

A Data-Driven Approach to Enhancing Charitable Institution Management through Statistical Methods and Digital Transformation

Dr . Ahmed Zadi²

Dr .Abderahmane Djoher³

Souhila Sebbagh⁴

Faiza Himiri⁵

Abstract

The quick development of digital technologies has completely changed how businesses gather, handle, and use data, especially when it comes to social and charity endeavours. In order to enhance evidence-based decision-making, increase administrative efficiency, and enable the fair distribution of social assistance, statistical information systems and the Internet have become indispensable instruments. The National Sponsorship Program in Algeria is a pertinent illustration of how information and statistical technologies might be used to manage vulnerable households, especially those of widows, orphans, and families in need of social assistance. This study looks at how statistical and digital tools can organise beneficiary data and enhance administrative procedures in nonprofit organisations. The analysis emphasises the significance of digital information management, precise statistical processing, and methodical data collection in finding. This study examines the contribution of digital and statistical tools to the organization of beneficiary data and the improvement of administrative practices within charitable associations. The analysis highlights the importance of systematic data collection, accurate statistical processing, and digital information management in identifying beneficiaries, assessing their needs, and allocating assistance more effectively. @The findings suggest that the integration of digital technologies into charitable management can reduce administrative workload, improve the accuracy and accessibility of information, and strengthen transparency and fairness in the distribution of social assistance. The Algerian experience therefore demonstrates the potential of digital transformation to enhance the professionalization and effectiveness of charitable organizations and to support more structured and equitable approaches to social assistance management.

Keywords: Digital transformation; Internet technology; Statistical information systems; Charitable organizations; Social assistance; Vulnerable households; Algeria; Data management.

¹ Received: May 28, 2026; Accepted: August 20, 2026; Published: September 08, 2026

© 2026 The Author. Published by IMCRA. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, adaptation, and reproduction in any medium, provided that the original author and source are properly credited.

<https://creativecommons.org/licenses/by/4.0/>



² University of belhadj bouchaib Ain Temouchent, Algeriaç Emails: ahmed.zadi@univ-temouchent.edu.dz

³ University of Oran 2, Algeria, Emails: Abderrahmane.LABORDPA, Laboratory (LANTDPA),

⁴ University of Oran 2, Algeria, Emails: sebbagh.souhila@univ-oran2.dz, djoher@univ-oran2.dz

⁵ Laboratory (LANTDPA), University of Oran 2, Algeria, Emails: himiri.faiza@univ-oran2.dz

1. Introduction

The rapid advancement of digital technologies has fundamentally transformed the way organizations generate, process, store, communicate, and utilize information. The increasing diffusion of information and communication technologies (ICTs), digital platforms, databases, statistical applications, and data-driven decision-making systems has created new opportunities for organizations to improve their administrative processes, enhance organizational performance, and respond more effectively to the needs of their stakeholders. This transformation is not limited to profit-oriented enterprises or public institutions; it has increasingly extended to nonprofit and charitable organizations, whose activities depend heavily on the effective management of information, human resources, financial resources, and beneficiaries' needs.

For charitable and nonprofit organizations, digital transformation is particularly important because these organizations operate within complex environments characterized by limited resources, growing social needs, and the necessity to ensure transparency, accountability, and fairness in the allocation of assistance. The ability to collect accurate information about beneficiaries, organize and update databases, identify priority needs, and analyze social and demographic characteristics can significantly improve the quality of administrative decision-making. In this regard, digital technologies should not merely be regarded as technical instruments for automating administrative tasks, but rather as strategic resources capable of transforming organizational information into actionable knowledge.

Previous research has increasingly emphasized the importance of digital transformation in the nonprofit sector. Cipriano and Za (2024) examined digital transformation in nonprofit organizations and highlighted the necessity of developing approaches that recognize the distinctive organizational characteristics, institutional constraints, and social missions of these organizations. Their contribution suggests that digital transformation cannot simply be transferred from the private sector to nonprofit organizations without considering the specific nature of their objectives and stakeholders. Similarly, Jong and Ganzaroli (2024), through their investigation of digital transformation in a charitable organization in London, demonstrated that the adoption of digital technologies, when accompanied by appropriate managerial practices and a data-driven organizational culture, can contribute to strengthening the social impact of nonprofit organizations. More recently, Cipriano and Za (2025), through a bibliometric analysis of the literature, confirmed that digital transformation in nonprofit organizations remains an evolving field of research and emphasized the need for further empirical investigations into its applications, determinants, and organizational outcomes.

From this perspective, the effective use of ICTs is closely associated with the emergence of the knowledge economy, in which knowledge and information constitute strategic resources for organizational and socioeconomic development. The transition toward a knowledge-based economy requires organizations to possess the technological capacity to collect, process, store, share, and exploit information. The quality of ICT infrastructure and information systems therefore becomes a fundamental condition for transforming raw data into meaningful information and subsequently into organizational knowledge that can support rational and evidence-based decision-making.

Before addressing the concept of the knowledge economy, it is necessary to clarify the meaning of knowledge itself. Knowledge may be understood as a combination of experiences, wisdom, skills, and technological capabilities characterized by renewal, creativity, innovation, and the ability to store and utilize information effectively (Salima & Fatima, 2017). In organizational contexts, knowledge management refers to the processes through which knowledge is created, acquired, organized, disseminated, shared, and applied to achieve predetermined organizational objectives. Effective

knowledge management enables organizations to capitalize on their informational and intellectual resources, improve decision-making, enhance organizational learning, and continuously improve their processes.

The knowledge economy, in turn, places knowledge and information technologies at the center of economic and social development. According to Zayed and Hadafeani (2019), the knowledge economy is based on the intensive utilization of knowledge and information technologies to contribute to social welfare and development. Within this framework, ICTs constitute a critical infrastructure through which knowledge can be generated, processed, disseminated, and transformed into practical solutions. Consequently, the quality, accessibility, reliability, and usability of technological and informational resources can directly influence an organization's ability to make informed decisions and achieve its objectives.

This viewpoint is extremely pertinent to charitable organisations since the quality of the information available about beneficiaries has a significant impact on how effective social assistance is. Inadequate, incomplete, outdated, duplicated, or poorly organized beneficiary information may lead to inefficient resource allocation, difficulties in identifying priority cases, duplication of assistance, exclusion of eligible beneficiaries, or unequal distribution of available resources. Conversely, the systematic use of digital databases and statistical techniques can improve the identification and classification of beneficiaries, facilitate the assessment of their socioeconomic characteristics and needs, and provide decision-makers with reliable evidence for planning and allocating assistance.

Given the important social role that charitable organisations play in helping needy communities and fostering social solidarity in Algeria, this issue takes on special significance. Reliable systems for gathering, organising, evaluating, and updating data are necessary for managing a large number of beneficiaries. Nevertheless, little empirical research has been done on how digital technologies and statistical tools are really used in the administrative management of beneficiaries inside Algerian charity associations, despite the fact that these technologies are becoming more widely available.

This research gap is particularly evident in relation to the National Sponsorship Program in Algeria, where the effective identification and monitoring of beneficiaries constitute essential components of the program's administrative and social performance. The use of digital and statistical tools in this context may provide opportunities to improve the accuracy of beneficiary identification, classify beneficiaries according to relevant characteristics, assess their needs, monitor changes in their situations, and support a more efficient and equitable allocation of assistance.

Nevertheless, the mere availability or adoption of digital technologies does not necessarily guarantee improved organizational performance. The effectiveness of digital transformation depends on several interrelated factors, including the quality of information systems, the accuracy and reliability of data, the statistical capacity of organizations, the competencies of personnel, organizational practices, and the ability of decision-makers to transform available data into usable knowledge. Therefore, it is necessary to move beyond a purely technological perspective and examine the extent to which digital and statistical tools actually contribute to improving the management of charitable activities and the achievement of social objectives.

Accordingly, this study seeks to investigate the role of digital and statistical tools in improving the administrative management of charitable activities, with particular reference to the National Sponsorship Program in Algeria. It specifically examines how these tools contribute to the collection and organization of beneficiary information, the identification and classification of beneficiaries, the assessment of their needs, and the improvement of the efficiency and equity of assistance distribution. The study also seeks to situate these practices within the broader framework of knowledge

management and the knowledge economy, considering information and technological capabilities as strategic resources for improving nonprofit organizational performance.

1.1. Research Problem

Despite the growing recognition of digital transformation as an important mechanism for improving organizational efficiency and social impact, there remains insufficient empirical evidence concerning its practical contribution to beneficiary management within Algerian charitable associations. In particular, the extent to which digital and statistical technologies improve the quality of beneficiary information, support evidence-based decision-making, facilitate needs assessment, and contribute to a more efficient and equitable distribution of assistance remains insufficiently explored.

Therefore, the central research problem of this study can be formulated as follows:

To what extent do digital and statistical tools contribute to improving the administrative management of beneficiaries and enhancing the efficiency and equity of social assistance within Algerian charitable associations, particularly within the framework of the National Sponsorship Program?

This central question leads to several complementary questions that allow the research problem to be examined from different dimensions.

Sub-Research Questions

- To what extent are digital technologies and information systems used in the administrative management of beneficiaries within Algerian charitable associations?
- How do digital tools contribute to the collection, storage, organization, updating, and accessibility of beneficiary information?
- To what extent do statistical tools contribute to the identification and classification of beneficiaries according to their socioeconomic and demographic characteristics?
- How does the use of digital and statistical technologies contribute to assessing beneficiaries' needs and identifying priority cases?
- To what extent does the quality of beneficiary information influence the effectiveness of administrative decision-making and the allocation of social assistance?
- How do digital and statistical tools contribute to improving the efficiency, transparency, and equity of assistance distribution within the National Sponsorship Program?
- What organizational, technological, and human factors may limit the effective adoption and utilization of digital and statistical tools within Algerian charitable associations?

To what extent can the effective integration of ICTs, statistical analysis, and knowledge management contribute to strengthening the transition of Algerian charitable associations toward a knowledge-based management approach?.

1.2. Research Objective

In response to these questions, the study aims to assess the contribution of digital and statistical technologies to the modernization of beneficiary management and the improvement of charitable assistance. More specifically, it seeks to determine whether the effective management of digital information and the use of statistical techniques can transform beneficiary data into reliable organizational knowledge capable of supporting evidence-based decisions, improving resource allocation, and strengthening the effectiveness and fairness of social assistance.

Ultimately, the study seeks to contribute to the emerging literature on digital transformation in nonprofit organizations by providing an empirical perspective from the Algerian charitable sector. It also aims to demonstrate that digital transformation should be understood not simply as the introduction of technological tools, but as an organizational process involving information quality, knowledge management, human capabilities, and data-driven decision-making. In this sense, the effective use of digital and statistical technologies may constitute an important pathway toward more efficient, transparent, and socially responsive charitable management.

Generating and investing knowledge - Spreading knowledge - Using knowledge in the best use.

As for the United Nations Development Program, the knowledge economy has been defined as “the dissemination, production and employment of knowledge sufficiently at the level of all areas of economic, political and societal activity in order to upgrade the human condition by building the possible human capabilities and distributing them to the various productive sectors accurately”

(Omran and Barahi, 2019).

Through an estimate by Peter Drucker published in *The Economist* magazine, he stated that by 2030 there will be 40% of working individuals who will be knowledgeable, and this is due to the countries that are in line with.

2. Literature Review

Recent literature has extensively examined digital transformation and digitalization across third-sector, non-profit, and Islamic institutions (such as charitable societies, Waqf bodies, and Zakat organizations), focusing on how technology and statistical tools enhance operational efficiency, transparency, and organizational sustainability:

Zadi et al. (2024), This study highlights the role of statistical methods and electronic digitalization in managing charitable organizations, focusing on the Algerian context. The authors examine the "National Sponsorship Program" as a successful digital model implemented to conduct a comprehensive census of widows and orphans, enabling equitable and transparent assistance distribution while streamlining administrative workflows within associations. The findings emphasize that combining statistical applications with customized software design reduces processing time and provides accurate data essential for effective humanitarian management. (Zadi et al., 2024)

Marciszewska et al. (2024), This research investigates the digital advancement of Non-Profit Organizations (NPOs) compared to for-profit enterprises in Poland, exploring the mediating role of technical and digital maturity between employee digital skills and organizational performance. Utilizing quantitative analysis (via PS Imago Pro 9.0 and the Process macro for SPSS) on a purposive sample of NPOs, the authors reveal that while NPOs currently exhibit lower digital maturity than commercial firms, employees' digital skills significantly and positively impact organizational performance. This relationship is predominantly mediated by overall digital advancement within the institution. (Marciszewska et al., 2024)

MoghadasNian et al. (2025), This paper presents a comprehensive Key Performance Indicator (KPI) framework designed to drive strategic digital transformation, transparency, and sustainability in Waqf institutions. The study categorizes KPIs across key operational domains, including financial performance, operational efficiency, donor engagement, governance, digital adoption, and stakeholder satisfaction. The findings demonstrate that implementing a structured, KPI-driven digital framework enables Waqf organizations to optimize resource allocation, enhance donor trust, and ensure long-term sustainability while maintaining their core ethical and social mission. (MoghadasNian et al., 2025)

Winanda (2026), This study analyzes the impact of digital Zakat service quality on donor (Muzakki) loyalty, incorporating institutional image as a moderating variable. Applying Moderated Regression Analysis (MRA) on active digital donors of Lazismu in East Java, Indonesia, the findings indicate that digital service quality significantly increases donor retention ($t=6.769, B=0.629$) by delivering enhanced efficiency and transparency. Furthermore, institutional image acts as a quasi-moderator, strengthening the relationship between technical service performance and long-term donor commitment. (Winanda, 2026)

3. Characteristics of the knowledge economy

The development of knowledge-based economies, as this economy is concerned with a group of The characteristics stand out as follows: (Makeed and Yahyaoui, 2014)

- An increase in the daily knowledge content of goods and services in an escalating manner.
- An increase in research and development processes at all levels, including institutions, governments, and universities.
- A great ability To bear the risks within the business and the corresponding rise in activities in the field of commercial projects.
- Reducing the lifespan of products and services, i.e. reducing the time periods between the time they are designed and the time they are displayed or replaced.
- The entry of communications, computers and the Internet into homes and places Work and school at a high level.
- An increase in the levels of education and skills among broad segments of the population.
- Flexibility and adaptability to consumer needs and market conditions.
- An increase in competition due to the constant access to the Internet by sellers and buyers.

4. Electronic Human Resources Management E-MRH

In light of recent trends related to globalization, customer orientation, privatization and other modern variables, most institutions attach great importance to the process of attracting, qualifying and developing employees.

Electronic human resources management in terms of its concept is an online tool to support MRH processes or a variety of different technologies that facilitate the use of human resource markets (i.e. electronic use) and expose the service more to employees through data. (Al-Taie and Al-Abadi, 2015)

5. Internet-Driven Telecommunications Development

During the 1990s, the Internet became the killer application of the information age. With this, the Internet became the focal point for the development of communications because consumer demand for data services is rising and is now driving infrastructure Increasingly operating on data and communication networks rather than on voice applications. They increased in triple digit rates during the 1990s, and today the Internet and other data services are now the main driver of utility investments.

Demand for broadband services, such as real-time delivery (streaming) of video- and graphics-intensive World Wide Web (WWW) pages, has stimulated incredible increases in available, The services sector, such as the real-time (streaming) delivery of World Wide Web (WWW) pages that are becoming increasingly popular for video and graphics, are spurring incredible increases in availability. (FriedenArtech, 2001, p. 18)

6. Digitalization

The ability of companies to digitize may vary within and across industries, digitization is of no interest to the company unless digitization investments are used in the company's business model - ie. When digitization occurs. If digitization is not used in the enterprise business model, the company wasted expenditure on digitization is just an expense where there is no return on investment. And therefore, It is important to determine where and how to base the impact of digitalization on a particular business model. In general, business models are interpretations of how a company does its business. (Ritter, 2020, p. 183)

7. Utilizing the strategic relevance of digitization

As digital innovations can transform industries across the board with few resources, new businesses are expected to emerge at scale, Provide great opportunities for entrepreneurs to create new market space. The Blue Ocean Strategy of Kim and Mauburn is a complement to the three-step approach to the pursuit of sustainability, The idea of a strategy that enables managers to maintain organizational success by creating uncontested market space has attracted considerable interest. The authors recommend that scarce resources not be wasted in crowded industries. (bleicher, 2019, p. 65)

8. Internet Governance and Privacy Paper Preparation

Internet governance can be illustrated in the context of interdisciplinary Internet governance: after the significant consequences of the Internet, which has social and political implications ,For example, these analyzes, and the role that the Internet plays in building the changing structure for the governance of the variables of society. (todd & G Mahm , 2017, p. 34)

9. The use of the Internet by charities

Areas of the new market inhabited by enterprises are now formed by more intense competition, consumers with changing demands and the emergence of new digital technologies. This boom has created a lot of opportunities but organizations can ignore them, The rapid adoption of Internet technologies by consumers has had a strong impact on organizations and associations and how they plan and present their marketing strategies. Chaffee suggested in 2004 that a digital marketing plan should be an integral part of the strategy,

How consumers interact with social media has become very important not only for marketers but especially for philanthropic marketers to understand and design appropriate marketing plans. Features of those who participate, digital media. (Quinton, 2012, p. 37)

10. Quality of Information Technology and Knowledge

Quality Concept According to the ISO 9000 standard, quality was concerned with a set of characteristics that meet the needs, but in the ISO 2000 version, this pattern changed and quality became seen or defined as the degree to which it meets A set of characteristics related to requirements, through this we notice that the previous definition focuses on the description being related to the product or service, while the modern definition focuses on what the thing should be and what it is, meaning that quality includes everything and not just the product or service. (HOYLE, 2007)

It is the quality system's point of view that the role From the point of view of the quality system for the role played by information technology, the ISO 38500 system provided an important conception of information technology governance, as it described it as the system through which the current and future use of information technology can be directed and controlled so that companies can evaluate, direct and control these uses to support the organization and Achieving its strategies, policies and plans. (PERIS & ALVAREZ, 2014)

With regard to organizational knowledge from the perspective of ISO, the ISO9001: 2015 standard aims to ensure that organizations are keen to look at and review their operations, and to ensure that operational knowledge is preserved. So that it must rely on itself by developing succession planning programs, developing technology updates, and dealing with supplier emergencies. Many organizations maintain organizational knowledge through business strategies and contingency plans. (Dentch, 2016, p. 110)

In terms of the importance of applying quality management, especially in business organizations, it leads to a set of benefits accruing to the latter with many positives, including: (Bogherza and Abdel-Rahman, 2019)

- Improving profitability and performance
- Increasing organizational effectiveness
- Gaining community satisfaction
- Strengthening the competitive position of the organization
- Preserving the vitality of the organization

11. Knowledge from the point of view of ISO

The ISO9001: 2015 standard aims to ensure that organizations look at and review their operations, and to ensure that operational knowledge is preserved. In the event that employees leave the organization, they remain aware With modern technologies that are interconnected with its business model, so that it must rely on itself by developing programs to plan the succession process, develop technology updates, and deal with emergencies related to suppliers. Many organizations maintain organizational knowledge through business strategies and contingency plans. (Dentch, 2016, p. 110)

12. Information and communication technology as a means of knowledge

The knowledge economy is built and developed through reliable methods based on information technologies, and aims to efficiently manage this information that depends on knowledge, especially in industries, as it is an important component of the economic sector. The latter has become a more important means in the development of societies in the present era, and this is what makes institutions adopt (Al-Zein, 2019) the technology system as a basic component in creating the knowledge economy. Where its role is:

- Creating a quantity of information that seeks to achieve real wealth
- Solving the problem of spatial proximity when exchanging knowledge and effective cooperation.
- It is a powerful system in addressing obstacles and advancing science through extensive databases.
- Technological social systems STS
- It is a social-technological system as it is linked to social components (humans) and technology (hardware) and consists of three main elements (Sheremet, 2022)
- Organizational structure: The organizational structure of STS represents the organizational employees subordinate to a group of positions led by people real perform the associated functions.

The European experience on digitization and the digital economy According to the reports of the DESI Digital Economy and Society Index for the year 2022, which is a composite index that summarizes indicators related to the digital performance of Europe and tracks the development of the member states of the European Union, since 2014 the European Commission has been

monitoring the digital progress of the member states of the European Union, which showed that there is progress in standards Digitization However, there is still a struggle to bridge the gaps related to digital skills and digital transformation of small and medium enterprises, as the European Union has allocated significant resources to support digital transformations with an estimated value of about 127 billion euros allocated to digital reforms and investments related to national recovery and resilience plans and reducing external dependencies. and increase the flexibility of the union. On average, member states allocate about 26% of their RRF allocations to digital transformation, above the mandatory 20% threshold. For countries that have chosen to invest more than 30% of their RRF in the field related to digitization, they are: Austria, Germany, Luxembourg, and Ireland ,and Lithuania. (DESI, 202 (2

According to DESI, which measures the progress of the European Union countries in the digital economy and digitization, it has identified five main criteria or indicators through which international progress can be known and determined in terms of digital development. These criteria are: communication, human capital, Internet use, integration of digital technology, services. Digital Public (Bejinaru & Cel Mare, 2019(

It can be explained in the following table .:

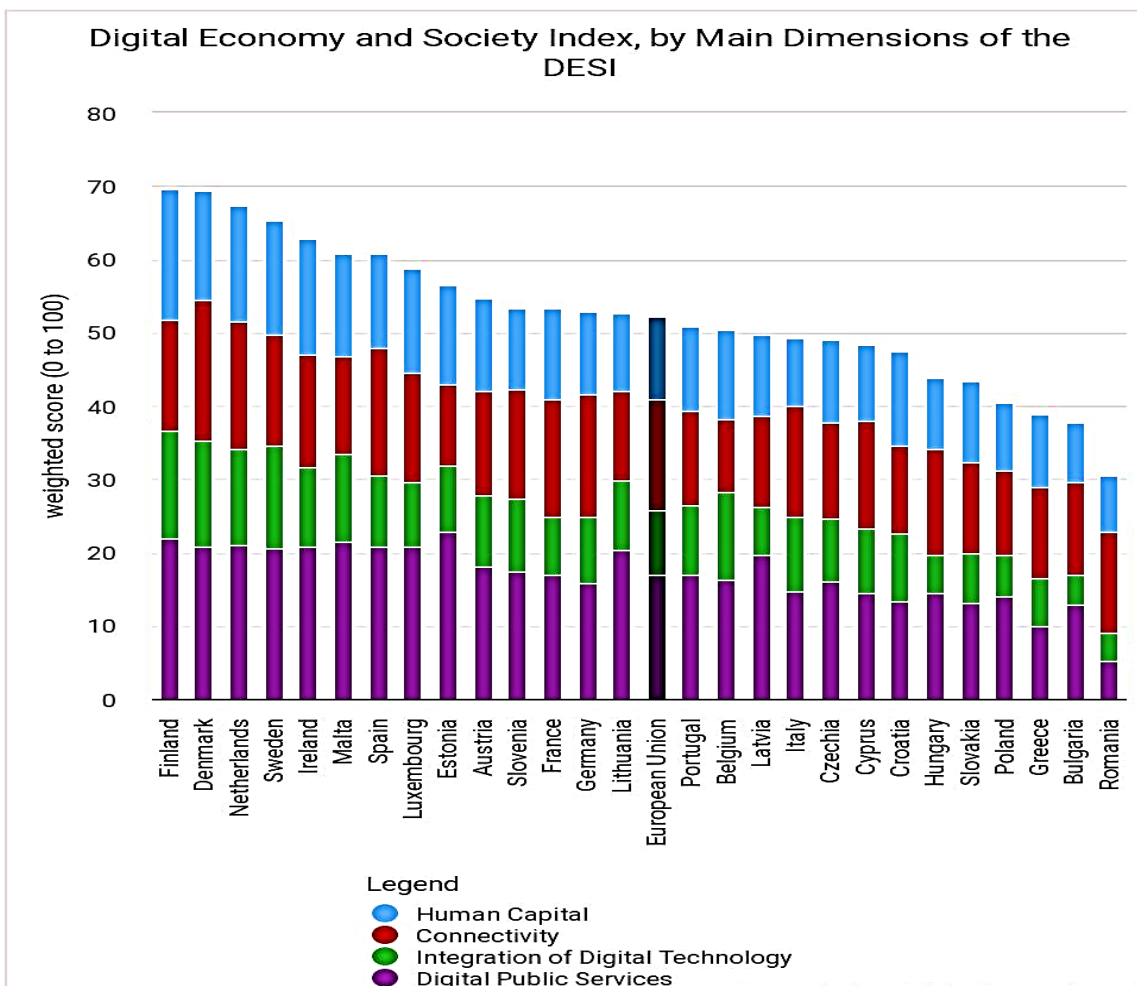
Table : 1 shows the main indicators of the digital economy according to DESI

Indicator	Indicator
1. Connectivity	Broadband, mobile broadband, broadband speed, and prices
2. Human capital	Basic skills and use of the Internet, advanced skills and development
3. Use of internet	Use of content, communication and online transactions by citizens
4. Integration of digital technology	Business digitalization & e-commerce
5. Digital public services	e-Govern

Source : Ruxandra Bejinaru & Stefan Cel Mare Impact of Digitalization on Education in the Knowledge Economy 2019

Through the DESI indicators for the year 2022, we will review, through the following figure, the ranking of European countries and their rates of progress in the digital field, according to the five indicators identified by the Digital Economy and Society Index.

Figure 1 : represents the progress of European countries in terms of digitization according to the five DESI standards



Through Figure 1, we can see the indicators of 28 European countries distributed in descending order on the field of digitization and with 4 criteria: human capital, communication, integration of digital technology, and public digital services. Where the unit of measurement is confined between 0 and 100 and Finland occupies the first place and Romania the last.

And through the following table we will show the index of each country as explained by the previous figure.

Table 2 shows the indicators of European countries in digitization according to The five criteria identified

by DESI

Pointer Country	human index	capital	contact indicator	Digital Technology Integration Index	Public digital services index
Finland	17.8		15.1	14.8	21.8
Denmark	14.8		19.3	14.5	20.8
Netherlands	15.8		17.5	13.0	21.0
Sweden	15.5		15.1	14.1	20.6
Ireland	15.7		15.4	10.8	20.9
Malta	14.1		13.3	12.0	21.5
Spain	12.8		17.4	9.63	20.9
Luxembourg	14.4		14.8	8.74	20.8
Estonia	13.5		11.1	9.12	22.8
Austria	12.7		14.1	9.79	18.0
Slovenia	11.1		15.0	9.96	17.4
France	12.5		16.0	7.98	16.8
Germany	11.2		16.8	8.96	15.9
Lithuania	10.6		12.3	9.31	20.4
EU	11.4		15.0	9.02	16.8
Portugal	11.5		12.9	9.4	17.0
Belgium	12.2		9.96	12.0	16.2
Latvia	11.0		12.5	6.46	19.7
Italy	9.14		15.3	10.2	14.6
Czech Republic	11.4		13.2	8.46	16.1
Cyprus	10.4		14.7	8.84	14.4
Croatia	13.0		12.0	9.18	13.4
Hungary	9.61		14.4	5.4	14.4
Slovakia	11.0		12.5	6.96	13.0
Poland	9.26		11.6	5.72	13.9
Greece	10.0		12.4	6.66	9.85
Bulgaria	8.15		12.7	3.88	13.0
Romania	7.73		13.8	3.79	5.26

Source : Digital Economy and Society Index (DESI, 2022)

In the following table, we note in terms of the first indicator related to human capital, which is considered one of the components and generator of knowledge, that Finland ranked first with a rate

of 17.8%, and with regard to the second indicator related to the communication index, Denmark ranked first with a rate of 19.3%, and the third indicator is an integration indicator Digital technology, Finland also ranked first with a rate of 14.8%, and the last indicator related to digital services was ranked first for Estonia, with a rate of 22.8%

Through the results of the table and the figure, it is clear that Finland and Denmark lead the ranking at very close rates in the field of digital economy, which requires weak countries in the field of digital economy to take experiences from these two leading countries in this field.

According to the World Bank Group (WBG) WORLD BANK GROUP, the digital economy contributes significantly to the gross domestic product in developed countries. It also helps in inclusion and poverty reduction at the level of developing countries by reducing information asymmetry for the working poor, and encouraging a more productive workforce by embracing digital technologies. In addition, the digital economy is important in stimulating innovation for countries in the areas of research and development, modern technologies, manufacturing and its development, and encouraging women to entrepreneurship. (WBG, Without Date)

13. The role of women in the digital economy:

Digital entrepreneurship may be a way to integrate the female component into the digital economy. In 2019, the United Nations Conference on Trade and Development (UNCTAD) launched the Women's E-Commerce Initiative with the aim of harnessing the transformative power of women's entrepreneurship in order to accelerate inclusive growth and contribute to poverty reduction, which leads to sustainable development.

The boom in e-commerce has led to a new emergence that leads to transformation and growth in digitization processes through more women having a chance to participate in digital operations, empowering women to these uses through freedom of work and expanding trade in the digital space, according to IFC studies (IFC) International Finance Corporation estimates that between 2025 and 2030 women could add more than \$14.5 billion to e-commerce markets in Africa and \$280 billion in Southeast Asia. (Sirimanne, 2022)

13. The Fusion of Social Computing and Content

In the past, most information technologies adopted by organizations were seen as additive tools to increase productivity or just lower operating costs. But today information technology has been linked to people's work as an artifact that can be neglected if necessary while working. Thus, the broad strategic view has been that the IT strategy should be in line with the business strategy of companies and associations. However, over the past two decades, the digital infrastructure of business and society has changed radically, and researchers and managers alike have recognized that the role of information technology has undergone a transformation. (Gal Oestreicher-siger & Lior, 2013, p. 593)

14. The Charity's Investment Policies

Seasoned donors often race or hold their fortunes with large estates, This is through large investments in the stock and bond markets in banks and stock exchanges, and these investors often expect that those charities will provide profits equal to their personal performance in the stock market in which they invested. And sometimes they feel frustrated when they know that those profits and returns from the investment portfolio of the charitable organization are few, and that they do not distribute those profits, or that part of them is paid for administrative fees. As an example, most charities pay about 5 percent of the market value of your grant fund and charge an administration fee of 1 to 1.5 percent. Knowing that the charity invests in someone else's money. Accordingly, you must maintain the value of your gift that you have provided, and establish a good investment policy in

managing your money management. Controls policy appropriate investments, asset allocation, portfolio management, benchmarks, Association officials should feel that donors have complete confidence in managing their gifts and gifts that they have given, rather than feeling negatively that donor funds are being directed to the benefit of the charitable association. Thus, the process of investing in the funds provided by the donors has returns of great value, through which the objectives of the charitable orga And make sure that the returns and gifts offered by the benefactors will make you feel comfortable before submitting your giftization are indicated in the distribution of returns and the protection of the manager. (L. Quynnn & Jordan, 2001, p. 34)

15. Associations as a Source of Personal Enrichment

Building on 'Tocqueville's observations, political philosopher George Kateb has argued that freedom of association has an independent and intrinsic value apart from protecting liberty and en The hunt for civil society. Voluntary NGOs can provide mutual assistance, develop civic participatory behaviors, provide assistance with valuable work, build community, and reduce negative and unwanted phenomena in society. (j, 2004, pp. 18-19)

16. Islamist Voluntary Welfare Associations

Islamist movements translate their vision of the Islamic message as the solid fundament offering answers to all problems of life into various activities: religious preaching, Ethical guidance for the individual's behavior, behavior, political and social activity, and organized social work This social work led to the establishment of many associations and individual volunteer work, A breaking point is given on the manner in which these Muslim NGOs operate at present in the Arab-Muslim world. Muslim Voluntary Welfare Associations are the product of a society that traditionally cherishes religious values and cultivates them in the society in which they live. (Harmsen, 2008, pp. 67-68)

17. National Kafel Program

Since the first day of the association, it has been working on digitizing the process of counting families, the incomes and grants granted to them, and it has contributed to the development of the 'Kafel Program', which works according to automated media and the use of communication technology via the Internet, where it is accessed via the web and the Smartphone. he association is following up the process in which the Ain Temouchent office was chosen as the first model state to work in by entering all the information related to the families of orphans and the statistics for them by the municipal offices of Ain Temouchent, Algeria.

18. The numerical statistician of management

On the morning of Saturday AH, corresponding to the first of December 2018, a series of regional training courses, organized by the National Office of the National Orphan Sponsor Association, were concluded to train and train the staff of the state offices and the National Office on the use of The electronic management software "Kafel Program", which was implemented by Engineer Mohamed Ben Fadda, head of the office of Sidi Ben Ada in the state of Ain Temouchent, and began to apply it in this state successfully and effectively a while ago, so the National Office decided to generalize its application to benefit from its efficiency and speed

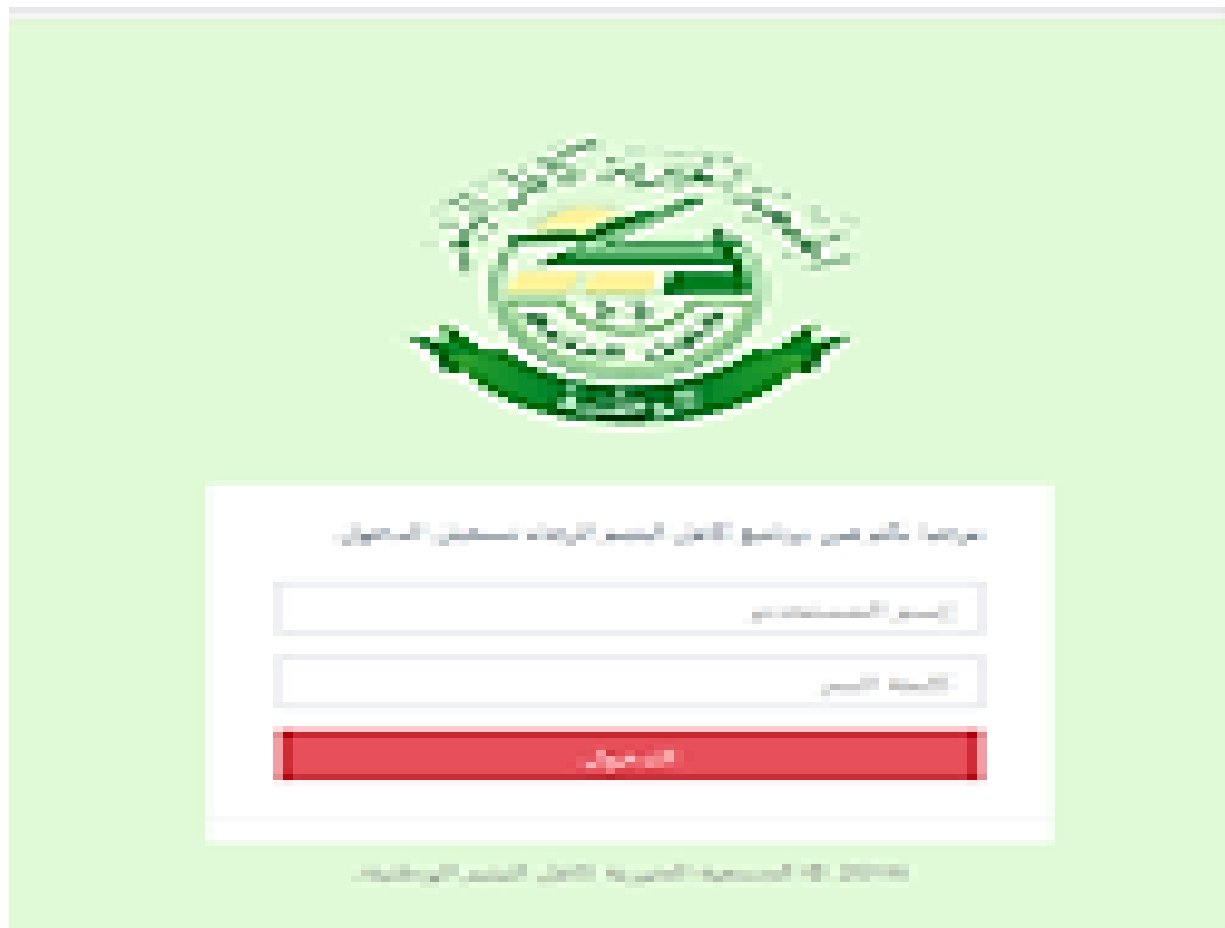
The series was launched from the western states last October, specifically on Saturday, October 29, 2018, from the city of Sidi Bel Abbes, with the participation of 25 members from 13 states from the western and southwestern states. They followed with great interest how to run and exploit the software in entering private information.

For the orphan and the widow and all matters that concern the financial and administrative functioning of the association. The adequate explanations provided by the software developer contributed to clarifying many things for the audience and lighting the way.

19. Enter the program

this is available via the following link: <http://www.kafelyatim.dz/appkafel>, After entering the link, the page for that appears.

Fig 2 : Shows entry to the sponsorship program from the official website of the Algerian National Orphan Support Association.

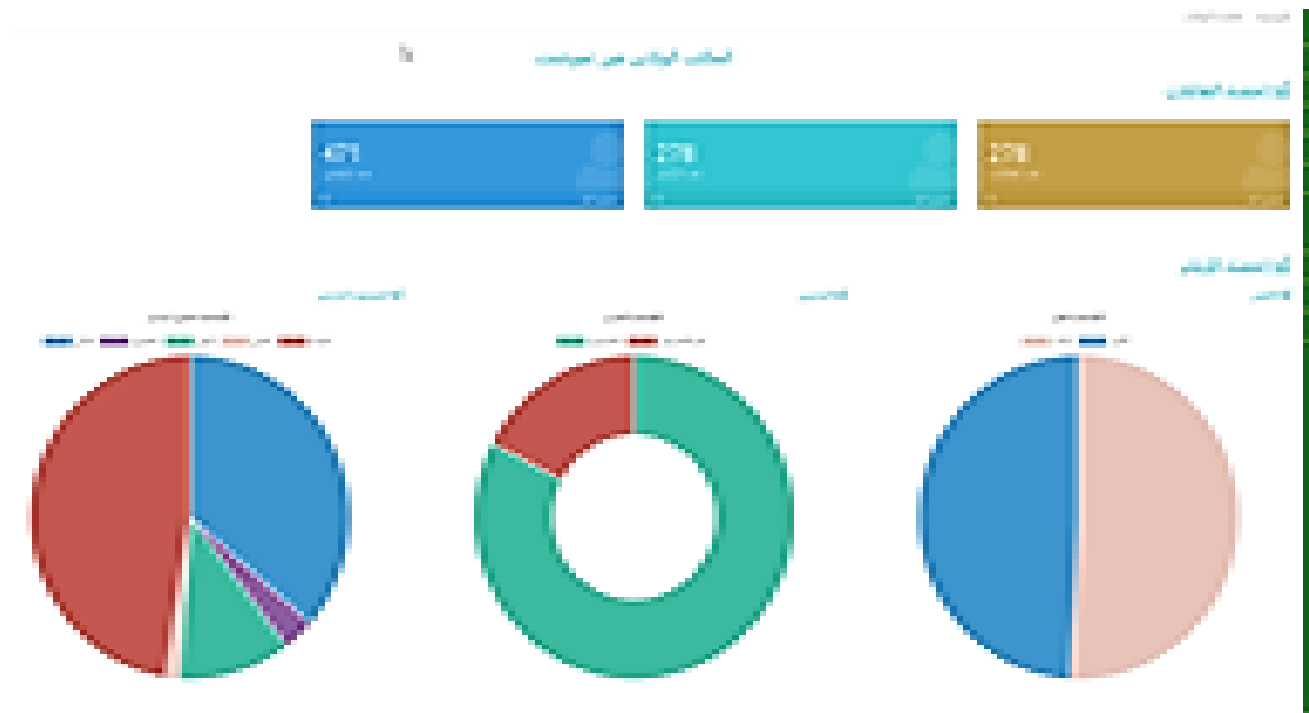


Source: From the National Kafel Program via the Internet link

20 .Accurate census of orphans' families

Since its establishment, the association has been striving for an accurate census of orphans' families, and the social committee has taken care of this, whereby members are transferred to orphan homes for inspection and a complete census of the social status, then the media committee is responsible for entering the information into the sponsor program.

Fig 3 : Shows the statistics for orphans after entering the user name and password by the head of the association for the state office.



Source: From the National Kafel Program via the Internet link

This menu allows the user to know the data that appears on the right and at the top, which allows access to the program functions and the database through which the user name appears, families counting, orphans counting, incomes and expenses.

21. The economic solidarity projects of the association

The association has several projects such as the orphan's bag project, the orphan's bag project, the clothing project and the Eid sacrifice etc. Projects can be viewed by the president of the association by accessing the same website.

22.1 The orphan's monthly project

One of the most important monthly activities of the association is the orphan's stand, which the association seeks to be permanent with God's help and then with the support of benefactors through the baskets in the municipality's shops

23. Orphan Bag Project

The association seeks to provide a school bag for each orphan with every school entry. The association, thanks to God and then with the support of benefactors, has prepared school bags for all orphans, and the process is completed by receiving the requests of each orphan and then providing them to them.

24. Organizing tourist and educational trips for orphans

The association organizes seasonal trips for the benefit of orphans for each school holiday. These trips aim to give psychological, social and educational comfort to the orphan. The programmed trips concern the tourist areas and beaches of Ain Temouchent and to some states such as Tlemcen and

The association also visits various companies and institutions, such as the electricity companies of Tarqa 'SKT' and the 'MED-GAZ' company for transporting gas from Algeria to Spain, with the aim of educating orphans about its activities on the one hand and supporting the association by those companies on the other hand. (<https://kafileyatim-dz.>, 2022)

25 . Association ambitions

Since its inception, the association has aspired to professionalism and excellence in economic and service solidarity, and it works hard to meet all the material and moral needs of orphans and widows. The craftsman for self-reliance and achieving sustainable participatory development, establishing a private clinic for health and psychological care and a kindergarten, opening shops that benefit the financially of the association to cover the expenses incurred, providing a utility vehicle for the association. Conclusion

Digital technologies have become an important means of improving the management and organization of charitable activities. Their use enables associations to manage beneficiary information more efficiently, facilitate administrative procedures, and provide a more reliable basis for identifying needs and allocating available assistance.

The experience of the National Sponsorship Program in Algeria illustrates the potential of digital and statistical tools to support the management of widows, orphans, and vulnerable families. By organizing beneficiary data and facilitating its processing, these tools can contribute to reducing administrative workload, improving the accuracy of information, and strengthening the fairness and effectiveness of assistance distribution.

However, the successful integration of technology into charitable management requires more than simply adopting digital tools. It also depends on the quality of the available data, the skills of personnel, the organization of administrative processes, and the ability to use information effectively in decision-making. Therefore, strengthening digital capacities and developing reliable information-management practices remain essential for improving the performance of charitable associations.

Overall, the study highlights the importance of digital transformation as a means of modernizing charitable administration and improving the delivery of social assistance. The Algerian experience demonstrates that the effective use of information and statistical technologies can contribute to a more organized, efficient, and equitable approach to supporting vulnerable populations. Recommendations

Based on the findings of this study, several recommendations can be proposed to improve the use of digital and statistical technologies in the management of charitable activities in Algeria:

- Strengthening digital infrastructure: Charitable associations should be provided with appropriate digital infrastructure and reliable information systems to facilitate the collection, storage, and management of beneficiary data.
- Developing staff competencies: Regular training should be organized to improve the digital and statistical skills of association staff and enable them to use information systems effectively.
- Establishing integrated beneficiary databases: Associations should develop accurate and regularly updated databases containing relevant information on widows, orphans, and vulnerable families to improve beneficiary identification and reduce duplication.
- Improving data quality and security: Appropriate procedures should be established to verify the accuracy of beneficiary information and protect personal data against unauthorized access or misuse.
- Promoting data-driven decision-making: Statistical information should be systematically used to assess needs, determine priorities, monitor assistance programs, and support administrative decision-making.
- Strengthening coordination among associations: Greater cooperation and information sharing between charitable associations and relevant public institutions could improve the identification of beneficiaries and contribute to a more efficient distribution of available resources.
- Evaluating digital programs regularly: Digital systems and assistance programs should be periodically evaluated to identify weaknesses, measure their effectiveness, and introduce improvements according to the changing needs of beneficiaries.
- Encouraging further research: Future studies should examine the impact of digital transformation on the performance of charitable organizations in different regions of Algeria and compare the Algerian experience with similar international initiatives.

References

- Al-Taie, Y. H., & Al-Abbadi, H. F. (2015). *Human resource management: Contemporary issues in administrative thought*. Dar Safaa for Publishing and Distribution.
- Al-Zein, A. (2019). The role of the transition to a knowledge-based economy in increasing the competitiveness of Arab economies: The case of the Algerian economy. *Journal of Strategy and Development*, 9(3).
- Bleicher, J., & Stanley, H. (2017). Digitization as a catalyst for business model innovation: A three-step approach to facilitating economic success. *Journal of Business Management*, (12).
- Bouguerza, R., & Abderrahmane, Y. (2019). Human resource management in light of adopting the concept of total quality in business organizations. *Journal of Studies in Humanities and Social Sciences*, 2(2).
- Bresler, R. J. (2004). *Freedom of association: Rights and liberties under the law*. ABC-CLIO.
- Dentch, M. P. (2016). *The ISO 9001:2015 implementation handbook: Using the process approach to build a quality management system*. ASQ Quality Press.
- Fatima, B. Y., & Salima, T. (2017). The knowledge economy in Algeria: Reality and prospects. *Annals of Bechar University in Economic Sciences*, 4(2).
- Frieden, R. (2001). *Managing Internet-driven change in international telecommunications*. Artech House.

- Harmesen, E. (2008). *Islam, civil society and social work: Muslim voluntary welfare associations in Jordan between patronage and empowerment*. Amsterdam University Press.
- Hoyle, D. (2007). *Quality management essentials*. Elsevier.
- Kafilyatim. (2022, January 23). *National orphan sponsor*. <http://kafilyatim.dz>
- Marciszewska, A., Brajer-Marczak, R., & Zablocka-Kluczka, A. (2024). Non-profit organizations in the context of digital transformation: Research results from Poland. *Organizacja i Kierowanie*, (1), 23–44.
- Mekid, A., & Yahiaoui, F. (2014). The reality of higher education in the knowledge economy. *Algerian Journal of Economics and Finance*, (1).
- Mercier-Laurent, E. (2020). *Artificial intelligence for knowledge management*. Springer Nature.
- Moghadasnian, S. A., Moghadasnian, A. S., & Moghadasnian, S. A. (2025). *Optimizing digital transformation in Waqf institutions: A strategic KPI framework for enhanced transparency and sustainability*. SSRN. <https://doi.org/10.2139/ssrn.6080752>
- Oestreicher-Singer, G., & Zalmanson, L. (2013). Content or community? A digital business strategy for content providers in the social age. *MIS Quarterly*, 37(2), 591–616.
- Omrane, A., & Brahi, S. (2019). Increasing the competitiveness of the Saudi economy through the transition to a knowledge-based economy. *Bibliophila Journal for Library and Information Studies*, (2).
- Peris-Ortiz, M., & Álvarez-García, J. (Eds.). (2014). *Action-based quality management: Strategy and tools for continuous improvement*. Springer International Publishing.
- Quinn, R. L., & Jordan, K. (2001). *Invest in charity: A donor's guide to charitable giving*. John Wiley & Sons.
- Quinton, S., & Fennemore, P. (2013). Missing a strategic marketing trick? The use of online social networks by UK charities. *International Journal of Nonprofit and Voluntary Sector Marketing*, 18(1), 36–51.
- Ritter, T., & Pedersen, C. L. (2020). Digitization capability and the digitalization of business models in business-to-business firms: Past, present, and future. *Industrial Marketing Management*, 86, 180–190. <https://doi.org/10.1016/j.indmarman.2019.02.022>
- Schwanholz, J., Graham, T., & Stoll, P.-T. (Eds.). (2018). *Managing democracy in the digital age: Internet regulation, social media use, and online civic engagement*. Springer. <https://doi.org/10.1007/978-3-319-61708-4>
- Sheremet, I. A. (2022). *Multigrammatical framework for knowledge-based digital economy*. Springer.
- Winanda, A. B. (2026). Digitalizing Zakat: Enhancing Muzakki loyalty through e-service quality and institutional image in Indonesia. *Journal of Digital Economic Studies*, 1(1), 42–60. <https://doi.org/10.64685/JDES.2026.1.1.42-60>
- Zadi, A., Benmostefa, R., & Rehab, Y. (2024). Managing charitable institutions according to statistical methods and electronic digitization. *Journal of Economic Growth and Entrepreneurship*, 7(3), 34–39.
- Zaid, M., & Hadfani, A. (2019). Intellectual capital as a competitive advantage for the organization in the knowledge economy. *Journal of Legal and Economic Studies*, (3).