results show a significant relationship.

Previous studies, however, did not show that the access to Internet will solve all manufacturing firm's problems but at least it would help them face such challenges as time management, cost reduction (Soegoto and Rushamidiwinata, 2018). Some problems like mastering your targeted market, knowing the distinctive product that fulfill the demand of customers and steps ahead from the competitors with the local and overseas production, are within reach, as stated by Van Z. and Muysken (2005), Sassi and Goaied (2013), Sayef B. and Sofien T. (2019). Some researchers like Salahuddin and Gow (2016) supported the claim on the significant, positive impact of the Internet on economic growth. Undeniably, the Internet has its place in economic growth.

Moreover, Najarzadeh R. et al. (2014) added that, apart from the influence on GDP, the Internet also has a significant, positive impact on labor productivity. In their study, which covered 28

OECD countries, Edward W. and Rajeev K. (2020) even found the result statistically low; however, the internet usage across the models were found to be positive. Kiel et al. (2017) mentioned that internet-triggered business model changes are offer-driven, particularly by production and process optimization within customers' production systems. Besides, Internet-marketing is a nonstop trending term that is evolving its scope every day, with a dethroned place in trade. Internet marketing has the capabilities to positively influence the availability of export information and then it influences the business network relationship and export market growth, as remarked by Bianchi and Mathews (2016) and Liu et al. (2020). For all these facts, Gholam A. et al. (2015), Gholam K. (2018) assumed that it would be necessary to acknowledge the fact that companies must take advantage of the Internet, to improve cost productivity, position the product or strengthen it and generate greater benefits for shareholders.

Additionally, the Internet breaks the odds of geographic (distance) (Caroline L. and Diana W., 2000), thus bridges the gap between manufacturing firms and consumers. While there is a large number of studies on the potential use of internet and firms, little has integrated their research on the relationship between the Internet and exporting, some raised the issues of relationship between the Internet and international trade (James E. (2001), Baliamoune (2002), Clarke and Wallsteen (2007), Nuray T. (2001), Behzad S. et al (2013)). Among the few that center their research on the role of the Internet on export are Bennett (1997) and Hamill and Gregory (1997), who focus more on the use of the Internet and the challenges that firms need to overcome. Yannis H. et al. (2009), on the other hand, showed that the technological infrastructure and internet capabilities of firms have significant positive impact on export revenues. This supported the hypothesis that the Internet allows manufacturing firms to follow up with the products and services in demand to gain dominance over a niche, thus brings up their export revenues. Since the Internet has the capability to connect people, it has created the possibility for exporter firms to extend their market using virtual export channels (VEC), supported Anna M. and Susan B. (2004).

According to Clarke and Wallsten (2007), there is a positive relationship between the access on the Internet and the export level of a country. The correlation is more accentuated from developing to developed countries. Some studies related to the impact of the Internet at the firm level still has not found (relevant) direct conclusion, rather, Akerman et al. (2018) has found that the information communication technology (ICT), on the other hand, increases the sensitivity of importing and exporting distance and the country's economic size. Caroline L. and Diana W., (2000), on the other hand, assume that internet use has more influence on trade for the least developed countries than the developing ones.

III. HYPOTHESIS

What is interesting about the Internet and its underlying technology is that it keeps changing over time. The change started to overtake in mid Gen Z where smartphones and tablets were more cherished than newspapers, and employees were merging phone and computer. According to the Global Digital report in 2019, internet users all over the globe were growing at a rate of more than 11 new users per second. The same reports added that in 2016, the number of internet users around the world were estimated to be around 3.3 billion up from 100 million users in late 1990s. The number continued to increase, as it registered 4.39 billion in 2019, in which 3.48 billion were using the Internet to have access to social media, that was an increase of 9% compared to the previous year. In the same year, the internet as a percentage of total world's population represented 57%, with 52% which were mobile internet users. However, according to the Global report in 2019, social media use was still far from evenly distributed across the globe, African only represented 38%.

Table 1 summarizes Madagascar internet user's performance compared to other African countries. Lagging behind with timid performance, yet companies started to weigh the benefits out of the use of the Internet. As for the case of Madagascar, the internet use for firms is growing at slower pace, with modest performance. According to the CIA World Factbook, Madagascar counted 1.066 million internet users in 2016, which represented 4.3% of internet penetration compared to the number of Madagascar population, and represented 0% of the world's internet users. Drawing back to 2006, the internet penetration represented only 0.6% of the total population with only 114.379 internet users. The communication company has tried to offer customers the best offer for them to have access at least on social media like Facebook, in which most of the people made use of the Internet and started business. This has increased the share of the internet users to 10% in 2018 against 0.4% in 2003, an increase of more than 30%, (Figure 1).

The explanations given above concerning the relevance of the internet usage in this technological era posit that the use of the Internet has been helpful to various nations and different sectors of economies. Yet, there is no empirical evidence shown on how the Internet has impacted firms exports in Madagascar. Madagascar, being a developing country, is, however, saddled with a lot of limitations on internet usage. These may include inadequate telecommunications infrastructure, whether in terms of availability or in terms of communication quality due to the obsolescence or saturation of existing networks. Yet, we cannot downplay the impact of the level of internet the country has currently on firm's export and performance. A critical examination of the impact of internet usage by firms in Madagascar on the organizations' export will enable the various stakeholders in the country to put forth measures to improve the internet connectivity in firms.

According to Fink et al. (2005), the usage of internet platforms reduces the communication costs between the exporting and importing countries. Similarly, Gnangnon and Iyer (2018), posited that the use of internet reduces the ill effects of geographical inaccessibility on countries' incorporation into the world trade in commercial services. Ibrahim et al. (2019), Gani and Clemes (2013) also established in their respective studies that internet has a significant positive impact on export. They expounded that progresses in digital information technology considerably impact export as it allows quickening in the creation of new markets, networks, and trade dealings among fresh trading partners. Thus, current telecommunication level and quality as well as internet connectivity has helped to build the reputation of various firms especially through advertisement on the firms' websites which has boosted their export. Against these backdrops, it can therefore be postulated that access to internet has a positive impact on Madagascar's exports. This leads to the first hypothesis which is:

H1: There is a positive relationship between access to the Internet and firm's exports in Madagascar.

Secondly, the level of exports to both developed and developing countries is also affected by the level of the internet usage taking place in these countries. It is, therefore, imperative to further analyze the extent to which the use of the Internet impacts firms' export to both developing and developed countries. The level of communication, access to inputs and retail distributors in overseas markets is determined by the level of information and communication technology tools used in those foreign nations. Based on this, firms can align their communications and exports towards nations with accessible internet connectivity and higher export opportunities in order to maximize their revenue. As such, the penetration into the markets of emerging and developed countries requires analysis of how these countries import or patronize goods from Madagascar. Intuitively, nations with better information and communication technologies, present Madagascar with enhanced communication between firms as well as other exporting opportunities. Thus, it is expected that firms will export more to countries with advanced technology and internet connectivity than countries without such technological advancement. We, therefore, hypothesize that:

H2: The positive relationship between access to internet and firm's exports is more pronounced in developed countries than developing countries.

IV. METHODOLOGY AND DATA COLLECTION

This study employs a quantitative research approach to arrive at its main objective, which is to analyze the impact of the Internet on export of enterprises in Madagascar. In doing so, secondary data will be used, given the fact that they are already assembled and more accurate with less biased sources. Due to the lack of accessibility and availability of information, however, we could only use the data from 2009. To test the hypothesis specified in the study, all data were obtained and calculated based on the World Bank Enterprise survey's data.

The study adopted the purposive sampling technique which permits the researcher to elect specific subjects from the population that will come up with the most extensive information about the phenomenon being studied. Accordingly, enterprises located in an export processing zone were excluded from the target population purposely to control the reverse causality from export to the Internet, which will cause endogeneity problems in the model to be estimated. Hence, clouding the test of the hypotheses of the study. Based on the above premise, 440 enterprises were selected as the main study samples out of the 477-target population or total enterprises enshrined in the enterprise survey data on Madagascar for the period of 2009.

V. EMPIRICAL MODEL AND STRATEGY

We deploy an ordinary least square (OLS) model to examine the correlation between the internet usage and exports of enterprises in Madagascar using firm level data from the world bank enterprise survey. This reason being that the possible reverse causation endogeneity that could have risen in the model is eliminated upon excluding the firms established in the export zones. Therefore, the empirical framework (OLS) is constructed based on the determinants of exports identified from the related literature reviewed (Kimura & Lee, 2006; Nyahoho, 2010; Van der Marel, et al. (2014); Anand et al. 2012).

$$Expor_i = f\left(INT_i, X_i\right)\text{.................} \quad (1)$$

Where $Expor_i$ is total exports of the firm i in the said period of time (2009). INT_i, is the use of any internet platform or media by firm i. X_{it} represents the vector of number of control variables of firm i.

In addition, several control variables are included to control the firm characteristics that have the potential of influencing both export and the use of the Internet by firms in Madagascar. These variables are the firm age, firm size, firm ownership, access to finance, and production capacity. Thus, the model is specified as follows:

$$Expor_i = \alpha_0 + \beta_1 INT_i + \beta_2 FA_i + \beta_3 FS_i + \beta_4 FO_i + \beta_5 AF_i + \beta_6 PC_i + e_i\text{...............} \quad (2)$$

$Expor_i$ represents the total exports of the firm i in the said period of time. INT_i, the use of any internet platform or media by firm i, FA_i represents the firm's age, FS_i is the firm size, FO_i firm ownership. AF_i represents the firm's access to finance. PC_i is the firms' production capacity.

As an empirical strategy, a two stage least square model will be estimated purposely to test the complete removal of the endogeneity in the model although the OLS is expected to give a robust correlation between Internet use and export even to the inclusion of the additional variables that might affect both Internet use and export. Export will be the explained variable while the Internet will be the main independent variable, the rest of the variables can be seen in Table 2.

The study expounds that if the Internet has made it easier for businesses to enter new markets by reducing communication and search costs, then it may also have made it easier to export goods and services. Thus, internet usage by firms is projected to positively influence firm's exports. Furthermore, internet usage by firms in Madagascar is anticipated to have greater impact on firm export to developed countries than to developing countries. The reason for this is that the benefits of Internet access upsurge as the firm's customers and suppliers connect (i.e., there are network externalities).

Using 440 observations, the summary statistics is first described (Table 3), by using mean, standard deviation, minimum and maximum values. The total number of the variables employed in the model are seven with Export as the dependent variable, INT for the main independent variable and the rest of the variables as a control measure.

The variable FO (foreign ownership) is average at 0.3877 percent with a maximum of 1 (see Table 3) which implies enterprises with foreigners with the highest share of ownership and zero otherwise. Thus, barely 4 percent of the enterprises under the study are owned by private foreigners. Equally, the variable FA or the enterprises in the study have an average age of 20.903% with a minimum age of 5years and maximum of 132 years. This suggests that the firms understudy are fairly aged and have the experience to widen or broaden their market share. In addition, the firm size (FS) measured by the number of permanent full-time employees is averaged at 78.550% with a minimum of 3 and a maximum of 1841. This suggests that the firms in the study are relatively big considering the average number of full-time employees hired by the enterprises.

Production capacity (PC) has an average value of 50.566 percent with a minimum value of 11 and a maximum value of 1781 (Table 3). Production capacity as measured by the number of permanent, full-time production workers suggest that the enterprises understudy possess a relatively huge capacity to produce more product of all things being equal. Moreover, the variable access to finance (AF) is average at 2.1373 percent with a minimum value of zero and maximum value of 4. This outcome suggests that on the average, the enterprises under the study face fairly moderate challenges or hurdles in accessing finance or credit. Firm competition is averaged at 0.6683 with a minimum of zero and maximum of one.

Lastly, export of enterprises to advanced or developed countries (ADEX) is average at 0.1156 percent with a minimum of zero, meaning no export to advanced nations was taking place and a maximum of 100 percent of annual export revenue was generated by developed nations (Table 3). Similarly, the enterprises under consideration averagely reported 0.0344 percent of annual export revenue to neighboring countries (EMEX) with a minimum of zero percent and maximum of 100 percent export revenue to developing countries (Table 3). Juxtaposing the export by the enterprises to the two different classification of nations reveals that on the average, enterprises in the study export more to the advance nations than the emerging nations.

VI. ANALYSIS

For over, at least, the past 20 years, the internet has taken over not only our society, but our economy. This leads to the fact that the Internet is considered as the most visible aspect of globalization. Thanks to the Internet, companies can now easily reach out to cross-border customers and have access to data in the remote areas.

The variables here-in given, referring to Table 4, were specifically subjected to multicollinearity tests using the Pairwise Correlation Matrix. As seen from table 4, the correlation between the independent variables is not that strong, except for the correlation of the dependent variable and the independent variables together. In general, a correlation coefficient of 0.7 particularly among the explanatory variables are deemed to be high and suggestive of the fact that the presence of multicollinearity exists among the variables. However, the results from the correlation test showed that all the other variables recorded low correlation coefficients among themselves since none of the correlation exceeds the 0.7 threshold. As a thumb rule, very serious multicollinearity exists if the correlation among two or more explanatory variables is greater than 0.8 (Hair et al. 2010). Hence, the multicollinearity is deemed absent among the regressors or better still minimal among the explanatory variables in the study.

6.1 Regression test

We performed further tests to find out how the correlation between exports and Internet use differs among the developing and developed countries, and explored to see whether or not it was robust for controlling the other firm characteristics variables. Therefore, a preliminary test was undertaken to test whether the Internet was endogenously determined or not. Using the Wu-Hausman endogeneity test, it was established that the Internet was not an endogenous variable though our instrument variable was rightly specified.

The OLS model was estimated over the two stage least square model using firm level data from the enterprise survey data. As part of ensuring the robustness of the model, the robust standard error was estimated purposely to cater for possible heteroskedasticity and serial correlation in the residuals. The results of the estimation are presented in table 5.

From the results, it is evident that a statistically positive significant relationship exists between the Internet and export at five percent level of significance. Thus, a percentage increase in the usage of the Internet by the firms under review results in 0.0580 percent increase in export of the firms.

For the rest of the variables, almost all the control variables for the firm heterogeneity characteristics are significant at either 1 percent or 5 percent level of significance with the exception of Access to Finance (AF) and Firm Competition (FC), which are barely insignificant. Also, Firm Size (FS) as a control variable is found to be positive and empirically significant at 95 percent confidence interval across the three estimated models.

In contrast, a negative but insignificant relationship was found between the control variable Access to Finance and export of firms. This outcome implies that an increase in the barriers to credit or finance will result in a decrease in firm export. However, this outcome was found to be fairly insignificant in the study as evident in the results given above. The possible reason for the insignificance of the variable could be as a result of the few number of firms, which face major challenges in accessing external credit. The study findings in the models 1, 2 and 3 further revealed that more than 85 percent variation in export is explained by the explanatory variables as exposed by the R-square in table 5. Hence, the results from the models are more reliable since the model is also free from auto correlation and heteroskedasticity.

6.2 Robustness Test

For robustness check, an alternate proxy for internet usage was utilized. As such, a continuous variable was estimated by adding up the number of internet media platforms (for example website and email) deployed by the various enterprises for their online engagement. The results from the robustness test are in consonance with the baseline model results. Therefore, the results are not substantially or statistically different from the main results. In short, the outcome of the study is robust even to the estimation of alternate proxy for internet usage, as can be described in the table 6.

It is expected that as the number of internet platforms used by the enterprise increase, there should be a corresponding increase in the impact of the Internet on firms' exports. The results from the robustness test are exactly in line with this study expectation and most importantly consistent with the baseline model results. Column model 1 in table 6 shows the result of the effect of the internet usage by firms on aggregate export as percentage of total sales. From the results, it is evident that there is still a statistically positive significant relationship between the internet and export. Thus, a percentage increase in the usage of internet by the firms under review results in 0.0901 percent increase in exports of the firms. However, comparable to the baseline model results, the robustness test result of the internet usage has bigger coefficient. This mirrors exactly the expectation that, as the number of internet platforms increases, the impact of the Internet on export increases further accordingly. By implication, the increase in the internet media platforms give the firms greater access to the universe or global market; this pushes the existing impact on export higher.

In addition, the results from model 2 and 3 still show a significant positive relationship between the firms' internet usage and export with greater impact of the Internet on export to advanced economies.

Accordingly, a unit increase in internet usage results in 0.0305 percent and 0.0863 percent increase in exports to developing and developed countries respectively. This outcome is plausible because Internet access is more common among enterprises in developed countries than developing nations and, as such, an increase in the internet platform engagement by firms in developing countries like Madagascar will provide them with greater access to interact with the global market. This outcome is parallel to the outcome received from the study baseline results.

Furthermore, the results of the control variables in the robustness test also remain empirically significant across the 3 models estimated, and most importantly they maintain the same direction of effect on export. Hence, the baseline results show that the connection between Internet use and exports is robust even to the inclusion of additional variables, which might affect both Internet use and export.

VII. INTERPRETATION AND CONCLUSIONS

For a decade now, internet has allowed countries to transform the way they trade by cutting cost of exporting. Though Madagascar is saddled with timid internet usage, we cannot downplay the impact the internet has currently on the firm's export and performance. Moreover, the result is relevant for firms to know the extent to which their internet usage is impacting their export to different economies in order to help concentrate on the area that needs improvement.

The findings showed a positive and significant relationship between the access to internet and firms' export, which supported our Hypothesis 1. It can be interpreted that the Internet offers a greater platform to access the universe by creating a global market for traded goods through the sharing of information globally. As such, the use of internet by the firm reduces the fixed costs of finding markets and buyers, hence the export boost. These results are consistent with the study's main hypothesis and the findings of Freund and Weinhold (2004), who argued that the Internet could lessen costs "both directly through organized exchanges with numerous buyers and sellers and indirectly through powerful search engines, which enable sellers to inform buyers of prices promptly. The low percentage can be interpreted as fear of challenges and lack of knowledge. Apart from the price, which is close to out-of-reach, firms also have less knowledge about the features of the Internet. That being the case, they cannot see far, but the situation in the country; they have forgotten that they can expand their business outside the country and put their product outside. The lack of quality content also added to the disinterest. Also, most business owners might not be technology savvy because the idea of creating content for their companies is sophisticated and time consuming for them.

The variables, access to finance and firm competition's outcome connote that, as firms increase in age, they acquire more experience, which help them to widen or broaden their market share. Hence, experienced firms have deeper understanding and knowledge about foreign markets. Likewise, firm competition was found to be positive on export though barely significant. By implication, when firms face high competition in their area of establishment, they are forced to seek markets outside their current territory in order to survive. Equally, an empirically positive association was found between export and firm ownership, which is a binary variable with 1 for foreign ownership and 0 for private domestic ownership, or otherwise. Per obtained result, moving from a domestic, private ownership of the firm to a foreign ownership leads to an increment function in export. Possible interpretation of the outcome is that most often than not foreign owners already have some existing market network outside the walls of Madagascar, and thus are well-able to link up countries and market the products across borders.

Larger firms have greater resources and capabilities, which enable them to compete more efficiently and effectively in foreign markets than smaller firms. This outcome is in line with the finding of Nadkarni and Perez (2007), who argued that smaller firms, especially in their early phase of internationalization, suffer from lack of experience operating in the foreign market. In addition, production capacity as a control was also found statistically positive and significant at 1 and 5 percent level of significance. Thus, a unit increase in the production capacity of the firms is more likely to result in an upward movement in the exports of the firms. As firms utilize more of their capacity, they can reduce the overall cost of their operations by spreading their overhead costs across more output. With the reduction of the cost of exporting, they can feed their new markets with their additional plant or human capital capacity.

Further analysis accepted our hypothesis 2, which assumed that the impact of the Internet on exports is more pronounced when firms export to developed countries than developing countries. From the results, a unit increase in internet usage by the firms lead to 0.0498 percent increase in export to advanced countries. Juxtaposing the impact of the internet usage on export to the two distinct countries reveals that the effect of internet usage of firms has a relatively greater influence on the export to advanced countries than developing countries.

The use of the Internet as explained earlier helps to ease communication both within and across borders. The availability of data and information about individuals and firms across the globe, enables organizations to reach out to other stakeholders for business transactions. In this way, firms in Madagascar are able to have direct access to individuals and companies for exports without having to establish a presence in foreign countries. We assume that the government has its own responsibility to raise the public's awareness of the importance of the Internet for firms and find a better strategy to minimize the access cost for firms. In fact, since the open up strategy adopted by the Madagascar government, the island has been actively promoting its exports, but not to its potential. As a matter of fact, the country has full potential to compete with the outside world, yet the lack of technology has made this competition hard, if not impossible to cope with. At least, with the help from the government, the agriculture sector along with service sectors can take advantage of the use of internet.

To sum up, these results are limited in their scope and practicality to help Madagascar companies, but with the lessons drawn from the present research, other countries having the same situation as Madagascar can learn from the findings. We can assume that firms can invest in their internet usage in order to increase exports which, in return, has the ability to increase the firm's benefits. Moreover, the internet connection in Madagascar has potential for progress, the government then should find a solution on making the data available for researchers to further their study. Nonetheless, researches are in favor of the company thus to the development of the country.

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Table 1: Internet user statistics for African countries

African countries	Population (2020 Est.)	Internet user		Penetration (% of Population)	Internet growth % of 2000-2019
		2000	2019		
Benin	12,123,200	15,000	3,801,758	31.4%	25%
DRC	89,561,403	500	7,475,917	8%	1,500%
Eritrea	3,546,421	5,000	293,343	8%	5,766%
Ethiopia	114,963,588	10,000	20,507,255	17%	204,972%
Ghana	31,072,940	30,000	11,737,818	37%	39,026%
Kenya	53,771,296	200,000	46,870,422	87%	23,335%
Madagascar	27,691,018	30,000	2,643,025	9.5%	8,710%
Mali	20,250,833	18,800	12,480,176	61%	66,284%
Mauritius	1,271,768	87,00	852,000	67%	879%
Rwanda	12,952,218	5,000	5,981,638	46%	119,5%
Senegal	16,743,927	40,000	9,749,527	58%	24,274%
South Africa	59,308,690	2,400,000	32,615,165	55%	1,259%
Zimbabwe	14,862,924	50,000	8,400,000	56%	16,700%

Source: Author's creation based on Internet World Stats, usage and population statistics, 2020

Table 2: Variable description and measurement

Variable	Notation	Measurement	Source
Export	Expor	Summation of firms indirect and direct exports	WBES
Internet	INT	Dummy: 1 if firms use any internet platform for operations and 0 otherwise.	WBES
Firm age	FA	Survey year - official registration year of firms.	WBES
Firm size	FS	Aggregate number of firms' employees.	WBES
Firm ownership	FO	Dummy: 1 if firm is owned by a foreigner and 0 if otherwise.	WBES
Access to finance	AF	Number of obstacles faced by firms in access to finance.	WBES
Production capacity	PC	Total number of production employees.	WBES
Firm Competition	FC	Dummy: 1 if firms have competitors in the local country and 0 otherwise	WBES

Table 3: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Expor	440	0.1588	0.347	0	100
INT	440	0.7685	0.422	0	1
FO	440	0.3877	0.487	0	1
FA	440	20.903	20.34	5	132

FS	440	78.550	180.53	3	1841
PC	440	50.566	163.501	11	1781
AF	440	2.1373	1.4771	0	4
FC	440	0.6683	0.331	0	1
ADEX	440	0.1156	0.3130	0	100
EMEX	440	0.0344	0.1691	0	100

Table 4 : Correlation Matrix

	Expor	INT	FO	FA	FS	PC	AF	FC
Expor	1							
INT	0.184***	1						
FO	0.217***	0.218***	1					
FA	0.132**	0.0172	-0.0131	1				
FS	0.392***	0.192***	0.226***	-0.0147	1			
PC	0.399***	0.129**	0.201***	-0.0732	0.434***	1		
AF	-0.0475**	0.0538	0.124**	0.00535	0.0510	0.0503	1	
FC	0.008*	0.132	0.142	0.00122*	0.0416	0.0115	0.0401*	1

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5: The effect of Internet usage on Export

	(1)	(2)	(3)
VARIABLES	Expor	EMEX	ADEX
INT	0.0580**	0.0283**	0.0498**
	(0.021)	(0.012)	(0.020)
FA	0.0019***	0.0001**	0.0012***
	(0.046)	(0.039)	(0.043)
FO	0.0908***	0.0125**	0.0689**
	(0.034)	(0.020)	(0.031)
FS	0.0020**	0.0019**	0.0017**
	(0.021)	(0.023)	(0.021)
AF	-0.0204*	-0.0012*	-0.0156*
	(0.011)	(0.005)	(0.010)
PC	0.0005***	0.0002**	0.0008***
	(0.033)	(0.023)	(0.024)

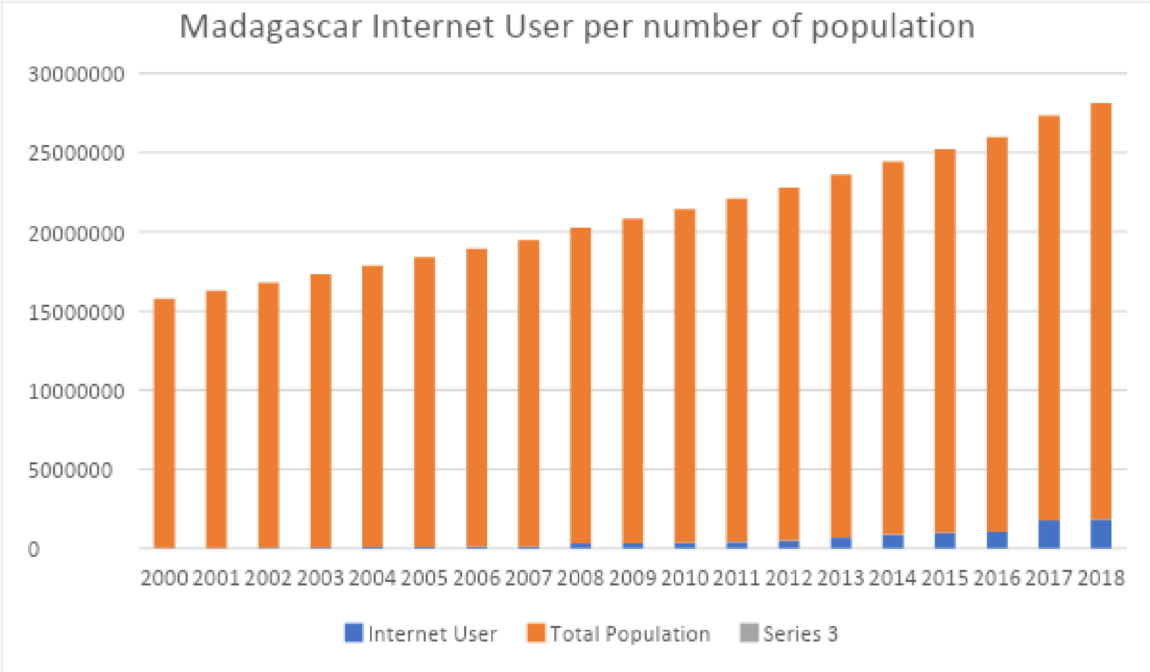
FC	0.0002*	0.0002*	0.0001
	(0.062)	(0.083)	(0.098)
Constant	0.0952***	0.0158**	0.0537**
	(0.030)	(0.018)	(0.022)
Observations	440	440	440
R-squared	0.895	0.852	0.873

Robust standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*

Table 6: Robustness check on the effect of Internet usage on Export

	(1)	(2)	(3)
VARIABLES	Expor	EMEX	ADEX
Internet	0.0901***	0.0305**	0.0863***
	(0.030)	(0.015)	(0.025)
FA	0.0020***	0.0002**	0.0013***
	(0.047)	(0.035)	(0.045)
FO	0.0954***	-0.0147*	0.0700**
	(0.035)	(0.019)	(0.032)
FS	0.0002**	0.0002**	0.0002**
	(0.031)	(0.022)	(0.022)
AF	-0.0204*	-0.0015*	-0.0157*
	(0.011)	(0.005)	(0.010)
PC	0.0005**	0.0002**	0.0009***
	(0.034)	(0.023)	(0.025)
FC	0.0006*	0.0001*	0.0009*
	(0.090)	(0.088)	(0.075)
Constant	0.1237***	0.0132	0.0704***
	(0.032)	(0.017)	(0.025)
Observations	440	440	440
R-squared	0.906	0.856	0.882

Robust standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*



Source: Author's creation based on the data collected from INSTAT

Figure 1: Evolution of Madagascar internet user per total number of populations

Corporate Governance Applications in Mutual Fund Industry Evidence from Egypt

Nancy Youssef

ABSTRACT

The purpose of this article is twofold. Empirically, the author uses a unique set of data in an emerging market (Egypt) to re-assess the inter-correlation between mutual fund governance, performance, fee structure, and stock selection and market timing of the fund managers' pre-and-post 2007-2008 financial crises. Methodologically, the author develops a Structural Equation Model to systematically address the endogeneity problem. The author contributes to the literature in two aspects. Firstly, the author identified some special features that only exist in developing countries. Secondly, the author answers the research question in an integrated and holistic way, so it bridges the three seemingly separate strands of literature on fund governance, performance and fees. The results are relevant to the misconduct of corporate governance rules in Egypt. Overall, the financial crisis demonstrates a need for enforcing the application of the regulations of the Egypt Code of Corporate Governance to increases the firm value.

Keywords: mutual fund governance, performance, fee structure, stock selection, market timing, endogeneity, structural equation model.

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I. INTRODUCTION

This article investigates whether mutual fund governance has an effect on fund performance, fee structure, and stock selection and market timing of the Egyptian fund managers' pre-and-post 2007-2008 financial crises. It provides an overview of three separate but inter-connected studies on the effect of the board structure and ownership in the mutual fund industry. The first two studies investigate the impact of board structure on mutual funds' performance and mutual fund fee structure in the Egyptian Stock Market, whereas the third one investigates the impact of board composition on the two skills of stock picking and market timing of the Egyptian fund managers' pre-and-post 2007-2008 financial crisis.

Using a final sample of 82 mutual funds between 2004 and 2013, this study first determines the fund performance and fund fees, and tests whether corporate governance characteristics such as board composition and ownership affect the fund performance and fund fees. The study further investigates the effect of mutual fund board composition and ownership on stock picking and market timing abilities of the Egyptian mutual fund managers' pre and post financial crisis.

This research applies a Structural Equation Modelling technique to solve the potential endogeneity problem between internal governance measures, fund performance, fee structure, and stock selection and market timing of the Egyptian fund managers. The results find no evidence on a significant relation neither between the corporate governance index of the Management Company and performance, nor between the governance index of the Management Company and fees. The study further finds no evidence on a significant relation neither between the corporate governance index of the fund Management Company and stock selection, nor between the corporate governance index of the fund management company and market timing of the Egyptian fund managers' pre and post the crisis.

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To analyse corporate governance in the mutual fund industry, this research utilizes Ross' (1973) principal-agent paradigm. In the context, the principal is the investor in the fund and the agent is the fund's advisor. Agency cost in mutual funds occurs because investors' interest diverges from fund advisor's interest. A fund adviser's utility function increases with compensation received from the fund; however, an investor's utility function increases with returns adjusted for risk and net of fees.

Although it may not benefit the investor's long-term risk-return profile, the fund manager has an incentive to increase the level of assets in the fund because the total assets invested in the fund determine fund adviser's compensation. In addition, compared to investor's utility, which decreases as asset related fees increase, fund advisers increase their utility if they negotiate higher fees.

The objective of this study is to investigate the effect of board structure on mutual fund performance in the Egyptian Stock Market. Egypt is one of the emerging economies that reacted to the excess attention surrounding corporate governance by constructing the Egypt Code of Corporate Governance: Guidelines and Standards in October 2005, which include regulations and procedures that improve the quality of corporate governance index (Ebaid, 2011). In the ensuing section, this research gives a brief idea about the development of Egyptian mutual funds.

II. RESEARCH PROBLEM

The research problem is formulated in the following three main questions:

1. How does the structure of the fund board of directors' impact performance in the Egyptian Stock Market?
2. How does the structure of the fund board of directors' impact fee structure in the Egyptian Stock Market?
3. Does the mutual fund board of directors' impact the two skills of stock picking and market timing of the Egyptian fund managers' pre-and-post 2007-2008 financial crises?

III. RESEARCH AIM

This research views the mutual fund sector as a convenient industry to examine the ability of boards to affect performance. In contrast to the studies on corporate governance, this research contends that boards have a direct impact on:

1. Investor fee variables.
2. Abnormal return measures, such as Jensen alphas.

The main purpose of this study is *to improve a model to enhance the performance of mutual fund board of directors in the Egyptian Stock Market*.

IV. RESEARCH OBJECTIVES

In particular, the aim of the research is to fulfil the following three objectives:

1. To present a comprehensive literature review on the effect of mutual fund governance on performance, examine the ability of mutual funds mangers to fulfil excess returns using system-based model (SEM), and provide a set of recommendations on how to improve the performance of mutual funds.
2. To present a comprehensive literature review on the effect of mutual fund governance on fees, examine the ability of mutual funds mangers to decrease investors' fees using system-based model (SEM), and provide a set of recommendations on how to negotiate fair fees.
3. To present a comprehensive literature review on the effect of mutual fund governance on stock picking and market timing abilities, examine the ability of mutual funds mangers to make security selection and market timing using system-based model (SEM), and provide a set of recommendations on how to ensure that fund managers are skilled in stock picking and market timing in the Egyptian Stock Market.

V. APPLICATIONS TO FIRM PERFORMANCE

The main objective of corporate governance is finding a solution to the principal-agent problem, and this is examined by Adam (1776), Berle and Means (1932), Jensen and Meckling (1976), Fama and Jensen (1983) and Shleifer and Vishny (1997). Cremers and Nair (2005) classify the corporate governance mechanisms in two categories, internal and external, which are classified into three broad groupings: market, internal monitoring and regulatory.

Market mechanisms include block shareholders, the capital market and the managerial labor market (Azim, 2012; Agrawal and Knoeber, 1996; Denis and McConnell, 2003). This study is a country-level study, and the capital market and managerial labor market are common to all companies. Also, there is a little difference between these market mechanisms; therefore, this research does not take into account the effect of these market mechanisms on performance (Agrawal and Knoeber, 1996; Denis and McConnell, 2003).

As an internal monitoring mechanism, this research focuses on boards of directors' structure and ownership structure (Jensen, 1993). Another important internal monitoring mechanism is managerial compensation. However, this study does not take into account the relation between director compensation and fund performance because there is no data available for complex-level director compensation in the Egyptian mutual funds. Thus, this research suggests that the Egyptian Stock Market should require funds to disclose the total compensation paid to directors by the complex rather than per fund. The availability of time series data on director compensation by the complex leads to higher quality compensation data for research on the determinants of director compensation and the relation between director compensation and performance.

Similar to Jensen (1993) argument that the legal system is 'too blunt an instrument' to solve the agency problems, and the legal system is common to all companies in a country-level study, this research focuses on the audit committee to examine the procedures the fund has established for maintenance of regulatory policy, due diligence, and return maximization.

Therefore, this research focuses mainly on ownership structure board's structure, and audit committee as monitoring mechanisms and their effect on mutual fund performance.

VI. PRINCIPAL-AGENT FRAMEWORK IN MUTUAL FUNDS INDUSTRY

Starks (1987), Ippolito (1992) and Golec (1992) suggest that the agency problem within the mutual fund industry arises due to incentives to manipulate portfolios in view of higher compensation. Furthermore, they document a flow-performance relation that generates incentives for investment companies to manipulate portfolio riskiness (Bansal, 2013; Ross, 1973; Williamson, 1985; Hansmann, 1996; Buchanan, 2014; Stout, 2012; Jensen & Meckling, 1976; McNulty et al., 2013).

To reduce agency cost, two types of internal corporate governance mechanisms could be introduced:

(i) Mechanisms that constrain monetary rewards for the agent with implied risk sharing rules.

(ii) Mechanisms that increase monitoring of the underlying process adopted by management in generating risk and returning outcomes (Chevalier and Ellison, 1995).

Both of two categories of corporate governance mechanisms seek to realign managers' and investors' interests; the former is by creating incentive contracts and the latter is by constraining managers' actions. The model is based on Ross (1973) economic theory of agency; he assumes interest alignment between agent and principal which is achieved via a fee-structure tied to the agent's performance.

The fee structure is based on the payoff from the agent's action, and incentives contracts are derived assuming corporation between the agent and the principal who decide a fee schedule "that maximizes a weighted sum of utilities". This research uses this model as the theoretical framework to illustrate agency problems within the investment company.

VII. CONCEPTUAL FRAMEWORK OF THE STUDY

A conceptual framework of linking board structure to performance and fees of the mutual funds has been hypothesized in Figure 1, Figure 2, and Figure 3.

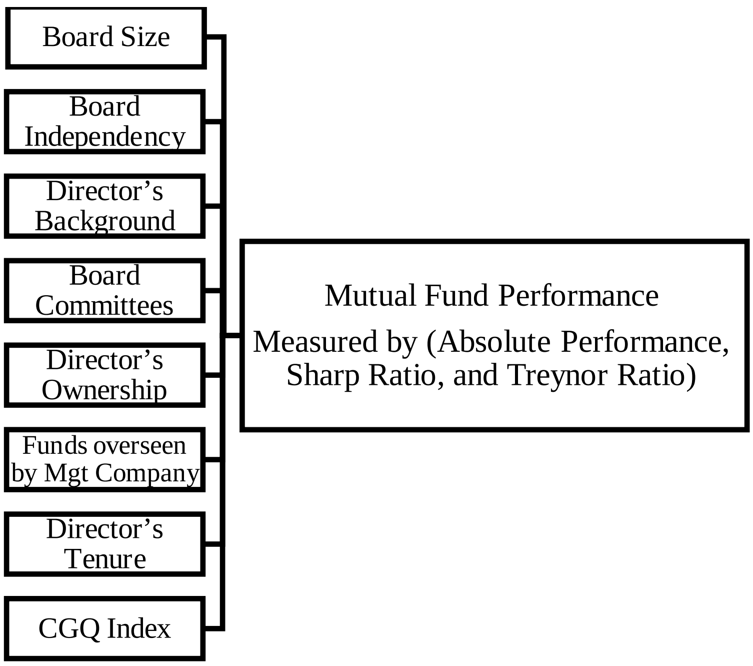

Figure 1: Conceptual Framework of Linking Board Structure to Performance

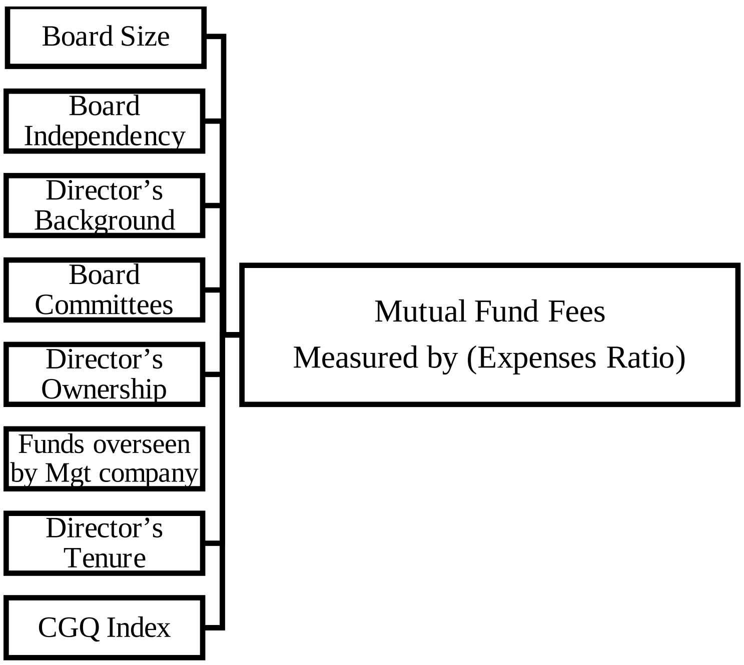

Figure. 2: Conceptual Framework of Linking Board Structure to Fees

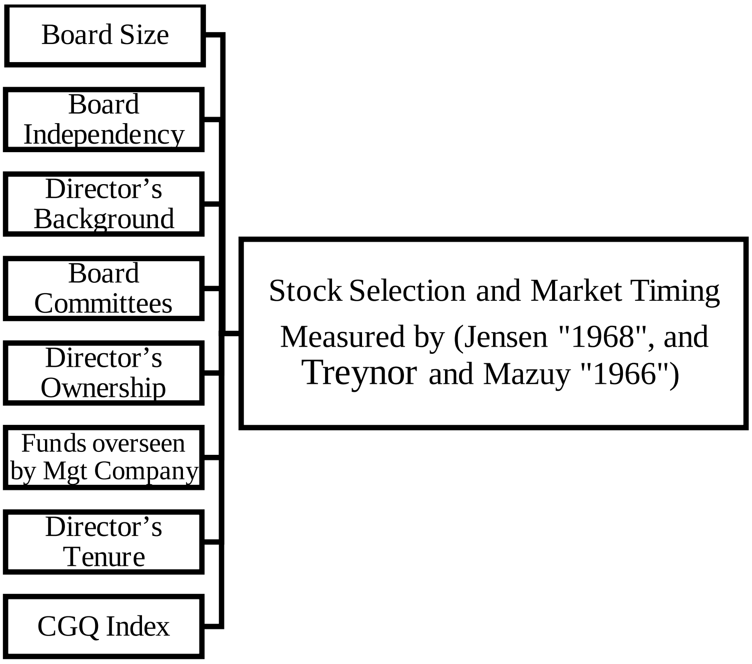

Figure 3: Conceptual Framework of Linking Board Structure to Stock Selection and Market Timing

VIII. MAIN FOCUS OF THE CHAPTER

As indicated before, this chapter provides an overview of three separate but interconnected studies. The first two studies investigate the role of board structure on mutual funds' performance and mutual fund fee structure, whereas the third investigates the impact of board composition on the two skills of stock picking and market timing of the Egyptian mutual fund managers' pre-and-post 2007-2008 financial crisis.

Article 1: The Effect of Board Structure on Egyptian Mutual Fund Performance: A Structural Equation Model Analysis

Literature Review

- *The Role of Board Structure in Mutual Funds Performance*

Baysinger and Butler (1985) suggest that there is a positive relationship between independent directors and performance. They further view that board composition as providing three components: the executive component, the monitoring component, and the instrumental component. The executive component provides information and expertise necessary for corporate strategy and business policy. The monitoring component fulfils a policing function over management's performance and represents shareholders' interests. The instrumental component provides general knowledge, networking, and productive links between organizations. They conclude that inside directors provide the executive component; independent directors fulfil the monitoring component. Similarly, Khorana et al. (2007) illustrate that independent directors enhance performance.

The results of Cochran et al. (1985) raise doubts about the theory that insider-dominated boards allow managers to consume higher levels of perquisites than do boards having other compositions. Similarly, Rosenstein and Wyatt (1990) document positive abnormal returns when an outside director is appointed with more positive abnormal returns for impartial and financial outsiders compared to the appointment of corporate outsiders.

Brickley et al. (1994) also supports the independent director monitoring hypothesis and shows outside dominated boards accrue positive performance on the declaration of poison pill defences. On the contrary, Agrawal and Knoeber (1998) find that the proportion of outside directors have a negative impact on performance.

Furthermore, (e.g., Agrawal & Knoeber, 1996; Klein, 1998; Bhagat & Black, 2002) find a negative relationship between independent directors and firm performance. Additionally, (Hermalin & Weisbach, 1991; Mehran, 1995; and Ferris & Yan 2007) find no relationship at all. On contrary, Yermack (1996), and Ding and Wermers (2012) find a positive relationship. Due to the lack of experience of most of the independent directors, Adams et al. (2009) find that firms that suffer from essential financial problems during the 2008-2009 crisis, had more independent directors than others.

Additionally, (e.g., Agrawal & Knoeber 1998, Yermack, 1996; Eisenberg et al., 1998; Cheng, 2008; and Guest, 2009) find a negative relationship between firm performance and board size. On contrary, Belkhir (2009) and Ding and Wermers (2012) find a positive relationship between firm performance and board size (Wintoki et al., 2012).

- *The Role of Ownership Structure in Mutual Funds Performance*

Barnhart and Rosenstein (1998) find that the variables of board composition, managerial ownership, and performance are simultaneously determined. Recent empirical work supports the monitoring hypothesis for board of directors. Brickley and James (1987) find that there is a negative correlation between managerial consumption of perquisites and both proportion of independent directors and concentration of ownership. Similarly, Mak and Li (2001) find that there is a negative correlation between the proportion of independent directors and both board size and managerial ownership. Recent evidence of Kryzanowski and Mohebshahedin (2016) finds that there is a positive relationship between directors' ownership and CEF returns of U.S. closed-end funds (CEFs) during 1994–2013, using a dynamic panel two-step system generalized method of moment's estimator to solve the endogeniety problem.

A large body of empirical research on corporate finance suggests that governance structures improve performance, but this research has serious issues with endogeneity (Wintoki et al., 2012). However, the implications for the empirical work will be usefulness if it does not deal with endogeneity problem, because the results will be biased and cannot be dependable (Roberts and Whited, 2012).

Consequently, when this research investigates the role of corporate governance mechanisms on performance, endogeneity come from the powerful association between past values of the regressand (performance), and current values of the regressors (corporate governance structure) (Wintoki et al., 2012; Agrawal & Knoeber, 1996; Rediker & Seth, 1995; Chandio, 2011; Klein & Zur, 2011). There are many methods of overcoming this; including Maximum likelihood (ML) and Ggeneralized Method of Moments (GMM).

Although, GMM and ML is a general framework for deriving estimators, there is a difference between the assumptions of the two methods. ML estimators use assumptions about the specific families of distributions for the random variables to derive an objective function. It selects the parameters that are probably have generated the observed data, which can be proceeded by maximizing an objective function. GMM estimators use assumptions about the moments of the random variables to derive an objective function. The assumed moments of the random variables present population moment conditions, which can be achieved by minimizing an objective function. Accordingly, ML can be more efficient than GMM, because ML uses the entire distribution instead of uses specified moments only.

Therefore, this paper utilizes SEM which is a multivariate technique that allows us to estimate a system of equations. Structural Equation Models are often drawn as Path Diagrams. SEM is a Full Information Maximum Likelihood (FIML), which estimates all the equations and all the unknown parameters jointly and obtains robust findings, compared with GMM.

- *The Structural Equation Modelling Analysis*

The empirical analysis is carried out at different levels: firstly, an absolute performance analysis is presented before risk adjusted performance analysis ratios such as Treynor and Sharpe's are carried out. See, Key Terms and Definition providing a full set of variables of the study.

Structural equation modelling (SEM) enables researchers to examine interrelationships among multiple endogenous and exogenous variables simultaneously (Hair et al., 2006). To test the effect of board composition on mutual fund performance, this paper utilizes SEM technique to deal with the endogeniety problem through the following three stages model specification, model estimation, and goodness of fit indices.

- *Structural Equation Modelling Specification*

In this paper, the central research question focuses on whether the composition of the board affects the mutual fund performance by using the following structural equation model (SEM):

$$Perf_{it} = \alpha_{it} + \alpha_1(B_{Size}) + \alpha_2(Ind_{Dir}) + \alpha_3(Fin_{Dir}) + \alpha_4(Prof_{Dir}) + \alpha_5(Dir_{Tn}) + \alpha_6(CG_Q) + \alpha_7(Dir_{Own}) + \alpha_8(Inv_{Comm}) + \alpha_9(Aud_{Comm}) + \alpha_{10}(Dir_{Fn}) + \alpha_{11}(\sigma_i) + \alpha_{12}(Time) + \alpha_{13}(Dum_p) + \alpha_{14}(Fund_{Obj\,1}) + \alpha_{15}(Fund_{Obj\,2}) + \alpha_{16}(Fund_{Obj\,3}) + \alpha_{17}(Fund_{Obj\,4}) + \alpha_{18}(Fund_{Obj\,5}) + \varepsilon_{it} \quad (1)$$

$$CG_Q = \beta_{it} + \beta_1(B_{Size}) + \beta_2(Ind_{Dir}) + \beta_3(Fin_{Dir}) + \beta_4(Prof_{Dir}) + \beta_5(Dir_{Tn}) + \beta_6(Dir_{Own}) + \beta_7(Inv_{Comm}) + \beta_8(Aud_{Comm}) + \beta_9(Dir_{Fn}) + \beta_{10}(Fund_{Obj\,1}) + \beta_{11}(Fund_{Obj\,2}) + \beta_{12}(Fund_{Obj\,3}) + \beta_{13}(Fund_{Obj\,4}) + \beta_{14}(Fund_{Obj\,5}) + \varepsilon_{it} \quad (2)$$

$$Dir_{Own} = \gamma_{it} + \gamma_1(B_{Size}) + \gamma_2(Ind_{Dir}) + \gamma_3(Fin_{Dir}) + \gamma_4(Prof_{Dir}) + \gamma_5(Dir_{Tn}) + \gamma_6(Dir_{Fn}) + \gamma_7(Inv_{Comm}) + \gamma_8(Aud_{Comm}) + \gamma_9(Fund_{Obj\,1}) + \gamma_{10}(Fund_{Obj\,2}) + \gamma_{11}(Fund_{Obj\,3}) + \gamma_{12}(Fund_{Obj\,4}) + \gamma_{13}(Fund_{Obj\,5}) + \varepsilon_{it} \quad (3)$$

- *Structural Equation Modelling Specification*

The results about the estimation of the structural model (A), (B), and (C) are presented in Table 1. According to the previous, in testing the hypotheses, results reveal that there are eleven hypotheses in this study, and ten hypotheses i.e. H1, H2, H3, H4, H5, H6, H7, H8, H9, and H10 are statistically significant. Thus, these hypotheses are supported. While, one hypothesis i.e. H11 is found statistically not significant. Hence, this hypothesis is not supported.

Although the hypothesis is not supported, the result is consistent with Ebaid (2011) argument that the internal audit function in Egypt suffers from many weaknesses that affect negatively its effective role in corporate governance. Furthermore, the result is consistent with Fawzy (2003) argument that however corporate governance standards in Egypt have improved significantly, as reflected in the overall assessment of all five OECD principles, the degree of progress is still far from properly implementing corporate governance principles.

Table 1: Path Coefficients - Whole Sample (p value of the t tests in parentheses)

	Model A		Model B		Model C	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: The Effect of Board Structure on Mutual Fund Performance Perf						
CGQ	0.0006	(0.790)	0.0145	(0.969)	0.6414	(0.730)

Dir Own	0.0020	(0.220)	-0.8908**	(0.002)	0.8654	(0.549)
Fund Obj5	-0.0023***	(0.000)	-1.4480***	(0.000)	-1.0128*	(0.046)
Fund Obj4	0.0021**	(0.002)	0.3722***	(0.001)	-0.1628	(0.771)
Fund Obj3	0.0012	(0.057)	0.3897***	(0.000)	-0.3382	(0.541)
Fund Obj2	0.0030***	(0.000)	0.3299***	(0.000)	-0.1568	(0.735)
Fund Obj1	-0.0014	(0.187)	-0.5204**	(0.003)	0.1519	(0.863)
Dump	0.0003	(0.240)	0.1009*	(0.048)	-0.2888	(0.256)
Time	-0.0005***	(0.000)	-0.0939***	(0.000)	-0.0245	(0.629)
Dir Tn	-0.0000	(0.244)	0.0066	(0.319)	0.0260	(0.429)
Prof Dir	0.0011	(0.692)	1.1817*	(0.017)	0.2290	(0.926)
Aud Comm	0.0020	(0.401)	-0.6722	(0.110)	0.1169	(0.955)
B Size	-0.0001	(0.612)	0.0591**	(0.001)	-0.0768	(0.395)
Inv Comm	-0.0000	(0.976)	0.1524	(0.598)	0.7073	(0.623)
Dir Fn	0.0001	(0.365)	-0.0202*	(0.045)	-0.0370	(0.460)
Fin Dir	-0.0028	(0.491)	-2.5017***	(0.000)	-0.4182	(0.906)
Ind Dir	-0.0018	(0.239)	0.5637*	(0.037)	0.1743	(0.897)
StdDev i	-0.2081***	(0.000)				
Constant	0.9205***	(0.000)	188.6593***	(0.000)	48.8607	(0.632)
Panel B: The Effect of Board Structure on Corporate Governance Index CGQ						
Dir Own	0.0998***	(0.000)	0.0998***	(0.000)	0.0998***	(0.000)
Fund Obj5	0.0443***	(0.000)	0.0443***	(0.000)	0.0443***	(0.000)
Fund Obj4	0.0465***	(0.000)	0.0465***	(0.000)	0.0465***	(0.000)
Fund Obj3	0.0307**	(0.002)	0.0307**	(0.002)	0.0307**	(0.002)
Fund Obj2	0.0216**	(0.008)	0.0216**	(0.008)	0.0216**	(0.008)
Fund Obj1	0.0521***	(0.001)	0.0521***	(0.001)	0.0521***	(0.001)
Dir Tn	-0.0095***	(0.000)	-0.0095***	(0.000)	-0.0095***	(0.000)
Prof Dir	0.4255***	(0.000)	0.4255***	(0.000)	0.4255***	(0.000)
Aud Comm	0.4015***	(0.000)	0.4015***	(0.000)	0.4015***	(0.000)
B Size	0.0124***	(0.000)	0.0124***	(0.000)	0.0124***	(0.000)
Inv Comm	-0.0333	(0.188)	-0.0333	(0.188)	-0.0333	(0.188)
Dir Fn	0.0146***	(0.000)	0.0146***	(0.000)	0.0146***	(0.000)
Fin Dir	-0.2357***	(0.000)	-0.2357***	(0.000)	-0.2357***	(0.000)

Ind Dir	-0.1463***	(0.000)	-0.1463***	(0.000)	-0.1463***	(0.000)
Constant	0.3177***	(0.000)	0.3177***	(0.000)	0.3177***	(0.000)
Panel C: The Effect of Board Structure on Director Ownership Dir Own						
Fund Obj5	0.0650***	(0.000)	0.0650***	(0.000)	0.0650***	(0.000)
Fund Obj4	0.0689***	(0.000)	0.0689***	(0.000)	0.0689***	(0.000)
Fund Obj3	0.1450***	(0.000)	0.1450***	(0.000)	0.1450***	(0.000)
Fund Obj2	0.0794***	(0.000)	0.0794***	(0.000)	0.0794***	(0.000)
Fund Obj1	0.0883***	(0.000)	0.0883***	(0.000)	0.0883***	(0.000)
Dir Tn	-0.0012	(0.057)	-0.0012	(0.057)	-0.0012	(0.057)
Prof Dir	-0.2624***	(0.000)	-0.2624***	(0.000)	-0.2624***	(0.000)
Aud Comm	0.0515	(0.249)	0.0515	(0.249)	0.0515	(0.249)
B Size	0.0440***	(0.000)	0.0440***	(0.000)	0.0440***	(0.000)
Inv Comm	0.0407	(0.215)	0.0407	(0.215)	0.0407	(0.215)
Dir Fn	-0.0095***	(0.000)	-0.0095***	(0.000)	-0.0095***	(0.000)
Fin Dir	0.2298**	(0.004)	0.2298**	(0.004)	0.2298**	(0.004)
Ind Dir	0.7272***	(0.000)	0.7272***	(0.000)	0.7272***	(0.000)
Constant	-0.0852**	(0.009)	-0.0852**	(0.009)	-0.0852**	(0.009)
var(e.Perf1)						
Constant	0.0000***	(0.000)				
var(e.CGQ)						
Constant	0.0047***	(0.000)	0.0047***	(0.000)	0.0047***	(0.000)
var(e.DirOwn)						
Constant	0.0079***	(0.000)	0.0079***	(0.000)	0.0079***	(0.000)
var(e.Perf2)						
Constant			0.6082***	(0.000)		
var(e.Perf3)						
Observations	932		932		932	

Note: This table provides results from SEM of The effect of board structure on mutual fund performance for the sample of 82 funds from (2004-2013). In Model (A), mutual fund performance is measured by the absolute return, in Model (B) mutual fund performance is measured by Sharp ratio, and in Model (C), mutual fund performance is measured by Treynor ratio. A robust t-statistics test is conducted, and p-values are in parentheses. Columns (2), (4), and (6) provide p-values. Columns (1), (3), and (5) present the path coefficients for the three models.

* Statistical significance at 10% level.

** Statistical significance at 5% level.

- *The Goodness of Fit*

The fit indices shown in Table 2 indicate that the hypothesized structural model provides a good fit to the data. The (R-squared) value of Perf3 (measured by Treynor ratio) is 0.01 and is considered low. This might be due to the major limitation of the Treynor ratio that the results will mislead if applied to the schemes with negative betas, and in model (C), there are 173 observations with negative betas.

Table 2: Structural Equation Model Fit Measure Assessment

	Model A	Model B	Model C	
Fit Statistics	Value	Value	Value	Description
Likelihood ratio				
chi2_ms	6.555	5.683	5.683	model vs. saturated
p > chi2	0.364	0.224	0.224	
chi2_bs	3638.278	4150.755	3464.685	baseline vs. saturated
p > chi2	0.000	0.000	0.000	
Population error				
RMSEA	0.010	0.021	0.021	Root mean squared error of approximation
90% CI, lower bound	0.000	0.000	0.000	
upper bound	0.045	0.057	0.057	
Pclose	0.977	0.892	0.892	Probability RMSEA <= 0.05
Information criteria				
AIC	-1904.801	14049.384	17040.621	Akaike's information criterion
BIC-	-1658.097	14291.251	17282.488	Bayesian information criterion
Baseline comparison				
CFI	1.000	1.000	1.000	Comparative fit index
TLI	0.999	0.995	0.994	Tucker-Lewis index
Size of residuals				
SRMR	0.002	0.002	0.002	Standardized root mean squared residual
CD	0.979	0.988	0.975	Coefficient of determination

Note: This table provides summary of Goodness of fit index

Conclusion

This paper conclude that most of the hypothesized relationships are supported (e.g. BSize is positively associated with Perf2 and CGQ, IndDir is positively associated with Perf2 and negatively associated with CGQ, ProfDir is positively associated with Perf2 and negatively associated with DirOwn, AudComm is positively associated with CGQ, DirOwn is negatively associated with

Perf2, DirFn is negatively associated with Perf2, and DirTn is negatively associated with CGQ). One is not supported (e.g., CGQ is not associated with Perf1, Perf2, and Perf3).

Additionally, this paper is consistent with (Kryzanowski and Mohebshahedin, 2016) argument that that there is a positive relationship between ownership by directors and CEF returns (closed-end funds). This paper is consistent with Kirkpatrick (2009) argument that the contribution of effective board oversight is an important, but often neglected, governance issue in issue in many OECD countries.

Article 2: The Effect of Board Structure on Egyptian Mutual Fund Fees: A Structural Equation Model Analysis

Literature Review

- *Role of Board of Directors in Mutual Funds Fee Structure*

Johnson (2009) argues that allowing sponsors to effectively control the board appointment process makes directors less likely to negotiate fees rigorously with sponsors. Despite the close relationship between fund boards and sponsors, there is evidence that boards can be effective mentors. Tufano and Sevick (1997) find an inverse relationship between board independence and fund fees. Adams et al. (2010) further report that independent boards of index funds offered by publicly traded investment companies, where conflicts between sponsors and fund shareholders are particularly high, are associated with lower fees. In addition, two large providers of index funds have fund sponsor officers acting as mutual fund board chairs and charge especially competitive fees.

Similarly, Gil Bazo and Ruiz-Verdú (2009) find that higher quality boards, measured using Morningstar's stewardship scores that assumed that highly independent boards were superior monitors, are related to lower ownership costs. However, Adams et al. (2010) also find that board with independent chairs charge higher front end loads.

Overall, the literature is consistent with Hermalin (1994) argument that there is no single optimal board structure. In addition, just because a board is implicitly of high quality (i.e., more independent, smaller, unitary) does not mean it monitors each share class with the same intensity. Boards may pay little attention to some classes and more attention to others. For instance, they may focus on fees at the largest share class or they may consider overall average expenses and not individual share class expenses. As such, there is no expectation concerning how board structure is associated with the range of fees charged to mutual fund investors.

- *Role of Ownership Structure in Mutual Funds Fee Structure*

Jensen and Meckling (1976) argue that, inside equity, ownership provides a powerful incentive for managers to act in the interest of shareholders (Rowe and Davidson, 2005). If management has too large an equity position, it may control enough votes to consolidate itself. Morck et al. (1988) argue that there is a positive correlation between managerial ownership and firm value. Rowe and Davidson (2005) argue that outside directors' ownership helps to align management interests and reduces fees.

The ownership structure of publicly held sponsors suffers more from the effects of agency costs than does the ownership of privately held ones (McConnell and Servaes 1990; Barnhart et al., 1994). Alternatively, the operating strategies of private sponsor funds may be more complex than public ones and incorporate concerns about firm and founder reputation. Ferris and Yan (2009) find that private fund sponsors charge lower fees and are less likely to be involved in fund scandals that harm sponsors' reputations. Overall, the literature suggests that publicly held firms have different incentive structures than privately owned firms. Therefore, they differ in how they assess the costs across single and multiple share class funds.

This paper examines the role of the board of directors and ownership structure on fees using structural equation modelling. SEM is a statistical technique prepared to deal with endogeneity problem, which come from the powerful relationship between past values of the regressand (fees), and current values of the regressors (corporate governance structure) (Agrawal & Knoeber, 1996). There are many methods of overcoming this; including Maximum likelihood (ML) and Ggeneralized Method of Moments (GMM).

Although, GMM and ML is a general framework for deriving estimators, there is a difference between the assumptions of the two methods. ML estimators use assumptions about the specific families of distributions for the random variables to derive an objective function. It selects the parameters that are probably have generated the observed data, which can be proceeded by maximizing an objective function. GMM estimators use assumptions about the moments of the random variables to derive an objective function. The assumed moments of the random variables present population moment conditions, which can be achieved by minimizing an objective function. Accordingly, ML can be more efficient than GMM, because ML uses the entire distribution instead of uses specified moments only.

- *Structural Equation Modelling Analysis*

SEM is adapted from (Erkens et al., 2012; Adams, 2012; Tufano and Sevick, 1997; Agrawal and Knoeber, 1996). To test the effect of board composition on mutual fund fees, this paper uses the SEM technique through the following three stages: model specification, model estimation, and goodness of fit indices. See, Key Terms and Definition providing a full set of variables of the study

- *Structural Equation Modelling Specification*

Considering the potential endogeneity problem between internal governance measures and fund fees and similar to (Erkens et al., 2012; Adams, 2012; Agrawal and Knoeber, 1996), the central research question focuses on whether the composition of the board affects the level of the mutual fund fees incurred by investors in mutual fund by using the following structural equation model:

$$Fees_{it} = \alpha_{it} + \alpha_1(B_{Size}) + \alpha_2(Ind_{Dir}) + \alpha_3(Fin_{Dir}) + \alpha_4(Prof_{Dir}) + \alpha_5(Dir_{Tn}) + \alpha_6(CG_Q) + \alpha_7(Dir_{Own}) + \alpha_8(Inv_{Comm}) + \alpha_9(Aud_{Comm}) + \alpha_{10}(Dir_{Fn}) + \alpha_{11}(Log_{Size}) + \alpha_{12}(Time) + \alpha_{13}(Dum_p) + \alpha_{14}(Fund_{Obj\,1}) + \alpha_{15}(Fund_{Obj\,2}) + \alpha_{16}(Fund_{Obj\,3}) + \alpha_{17}(Fund_{Obj\,4}) + \varepsilon_{it} \quad (4)$$

$$CG_Q = \beta_{it} + \beta_1(B_{Size}) + \beta_2(Ind_{Dir}) + \beta_3(Fin_{Dir}) + \beta_4(Prof_{Dir}) + \beta_5(Dir_{Tn}) + \beta_6(Dir_{Own}) + \beta_7(Inv_{Comm}) + \beta_8(Aud_{Comm}) + \beta_9(Dir_{Fn}) + \beta_{10}(Time) + \beta_{11}(Dum_p) + \beta_{12}(Log_{Size}) + \beta_{13}(Fund_{Obj\,1}) + \beta_{14}(Fund_{Obj\,2}) + \beta_{15}(Fund_{Obj\,3}) + \beta_{16}(Fund_{Obj\,4}) + \varepsilon_{it} \quad (5)$$

$$Dir_{Own} = \gamma_{it} + \gamma_1(B_{Size}) + \gamma_2(Ind_{Dir}) + \gamma_3(Fin_{Dir}) + \gamma_4(Prof_{Dir}) + \gamma_5(Dir_{Tn}) + \gamma_6(Dir_{Fn}) + \gamma_7(Aud_{Comm}) + \gamma_8(Inv_{Comm}) + \gamma_9(Fund_{Obj1}) + \gamma_{10}(Fund_{Obj2}) + \gamma_{11}(Fund_{Obj3}) + \gamma_{12}(Fund_{Obj4}) + \varepsilon_{it} \quad (6)$$

- *Structural Equation Modelling Estimation*

The results about the estimation of the structural model (A) are presented in Table3 which includes three panels. Panel A: The Effect of Board Structure on Mutual Fund Fees, Panel B: The Effect of Board Structure on Corporate governance Index, and Panel C: The Effect of Board Structure on Director Ownership which will be illustrated below. According to the previous, in testing the hypotheses, results reveal that there are eleven hypotheses in this study, and ten hypotheses i.e. H1, H2, H3, H4, H5, H6, H7, H8, H9, and H10 are statistically significant. Thus, these hypotheses are supported. While, one hypothesis i.e. H11 is found statistically not significant. Hence, this hypothesis is not supported.

Although the hypothesis is not supported, the result is consistent with Ebaid (2011) argument that the internal audit function in Egypt suffers from many weaknesses that affect negatively its effective role in corporate governance. Furthermore, the result is consistent with Fawzy (2003) argument that however corporate governance standards in Egypt have improved significantly, as reflected in the overall assessment of all five OECD principles, the degree of progress is still far from properly implementing corporate governance principles. Additionally, the result is consistent with Tobe (2000) who argues that there is a growing lack of trust in the mutual fund industry. Unless something is done to protect shareholders from excessive expenses, the next market downturn will lead to stringent government regulation.

Figure 3: Path Coefficients - Whole Sample (p value of the t tests in parentheses)

Model A			
	(1)	(2)	
Panel A: The Effect of Board Structure on Mutual Fund Fees			
ExpRatio			
CGQ	0.0634	(0.103)	
DirOwn	0.0700	(0.055)	
BSize	-0.0112***	(0.000)	
IndDir	-0.0070	(0.833)	
AudComm	-0.1000*	(0.047)	
InvComm	0.0015	(0.964)	
DirFn	0.0013	(0.308)	
DirTn	0.0013	(0.117)	
FinDir	0.1842**	(0.004)	
ProfDir	-0.1467***	(0.001)	
Dump	0.0152**	(0.006)	
FundObj1	0.0421*	(0.042)	
FundObj2	0.0641**	(0.002)	
FundObj3	0.0526*	(0.012)	
FundObj4	0.0132	(0.570)	
LogSize	-0.0056	(0.075)	
Time	-0.0020	(0.213)	
Constant	4.1365	(0.204)	
Panel B: The Effect of Board Structure on Corporate Governance Index			
CGQ			
DirOwn	0.0031	(0.942)	
BSize	0.0188***	(0.000)	
IndDir	-0.1503***	(0.000)	
AudComm	0.6892***	(0.000)	
InvComm	0.0222	(0.573)	
DirFn	0.0125***	(0.000)	
DirTn	-0.0110***	(0.000)	
FinDir	-0.2456***	(0.001)	
ProfDir	0.4371***	(0.000)	
Dump	-0.0008	(0.895)	
FundObj1	-0.0935***	(0.000)	
FundObj2	-0.0812***	(0.000)	
FundObj3	-0.0717**	(0.003)	

FundObj4	-0.1474***	(0.000)	
LogSize	0.0300***	(0.000)	
Time	0.0041*	(0.027)	
Constant	-8.3399*	(0.025)	
Panel C: The Effect of Board Structure on Director Ownership			
DirOwn			
BSize	0.0315***	(0.000)	
IndDir	0.7487***	(0.000)	
AudComm	-0.1141*	(0.026)	
InvComm	-0.1837***	(0.000)	
DirFn	-0.0157***	(0.000)	
DirTn	0.0045***	(0.000)	
FinDir	0.1486	(0.052)	
ProfDir	-0.1144*	(0.020)	
FundObj1	0.0420	(0.092)	
FundObj2	0.0766**	(0.002)	
FundObj3	0.0385	(0.129)	
FundObj4	0.0245	(0.323)	
Constant	0.0534	(0.192)	
var(e.ExpRatio)			
Constant	0.0038***	(0.000)	
var(e.CGQ)			
Constant	0.0050***	(0.000)	
var(e.DirOwn)			
Constant	0.0057***	(0.000)	
Observations	501		

Note: This table provides results from SEM of the effect of board structure on mutual fund fees for the sample of 48 funds from (2007-2013). In Model (A), mutual fund fees measured by the expense ratio. A robust t-statistics test is conducted, and p-values are in parentheses. Column (2) provides p-values. Column (1) presents the path coefficients of the model (A).

* Statistical significance at 10% level.

** Statistical significance at 5% level.

*** Statistical significance at 1% level.

Probability of a t-value equals to or greater than actual t-value in a two-tailed test for significance of coefficient under the null hypothesis that the true value is zero. The symbol *** indicates that the null hypothesis is rejected at the 0.001 level of significance.

- *The Goodness of Fit*

The fit indices shown in Table 4 indicate that the hypothesized structural model provides a good fit to the data. In this paper, the (R-squared) values of the endogenous variables range from 0.23 and 0.89, and the overall (R-squared) value is 0.98 for model (A), these values fall within the acceptable range compared with other studies in the area of financial management research.

Table 4: Structural Equation Model Fit Measure AssessmentNote: This table provides summary of goodness of fit index. *Conclusion*

Model A			
	(1)	(2)	
Panel A: The Effect of Board Structure on Mutual Fund Fees			
ExpRatio			
CGQ	0.0634	(0.103)	
DirOwn	0.0700	(0.055)	
BSize	-0.0112***	(0.000)	
IndDir	-0.0070	(0.833)	
AudComm	-0.1000*	(0.047)	
InvComm	0.0015	(0.964)	
DirFn	0.0013	(0.308)	
DirTn	0.0013	(0.117)	
FinDir	0.1842**	(0.004)	
ProfDir	-0.1467***	(0.001)	
Dump	0.0152**	(0.006)	
FundObj1	0.0421*	(0.042)	
FundObj2	0.0641**	(0.002)	
FundObj3	0.0526*	(0.012)	
FundObj4	0.0132	(0.570)	
LogSize	-0.0056	(0.075)	
Time	-0.0020	(0.213)	
Constant	4.1365	(0.204)	
Panel B: The Effect of Board Structure on Corporate Governance Index			
CGQ			
DirOwn	0.0031	(0.942)	
BSize	0.0188***	(0.000)	
IndDir	-0.1503***	(0.000)	
AudComm	0.6892***	(0.000)	
InvComm	0.0222	(0.573)	
DirFn	0.0125***	(0.000)	
DirTn	-0.0110***	(0.000)	
FinDir	-0.2456***	(0.001)	
ProfDir	0.4371***	(0.000)	
Dump	-0.0008	(0.895)	
FundObj1	-0.0935***	(0.000)	
FundObj2	-0.0812***	(0.000)	
FundObj3	-0.0717**	(0.003)	
FundObj4	-0.1474***	(0.000)	
LogSize	0.0300***	(0.000)	
Time	0.0041*	(0.027)	
Constant	-8.3399*	(0.025)	
Panel C: The Effect of Board Structure on Director Ownership			
DirOwn			
BSize	0.0315***	(0.000)	
IndDir	0.7487***	(0.000)	
AudComm	-0.1141*	(0.026)	

InvComm	-0.1837***	(0.000)	
DirFn	-0.0157***	(0.000)	
DirTn	0.0045***	(0.000)	
FinDir	0.1486	(0.052)	
ProfDir	-0.1144*	(0.020)	
FundObj1	0.0420	(0.092)	
FundObj2	0.0766**	(0.002)	
FundObj3	0.0385	(0.129)	
FundObj4	0.0245	(0.323)	
Constant	0.0534	(0.192)	
var(e.ExpRatio)			
Constant	0.0038***	(0.000)	
var(e.CGQ)			
Constant	0.0050***	(0.000)	
var(e.DirOwn)			
Constant	0.0057***	(0.000)	
Observations	501		

Note: This table provides summary of goodness of fit index.

Conclusion

This paper concludes that most the hypothesised relationships are supported (e.g. BSize is positively associated with CGQ and DirOwn, and negatively associated with ExpRatio. IndDir is positively associated with DirOwn, and negatively associated with CGQ. AudComm is negatively associated with ExpRatio and DirOwn and positively associated with CGQ, and Prof Dir is negatively associated with ExpRatio and DirOwn and positively associated with CGQ and some others are not supported (e.g. CGQ is not associated with ExpRatio). Additionally, this paper is consistent with Kirkpatrick (2009) argument that the contribution of effective board oversight is an important, but often neglected, governance issue in issue in many OECD countries. This paper is consistent with (Kryzanowski and Mohebshahedin, 2016) argument that closed end funds board sizes are negatively related to fees.

Article 3: The Effect of Board Structure on Stock Picking and Market Timing Abilities of the Egyptian Mutual Fund Managers: Evidence from Financial Crisis

Literature Review

- *Role of Board of Directors on Stock Picking and Market Timing Abilities*

Poor corporate governance has been suggested by academics as a key contributing factor to the recent crisis. Theoretically, McNulty et al. (2013) argue for the significance of board processes and their impact on financial risk supported by quantitative evidence. Through attention to the deeper social-psychological dynamics of collective board behaviour, they are afforded greater understanding of board functions and how risk management operates through the mechanism of the board. The evidence on the value of corporate governance during the crisis is derived from data on US financial companies (Ahrens et al., 2011).

Furthermore, McNulty et al. (2013) extend earlier work by providing evidence for UK firms. Similar to US firms, firms in the UK are significantly affected by the crisis and experience a considerable weakening of their balance sheets (Financial Times, 2008). Practically, in the aftermath of the crisis, emphasis is given in the UK to the important role of boards in managing risk. Subsequently, the UK Corporate Governance Code has determined the responsibility of boards for effective risk management (Financial Reporting Council, 2010: Principle C.2).

- *Role of Ownership Structure on Stock Picking and Market Timing Abilities*

Desender et al. (2013) develop a contingency approach to explain how firm ownership influences the monitoring function of the board measured as the magnitude of external audit fees contracted by the board. Analyses of data on Continental European companies find that while board independence and audit services are complementary when ownership is dispersed, this is not the case when ownership is concentrated suggesting that ownership concentration and board composition become substitutes in terms of monitoring management.

Furthermore, Erkens et al. (2012) investigate the influence of corporate governance on financial firms' performance during the 2007–2008 financial crisis, they find that firms with more independent boards and higher institutional ownership experienced worse stock returns during the crisis period. They suggest that this is because (1) firms with higher institutional ownership took more risk prior to the crisis, which resulted in larger shareholder losses during the crisis period, and (2) firms with more independent boards raised more equity capital during the crisis which led to a wealth transfer from existing shareholders to debt holders.

This paper examines two models proposed and tested in the literature to measure stock picking and market timing abilities of Egyptian fund managers which are: (1) Jensen (1968) model, and (2) Treynor and Mazuy (1966) model respectively. The study of the impact of corporate governance on portfolio selection and market timing is particularly valuable for various reasons (Lassoued and Elmir, 2012). Firstly, a large body of theoretical and empirical literature has shown that corporate governance mechanisms affect risk and return. In fact, many arguments demonstrate that board characteristics (Agrawal and Knoeber, 1996) ownership structure, managerial compensation and external control help to explain risk and return. Secondly, governance quality seems to be a criterion used by sophisticated investors for their portfolio management.

Consequently, when this research investigates the role of corporate governance mechanisms on stock picking and market timing abilities, endogeneity come from the powerful association between past values of the regressand (stock picking and market timing), and current values of the regressors (corporate governance structure) (Wintoki et al., 2012). There are many methods of overcoming this; including Maximum likelihood (ML) and Generalized Method of Moments (GMM). Although, GMM and ML is a general framework for deriving estimators, there is a difference between the assumptions of the two methods. ML estimators use assumptions about the specific families of distributions for the random variables to derive an objective function. It selects the parameters that are probably have generated the observed data, which can be proceeded by maximizing an objective function. GMM estimators use assumptions about the moments of the random variables to derive an objective function. The assumed moments of the random variables present population moment conditions, which can be achieved by minimizing an objective function. Accordingly, ML can be more efficient than GMM, because ML uses the entire distribution instead of uses specified moments only.

Therefore, this paper utilizes SEM which is a multivariate technique that allows us to estimate a system of equations. Structural Equation Models are often drawn as Path Diagrams. SEM is a Full Information Maximum Likelihood (FIML), which estimates all the equations and all the unknown parameters jointly and obtains robust findings, compared with GMM.

- *Structural Equation Modelling Analysis*

The empirical analysis is carried out at different levels: (1) Jensen's Alpha model to measure to measure stock selection, and (2) Treynor and Mazuy (1966) to measure market timing. See, Key Terms and Definition providing a full set of variables of the study (Huber & Mellace, 2013). The results are based on a sample of 524 annual and semi-annual observations for 35 mutual funds from 2004 to 2013.

SEM is adapted from (Erkens et al., 2012), (Adams, 2012) and (Agrawal and Knoeber, 1996). To test the effect of board composition on mutual fund performance, this study uses the SEM technique through the following three stages: model specification, model estimation, and goodness of fit indices, which will be discussed respectively in the ensuing sections.

- *Structural Equation Modelling Specification*

For the analysis of the effect of board structure on mutual fund performance, this study evaluates the previous hypotheses. To test this assertion, a simultaneous equation system is utilized, where fund performance, corporate governance index, and director ownership are endogenous variables by using the following structural equation model:

$$\begin{aligned} Perf_{it} = {} & \alpha_{it} + \alpha_1(B_{Size}) + \alpha_2(Ind_{Dir}) + \alpha_3(Fin_{Dir}) + \alpha_4(Prof_{Dir}) + \alpha_5(Dir_{Tn}) \\ & + \alpha_6(CG_Q) + \alpha_7(Dir_{Own}) + \alpha_8(Inv_{Comm}) + \alpha_9(Aud_{Comm}) + \alpha_{10}(Dir_{Fn}) + \alpha_{11}(\sigma_i) \\ & + \alpha_{12}(Time) + \alpha_{13}(Dum_p) \\ & + \alpha_{14}(Fund_{Obj\,1}) \\ & + \alpha_{15}(Fund_{Obj\,2}) + \alpha_{16}(Fund_{Obj\,3}) + \alpha_{17}(Fund_{Obj\,4}) + \alpha_{18}(Dum_{fc}) + \varepsilon_{it} \end{aligned} \tag{7}$$

$$\begin{aligned} CG_Q = {} & \beta_{it} + \beta_1(B_{Size}) + \beta_2(Ind_{Dir}) + \beta_3(Fin_{Dir}) + \beta_4(Prof_{Dir}) + \beta_5(Dir_{Tn}) + \beta_6(Dir_{Own}) \\ & + \beta_7(Inv_{Comm}) \\ & + \beta_8(Aud_{Comm}) + \beta_9(Dir_{Fn}) + \beta_{10}(Fund_{Obj\,1}) \\ & + \beta_{11}(Fund_{Obj\,2}) + \beta_{12}(Fund_{Obj\,3}) + \beta_{13}(Fund_{Obj\,4}) + \beta_{14}(Dum_{fc}) + \varepsilon_{it} \end{aligned} \tag{8}$$

$$\begin{aligned} Dir_{Own} = {} & \gamma_{it} + \gamma_1(B_{Size}) + \gamma_2(Ind_{Dir}) + \gamma_3(Fin_{Dir}) + \gamma_4(Prof_{Dir}) + \gamma_5(Dir_{Tn}) + \gamma_6(Dir_{Fn}) \\ & + \gamma_7(Inv_{Comm}) + \gamma_8(Aud_{Comm}) + \gamma_9(Fund_{Obj\,1}) \\ & + \gamma_{10}(Fund_{Obj\,2}) + \gamma_{11}(Fund_{Obj\,3}) + \gamma_{12}(Fund_{Obj\,4}) + \gamma_{13}(Dum_{fc}) + \varepsilon_{it} \end{aligned} \tag{9}$$

- *Structural Equation Modelling Estimation*

The results about the estimation of the structural model (A), (B) are presented in Table5 which includes three panels for every model. According to the previous, in testing the hypotheses, results reveal that there are eleven hypotheses in this study, and ten hypotheses i.e. H1, H2, H3, H4, H5, H6, H7, H8, H9, and H10 are statistically significant. Thus, these hypotheses are supported. While, one hypothesis i.e. H11 is found statistically not significant. Hence, this hypothesis is not supported.

Although the hypothesis is not supported, the result is consistent with Ebaid (2011) argument that the internal audit function in Egypt suffers from many weaknesses that affect negatively its effective role in corporate governance. Accordingly, corporate governance in Egypt, in its current status, has no significant effect on performance because corporate governance rules included in the Egypt Code of Corporate Governance: Guidelines and Standards are not mandatory and lack legislative force (Sharma et al., 2008). Additionally, the result is consistent with Erkens et al. (2012) argument that the coefficients of the country-level governance variables are insignificant.

Table 5: Path Coefficients - Whole Sample (p value of the t tests in parentheses)

	Model (A)		Model (B)		
	(1)	(2)	(3)	(4)	
Panel A: The Effect of Board Structure on Mutual Fund Performance					

Perf					
CGQ	-0.0020	(0.294)	-1.0160	(0.512)	
Dir Own	0.0059***	(0.001)	-0.3951	(0.782)	
Time	-0.0004***	(0.000)	-0.1542***	(0.001)	
Dump	-0.0001	(0.652)	0.5075***	(0.000)	
Dumfc	0.0001	(0.779)	2.1023***	(0.000)	
Fund Obj1	0.0008*	(0.019)	-1.1125***	(0.000)	
Fund Obj2	-0.0001	(0.899)	-0.4250	(0.224)	
Fund Obj3	0.0004	(0.339)	-1.0893**	(0.002)	
Aud Comm	0.0001	(0.980)	1.1127	(0.544)	
Inv Comm	-0.0002	(0.878)	-0.8483	(0.417)	
B Size	-0.0003***	(0.000)	0.0669	(0.341)	
Ind Dir	-0.0049**	(0.008)	0.6582	(0.663)	
Dir Tn	0.0000	(0.182)	-0.0058	(0.825)	
Dir Fn	0.0000	(0.975)	-0.0782	(0.073)	
Fin Dir	-0.0183*	(0.020)	-2.4791	(0.701)	
Prof Dir	0.0144**	(0.010)	1.9437	(0.671)	
Fund Obj4	-0.0014***	(0.001)	1.1185**	(0.002)	
StdDev i			52.5244***	(0.000)	
Constant	0.8764***	(0.000)	307.5198***	(0.001)	
Panel B: The Effect of Board Structure on Corporate Governance Index					
CGQ					
Dir Own	0.2890***	(0.000)	0.2890***	(0.000)	
Dumfc	0.0109**	(0.002)	0.0109**	(0.002)	
Fund Obj1	0.0633***	(0.000)	0.0633***	(0.000)	
Fund Obj2	0.0495***	(0.000)	0.0495***	(0.000)	
Fund Obj3	0.0819***	(0.000)	0.0819***	(0.000)	
Aud Comm	0.5766***	(0.000)	0.5766***	(0.000)	
Inv Comm	-0.1399***	(0.000)	-0.1399***	(0.000)	
B Size	0.0033	(0.099)	0.0033	(0.099)	
Ind Dir	-0.2194***	(0.000)	-0.2194***	(0.000)	
Dir Tn	-0.0114***	(0.000)	-0.0114***	(0.000)	
Dir Fn	0.0079***	(0.000)	0.0079***	(0.000)	
Fin Dir	-0.4345*	(0.016)	-0.4345*	(0.016)	
Prof Dir	0.6271***	(0.000)	0.6271***	(0.000)	
Fund Obj4	0.0825***	(0.000)	0.0825***	(0.000)	
Constant	0.3309***	(0.000)	0.3309***	(0.000)	
Panel C: The Effect of Board Structure on Director Ownership					
Dir Own					
Dumfc	0.0033	(0.421)	0.0033	(0.421)	
Fund Obj1	0.1110***	(0.000)	0.1110***	(0.000)	
Fund Obj2	0.1815***	(0.000)	0.1815***	(0.000)	
Fund Obj3	0.1062***	(0.000)	0.1062***	(0.000)	
Aud Comm	0.5234***	(0.000)	0.5234***	(0.000)	
Inv Comm	0.3174***	(0.000)	0.3174***	(0.000)	

B Size	0.0462***	(0.000)	0.0462***	(0.000)	
Ind Dir	0.9846***	(0.000)	0.9846***	(0.000)	
Dir Tn	-0.0087***	(0.000)	-0.0087***	(0.000)	
Dir Fn	0.0126***	(0.000)	0.0126***	(0.000)	
Fin Dir	3.7165***	(0.000)	3.7165***	(0.000)	
Prof Dir	-2.6595***	(0.000)	-2.6595***	(0.000)	
Fund Obj4	0.1192***	(0.000)	0.1192***	(0.000)	
Constant	-0.8138***	(0.000)	-0.8138***	(0.000)	
var(e.Perf1)					
Constant	0.0000***	(0.000)			
var(e.CGQ)					
Constant	0.0014***	(0.000)	0.0014***	(0.000)	
var(e.DirOwn)					
Constant	0.0019***	(0.000)	0.0019***	(0.000)	
var(e.Perf2)					
Constant			1.8104***	(0.000)	
Observations	524		524		

Note: This table provides results from SEM of the effect of board structure on performance pre and post the financial crisis for the sample of 35 funds from (2004-2007) and (2009-2013). A robust t-statistics test is conducted, and p-values are in parentheses. Columns (2) and (4) provide p-values. Columns (1) and (3) present the path coefficients for the two models. * Statistical significance at 10% level. ** Statistical significance at 5% level. *** Statistical significance at 1% level.

- *The Goodness of Fit*

The fit indices shown in Table 6 indicate that the hypothesized structural model provides a good fit to the data. In this study, the (R-squared) values of the endogenous variables range from 0.46 and 0.96 and the overall (R-squared) value is 0.99 for model (A), the (R-squared) values range from 0.33 and 0.96 and the overall (R-squared) value is 0.99 for model (B), these values fall within the acceptable range compared with other studies in the area of financial management research.

Table 6: Structural Equation Model Fit Measure Assessment

	Model A	Model B	
Fit Statistics	Value	Value	Description
Likelihood Ratio			
chi2_ms	2.515	4.308	model vs. saturated
p > chi2	0.642	0.635	
chi2_bs	3661.556	3549.059	baseline vs. saturated
p > chi2	0.000	0.000	
Population Error			
RMSEA	0.000	0.000	Root mean squared error of approximation
90% CI, lower bound	0.000	0.000	
upper bound	0.053	0.047	
Pclose	0.936	0.963	Probability RMSEA <= 0.05
Information criteria			
AIC	-1622.152	1904.665	Akaike's information criterion
BIC	-1409.077	2122.001	Bayesian information criterion
Baseline comparison			

CFI	1.000	1.000	Comparative fit index
TLI	1.005	1.004	Tucker-Lewis index
Size of residuals			
SRMR	0.001	0.001	Standardized root mean squared residual
CD	0.999	0.999	Coefficient of determination

Note: This table provides summary of goodness of fit index.

IX. CONCLUSION

This paper conclude that most of the hypothesized relationships are supported (e.g. BSize is negatively associated with Perf1, IndDir is negatively associated with Perf1 and CGQ, ProfDir is positively associated with Perf1 and CGQ, InvComm is negatively associated with CGQ, DirOwn is positively associated with Perf1 and CGQ, DirFn is positively associated with CGQ, and DirTn is negatively associated with DirOwn) and one is not supported (e.g. CGQ is not associated with Perf1, and Perf2). Additionally, this paper is consistent with (Kryzanowski and Mohebshahedin, 2016) that closed end fund board size is negatively related to benchmark-adjusted returns, because larger boards are less effective in monitoring (Jensen, 1993; Lipton and Lorsch, 1992).

9.1 Research Conclusions

The main conclusion of this research is to provide evidence through robust statistical analysis around the usefulness of governance attributes Egyptian mutual funds' performance, fee structure, and stock selection and market timing. The research finds no evidence on a significant relation neither between the corporate governance index of the fund management company and fund performance – measured by Absolute performance, Sharpe ratio, and Treynor ratio – nor between the corporate governance index of the fund management company and fund fees measured by Expenses ratio. The research further finds no evidence on a significant relation neither between the corporate governance index of the fund Management Company and stock selection – measured by Jensen (1968) model – nor between the corporate governance index of the fund Management Company and market timing of the Egyptian fund managers measured by Treynor and Mazuy (1966) model pre and post the crisis.

Therefore, this research is consistent with Kirkpatrick (2009) argument that the contribution of effective board oversight and robust risk management including reference to widely accepted standards is not limited to financial institutions. It is also an important, but often neglected, governance aspect in nonfinancial companies. Potential weaknesses in board composition have been obvious for some time and widely debated. The remuneration of boards and senior management also remains a highly controversial issue in many OECD countries.

Furthermore, the results are consistent with Fawzy (2003) who argues that corporate governance in Egypt has no significant effect on enhancing fund performance and decreasing fund fees because corporate governance rules are included in the Egypt Code of Corporate Governance: Guidelines and Standards - to promote responsible and transparent behaviour in managing corporations according to international best practices that strike equilibrium between various parties' interests - are not mandatory and lack legislative force, so it is not clear how auditors would react to client's voluntary adoption of corporate governance practices (Sharma et al., 2008).

Additionally, this research is consistent with (Kryzanowski and Mohebshahedin, 2016) argument that there is a negative relationship between board size and CEF (closed closed-end funds) fees, and there is a positive relationship between ownership by directors and CEF returns.

Accordingly, the financial crisis demonstrates a need for the OECD through the guidance Group on Corporate Governance to investigate the adequacy of its corporate governance principles in these key areas in order to determine whether additional guidance and clarification are needed. It is also necessary to modify some recommendations contained in the OECD methodology for evaluating the implementation of the OECD Principles of Corporate Governance (Kirkpatrick, 2009).

Finally, the global financial crisis demonstrates the need to integrate behavioural finance into our economic and financial theories. The crisis could have been prevented. There would have been no foreclosures of homes financed by subprime mortgages if no subprime mortgages were allowed, and no failures of banks holding them. Therefore, we should take into consideration aspirations for houses, trade-offs in crisis prevention (Shefrin and Statman, 2011).

9.2 Future Research Directions

For future research, the model in this study could be expanded to include more factors such as director compensation, because there is no data available for complex-level director compensation in the Egyptian mutual funds. Thus, this paper suggests that the Egyptian Stock Market should require funds to disclose the total director compensation by the complex rather than per fund. The availability of time series data on director compensation by the complex leads to higher quality compensation data for research on the relationship between compensation and performance..

Furthermore, there is no data available for corporate governance index of the mutual funds management companies in Egypt. Therefore, a governance index is constructed calculated as an average of six governance indicators based on the OECD Corporate Governance Principles April 2004 (EFSA), using the annual reports of the companies and the companies' websites. The data has been obtained from web based sources, and there might be inaccuracies in this method of data collection. Although the results of the three studies are consistent with the Worldwide Governance Indicators (WGI), the country-level index for corporate governance indicates a weak governance performance in Egypt.

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Key Terms and Definition

Panel A Endo enous Variables

Variables	Measures	Source
Corporate Governance Index (CG_Q)	A constructed governance index calculated as an average of six governance indicators.	Calculated from the annual reports of the fund management companies and the companies' websites.
Equity Ownership by Directors ($Dir_{\ Own}$)	The number of directors holding zero shares divided by board size.	Board of director's annual reports of Egyptian funds.

Panel (B) Exogenous Variables

Variables	Measures	Source
BoardCommittee Structure (Inv_{Comm}) (Aud_{Comm})	The number of directors on the investment committee divided by board size. The number of directors on the audit committee divided by board size.	Board of director's annual reports of Egyptian mutual funds.
Board Size (B_{Size})	The size of the board .	Board of director's annual reports of Egyptian mutual.
Director's Background (Fin_{Dir}) $(Prof_{Dir})$	The directors' background. The number of directors with a background in finance or investment divided by board size. The number of directors who are retired or serve on several different boards as professional directors divided by board size.	Board of director's annual reports of Egyptian funds.
Director's Tenure (Dir_{Tn})	The average number of years the firm's directors have served on the board either the fund management company board or any other boards.	Board of director's annual reports of Egyptian mutual funds.
Number of Funds overseen by the Fund Management Company (Dir_{Fn})	The number of funds overseen by the fund management company.	Board of director's annual reports of Egyptian mutual funds.
Proportion of Independent Directors (Ind_{Dir})	The number of independent directors on the board divided by board size.	Board of director's annual reports of Egyptian funds.

Panel (C) Control Variables

Variables	Measures	Source
Fund Size (Log_{size})	The logarithm of total net assets of the fund.	Calculated from the mutual fund's financial statements.
Standard Deviation of the Stock Return (σ_i)	The standard deviation of mutual fund returns.	Calculated with help of Microsoft Excel.

Source: Developed by the Researcher

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