Digital Maturity in Peruvian Universities: Distinctive Factors in Management, Governance, Innovation and Digital Transformation Process

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Abstract - **The purpose of the research was to establish the determinant actions of digital maturity in Peruvian universities. The digital maturity understood as the faculty that the university has to generate value, assuming the digital conversion throughout the organization, taking into account people, culture and processes, to achieve optimal results, as digital systems are leveraged to provide outstanding quality care to students, resulting in improved services obtaining better experience. We start from the inference that all universities have already implemented the management of digital tools and resources for the care of educational services, where such implementation should be expanded, thus the need to assess how is the digital maturity in private and public universities. The research conducted from the look of the quantitative approach, basic type, descriptive comparative explanatory design, the sample 370 university students, calculated through simple random probability sampling, the information was collected with the instrument of digital maturity estimation scale of universities, subjected to validation of content by expert judgment and construct validity with confirmatory analysis of the item, in addition to reliability, the theta coefficient ($\theta=0.993$) and omega coefficient ($\omega=0.919$). The results of the study were demonstrated using a test statistic and to demonstrate the hypotheses, logistic regression was used, which showed that the predominant process of digital maturity in Peruvian universities was digital management, concluding that both online and offline digitization and digitization-oriented human talent management were aspects of priority in digital maturity in private universities in Peru**

Keywords: **Digital Maturity, Management, Governance, Innovation and Digital Transformation**

I. INTRODUCTION

Putting digital resources into practice, the incorporation of new information and intercommunication technologies in universities forges significant competitiveness, deploys competencies, capabilities and digital skills in educational actors so that all their educational processes can be sustained and endure (Allabergenov et al., 2024). The digital maturity evidenced in Peruvian universities represents the purpose of the study, taken as the faculty that the university has to generate value, assuming the digital conversion throughout the organization, taking into account people, culture and processes, to achieve optimal results. Digital maturity refers to the degree to which digital systems are used to deliver high-quality educational care to students, resulting in optimized services and a more satisfying experience (Martin et al., 2019). The understanding of digital transformation, the acquisition of technological equipment, the experience in handling digital technologies and their strategic application in the future will allow Higher Education Institutions (HEIs) and organizations of different socioeconomic levels to evaluate the degree of digital maturity achieved by those who will lead the digital transformation processes (Mejía-Delgado & Mejía-Delgado, 2022). "In Latin America, IMD's World Digital Competitiveness Ranking 2020 serves as a reference to evaluate progress and changes in digitization in the region. For example, Mexico fell back five positions compared to 2019, ranking 54th; Peru advanced six places to 55th; Colombia dropped three positions, reaching 61st place; Argentina maintained its position at 59th place, while Venezuela ranked 63rd, placing it among the ten countries with the lowest performance in the ranking (IMD World Digital, 2020). The discouraging figures reflect a global scenario of progress towards digitalization, however, our indicators are inferior to be able to execute them when compared to other nations in our environment such as Chile and Brazil, the scenario is not very encouraging when compared to realities such as Europe, USA and Asia.

At the national level, Consultora EY Peru's report, (2021) "Impact of the crisis on the digital maturity of Peruvian companies", carried out at the beginning of 2021 and which compiles the digital practice of organizations in the country

with the repercussions of Covid-19, an event of great relevance, given that it was an exceptional situation in which digitalization became, in many cases, an essential element to ensure the continuity of business processes; On the other hand, the report shows the digital maturity of the education sector within a rating range of 1 to 5, where the indicators show that the country is moving towards the use of digital technology, obtaining a level of 3.13, being far from exceeding the 4.0 threshold to reach the next level of advanced, placing it among the sectors with great development in the last year, going from 54.22 to 64.66, i.e., showing 10.44 points of growth. Although the indicators show that the country is moving in the direction of digital technology use, the adaptation made by the pandemic, and which significantly revealed aspects of the educational field, has embodied an increase of only 0.15 in the maturity indicator at the national level (Arciénaga et al., 2021); possibly caused by the unforeseen way in which they were forced to include them in their processes, without prior organization.

In the Peruvian context, innovations in the modes of provision of higher education generated by the pandemic are advantageous doors on their own to change the design of university education, especially in the pursuit of a better democratization in terms of access and success of the student population, in addition to a better quality training experience, enhanced by technology (Ubaydullaeva et al., 2024). University authorities have been trying for decades to incorporate ICT into the educational system, currently obtaining few success rates (Kelly, 2019) due to the problem found in achieving a positive stance around the digital divide, the absence of teacher reliability in trainings (Molina-Pacheco & Mesa-Jiménez, 2018) and the presence of closed and vertical leaderships (D'Elia, 2019). The following are identified as the main challenges of digital innovation in the university environment: opposition to change, the scarcity of clarity about its true meaning, the costs involved and the shortage of competencies and trained professionals. For this reason, it is crucial to differentiate between the differences between digitalization and digital transformation or maturity.

Digital innovation mainly involves two things: transforming and converting, in order to adapt to the digital world, focusing on a very efficient and fast digital advancement research (Alayón Rodríguez, 2021); in the way a university incorporates technology, human talent and procedures in its activities, fundamentally transforming its institutional dynamics. This process implies taking advantage of knowledge, influencing the organizational culture and redefining the forms of management and work, all supported by the adoption of innovative technologies. Digital transformation requires a cultural change in the institutions, encompassing the entire university. It is essential to develop pedagogical strategies that foster commitment to this transformation, promoting their active participation and turning them into agents of change. It is essential to offer collaborators the tools that allow them to develop flexibility and agility to promote communication and group work

virtually. Digital transformation is not possible without a profound cultural change. It all starts with personal commitment and collective effort.

Digital maturity is understood as the adoption of digital technologies and the use of ICTs to provide fast and effective solutions to the needs of organizations. This includes the digitization process and the identification of the potential of new technologies to innovatively transform institutional processes, developing products, services and competitive strategies, especially in the field of public universities (Fernández et al., 2021). With the support of the Ministry of Education, universities managed to advance in the digitization of certain processes linked to teaching-learning; however, they have not achieved a true digital transformation or maturity (Balaji et al., 2022). This aspect is linked to the licensing provided by the National Superintendence of University Higher Education (SUNEDU) to academic programs of private and state universities in Lima-Peru. Although these institutions have institutional licenses, they lack accredited virtual programs. It is expected that, with the return to face-to-face teaching, the digitalization process can move forward, although achieving an optimal level of digital maturity still seems a distant challenge (Srinivasa Rao et al., 2019).

The study addresses the lack of research that evaluates digital maturity in Peruvian universities, with the aim of identifying the levels achieved and the existing deficiencies, in order to establish areas for improvement related to technological innovation based on the results obtained. The lack of research on digital maturity restricts the ability of institutions to adequately guide their processes and strategies, hindering their positioning in the sector in which they operate. This exposes them to act in an improvised manner and to make decisions based on emergencies, without having an effective management mechanism to guide them towards digital maturity and allow them to maintain it in a sustainable manner over time, as proposed in this study. Therefore, some progress in digital transformation has been evidenced. The objective was to diagnose and recognize the differences, both positive and negative, in aspects such as digital maturity, digital management, digital governance, innovation and digital transformation within the university system.

Conceptual Approach to Digital Maturity

Digital maturity is a concept used within the digital transformation process, which allows evaluating the progress and defining the path that organizations must follow to reach a more advanced development. An essential aspect to strengthen during this process is the digital culture, as it gives them the power to compete in an environment characterized by more advanced technology. In fact, digital culture constitutes the central pillar on which the digital transformation of an organization must be built (Lorenzo, 2016). Digital maturity in universities aims to make them adjust to be effectively competitive in an increasingly digitized environment, going beyond the mere adoption of new technologies. It is about aligning strategies, personnel,

institutional culture, technologies employed and organizational structure, in order to meet the digital expectations of students, employees and stakeholders. This process involves constant adaptation in an ever-changing digital landscape (Kane, 2017; Rossmann, 2018) emphasizes that digital maturity refers to the formation of capabilities specifically to manage digital transformation encompassing areas such as technological capabilities, strategy, expertise, business models, leadership, governance, change management and organizational culture. In the educational environment, especially in universities, digital transformation goes beyond the management of information technologies that efficiently and agilely meet the current needs of institutions and the academic community. It also implies rethinking and transforming educational processes in a disruptive way, creating new services and academic dynamics based on the potential offered by technology to renew the field of education (Fernández et al., 2021), it is essential to identify the key elements that should be considered when addressing the concept of digital maturity.

Component 1 of digital maturity is Digital management at the university: Digital management involves managing and automating information to streamline the strategic decision-making process at the university level, consolidating itself as the foundation of the digital model of the institution (Silva Quiroz et al., 2016); it also consists of applying digital technologies to institutional management, including the implementation of smart offices, the digitization of processes and the provision of services in both face-to-face and virtual formats (Fierro-Moreno, 2021). The implementation of these technologies contributes to making the institution's existing processes more efficient (Fernández et al., 2021).

Component 2 of digital maturity is the digital government in the university: It can be stated that a university digital government implies the strategic use of digital technologies and educational administrative information, through the application of a set of regulations, pedagogical approaches, formulation of public policies, procedures, techniques, methodologies and measurement tolos. They will be implemented in the university to guide, manage and develop digital technologies aimed at the digitization of processes, content and services that benefit both students and teachers (Salirrosas Navarro et al., 2022).

Component 3 of digital maturity is Digital innovation at the university: Digital innovation is not only limited to the development of new products or processes, but also involves taking advantage of the opportunities offered by digitization. Moreover, it consists of combining traditional and digital factors to create innovative solutions, focusing on the value that can be offered to the user in terms of experience and costs. These innovative elements improve the initial performance of the institution and the competitive offer in the market. Digital innovation arises from various factors, such as the interaction of people and resources in public and private networks, the use of technologies that mimic human action, sensory and artificial intelligence, the exploitation of

social trends and the creation or modification of business systems (Gellweiler & Krishnamurthi, 2020); in addition, technologies allow the creation of new processes or the disruptive transformation of existing ones (Fernández et al., 2021).

Component 4 of digital maturity is Digital Transformation in the university: It implies a progressive and disruptive change that begins with the incorporation of digital technologies, and then the institution moves towards a comprehensive transformation (Henriette et al., 2016). In this context, digital transformation is understood as a gradual process that uses digital and technological capabilities to optimize the institution's fundamental processes, user experience and operating procedures, generating value (Morakanyane et al., 2017). This is because a new technology with great potential gives rise to disruptive and strategic processes (Fernández et al., 2021).

Importance of Digital Maturity in Universities

General digital policies are established by the State, however, collaboration in planning, implementation and evaluation by various sectors, including universities, is essential to design policies that ensure public welfare. Universities need to achieve an advanced level of digital development, prioritizing the training and professional growth of teachers, together with research, evaluation and monitoring activities, contribute to the fulfillment of digital policies and, at the same time, respond to the demand of the private sectors for trained professionals (Lugo & Ithurburu, 2019). The incorporation of ICT in professional training is essential for acquiring knowledge and keeping up to date with contemporary advances (Quezada, et al, 2024). Through digital media such as virtual repositories, where teachers, learners and professionals have access and share various content, research papers and courses synchronously and asynchronously, operating 24 hours a day throughout the week (Suárez-Rodríguez et al., 2018). This enables the establishment of new pedagogical approaches in the field of teaching-learning, through the management and implementation of ICT, advanced competencies are fostered, such as the ability to solve complex real-life problems and a deeper understanding of the learning process (Knezek & Christensen, 2016); in addition, it provides greater opportunities for educators and learners to interact optimally in times of global digitization, through the incorporation and use of ICT in the educational context (Lawrence & Tar, 2018).

In a complex context of uncertainty, university education was able to adapt and respond to change; for example, to the change in methodology from a face-to-face teaching-learning scheme to a remote modality process. This process drove a rapid digital transformation in universities, which introduced new teaching methodologies, which in turn, altered students' learning strategies. These strategies, focused on self-regulation, problem solving and creativity, have made it possible to maintain educational continuity despite distance restrictions. All this has been achieved through the

strengthening of academic planning, the implementation of new virtual teaching methodologies and the use of ICTs (Martín-Cuadrado et al., 2021); however, there are digital gaps in universities that need to be closed and to have a solid digital maturity, being integrated into the global digital education system and, in turn, having a common bank of digital resources, both data and knowledge (Akhmetshin et al., 2021)

A modern university must incorporate mechanisms for adaptive reaction to global challenges and can employ digital technologies that streamline decision making in its management, automating repetitive tasks and digitizing workflows involving the management of physical documents (Barabanova et al., 2019); currently, universities are focusing on strengthening their digital platform and infrastructure, incorporating functionalities that allow users to directly manage processes. (Crittenden & Peterson, 2019). The relevance of digital literacy in universities and the consolidation of a new paradigm in higher education, represented by the creation of increasingly complex learning environments influenced by technological innovation, is evidente (Kumar & Sajjan, 2024). This approach seeks to develop creative ways of integrating technology to optimize educational environments and promote the acquisition, deepening and generation of knowledge. In addition, it highlights the essential role of digital competencies as a fundamental basis for pedagogical skills in the higher education sector (Zamzam & Naghdi, 2014). For all these reasons, the need to improve the level of digital competencies of university faculty is indisputable (Jorge-Vázquez et al., 2021

II. METHODOLOGY

The study developed according to specifications of the positivist paradigm oriented to the verification of knowledge through the testing of hypotheses, the formulation of predictions and the search for objective and measurable answers. For this reason, it adopts a quantitative approach focused on the application of techniques, methods and tools to collect and analyze data using inferential and descriptive statistical tools such as levels, frequencies and percentages and logistic regression respectively; in the research no manipulation of variables is performed so it corresponds to the non-experimental design, basic type because through theoretical positions and results contribute to the generation of substantive constructs or theories, the study provides evidence that allows comparing the level of digital maturity between public and private universities in Peru. The compilation of information was carried out by means of a questionnaire composed of 81 items, which was subjected to content validation through expert judgment and construct validation through confirmatory analysis of the items, also for reliability through Cronbach's Alpha 0.994, for corresponding to the ordinal scale, the data collection was conducted with a sample of three hundred and sixty students, selected by simple random probability sampling. The levels identified according to the digital maturity index (DMI) were: incipient, in process and advanced. A normality test of the

data was performed using the Kolmogorov-Smirnov test, given that the sample exceeded 50 participants, and the results indicated that the data did not follow a normal distribution. Therefore, it was decided to use a parametric statistical analysis, specifically logistic regression, to contrast the research hypotheses.

III.RESULTS

TABLE I DIGITAL MATURITY IN PERUVIAN PUBLIC AND PRIVATE UNIVERSITIES

Digital maturity	Universities			
	Private		Public	
	n	%	n	%
Incipient	4	3%	12	6%
On track	52	34%	140	67%
Advanced	96	63%	54	27%
Total	152	100%	208	100%
Digital management	**n**	**%**	**n**	**%**
Incipient	2	1%	12	6%
On track	54	36%	134	64%
Advanced	96	63%	62	30%
Total	152	100%	208	100%
Digital Government	**n**	**%**	**n**	**%**
Incipient	8	5%	16	8%
On track	50	33%	136	65%
Advanced	94	62%	56	27%
Total	152	100%	104	100%
Digital innovation	**n**	**%**	**n**	**%**
Incipient	8	5%	20	10%
On track	54	36%	132	63%
Advanced	90	59%	56	27%
Total	152	100%	104	100%
Digital transformation	**n**	**%**	**n**	**%**
Incipient	8	5%	18	9%
On track	46	30%	126	61%
Advanced	58	64%	64	31%
Total	**152**	**100%**	**104**	**100%**

Table I shows that digital maturity in Peruvian universities, we can affirm that private universities represent 63% of the advanced level of digital maturity compared to public universities at 27%, this is reflected in the development of specific capabilities to manage digital transformation, which are divided into digital skills, strategy, experience, business models, and capabilities in leadership, governance, change management and digital culture in the university environment.

Regarding digital management, private universities are at an advanced level 63% and 36% are on track, while public universities are at an advanced level 30%, a significant difference is observed, and from the results it can be deduced that public universities still have deficiencies in data management and digital automation for internal strategic decision making. In addition, they do not have a digital institutional model or services available both online and offline, which are essential for the country's universities.

Regarding digital governance in private universities, 62% are at an advanced level and 36% are at an advanced level, while in public universities 27% are at an advanced level, as we can see the differences are considerable, however we can also state that 5% of private universities and 8% of public universities are at an incipient level, since they have not yet adapted the strategic implementation of digital technologies or information management in educational administration. They have not implemented a set of standards, educational approaches, public policies, procedures, techniques, methodologies and digital measurement tools that should be used in the university institution. In addition, the use of information and communication technologies has not yet been integrated into the organizational culture.

Regarding digital innovation, 36% of private universities are in the process of implementation and 5% are at an incipient level. On the other hand, public universities have 10% at an incipient level or not incorporated, while 63% are on track and 27% at an advanced level. However, they still show weaknesses in digital innovation, as they do not develop new digital products or processes, nor do they take full advantage of the opportunities offered by digitalization, such as the combination of traditional and digital factors to create innovative solutions. In addition, they do not focus on the value they can provide to the user in terms of experience and costs.

Finally, in terms of digital transformation or evolution, 58% of private sector universities are at advanced levels, while 5% are at an incipient level. On the other hand, public universities have 31% at an advanced level and 9% at an initial or incipient level. Despite this, the disruptive upward transformation that begins with the incorporation of digital tools is still not observed. Digital transformation should be an evolutionary transition phase where digital and technological competencies are leveraged in all processes and activities of the university. Nor is the creation of new disruptive and strategic processes that add value to the university community perceived.

TABLE II LOGISTIC REGRESSION COEFFICIENTS OF THE DIMENSIONS OF DIGITAL MATURITY ACCORDING TO STUDENTS OF THE UNIVERSITY

Universities	Dimension	B	Standard error	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Inferior	Superior
Private	Digital management	,860	,405	,034	2,364	1,068	5,231
	Digital Government	-,370	,457	,417	,690	,282	1,690
	Digital innovation	-,585	,448	,192	,557	,232	1,341
	Digital transformation	-,054	,427	,899	,947	,410	2,188
Public	Digital management	,898	,427	,035	2,454	1,063	5,664
	Digital Government	-,420	,437	,336	,657	,279	1,547
	Digital innovation	-,501	,390	,198	,606	,282	1,300
	Digital transformation	,102	,306	,740	1,107	,607	2,018

To test the hypotheses, the parametric inferential statistic logistic regression was used. The general hypothesis was that the predominant component of digital maturity in private and public universities- 2024 *is digital innovation*, which was rejected due to the results observed in Table II. Digital management, with scores of B= 0.860 in private universities and B= 0.898 in public universities, both with significance values less than 0.05, shows to be the aspect with the highest implementation or presence in both institutions. This indicates that work is being done in information management and digital automation for strategic decision making, as well as in the creation of institutional digital models and services available both online and offline. However, these processes have yet to be consolidated, since, according to the Exp(B)= 2,364 and 2,454, digital management presents risks and weaknesses in aspects related to monitoring and follow-up, which hinders its complete consolidation. Similarly, it can be observed that digital transformation, with values B= 0.054 and 0.102, is the least predominant. This suggests that the country's universities do not evidence a disruptive incremental change in the use of digital technologies. A digital transformation understood as a process that takes full advantage of digital and technological competencies in all processes and activities of the institution is not perceived

TABLE III COEFFICIENTS OF THE LOGISTIC REGRESSION OF THE INDICATORS OF THE DIGITAL MANAGEMENT DIMENSION OF DIGITAL MATURITY ACCORDING TO STUDENTS OF THE UNIVERSITY

University	Characteristics of Digital Management	B	Standard error	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Inferior	Superior
PRIVATE	Automation and use of intelligent offices	,039	,255	,879	1,040	,630	1,715
	Online and offline digitization	,408	,337	,225	1,504	,778	2,908
	Digitization-oriented human talent management	-,912	,424	,032	,402	,175	,923
	Information processing and digital technologies	,322	,359	,371	1,379	,682	2,789
PUBLIC	Automation and use of intelligent offices	,236	,186	,204	1,267	,880	1,824
	Online and offline digitization	,313	,234	,181	1,368	,864	2,164
	Digitization-oriented human talent management	-,435	,301	,149	,647	,359	1,168
	Information processing and digital technologies	-,054	,238	,820	,947	,595	1,510

The first delimited hypothesis states that a main digital management characteristic that drives digital maturity in public and private universities is digitization-oriented human talent management is shown in table III. This hypothesis was accepted in private universities, supported by a B value = 0.912 indicating its presence or predominance, although it is also considered a critical aspect. It can be affirmed that, in areas such as personnel selection and recruitment, professional development through online training programs, performance evaluation with digital tools and the management of the student's own experience, deficiencies still persist in their implementation. In the case of public universities, the hypothesis is rejected due to a significance value greater than 0.05. Private universities present deficiencies related to automation and the use of intelligent offices, while in public universities, the main weakness lies in the management of information and digital technologies, as reflected in the B values= ,039 and 0.054, respectively.

TABLE IV COEFFICIENTS OF THE LOGISTIC REGRESSION OF THE INDICATORS OF THE DIGITAL GOVERNMENT DIMENSION OF DIGITAL MATURITY ACCORDING TO STUDENTS OF THE UNIVERSIDAD PRIVADAS AND UNIVERSIDAD PÚBLICAS DE LIMA- PERU, 2024

Universities	Characteristics of digital government	B	Standard error	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Inferior	Superior
Private	Management and strategies for the use of digital technologies	-,388	,432	,369	,679	,291	1,582
	Investment in the implementation of digital technologies	,323	,548	,556	1,381	,472	4,044
	Standards for digital driving	-,795	,503	,114	,451	,168	1,209
	Digital driving resources	,731	,490	,136	2,076	,794	5,428
Public	Management and strategies for the use of digital technologies	-,143	,288	,620	,867	,493	1,525
	Investment in the implementation of digital technologies	,529	,381	,165	1,697	,804	3,582
	Standards for digital driving	-,443	,338	,191	,642	,331	1,246
	Digital driving resources	,136	,284	,633	1,145	,657	1,997

Table IV shows the second specific hypothesis refers that the predominant characteristic of digital government in public and private sector universities-2024, was the direction and strategies for the use of digital technologies, due to a significance value greater than 0.05. However, according to the value B= 0.795, in private universities, the existence of standards that guide digital governance stands out as the main characteristic, while in public universities, investment in the implementation of digital technologies predominates. It can be affirmed that, in private universities, within the scope of digital governance, the principles and guidelines that regulate interactions and behavior in digital environments are prioritized. These guidelines are fundamental to foster both responsible and ethical use of technology. On the other hand, in public universities, according to the B value = 0.529, there is evidence of a preference for investing in technology, focusing financial, human and material resources on the acquisition, installation and maintenance of technological solutions within the institution.

In private universities, insufficient investment in the implementation of digital technologies was identified, with a B value of 0.323, which reflects limitations in financial, material and human resources for the development of technological systems and tools. On the other hand, public universities present difficulties in the resources needed to lead digital management, with a value B= 0.136. This shows the relevance of having personnel and component leaders who manage effectively through the integration of knowledge, skills, tools and networks. In this sense, it is key to have highly trained professionals in the area of information technology.

TABLE V COEFFICIENTS OF THE LOGISTIC REGRESSION OF THE INDICATORS OF THE DIGITAL INNOVATION DIMENSION OF DIGITAL MATURITY ACCORDING TO STUDENTS OF THE PRIVATE UNIVERSITY AND PUBLIC UNIVERSITY

University	Digital innovation features	B	Standard error	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Inferior	Superior
Private	Leveraging social trends	-,028	,380	,942	,973	,462	2,050
	Creation or change of commercial systems	1,691	,677	,013	5,424	1,439	20,446
	Interconnection in public and private networks	-1,337	,554	,016	,263	,089	,779
	Use of mimic technologies and human extension	-,529	,191	,006	,589	,406	,856
Public	Leveraging social trends	,103	,373	,781	1,109	,534	2,304
	Creation or change of commercial systems	,233	,283	,410	1,263	,725	2,201
	Interconnection in public and private networks	,128	,391	,743	1,136	,528	2,443
	Use of mimic technologies and human extension	-,424	,204	,038	,655	,439	,977

Table V shows the third specific hypothesis refers that the predominant characteristic *of digital innovation of the digital maturity of public and private universities* is the use of social trends, When analyzing the results, the research hypothesis is discarded because the significance value exceeds 0.05 in both universities. However, when considering the value B = 1.691, it can be affirmed that in private universities the main characteristic of digital innovation lies in the development or modification of digital business systems. These institutions focus on this aspect as a key process to sustain themselves efficiently and competitively in an environment marked by frequent digital evolution. In public universities, according to the value B = 0.424, the use of technologies oriented to imitation and human extension predominates. These institutions focus on employing technology as a transformative resource for ways of working and living, while addressing the ethical and social challenges necessary to ensure balanced and sustainable technological development. On the other hand, in both public and private universities, according to the B values = 0.028 and 0.103 respectively, it is still necessary to strengthen the use of social trends. Universities in Peru have not yet managed to effectively articulate research, innovation and technological adaptability, nor to identify and respond adequately to trends that could increase their relevance in the market.

TABLE VI COEFFICIENTS OF THE LOGISTIC REGRESSION OF THE INDICATORS OF THE DIGITAL TRANSFORMATION DIMENSION OF DIGITAL MATURITY ACCORDING TO STUDENTS OF THE UNIVERSITY

Universities	Digital innovation features	B	Standard error	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Inferior	Superior
Private	Adoption and implementation of digital technologies	-,535	,284	,059	,585	,336	1,021
	Digital evolution	,775	,409	,058	2,171	,974	4,836
	Use of technology in the generation of value	-,398	,361	,269	,671	,331	1,361
Public	Adoption and implementation of digital technologies	,101	,251	,688	1,106	,676	1,811
	Digital evolution	,386	,273	,157	1,471	,862	2,513
	Use of technology in the generation of value	-,442	,272	,104	,643	,377	1,095

Table VI shows the fourth specific hypothesis refers that the predominant characteristic of the digital transformation or evolution that develops the digital maturity *of public and private universities* is the generation of value; upon observing the results, the research hypothesis is rejected due to a significance value greater than 0.05 in both universities. In addition, when reviewing the results of private universities with a value B= 0.775, it is obtained that the predominant component within the digital transformation is the digital evolution, in which they adapt to technological variants and new educational requirements, improve the quality of education and prepare students for an increasingly digitized and globalized work environment. In public universities, with a value of B = 0.442, its main characteristic feature is the use of technology to generate value, not only in the educational and administrative field, but also in the training of students for a work environment in continuous digital change.

IV. DISCUSSION AND CONCLUSION

As a component of digital maturity, we can observe that private universities present weaknesses regarding investment in the adoption of digital technologies, with a value B=0.323, there is evidence of insufficient or deficient investment of material, financial and human resources for the development of technological systems and tools in management, in agreement (Đurek et al., 2018) refer that Higher Education Institutions show interest in Digital Maturity because it drives actions aimed at improving performance in a digitized environment, therefore, in the coming years, it will be necessary to allocate resources and incorporate strategies that recognize the potential of emerging technologies. Perez, et al., (2024), for their part, refer that the insertion of digital maturity understood as digital culture in universities is indispensable to increase healthy competitiveness, optimize processes, ensure viability and promote academic progress. We can infer that universities in the country are progressively inserting information technologies in their administrative and academic processes; economic investment and investment in the development of human resources are still not enough, so there is a weakness in the digital culture essential to increase competitiveness, professional skills and the acquisition of emerging technologies. Therefore, digital maturity in some universities is at a beginning or incipient level, and in others it is on the way or in process, requiring greater commitment and effort to evolve in more digitalized university education, often involving a holistic assessment.

Ipanaqué et al., (2023) in their study refers that e-government or digital government is a strategy to modernize universities, inserting transparency in the management of their activities, increasing and improving the academic quality necessary to achieve excellence, practicing accountability and democratization in the service linking with the social context, in agreement (Trisninawati & Helmi, 2024) states that digital government is an approach to university transformation; the incorporation of digital technology in the processes of academic and administrative management, participation, communication in the university benefiting all members that make up the university community; promoting efficiency and transparency. The result of the research regarding the government or digital management in universities allows us to affirm that they are at an incipient level, they still do not strategically use digital technologies or information in

educational management, through the management of a set of standards, educational approaches, the formulation of public policies, procedures, techniques, methodologies and instruments of digital measurement, which will be used in the university institution, where information and communication technologies are not yet part the organizational culture. Thus, we can infer that the country's universities have been incorporating the use of information technologies in an isolated way and not thought as digital government, as digital culture. It is important that the university institutions see as an opportunity and necessity the insertion of digital government from the perspective of an internal holistic transformative approach linked to institutional management, participation and effective and transparent communication that aims to achieve excellence and democratization linking the university and society.

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