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The Role of Digital Training for Human Resources in the Relevance of Research Within the University

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ABSTRACT

This article examines the role of digital human resources training in the mastery of digital research management (DRM) in universities. For they are primarily responsible for structural change and innovation in university research. Notwithstanding this, this paper aims to detect and identify the technical and digital deficiencies that mitigate the level of achievement in research.

Method: Our approach is based on an empirical study via a sample of 135 research specialists who will be interviewed and organized as follows: 34 teachers and 34 PhD students from the université Chouaib Doukkali in El Jadida, and 33 teachers and 34 PhD students from the université d' Ain Chock in Casablanca. Nevertheless, we focused on the use of SPSS software. The chi-square test and Cramer's Phi V will form the basis of our analysis, in order to process and interpret the data. At the same time, we will assess the correlation and strength of the relationship between the dependent and independent variables

Our study is based on a hypothetico-deductive approach that takes into consideration a mixed reflection based on qualitative and quantitative methods. The results of this study reveal that human resources are not being provided with specific training in MDR research, which is seen as a means of strengthening and modernizing research in higher education.

Result: The results attest those human resources are not trained by digital management strategies to carry out research projects, however, cel impacts relevance, excellence and above all innovation in scientific research.

Conclusion: In short, the aim of this article is to explore and determine the level of training of human resources for a digital transformation that positively impacts the world of creation, invention and innovation of new professional knowledge, reflexive and professionalizing, specific to scientific research on a national and international scale.

Key words: Digital management, research, university, challenges, prospect

INTRODUCTION

Today, the digital revolution has profoundly changed the way scientific research is practiced and produced. However, digital research management (DRM) uses information and communication technologies in investigations at university level, because they are essential to the operationalization, efficiency and effectiveness of university scientific work. In reality, it's an inescapable necessity that facilitates performance in both the public and private sectors. This situation is inextricable from the logic of inventing and

innovating scientific research in a rational and operational way.[1]

In this respect, digital technologies are the backbone of scientific affairs for universities, because they now apply to all sectors. In the meantime, the systematic use of the potential of digital technologies has become one of the central tasks of management, because it is increasingly decisive when it comes to competition and excellence in university scientific research. Identifying the potential of digital technologies for the creation and invention of digital research management models and systems is at the heart of MDR's research and teaching activities. We analyze practice with a view to developing a sense of application of innovative concepts, while instilling specific digital skills in future researchers.

Digitization, and more specifically digital research management, has attracted the attention of many researchers and specialists in the field. For it provides logic and speed of organization and reflection. What's more, the consistency of management and operationalization of expected results has a considerable influence on society, and sets the course for its success par excellence.

In the meantime, universities and researchers in the field are all faced with the challenges of adapting to, getting used to and mastering this digital world of research, especially when it comes to new perspectives that can launch future innovators towards hard-hitting programming that facilitates the realization of their short- or long-term projects.

To this end, this reflexive work makes it possible to overcome the obstacles that can stand in the way of successful scientific research, but, in fact, the problem lies in this resistance to change conceived as a truth that has lasted for a long time, moreover, it constantly attempts to change the ethical and methodological foundations of the university structure.[2]

In this regard, we argue that the field of scientific research still lacks the conceptual and empirical clarity needed to benefit from the theoretical diversity of MDR digital research management. The label "MDR" has been applied to the evolution of technology, as well as to the evolution of both public and private entities in societies in general.

Meanwhile, it has been used more specifically to refer to change in universities. Indeed, its use refers to technical and technological processes specific to MDR, in addition, it attaches itself to the types of data and rational thinking of analysis and information processing categorically benefiting from new theories and theoretical elaborations on digital and digital transformation.

No one can doubt that the circumstances of the Covid 19 pandemic have had an impact on the field of teaching and learning. On the other hand, the virtual world has seen remarkable changes and unprecedented successes in the mastery of techniques and methods through the use of information and communication technologies (ICT).[3]

Today, university research cannot function to the detriment of the digital world, as the level of digitization of Moroccan universities must be improved to maintain the competitiveness of scientific research. That said, digital transformation will have an impressive influence on the performance of research projects.[4]

MDR digital research management is equipped with an arsenal of interesting technological tools needed for good management of the needs and demands of specialist researchers in the field of university research.[5]

However, these innovations have brought about considerable changes in various institutions. However, the MDR conveyed indispensable methodological and scientific approaches, with reflections and procedures that acted on the essential components of scientific research within the University

LITERATURE REVIEW

1.1- Digital research management (DRM) at the university

According to Heavin and Power,[6] the ultimate and overarching goal of MDR is to find the most appropriate solutions to address the impediments that can negatively influence the relevance and efficiency of academic research.

Digital transformation is always present in managerial strategies, as it prompts managerial researchers to rethink the strategic approaches and investigative operations of academics in order to revalue the theories and procedures inherent in digital transformation specific to research.[7]

In this connection, Kraus, S. and all,[8] also prove that establishments that do not implement mechanisms and approaches that respect the foundations and logic of the MDR are bound to find it difficult to keep up with the novelties and news of the new digital reality in the empirical phase.

However, research via MDR tends to be highly specialized and limited to specific fields, which is why there has been a significant increase in the number of articles and publications from different disciplines with convincing results every year.

From this point of view, the digital management of MDR research must be seriously considered in order to meet the needs of demand and the conditions of scientific research in higher education. To this end, MDR needs to be harnessed to overcome the difficulties encountered in the field of scientific research, because any process of change must avoid and overcome obstacles, and perceive challenges and prospects with insight and a great deal of realism.

Over the past decade, universities have been focusing attention on artificial intelligence (AI) tools, and in particular on ways of using MDR as a primary tool in scientific training techniques. Nevertheless, although AI technology offers great potential for solving difficulties, challenges remain involved in practical implementation. Meanwhile, the lack of expertise in the strategic use of AI and the digital management of MDR research is holding back the creation of the initiative in the university.

To this end, the fruits of the results lead to good theoretical and managerial reflections, which advocate the logic of bringing out new methods and new managerial methodologies and digital technologies specific to research. But, if we refer to previous experiences and research, we can state that there was resistance to change in all establishments, And sometimes, generate debates influencing programs whose operationalization that at the level of projects in universities. This is where MDR comes in, to fill the gaps and meet the demands of change.

1.2- Digital research management and user motivation

With this in mind, a considerable number of researchers from different sections and fields, and even specialists in mathematics, physics, political science and legal science, are taking a keen interest in the contribution of MDR and, above all, in its evolution and effectiveness. The crucial objective of this article is to provide an overview of the MDR in order to propose avenues of research for the future, in this sense, the results indicate in particular that managers must adapt their managerial strategies to a new digital reality.[9]

So, based on this reality, the MDR must be taken into consideration insofar as its applicability in the research field generates unquestionable, unpublished and consistent results, so, the overriding interest is to turn to a digital and managerial deepening to break through professionally, and especially with the explosion and multiplication of new technologies.

Many research units at university level are going digital, and adopting MDR as part of the education system process, particularly in syllabuses and training modules specific to scientific research. This reality will surely change the face of all progress in the field of university scientific research.

It is therefore a subject that all those involved in university research are now

fully confronted with. For this reason, our aim in this article is to answer the following research question: To what extent does human resources performance foster the professionalization and refinement of digital management practices in MDR research at university level ?

Above all, to examine the role that institutional policies can play in the implementation and operationalization of digital research management at Moroccan universities. Hence our focus on the first hypothesis, which is to verify the level of mastery of digital research management by teaching researchers and doctoral students, and to assess whether this can contribute to the evolution and performance of university scientific research.

But in the second, we'll be asked to justify whether the application of digital research management in research by specialists in research units and PhD students is bearing fruit and can reinforce and operationalize good governance of scientific research in a professional and professionalizing way.[10]

1.3- Digital research management: a key epistemological issue

Entering the field of digital research management is not easy to conceive, nor is it easy to proceed appropriately in research work. On the other hand, the term expresses an efficient, reflective and professionalizing managerial skill that comes under the umbrella of artificial intelligence (AI). For some, MDR is presented as the automation of research activities associated with human reasoning, such as the pursuit of perfectionism and rationalism ensuring rigorous and productive work.

In fact, this is achieved through the establishment of a Cartesian mindset that ensures creation and innovation par excellence. To achieve this, digital technologies via digital research management are transforming the management of the staff concerned and enabling them to master the methods deployed, as they explicitly impact the performance of scientific production within the university. In addition, the need for digital transformation (DT) based on MDR restores unprecedented epistemological reflection. In the meantime, critical paths are being developed to amplify and enrich the spirit of analysis through digital skills. On the other hand, this situation can raise complex and ambiguous challenges for operational scientific research.[11]

This article explores the training and integration of human resources research specialists in universities, and the appropriation of digital skills as a strategic approach in higher education institutions. In this context, digital skills refer to the ability of individuals to use the latest digital technologies effectively and efficiently. Without doubt, digital skills are in fact the specific abilities required to use more advanced digital tools and platforms, including data analysis and the use of more sophisticated software. Given the rapid advances in digital technologies, higher education is at a pivotal point in embracing these changes to improve research efficiency and innovation excellence. The study focuses on a literature review based on leading figures and experiences to examine current practices that align digital and digital literacy within the university.[12]

MDR is a paradigm, a unique and typical concept based on new ideas and the best managerial and scientific informational approaches. Since then, this reasoning has reflected the possibility of carrying out and developing research assisted by machines (computers) and, more precisely, by the most advanced and high-performance software.

From the outset, this state of affairs favors the study of mechanisms that enable all those involved in research at university level to perceive, reason, produce pertinently and act better.

In fact, digital transformation is a process by which players change the way they conceive and perceive things. To do this, it has become a necessity that ensures both the modification of practical research management methods in universities.

In other words, universities need to apply modern information technologies MDR to meet the growing learning needs of students and teachers, however, this study aims to analyze the need to appropriate knowledge in a field of training in the digital economy and epistemological reflections in order to create high-quality human resources concerned with excelling in scientific productions.

1.4- Managerial innovation (MI) as a source of performance

IM managerial innovation in scientific research refers to the introduction of new ideas, methods, technologies or approaches that improve understanding, practice or applications in a given field. This can include new discoveries by identifying novel phenomena or concepts, improved methodologies, developing more effective techniques and tools for carrying out experiments or analyzing relevant data specific to the field of science, and transforming research results into useful technologies or services for society. MI represents an innovative, efficient approach whose overriding aim is to rethink research management in higher education, by challenging existing declarative and procedural practices and thinking, and adopting new postures and approaches aimed at making research more effective and rational.

With this in mind, innovation in university research is the way forward, as needs and expectations undergo metamorphosis. Indeed, to implement real change, it is essential that the will to put human resources (HR) back at the heart of research in universities mobilized is an inescapable and profound necessity. However, the MDR aims to give birth to a new generation of knowledgeable teachers and creative doctoral students, implementing a spirit of initiative by setting up an integrated knowledge innovation system that connects the university to its deserved economic and social environment.

In this context, the adoption and enhancement of innovation remains a real deal for managerial entities to guarantee the insight and development of their productivities. In short, this approach enables players to identify a positioning that operationally promotes technological and managerial innovations as sources of competitive advancement.[13]

With this in mind, information technologies have become ubiquitous in the public sector, and it's hard to imagine a public issue or government service that doesn't involve them in some substantial way. Public management research now incorporates the effects of data availability and quality, as well as the technologies used in the public sector. From a public management perspective, digital management can be seen as an essential aspect of innovation, co-production, transparency and the creation of public value.[14]

Among other things, the influence of information technologies on human resources management and, more specifically, on training policy and research to cope with new environments are examined, and the technologies used in an attempt to develop a learning entity. Success factors for training policy are identified. These include flexibility in the management of training time, the active participation of trainers, the establishment of control mechanisms to guarantee training, the creation of quality content, the promotion of interactive elements between trainers, students and among themselves, the use of standardized and developed technologies and progressive implementation.[15]

This article explores the integration of human resource management and the impact of digital skills as a strategic approach in higher education institutions. In this context, digital competencies refer to the ability of individuals to design and use digital technologies effectively and efficiently. Digital competencies, however, are understood as the specific skills required to use digital tools and platforms, including data analysis, software use and online

communication. Given the rapid advances in digital technologies, higher education finds itself at a more important time than ever to adopt changes that aptly enhance the effectiveness of training and research management and academic excellence.[16]

The issue of training and human resources in connection with the adoption and management of entities is conspicuously absent from the burgeoning specialist literature. To remedy this imbalance, a research program on training and related human resource issues is needed to support and inform the growing e-business sector.

This article aims to demonstrate the need to implement the competency model for teachers and lecturers as an innovative human resources management tool. The authors have used a variety of scientific research methods to establish universal scientific standards for the selection, evaluation, training and work management of teachers and doctoral candidates, using the competencies of academic players.[17]

1.5 -Scientific research and the responsibility of institutional policies

In Morocco, the competence of public policies generally lies in the institutionalization of texts governing and legislating scientific research. They then delegate these missions to institutional policies (research centers), which are the main players, through the research units, considered responsible for designing and developing scientific programs.

Within this framework, each unit deploys and adopts rational approaches and develops specific and suitable mechanisms based on human resources (HR) skills and, more precisely, on specific budgetary funds inherent to each research laboratory. From the outset, the research unit is fundamentally recognized by the National Center for Scientific Research (CNRST), which provides it with competent personnel in the field, and with specific budget allocations.

In this respect, specific expert committees from the field of higher education and scientific research carry out a synoptic and more concise survey and analysis of the research unit, its positioning and, above all, its productive and evolutionary process. On the other hand, expert appraisal focuses specifically on the scientific project and its human and material resources.

The conclusions are accompanied by a score based on criteria such as: scientific quality of production, outreach and attractiveness, integration into the higher education environment, institutional strategy, governance and laboratory life. Following this evaluation, the Ministry of Culture and Communication decides on the accreditation of each institution's research units. (Superior Council for education, training and scientific research: Instance of national evaluation of education system, training and scientific research.2022)

Ramaditya and his collaborators prove that digital learning has an impact on innovative behavior and knowledge management on organizational performance. The results of the study indicate that digital learning has a direct impact on performance and that knowledge management affects performance.[18]

MATERIALS & METHODS

Our methodological approach takes into account a sampling of university research specialists, with 135 interviewed per mailing, organized as follows: (34 teacher-researchers and 34 doctoral students from the Université Chouaib Doukkali d'El Jadida were interviewed, plus33 teacher-researchers from research units, with 34 doctoral students from the Université d'Ain Chock de Casablanca interviewed. In all cases, this phase was based on a methodology for collecting and analyzing qualitative and quantitative data, advocating the paradigm of methodological individualism of Max Webber and Raymond Boudon. Based on this premise, the data was collated and interpreted via a field questionnaire.

Furthermore, the results of this finding will enable us to bring out a necessary smart data

background relating to the representations, perceptions and experiences of resource persons at the two universities. During this empirical phase, we focused our attention on the actors most responsible and closest to the field, in order to gather data and real truths translating the reality and veracity of the application of MDR digital research management in higher education research methodologies.

First of all, we have chosen to carry out our research using a meso study, which contains a pool of teacher-researchers from the research units of the two aforementioned universities. The sample was set at 67. In a second phase, we also opted for another micro-study which took into consideration doctoral students who represent the research of the aforementioned universities, with a number of (68 questioned) out of a total of 135 participants for this operation.

In all cases, this phase was based on a hypothetico-deductive approach involving qualitative and quantitative analysis, and on the basis of this premise, data was collated and interpreted via a field questionnaire.

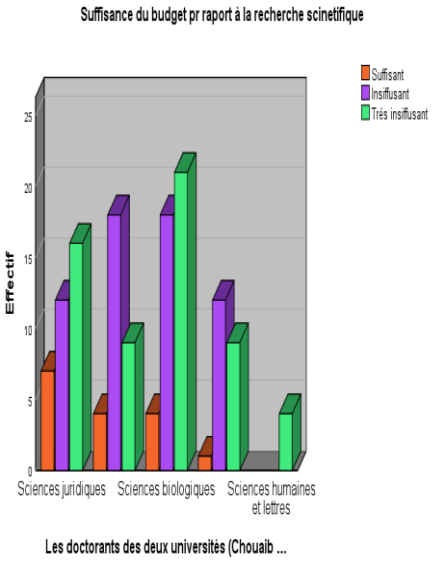
In addition, the results of this study enabled us to draw up a smart data background, based on the representations, perceptions and experiences of resource people at the two universities. Due to the nature of its variables, which form the backbone of our study, and despite a descriptive reflection that was carried out by a multivariate analysis based on SPSS software in order to analyze the results of our survey.

In this respect, we have also built our reflection on the correlation of dependent and independent variables by calculating the strength of relationship while verifying the margin of error between the variables. In this respect, we check the asymptotic significance of Pearson's Chi-square, and also evaluate the value of Cramer's V and Phi, in order to verify the strength of the relationship between the variables. Finally, the results obtained clearly explain the importance of the degree of application of the MDR in scientific research at university level, or, on the contrary, simply inform us about the degree and level of its use and application.

STATISTICAL ANALYSIS

1: Sufficient budget compared to the University of Chouaib Doukkali and Ain Chock

Chi-square tests			
	Value	**ddl**	**Asymptotic significance (two-sided)**
Pearson chi-square	21.198a	8	.007
Likelihood ratio	23.060	8	.003
Linear by linear association	8.547	1	.003
N of valid observations	135		



Chi-square tests			
	Value	**ddl**	**Asymptotic significance (two-sided)**
Pearson chi-square	21.198a	8	.007
Likelihood ratio	23.060	8	.003
Linear by linear association	8.547	1	.003
N of valid observations	135		

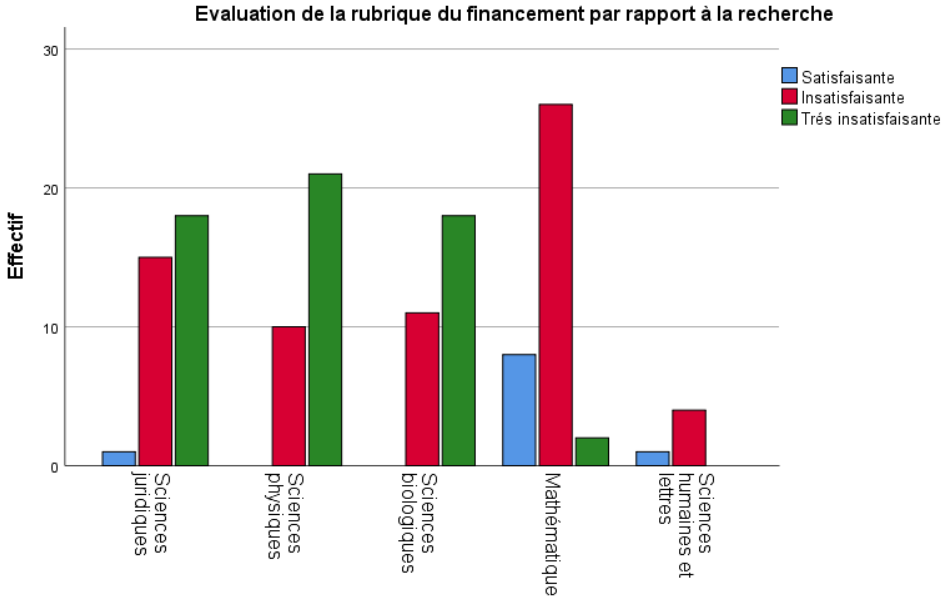
Analysis of the tables and graph shows that doctoral students at both universities (Chouaib Doukkali and Ain Chock) declare that the funding allocated to scientific research in higher education remains very modest in relation to the objectives set by the university. In this respect, Pearson's Chi-square test of asymptotic significance is greater than 0.05, however, this explains why there is no correlation between the variables,

In addition to the fact that Cramer's V and Phi values do not exceed 70%, so there is in reality no strong relationship between the variables. But, despite all this, we can conclude from the results that all doctoral students at the two universities from all disciplines (legal sciences, biological sciences and humanities) admit that the budget remains very inadequate in relation to the demand for scientific research, and in particular this funding for higher education will remain very meagre in relation to the objectives set by the two universities.

2- Evaluation of funding budget in relation to research

Chi-square tests			
	Value	**ddl**	**Asymptotic significance (two-sided)**
Pearson chi-square	21.198a	8	.007
Likelihood ratio	23.060	8	.003
Linear by linear association	8.547	1	.003
N of valid observations	135		

		Value	**Approximative Signification**
Paire nominale Nominal	**Phi**	.396	.007
	Cramer's V	.280	.007
Interval by Interval	**R de Pearson**	-.253-	.003[c]
Ordinal par Ordinal	**Spearman correlation**	-.266-	.002[c]
N of valid observations		135	



Based on a rational reading of the results shown in the tables and graphs, analysis of the results reveals that doctoral students at the two universities (Chouaib Doukkali and Ain Chock) state that the funding budget allocated to scientific research at Moroccan universities does not meet the objectives set by those responsible for scientific research at the universities. Apart from the fact that Pearson's Chi-square test of asymptotic

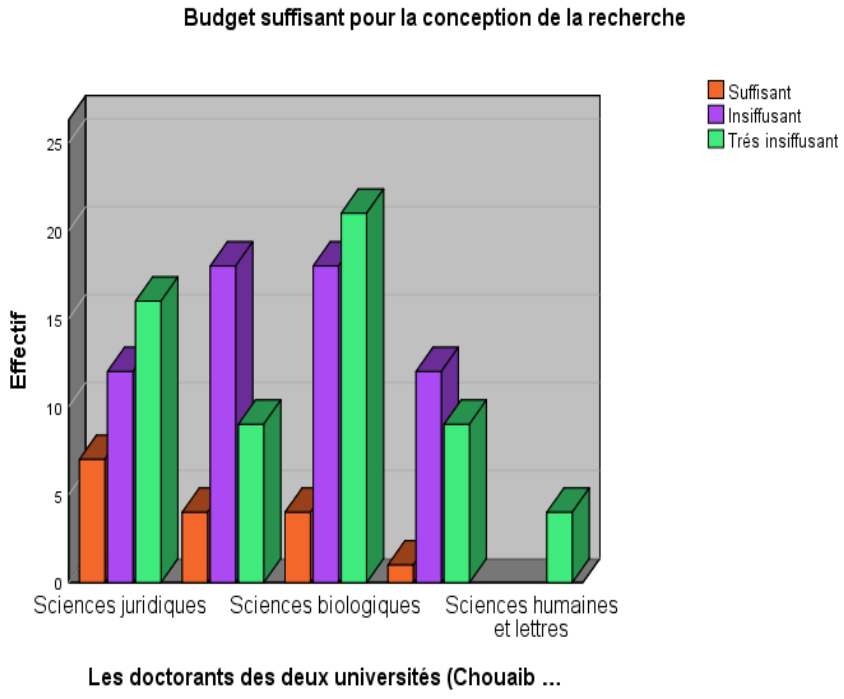
significance exceeds the value of 0.05, however, this clarifies that there is no correlation between the dependent and independent variables.

Notwithstanding this, Cramer's V and Phi in their value does not exceed the 70% estimate, so there is not at this time a strong relationship between the variables. But, despite all this, we can state that all doctoral students at the two universities in all fields (physical sciences, biological sciences, legal sciences, mathematics and humanities) admit that the budget does not meet the wishes of future researchers at the two universities. This rate remains very insufficient in relation to the demands and requirements of scientific research

3. Sufficient budget for research design

		Value	Approximative Signification
Paire nominale Nominal	**Phi**	.396	.007
	Cramer's V	.280	.007
Interval by Interval	**R de Pearson**	-.253-	.003[c]
Ordinal par Ordinal	**Spearman correlation**	-.266-	.002[c]
N of valid observations		135	

Chi-square tests			
	Value	**ddl**	**Asymptotic significance (two-sided)**
Pearson chi-square	21.198a	8	.007
Likelihood ratio	23.060	8	.003
Linear by linear association	8.547	1	.003
N of valid observations	135		



The tables and graphs illustrate the results obtained from the declarations of doctoral students at the two universities (Doukkali and Ain Chock), which prove that the budget allocated to research design remains highly insignificant if we want to talk about more advanced and scientific research. However, this budget, which is intended to provide a glimpse of relevant concepts, remains to be meditated on at the level of

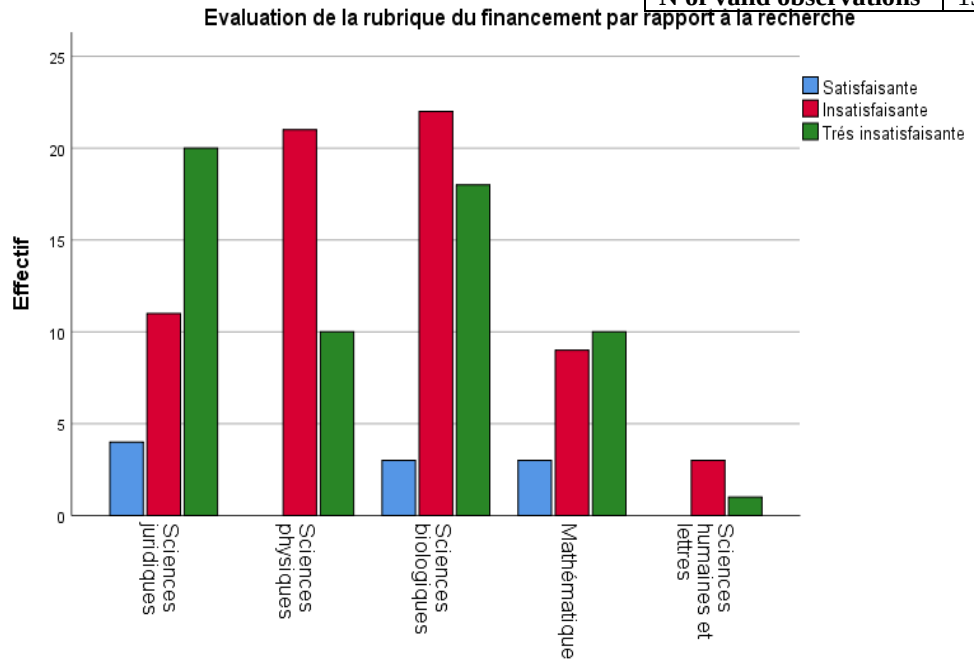
higher education. Furthermore, in this perspective, and as such, the Pearson Chi-square test in asymptotic significance is greater than 0.05.

However, this explains that there is no correlation between the variables, hence, Cramer's V and Phi in their value does not exceed the percentage of 70%, therefore, we can conclude that there is not in truth a strong relationship between the variables. but. After that, all doctoral students from all branches admit that this budget remains insufficient to the requirements of scientific research, in short, this reality remains further from the ambitions of the objectives, which translate the right path towards excellence, invention and innovation.

4.-Evaluation de la rubrique du financement par rapport à la recherche

Chi-square tests			
	Value	**ddl**	**Asymptotic significance (two-sided)**
Pearson chi-square	21.198 a	8	.007
Likelihood ratio	23.060	8	.003
Linear by linear association	8.547	1	.003
N of valid observations	135		

		Valu e	**Approximat ive Significatio n**
Paire nominale **Nominal**	**Phi**	.396	.007
	Cramer's V	.280	.007
Interval by Interval	**R de Pearson**	-.253-	.003[c]
Ordinal par Ordinal	**Spearman correlatio n**	-.266-	.002[c]
N of valid observations		135	



All doctoral students in the different departments (Physical sciences, biological sciences, Legal sciences, Mathematics and Humanities) of the two universities (Chouaib Doukkali in El Jadida, and Ain Chock in Casablanca) declare after analysis of the tables and graph that the funding heading in relation to scientific research in higher education remains relative and very insufficient in relation to the objectives expected by the university. To this end, Pearson's Chi-square test in its asymptotic significance is greater than 0.05, which explains why there is no correlation between the variables. In this respect, Cramer's V and Phi values do not exceed 70%, so there

is clearly no strong relationship between the variables, but, in the final analysis, this explains why the specific heading of scientific research funding remains incompatible with the challenges and prospects of a more reflective, rational, or more precisely, more professional and professionalizing research.

RESULT

Digital research management (DRM) is an inescapable reality, as it operationally promotes the effectiveness and rationality of all scientific production. For this reason, we began by conducting an exploratory study among Moroccan research centers, teacher-researchers and doctoral students, in order to elucidate, clarify and objectively assess this sought-after and prospective situation.

Analysis of the corpus of data processed at the end of our data collection shows that the scientific production of digital management research MDR, (Table 1) was mainly through results generated from the empirical phase.

But, in fact, the findings obtained reflect the place of MDR in research and, above all, in the evaluation of its applicability in scientific projects, whether by the various research centers and laboratories or by university doctoral students. (For information: Casablanca Serum and Vaccine Center, research laboratories at the University of Chouaib Doukkali in el Jadida and Ain Chock in Casablanca).

The results of the empirical research reveal that a striking percentage of teaching researchers at Chouaib Doukkali University declare that research centers only facilitate access to scientific research work with a percentage of 31.4%, and with an emphasis on MDR of 45%, and finally the degree of application of digital research management does not exceed the threshold of 59%, With this in mind, university lecturers at Casablanca's Ain Chock University point out that research units (laboratories) can only facilitate access to scientific data at a rate of 25%, but that MDR enhancement does not exceed the threshold of 39%.

However, the degree of application of the MDR in university research projects is estimated at 49%. Then there are the doctoral students at Chouaib Doukkali University, who prove that access to documents in the centers is estimated at a percentage of 37%, while the development of the MDR does not exceed 41%. Nevertheless, the degree of applicability of the MDR remains very modest in relation to the wishes and ambitions of scientific research, and hardly exceeds the percentage of 39%.

And in the final phase, doctoral students at the University of Ain Chock report that access to scientific documents concerning research centers is rated at 25%, and with an evaluation of 47%, but, if we refer to the enhancement of the MDR in scientific approaches and procedures, we note that the degree of application of the MDR in research work does not exceed a contribution of 43%. This consideration, together with the necessary Big and smart data, has enabled us to assess and highlight the extraordinary role that digital research management can play in Moroccan universities,

Whether in terms of its consideration, implementation or, more precisely, its application in higher education research projects.

In short, based on the results we've seen, we can say that digital research management is a real performance gas pedal, a tool for applying intelligent techniques and technologies. In this respect, MDR imposes powerful reflections on teaching researchers and doctoral students, enabling them to change their traditional practices in order to stay on track and achieve better results.

However, digital research management must be inclined towards digital innovation and have a mindset of invention and creation in order to remain competitive by improving productive performance. Digital management is ubiquitous in scientific research and epistemologically challenges the reflexive and professional approaches of research, among other things. It is the raison

d'être of researchers, forcing them to rethink, restructure and recast digital managerial strategies and operations.

DISCUSSION

Digital Research Management (DRM) in universities probably refers to the process of using, integrating and above all mastering Information and Communication Technologies in the field of scientific research. This is because it facilitates the creative, inventive and innovative spirit of future researchers, as well as fostering the promotion of higher education and progress in the scientific research system in general.

This reality, in turn, generates specific objectives that can be summed up in the following points: First of all, we need to think about improving techniques and procedures in order to better grasp the pace, knowledge and know-how.

In addition, we need to equip ourselves with efficient, reflexive digital managerial skills to create a professional (MDR) capable of meeting the demands of research. In return, measure all the obstacles that stand in the way of excellence and success in scientific research at university level. In reality, taking charge of digital research management in universities represents a multifaceted challenge due to its complex applicability by the various players involved in research. In short, this study aims to clarify and examine the innovations and changes in university management and governance with regard to digital research management.

It is in this context that higher education establishments are constantly trying to develop a universal mechanism for a new scientific research management model that advocates digital research management (DRM). Currently, the world of scientific research is focusing on the dimension of digitization policy and the governance of emerging digital technologies.

Nevertheless, all our research opts for theoretical, methodological and practical challenges, as well as deploying and targeting ethical and competitive perspectives. It is from this perspective that we focus our thinking to address and examine ways to order and regulate recent and innovative technologies at the research level.

In addition, we study and evaluate in concrete terms how these current technologies are legislated from the government's point of view, and then reveal how they are programmed and codified in institutional policies. In addition, we find out how they impose themselves, and to what extent they trace their paths by modifying communicational and procedural modes aimed at the growth and development of scientific production on a national and universal scale.

What's more, we need to focus on a diachronic and synchronic study of the relationships between academic researchers and discover their commitments. This will enable us to assess the role of public and institutional policies in mobilizing digital technologies to reconstruct contemporary conceptual approaches. In addition, to trace the guidelines for promoting scientific research in Moroccan higher education.

Nevertheless, this report proves the considerable value of digital technology, and above all affirms the importance of digital research management (DRM) as an essential approach and model in the university training curriculum. Today, digital technology has invaded the world of information and communication, and digital technologies are everywhere. This means that entities equipped with the right technical, digital and digital skills design better and adopt good practices more effectively, and perform better in scientific research.

In fact, the synthesis of the results obtained is twofold: firstly, to map the thematic evolution of (DRM) in scientific fields. In this respect, existing research on digital research management in different academic themes will help shape the evolutionary perspective adopted in this cens. Secondly, digital research management enables university researchers and doctoral students to increase the efficiency of their work,

moreover, to better design research projects, and above all, to effectively perfect their methodologies in order to make the most ad hoc and precise decisions with a view to improving their initiatives.

Without scepticism, digital research management enables university researchers and PhD students to increase the efficiency of their work, to design projects and perfect their research quickly and efficiently, moreover, to make more precise decisions, and to adapt concretely to a new reality by improving their forward-looking methodologies. However, many universities still face a number of obstacles and challenges when it comes to digital research management (DRM). Indeed, the lack of IT, digital and digital resources means that universities are unable to acquire the important software that will enable the efficient implementation of (MDR) in higher education. From the outset, our aim was to focus on an objective and rational analysis of the reversible impact of digital research management.

This observation has prompted us to track down the right reason for managing information and transforming it into representative knowledge. In this sense, universities, as the main institutions responsible for training future professionals, need to respond to this demand and promote the development of informational and procedural skills in research teachers and doctoral students. In this respect, the real challenge lies in mastering digital skills and artificial intelligence (AI) techniques, of which the (MDR) remains an immeasurable evidence.

CONCLUSION

Today, digital research management (DRM) has attracted considerable interest in academic institutions over the last few decades. Indeed, developing countries and the people concerned are all facing the same challenges of adapting to the digital world and digital technologies. Nonetheless, the MDR is emerging as an essential vector of transformation for universities in an ever-changing professional research landscape.

This technological revolution is having a profound impact not only on the way researchers carry out their research, but also on the way research projects are directed and managed at higher education level. In fact, the study explored for the first time the role and impact of digital management on the relevance of scientific research in terms of management concepts and methods at the Chouaib Doukkali University in El Jadida and the Ain Chock University in Casablanca.

In this perspective, university lecturers also argue that research units (laboratories) are focusing their attention on the development of digital research management (DRM) with a modestly representative percentage. But, on the other hand, doctoral students prove that the digital management of research remains far less significant in relation to the ambitions and objectives outlined by said universities.

Research professors also make it clear that research centers are only able to draw on a very modest pool of current digital technologies for scientific research. But doctoral students, especially those specializing in scientific subjects (physics, life and earth sciences, etc.), claim that there is a flagrant lack of digital technologies in universities, as most of them carry out their research in old, traditional laboratories.

On another front, teaching researchers and doctoral students attest that digital documents specific to all fields and specialties at the two universities do not exceed a percentage that can motivate scientific research. At the same time, digital research management (DRM) is opening up new digital managerial opportunities by changing researchers' guidelines. It's time for universities to make the effort and map out the key paths so that research staff at university level can quickly adapt to the demands of changes and developments in science. What's more, they can appropriate new technologies built on the most

advanced smart datasets, and operationalize and streamline experiments to deliver more innovative products and services.

Among other things, this can only be achieved through a complete overhaul of traditional declarative and procedural models, whether at center or research unit level, so a re-evaluation of research strategies and methodology at universities is essential. Indeed, digitalization has transformed the way universities conceive and interact with their environment, and is constantly helping students and researchers to create new challenges to reform archaic and traditional management.

This situation is giving rise to new forms of work organization, enabling researchers to adapt to a constantly changing space and rethink digital management methods in order to remain competitive in the global research arena. However, taking digital research management (DRM) into consideration can profoundly boost reflexivity and insight into methods, as well as highlighting new challenges and requirements for future university researchers.

In short, it also requires an adaptation of the ways in which those responsible for digital technologies are supervised and monitored, and vigilance in facilitating access and enabling researchers to benefit from new technological cultures, in order to enhance and push scientific research towards excellence. It's in this perspective that researchers can find the efficient means to manage their research projects pertinently, while maintaining cohesion and ensuring productivity. After all, this can lead to a balanced, promising and forward-looking working environment, far removed from typically subjective and utopian thinking.

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