Digital Transformation in Portuguese Courts

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ABSTRACT

Digital Transformation is more than ever a reality. The benefits to big companies are innumerable, but when it comes to a heavy machine like governments and public administration, the problems that come from a transformation of these magnitude are many, and they start with people and the resistance that these present to projects of digital transformation. Through personal interviews in three Portuguese Courts we propose a research model, based on the Technology Acceptance Model, with the objective of increasing acceptance by people to these digital transformation projects in Portuguese Courts.

KEYWORDS

Digitalization, Digital Transformation, Government, Technology Acceptance Model

1 INTRODUCTION

As new technologies become increasingly used by all individuals, it is also important that companies and governments themselves adapt and assimilate them in order to foster new growth potentials and benefits for the citizens[1]. It is almost demanding that companies and governments not only embrace but actually make a step forward to push for the digitalization.

This digitalization has already changed industries as a whole, such as the publishing and music industries and their basic foundations[2], and it is becoming clear that digital technologies and its applications will affect every person, every company, and therefore, every government. Since digitalization offers a huge potential to transform businesses and governments radically, it is often referred to as digital transformation[3].

Digital transformation can be described as a two-phase process, the first phase where traditional offerings are digitized, and the second phase where entirely new offerings emerge, things that are only possible because of digital technology[4]. Despite the growing awareness about the importance of digital technologies and their impact on the reshaping of entire business activities, most companies and governments are struggling to assimilate digital technologies and to fully understand the benefits gained through investment in these technologies[5]. Furthermore, as companies and governments engage in this digital transformation, several issues arise.

Of all the problems encountered both in the literature and in reports made in digital transformations of other European countries the most relevant are the lack of computer literacy of the people involved in the projects, as well as the people who will use them; the lack of funds to carry out these same projects; the bureaucracies inherent in a project that more than digitalization will be of Digital Transformation [6][7][8]; and the resistance of the people to the implementation of technological projects[9]. Of all these problems, the one chosen to be approached in this document was the resistance of the people in Portuguese Courts to the implementation of technological projects.

To address the problem of people's resistance to technological changes in the public administration we propose a model based on the Technology Acceptance Model to improve the adoption/success rate of technological changes and digital projects.

2 RESEARCH METHODOLOGY

The approach chosen for guiding our work was the research process. Research process consists of series of actions or steps necessary to effectively carry out research and the desired sequencing of these steps. The chart shown in Figure 1 well illustrates a research process. This process is based on an iterative process composed by the seven steps detailed below:
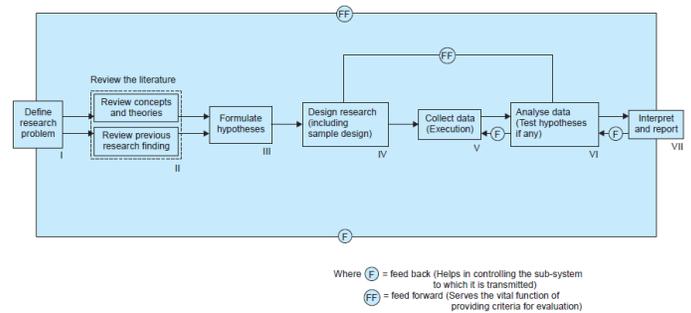

Figure 1: Research Process Flowchart [19]

(1) **Formulating the research problem:** The specific research problem and justify the value of a solution.
(2) **Review the literature:** The purpose of conducting research is to "fill in the gaps" of our knowledge about a particular field or subject, to identify a new problem, or to "test" a new solution or recommendation for an existing issue or phenomenon.
(3) **Development of working hypotheses:** After extensive literature survey, researcher should state in clear terms the working hypothesis or hypotheses. Working hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences.

(4) **Design Research:** The research problem having been formulated in clear cut terms, the researcher will be required to prepare a research design, i.e., he will have to state the conceptual structure within which research would be conducted.

(5) **Collect Data:** Once the instrumentation plan is completed, the actual study begins with the collection of data. The collection of data is a critical step in providing the information needed to answer the research question. Every study includes the collection of some type of data fi!? whether it is from the literature or from subjects fi!? to answer the research question.

(6) **Analyse Data:** After the data have been collected, the researcher turns to the task of analysing them. The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences.

(7) **Interpret and Report:** Once the research has concluded, it is important to correctly interpret the data and to share the results.

3 PROBLEM

This section relates to the "Formulating the research problem" step of our Research Process, where we become aware and recognize a problem and the issues that must be addressed.

3.1 Theoretical background

Although the implementation of a Digital Transformation is something that brings several improvements, it does not happen without facing several issues.

Most technologies, skills, and processes that exist do not translate to a digital world. The modern government must transform itself to adapt to the technologies and processes needed in todayfis digital world[12].

In order to know more about these problems and to verify if there are similarities between digital transformations in governments around the world, three studies were carried out on the digital transformations of three specific countries: Australia, Norway and United Kingdom.

Through the analysis of the documents regarding the Digital Transformation in the three countries mentioned above, we can clearly identify a pattern in what concerns to the main obstacles presented by the Digital Transformation as well as the key principles needed to make the process as seemingly and effectively as possible.

In all the countries studied, the problems found were very similar, if not the same, and they all rely, mainly, on three principal obstacles: the lack of funds, the privacy and security of the information and the digital exclusion or lack of digital literacy[6][7][8]. Digital literacy is the measure of an individualfis ability to use digital technology, communication tools, and/or networks to access, manage and integrate digital resources.Therefore, the measure of an individualfis literacy in technology focuses on their relative skill to use a range of technologies[11].

Perceived digital literacy has been consistently reported in the literature as having a positive relationship with the adoption of new technology, while the opposite is a given fact as well,digital illiteracy causes resistance from the people to the implementation of digitalization projects.

3.2 Problem Statement

The problem that we are going to propose a solution for, is the **resistance from the people in Portuguese Courts to the implementation of digital transformation projects**.

Of all the problems found in the literature and from the analysis of the reports of implementations in other countries, this problem seemed to be the one that our work could have the most impact in. Resistance to the adoption of new ideas is a major impediment to success of digital initiatives, leaders agreed[12].

Fundamental shifts in government have never been easy to realize. These shifts are from closed, hierarchical, turf bound, and inward orientation to open, decentralized, service-oriented, and connected organization. They cannot be done by technology alone. They involve changes in attitudes, skills, and routines and organizational culture[13].

A well-sequenced and prioritized series of the government, complemented with public sector reforms, can set in motion the necessary learning and the momentum and commitment to overcome such barriers and resistance to change[13].

4 RELATED WORK

In order to develop a method to increase the acceptance of people to digital transformation projects, it is crucial to research about the already existing models for technology acceptance, and also other applications of this models in a real environment. This section begins with a description of the TAM as it is used in all applications described in the following sections.

In this way the model itself is known, since its relevance is not only for this specific work, but for other works in this area as well.

Following the introduction to TAM, four practical cases of implementation of this model in different areas are presented, namely online learning, social networking and mobile banking.

4.1 Technology Acceptance Model

The Technology Acceptance Model (TAM) is one of the most widely used theories in Information System (IS) literature. Perceived usefulness and perceived ease of use are two beliefs used to predict attitudes, which in turn influence intended use of a technology. This intention then consequently impacts behavior of actual system usage. Perceived usefulness is the degree to which a user thinks a technology would enhance performance or productivity in the workplace. Perceived ease of use is the degree of lack of effort required by the user in adopting a given technology. According to the TAM perceived ease of use also affects perceived usefulness. Figure 2 depicts the original TAM.
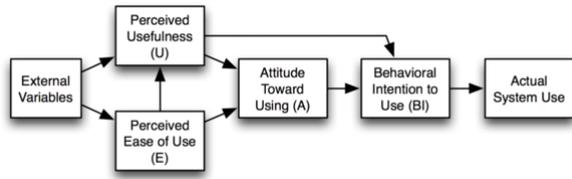
Figure 2: Original TAM [14]

TAM has also been widely used to help understand and explain user behavior in an information system and there has been a number of researches which have been used to test the model with reliable results.

4.2 TAM application in online learning: the role of Social Influence

This article refers to the application of the Technology Acceptance Model in online learning, having Egyptian universities as a source for the field study[15]. The objective of this research was to identify the determinants of studentsfi acceptance of online learning and to investigate how these determining factors could modify students' intention to join online learning. A conceptual framework based on the TAM was used and modified.

A questionnaire was also conducted for students who participated in online learning at this university. The results revealed that TAM continues to be a relevant model since the determining factors have been identified as ease of use, usefulness (both part of TAM) and also social influence and attitudes toward online learning.

4.2.1. Research Model

Considering the factor of social influence in the acceptance of new technologies, based on TAM, a new conceptual model was proposed(Figure 3) for research in which Social Influence arose before the Perceived Ease of use and Perceived Usefulness, and questionnaires were used to test the validity or not of the conceptual model.
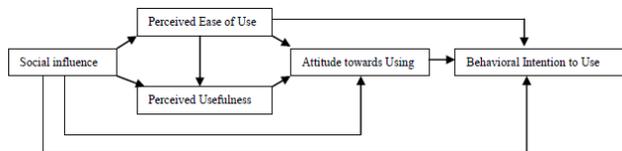

Figure 3: Proposed Research Model [15]

4.2.2. Conclusion

The research results illustrated positive and significant relationships between students' behavioral intention to use online learning and each of social influence of students' referent group, students' attitudes towards online learning, and students' perception of both ease of use and usefulness of online learning. Additionally, social influence of students' referent group was found to be a significant

predictor for both students' attitudes and their intention to use online learning.

4.3 TAM and Flow Theory on online learning acceptance behavior

This study proposes an integrated theoretical framework for usersfi acceptance behavior on web-based streaming e-learning[16]. It considers the e-learning systems user as both a system user and a learner. Constructs from information systems (Technology Acceptance Model) and Human Behavior and Psychology (Flow Theory) were tested in an integrated theoretical framework of online e-learning usersfi acceptance behavior.

To test the research model, a survey was conducted on students at a comprehensive university. A streaming e-learning course on project management during software development was made available to the students. The subjects were divided into three groups through random sampling, and received an one-hour, hands-on demonstration on the streaming e-learning systems before the course began. The subjects were asked to use the streaming-based e-learning system during the subsequent four-week e-learning course.

After completing the first section of the course, the students were asked to complete a survey to indicate their intentions about continuing usage of the streaming e-learning system.

4.3.1. Research Model

Figure 4 shows the Research Model that was empirically tested in this study. This model was constructed to answer the research questions raised and was derived from the theories described in the literature. Several hypotheses were tested in order to understand which ones were more relevant to the study (H1-H8).
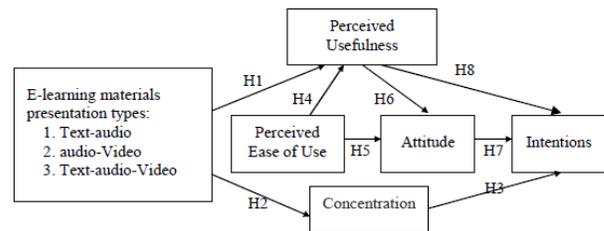

Figure 4: Proposed Research Model [16]

4.3.2. Conclusion

The data collected from the experiment shows significant evidence to support the hypotheses presented. The analytical results confirm the dual identity of the online e-learning user as a system user and a learner, since both the flow and the perceived usefulness of the e-learning system strongly predict intention to continue using e-learning.

The data obtained in this study also supports the notion that e-learning presentation types and usersfi intention to continue use of the tested technology are related. User concentration and perceptions of the usefulness are both intermediate variables inside this relationship.

The most media-rich presentation interface (text-audio-video based presentation) generated higher levels of perceived usefulness and concentration than text-audio and audio-video based presentations. Moreover, perceived usefulness and concentration influenced user intentions.

Therefore, the study concludes that the acceptance rate of text-audio-video based presentations is high not only because of its perceived usefulness but also because it generates the highest user concentration.

4.4 Application of TAM on Social Network Websites: impact of Perceived Social Capital

In this study it was examined the individualsfi participation intentions and behavior on Social Networking Sites (SNSs)[17]. For this purpose, the TAM was utilized and extended in through the addition of fiperceived social capitalfi construct aiming to increase its explanatory power and predictive ability in this context.

The data was collected from a survey of 1100 participants and distilled to 657 usable sets that were analysed to assess the predictive power of the proposed model via structural equation modeling.

Thus, this study extended TAM by including perceived social capital and suggested that perceived social capital was a significant determinant of SNS acceptance and use. Therefore, the study hypotheses were developed based on the TAM.

4.4.1. Research Model
The study proposes a model that lends itself to studying the adoption of new technologies and applies it to determine significant factors that influence adoption of SNSs in Saudi Arabia. The model proposed in Figure 5 was constituted through the test of 7 hypotheses. These hypotheses identified the relationship among factors as independent variables that impact adoption behavior. Each accepted hypothesis represented an explanation of usage behavior as dependent variables. The study hypotheses were tested using multiple regression analysis.
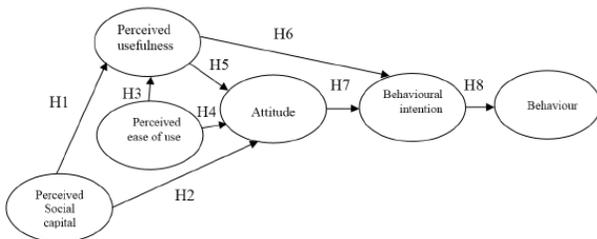
Figure 5: Proposed Research Model [17]

4.4.2. Conclusion
The study results showed that "Perceived ease of use", "Perceived Social Capital" and "Perceived Usefulness" were significantly and positively related to "Attitude". Moreover, it was found that "Perceived Social Capital" and "Perceived ease of use" were significantly and positively related to "Perceived Usefulness".

4.5 Application of TAM in Mobile Banking Adoption

This study was specifically focused on the evaluation of MKesho, a M-banking application in Kenya [18]. Out of a total of 450 questionnaires distributed to M-Kesho users, 395 were returned and validated. This research integrated TAM with four additional variables in order to evaluate which ones were more relevant to the adoption of M-banking. The constructs of perceived ease of use, perceived usefulness, attitude to use, and adoption were retained from the original TAM. Perceived credibility, transaction cost and perceived self efficacy were included for this research hypothesis only.

4.5.1. Research Model
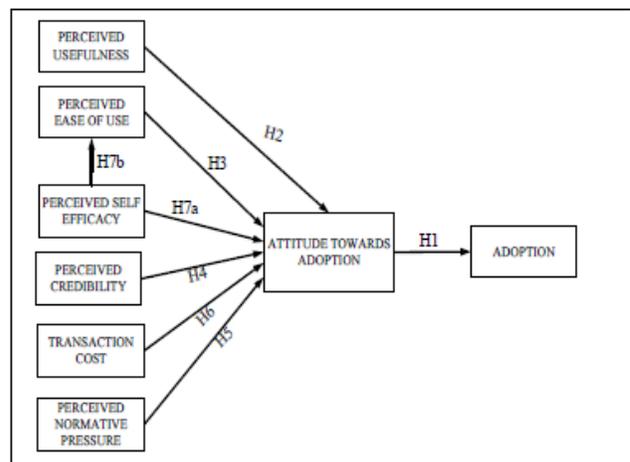Figure 6 shows the research model proposed in this case:

Figure 6: Proposed Research Model[18]

4.5.2. Conclusion
After the analysis it was concluded that this result was consistent with the finding of previous research on M-banking and that the most plausible explanation as to why the innovation wasnfit perceived as being accepted by the people could be the lack of knowledge and awareness about M-banking in Kenya.

5 PROPOSAL

5.1 Description and Objectives

The main objective of the proposed solution is to **increase user acceptance of technological projects in Portuguese Courts**. This will be achieved through the development of a research model derived from the Technology Acceptance Model and the field study made in three different Portuguese Courts.

The development of this model also aims to increase the success rate and ease of adaptation of people to technological changes in the work environment, since resistance to change is often a factor that leads to failures in project implementation or delays to achieve the

desired results in their implementation. We also have the objective of being able to "standardize" the implementation of technological projects so that our model can be used as a basis for the creation of methods, which would be used in future implementations of other digitalization projects.

In order to reach a research model as real and connected to reality as possible, that would be the basis for future methods, it was decided to carry out a field study in different Portuguese Courts in order to access which were the external factors that would increase digital transformation projects' acceptance by their collaborators.

To this end, the chosen institutions were Court of the District of Lisbon West, Judicial Court of Oeiras and Court of Appeal of Oporto. In order to assess people's perceptions of the positive or negative impacts of the implementation of a digital transformation project, 65 personal interviews were conducted with Court employees. The samples chosen for conducting the personal interviews in each Court are described in more detail in the corresponding section on point 6. Data Analysis and Discussion.

In figure 7 we illustrate the theoretical research model that served as the basis for the interviews, which were carried out with the purpose of understanding which hypothesis, corresponding to external factors, were most relevant.

The relevance of each hypothesis to the model we are going to derive is going to be measured based on the following criteria:

- **Average:** This value will be determined on the basis of a Likert Scale (in this case from 1 to 7) that will be used by each worker to classify each of the hypotheses. For this parameter, the hypothesis with a value equal to or greater than 5,60 / 7 (80% of the maximum value of the Scale) will be considered relevant.
- **Standard Deviation:** This value will be used as an indicative measure of the dispersion of the answers obtained, and not as the main criterion for selecting the relevant hypotheses.(for the study in question it will be essential to understand if a particular hypothesis meets consensus within the sample).

5.2 Hypothesis and Research Model

The proposed research model is based on 6 hypotheses, corresponding to the external factors indicated in the Technology Acceptance Model .From the interviews carried out, the objective would be to perceive which external factors are more and less relevant for the workers in Portugal, in order to have a model that is as faithful to reality as possible and based on real implementations and not only in literature.
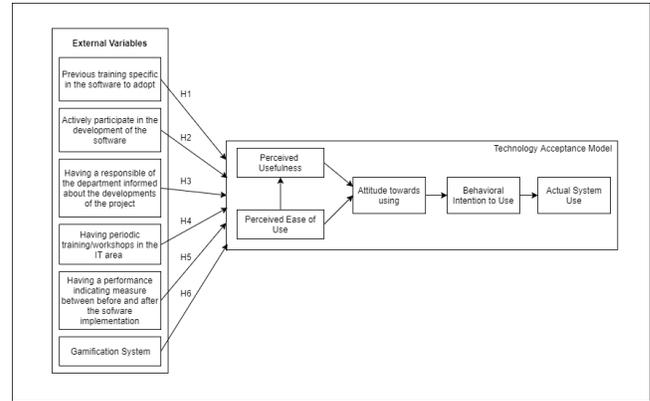

Figure 7: Theoretical Research Model

Next we illustrate the proposed hypotheses with a brief description of each one of them.

- **Hypothesis 1:** Previous training specific in the tools/processes to adopt is positively related to the perceived usefulness of the system.
- **Hypothesis 2:** Actively participating in the development of the tools/processes is positively related to the perceived usefulness of the system.
- **Hypothesis 3:** Having a responsible of the department informed about the developments of the project is positively related to the perceived usefulness of the system.
- **Hypothesis 4:** Having periodic training / workshops in the IT area is positively related to the perception of ease of use.
- **Hypothesis 5:** Having a performance indicating measure before and after the project is positively related to perceived usefulness.
- **Hypothesis 6:** Having a gamification system is positively related to perceived ease of use.

6 DATA ANALYSIS AND DISCUSSION

In order to assess people's perceptions of the positive or negative impacts about the implementation of Digital Transformation projects, 65 personal interviews were conducted with court employees of 3 courts spread across Portugal: Sintra, Oeiras, and Oporto.The overall sample includes court officers, magistrates, lawyers and also the Administrator of each court visited.

In the next point we will present an analysis for each of the courts visited and present the practical research model for each one of them, using the results gathered through the personal interviews made.

To select the hypotheses relevant to our model, the criteria mentioned in item 5.1 "Proposal Description and Objectives", will be analyzed for each of the hypotheses presented.

6.1 Court of the District of Lisbon West

The sample chosen for conducting the personal interviews in this court included 15 court officers, two magistrates, two lawyers, and the Administrator of the Palace of Justice of Sintra - Court of the

District of Lisbon West (n=20 interviewees). In Figure 8 the classifications obtained for each hypothesis presented, for this sample, are summarized.

The classification used for the hypotheses proposed was a Likert scale of 1 to 7 being 1 - I do not consider relevant at all and 7 - I consider it very relevant.

		Hypothesis classification							Average	Standard deviation
		1	2	3	4	5	6	7		
Hypothesis	H1	0	0	0	0	2	5	13	6,55	0,67
	H2	0	0	0	0	0	7	13	6,65	0,48
	H3	0	0	6	7	5	1	1	4,20	1,08
	H4	0	0	0	0	0	4	16	6,80	0,40
	H5	0	0	5	6	6	2	1	4,40	1,11
	H6	5	3	3	6	2	1	0	3,00	1,52

Figure 8: Results for Court of the District of Lisbon West, sample with n = 20 respondents

Taking a more general analysis of the answers given by the interviewees at the Court of the District of West Lisbon, we can conclude that according to the previously defined criteria, the hypotheses relevant to the model of this institution are then:

- **Hypothesis 1:** Previous training specific in the tools/processes to adopt is positively related to the perceived usefulness of the system.
- **Hypothesis 2:** Actively participating in the development of the tools/processes is positively related to the perceived usefulness of the system.
- **Hypothesis 4:** Having periodic training / workshops in the IT area is positively related to the perception of ease of use.

We can then derive the model (Figure 9) for this institution, concluding that three of the presented hypotheses did not meet the proposed criteria, leaving only 3 of the 6 hypotheses of the initial theoretical model.
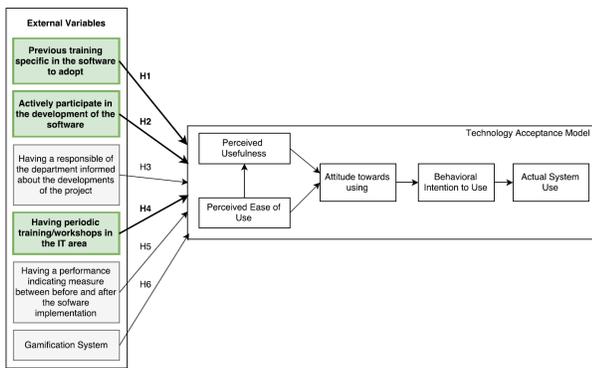

Figure 9: Research Model for Court of the District of Lisbon West

6.2 Judicial Court of Oeiras

The sample chosen for conducting the personal interviews in this court included 16 court officers, two magistrates and two lawyers

(n=20 interviewees). In Figure 10 the classifications obtained for each hypothesis presented, for this sample, are summarized.

The classification used for the hypotheses proposed was a Likert scale of 1 to 7 being 1 - I do not consider relevant at all and 7 - I consider it very relevant.

		Hypothesis classification							Average	Standard deviation
		1	2	3	4	5	6	7		
Hypothesis	H1	0	0	0	0	0	7	13	6,65	0,48
	H2	0	0	1	0	1	13	5	6,05	0,86
	H3	2	8	6	0	3	1	0	2,85	1,35
	H4	0	0	0	0	3	10	7	6,20	0,68
	H5	0	0	0	0	8	10	2	5,70	0,64
	H6	9	6	3	1	1	0	0	1,95	1,12

Figure 10: Results for Court of Oeiras, sample with n = 20 respondents

Taking a more general analysis of the answers given by the interviewees at the Judicial Court of Oeiras, we can conclude that according to the previously defined criteria, the hypotheses relevant to the model of this institution are then:

- **Hypothesis 1:** Previous training specific in the tools/processes to adopt is positively related to the perceived usefulness of the system.
- **Hypothesis 2:** Actively participating in the development of the tools/processes is positively related to the perceived usefulness of the system.
- **Hypothesis 4:** Having periodic training/workshops in the IT area is positively related to the perception of ease of use.
- **Hypothesis 5:** Having a performance indicating measure before and after the project is positively related to perceived usefulness.

We can then derive the model (Figure 11) for this institution, concluding that two of the presented hypotheses did not meet the proposed criteria, leaving only 4 of the 6 hypotheses of the initial theoretical model.
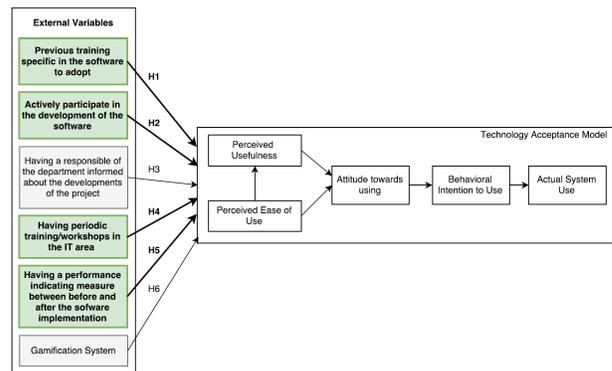

Figure 11: Research Model for Judicial Court of Oeiras

6.3 Court of Appeal of Oporto

The sample chosen for conducting the personal interviews in this court included 20 court officers, four lawyers and the Administrator

of the Court (n=25 interviewees). In Figure 12 the classifications obtained for each hypothesis presented, for this sample, are summarized. The classification used for the hypotheses proposed was a Likert scale of 1 to 7 being 1 - I do not consider relevant at all and 7 - I consider it very relevant.

		Hypothesis classification						Average	Standard deviation
		1	2	3	4	5	6	7		
Hypothesis	H1	0	0	0	0	2	6	17	6,60	0,63
	H2	0	0	0	0	0	13	12	6,48	0,50
	H3	6	12	6	1	0	0	0	2,08	0,80
	H4	1	11	10	0	1	2	0	2,80	1,20
	H5	0	0	0	0	1	10	14	6,52	0,57
	H6	5	15	2	0	0	3	0	2,36	1,44

Figure 12: Results for Court of Appeal of Oporto, sample with n = 25 respondents

Taking a more general analysis of the answers given by the interviewees at the Court of Appeal of Oporto , we can conclude that according to the previously defined criteria, the hypotheses relevant to the model of this institution are then:

- **Hypothesis 1:** Previous training specific in the tools/processes to adopt is positively related to the perceived usefulness of the system.
- **Hypothesis 2:** Actively participating in the development of the tools/processes is positively related to the perceived usefulness of the system.
- **Hypothesis 5:** Having a performance indicating measure before and after the project is positively related to perceived usefulness.

We can then derive the model (Figure 13) for this institution, concluding that three of the presented hypotheses did not meet the proposed criteria, leaving only 3 of the 6 hypotheses of the initial theoretical model.
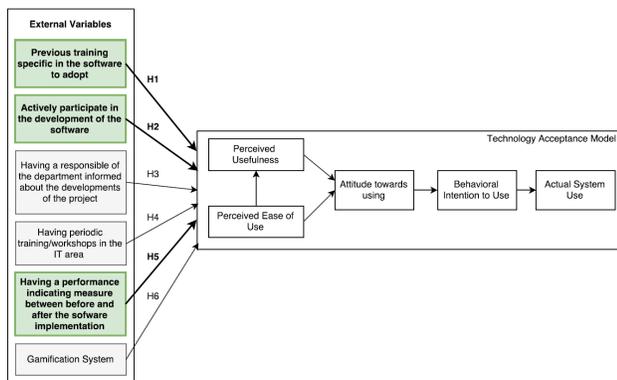

Figure 13: Research Model for Court of Appeal of Oporto

6.4 Global Overview

Once the analysis is done for each Court where interviews were conducted, we can then do a general analysis of the results and thus derive a global model, taking into account the total number of interviews conducted.

The global sample counts with 65 responses from workers in the three courts where interviews were conducted, ranging from court officers to Magistrates.
In Figure 14, the global results are summarized.

		Average (n=65)	Accepted/ Rejected (x ≥5,6 as criteria)	Standard deviation	Comments
H1	Previous training specific in the tools/processes to adopt is positively related to the perceived usefulness of the system	6,60/7	Accepted	0,60	✓ Hypothesis with the highest average value; ✓ Most consensual hypothesis supported by the lowest value of standard deviation.
H2	Actively participating in the development of the tools/processes is positively related to the perceived usefulness of the system	6,40/7	Accepted	0,67	✓ Hypothesis with the second highest average value; ✓ Second most consensual hypothesis supported by the low value of standard deviation.
H3	Having a responsible of the department informed about the developments of the project is positively related to the perceived usefulness of the system	2,97/7	Rejected	1,39	✗ Hypothesis with a low mean value, below criteria; ✓ Given the standard deviation value there is a relative consensus that this hypothesis is not relevant.
H4	Having periodic training / workshops in the IT area is positively related to the perception of ease of use	5,08/7	Rejected	2,01	✓ Hypothesis with mean value near the selected criteria; ✗ Not consensual, supported by the highest standard deviation.
H5	Having a performance indicating measure before and after the project is positively related to perceived usefulness	5,62/7	Accepted	1,19	✓ Hypothesis with mean value above the selected criteria; ✓ Standard deviation shows that it is a consensual hypothesis.
H6	Having a gamification system is positively related to perceived ease of use	2,43/7	Rejected	1,44	✗ Hypothesis with the lowest average value, below criteria; ✓ Given the standard deviation values there is a relative consensus that this hypothesis is not relevant.

Figure 14: Summary table - Final Data

Since this work was based on field work, to add to the analytical data, we also have testimonies that prove what people really think about each of the hypotheses, by their own words. Next we present the testimonies for each one of the hypotheses, and in the end, the final model derived (Figure 15).

H1: Previous training specific in the tools/processes to adopt is positively related to the perceived usefulness of the system.

"I think it would certainly raise my awareness of the usefulness of the system. Receiving training not only through theoretical power-points, but practical training in new procedures and new software, and putting the "hands on", would make it much easier. So, when the implementation took place, we would already be familiar with the tool and there was no need to waste time to ask someone or try to find out alone. Practical training would be very important, we are already fed up with executives and powerpoints."

H2: Actively participating in the development of the tools is positively related to the perceived usefulness of the system.

"I think it's something that has to happen. We are working here every day and we are going to use the new tools. And it has already happened a bit in this project. They asked us what were the most frequent requests of the people that came here and that made us feel that we were somehow collaborating in something that would bring us some benefits. However, it was only that. No one showed us anything

after that, nor did they inform us of changes or showed us how the tool would work until the day of training. And then it was not to change anything, it was just to show some slides."

H3: Having a responsible of the department informed about the developments of the project is positively related to the perceived usefulness of the system.

"The training should be for everyone, not just for a responsible person, or for someone chosen, because then, if that person leaves, or gets sick, what do we do?"

"If the changes are previously explained to us, we understand, it is not needed to choose just one person that it's thought to be the best fit. We want to work and do our best to help people, if the changes coming are going to help us, awesome, but it has to be for everyone".

H4: Having periodic training / workshops in the IT area is positively related to the perception of ease of use.

"Of course it is. To be honest I do not even understand why it is not done here. I have worked in several other companies before and we received training every 6 months, office suite, and everything. We even had other optional training in other specific programs if we wanted to."

"I think it is essential. Besides helping people of older age who work here to be familiarized with new programs, it also helps people who already know how to do some things to keep getting better. Then, when changes come, its easier for everyone to embrace it. For sure"

H5: Having a performance indicating measure before and after the project is positively related to perceived usefulness.

"Having a before and after measure of our work is not a bad thing, it helps us to understand if in fact this is really helping us do our job and do it more effectively. Although what I really wanted to know is the citizens opinion's about this change. I think the reports of user satisfaction should be shared with everyone, not only management.'

H6: Having a gamification system is positively related to perceived ease of use.

"I do not really think that "gamification" helps with anything. We are here to work for the people and we give our best despite having poor hardware and means in general. As you can see I brought this mouse from home, this is what needs to be changed. We do not need achievements or points to work, we need better conditions."

"I think the priorities should be others. Everyone here works 24/7 and sometimes extra hours, without received a single extra penny, a few achievements and points would not change anything. We work here because we want to help. That is it."

According to the previously defined criteria and also to the testimonials acquired during the personal interviews, we can now conclude that the accepted hypothesis for our model are H1, H2 and H5, and we are now able to derive a final model (Figure 15),

consisting of only three of the six theoretical hypothesis proposed by us.
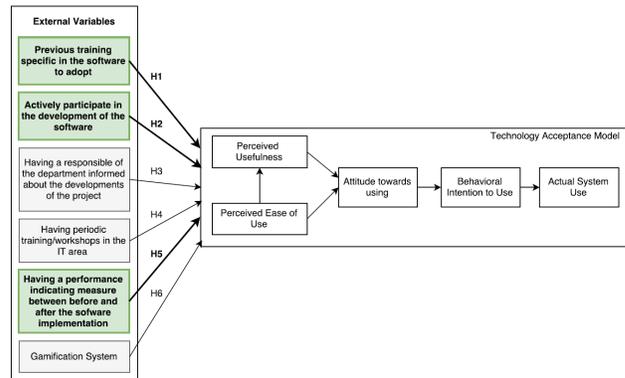

Figure 15: Final Model - External Factors that influence acceptation to Digital Projects in Portuguese Courts

7 CONCLUSION

7.1 General Conclusion

Through this work we can reach a series of conclusions about Digital Transformation in the Portuguese Ministry of Justice, specifically in the Courts. Although Digital Transformation is an increasingly important topic in society and more than ever a reality, both in the private sector and in the public sector, these are two very distinct realities, both in terms of size and degree of maturity in what concerns to transformations of this kind. Of all the problems that arise during a Digital Transformation in governmental entities, both in Portugal and abroad, was chosen for a more specific approach in this work, the problem of the resistance of the workers to projects of this nature, and what factors could influence their acceptance. In order to find a solution to the problem found, it was proposed the creation of a model, based on the Technology Acceptance Model and personal interviews in Courts throughout the Country, which would allow us to assess the external factors that influence the acceptance of the workers of the Courts in Portugal for digitization projects. After conducting 65 personal interviews with workers from three Portuguese courts, from judicial officers to Magistrates, it was possible to perceive not only which of the hypotheses proposed by us were more or less relevant, but also the reality that is experienced in the Portuguese Courts.

7.2 Limitations

Although the dissertation ran without major limitations, there were some changes that had to be made due to the specification of the work performed being with a state institution. Since we were working with a government institution and therefore a heavy and complex machine, more than a company for example, there were certain aspects that could not be foreseen, namely implementations of Digital Transformation projects in other courts in the country. If it had been possible during the dissertation period, to demonstrate and evaluate the model created, in an implementation of a Digital Transformation project in another Court, we could evaluate if the

model created would have actual use in practice, and evaluate if it would in fact be the ideal to solve the problem we identified. The fact that the method chosen to carry out the interviews, was through personal interviews, also contributed somehow as a limiting factor, since it is impossible in the given time to visit more courts around the country which could have given another perspective to our work. However after the work is done we can conclude that the benefits of this methodology far outweigh the disadvantages, since personal visits to courts have another impact not only on the data for our model, but also on people's responses to it.

7.3 Future Work

For future work, the ideal would be to develop a structured method for the implementation of Digital Transformation projects in the public administration. Based on the model created by us, it is possible to develop a method that, through the factors identified in our model as factors that increase the acceptance of the workers, will increase the acceptance of public administration workers to digitization projects. It may also be expanded to other public administration institutions, other ministries, through field work in areas not yet exploited with the objective of creating a global model for such projects rather than being restricted to the courts, or to the Ministry of Justice.

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