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ABSTRACT

Given the number of abandoned animals in Dublin in the recent post-pandemic period, considering Dublin's population and charity activities, a question originated from this context: how have technologies impacted the animal adoption process in Dublin? Thus, to answer this question, the research aimed to investigate how charities are organised and operate and what technologies are involved in these processes in Dublin. During the research project, fourteen charities were invited within the Dublin area in Ireland. The research was composed of fourteen questions with a semi-structured interview. It is reasonable to emphasise that only two charities accepted the invitation to participate in the research, and we could identify two different realities. Charity number one has a formal approach regarding animal adoption. They analyse possible adopters through a form and consider that financial issues are the main reason technology is not implemented. Charity number two has an informal approach to animal adoption; they prefer to keep this way and consider people's age as the main impediment to technology deployment. However, there was a limitation in the number of charities participating; it gave us an insight into the reality of these two charities. In order to enhance the results of this study, future research involving technology in animal adoption is advised.

Keywords: animal adoption process; technology in animal adoption; animal adoption Dublin.

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INTRODUCTION

1.1. CONTEXT AND BACKGROUND

For many of us, the relationship with our pets is part of everyday life, but the relationship between humans and animals was not always this way. The connection between human beings and animals has a long history, with roots in ancient times. In the beginning, animals served to protect territory, assist in hunting, or as a means of transport, including other services (THE COLLEGE OF VETERINARY MEDICINE AT MICHIGAN STATE UNIVERSITY, 2018). This "working mode" interaction was usual and persisted in different societies. One of the most classic examples is the interaction between the ancient Egyptians and cats. In this case, the cats emerged as part of the social chain from the rank of predators to being associated with deities (YUKO, 2021).

Furthermore, the development of agriculture, the invention of the wheel and exploratory navigations contributed for the development of civilisation (PHILLIPS, 2015), what affected the relationship between humans and animals as well. For instance, the advent of agriculture permitted humans to stop migrating and start accumulating goods; it also allowed humans to develop the concept of right to property of those accumulated goods. Thus, the right of property progressed to the feeling of possession of land, animals, and their derivate. During this period, approximately 3000-4000 years ago, the exchange of goods for animals seemed to be an appealing choice; later, this exchange gave way to the sale of animals for food purposes, followed by the animal trade (PHILLIPS, 2015).

Even though we have maintained a trading relationship with animals, humans began considering animals as companions. It is not straightforward to say when this happened.

However, it was from the domestication of animals that this relationship developed and today, we buy animals for other purposes, with other perspectives or better, we can adopt them.

In terms of animal's purchase, when an animal is available for purchase, it automatically becomes a commodity. At the same time, if we understand that animals are not commodities but beings capable of feeling, we will agree that there is no point in purchasing animals. By buying an animal, we will be encouraging a very unfair trade, the trade of living beings (PETA UK, n.d.). In resume, the animal market is unfair because it treats animals as merchandise and being seen as a product in the market like any other product, it can be used and discarded. Soon, we can compare it to a fashion item acquired for some time, used, and disposed of after being no longer functional (REGAN,1986).

On the other hand, there are the adoption processes, whose propose is to save and care for animals' welfare. It is worth considering that, the sequels in the animal's life can be diverse, including searching for food and being exposed to different climatic conditions, thus becoming ill and dying. The uncertainty of rescue accompanies abandonment, and even when rescued, the animal still runs the risk of not being adopted. Shelters, consecutively, may lack physical or financial resources, having trouble to give the needed support for each of those abandoned animals.

The history of animal adoption, in turn, is intrinsically linked to the animal rescue. It began at the end of the 19th century with a group of animal advocates who, together with their leader Caroline Earl White, founded the first shelter in the history of the United States of America (WAXMAN, 2021). The purpose of the shelters at that time was the welfare of the horses. The reason behind that was the advent of the automobile industry in the 19th Century. The horses, which so far were the primary means of transport, began to be abandoned or replaced by the automobile as they got old or sick.

The perception that shelters should look after abandoned animals has persisted for many years. Still today many people believe that shelters should look after unwanted animals; for instance, there are cases where people abandon kittens in front of a shelter (SURVE, 2021). In some cases, people abandon animals far from the shelters and the situation can be even worse, leading to their death if the help does not arrive in time. A recent case in Dublin has urged public attention where a carcass of a mare and her calf were found on an abandoned site (TUTTY, 2022). Another case that caught the attention in Dublin was the news of a dog being thrown out from a car window on the road (MCCULLAGH, 2022). Thus far, some countries like Brazil have taken up euthanasia to control shelter abandonment and animal populations (ARDILA GALVIS et al., 2015). Further, other countries like Taiwan have abolished euthanasia to minimize deaths, but in doing so, the shelter starts pilling up animals, becoming inoperative (WANG et al., 2020).

However, in terms of adoption, when adopting an animal, we exercise our responsibility and commitment to the community and the animal's welfare (VETERINARY SERVICE, 2022). Furthermore, it is good to mention that the adoption act can bring many benefits for humans too (THE COLLEGE OF VETERINARY MEDICINE AT MICHIGAN STATE UNIVERSITY, 2018). One research carried out by the American Heart Association (LEVINE et al., 2013) showed that people who own a dog as a companion tend to have lower blood pressure and lower cholesterol than those who do not have a pet. Also, those owning a dog would have fewer chances of suffering from heart issues.

In addition, The National Centre for Biotechnology Information (2015) published an article showing evidence that people with a companion animal socialise more than those who do not have one. The investigation also noticed that people who own an animal could expand their social network through their four paws companions and get more emotional assistance (WOOD et al., 2015). These results corroborate with the study of the National Institute of

Health (2018), which mentioned the benefits related to isolation, improving humour, and lowering cortisol levels in the blood. In other words, a less stressful life for humans and happier life for animals. As we could see, over the years the relationship of human humans has narrowed, and today we care about taking care of our pets just like any family member.

Considering the benefits of the human vs animal relationship and the importance of adoption systems for the beginning of this relationship, we highlight the charities in charge of this service, especially in Dublin. However, its steps are not evident to the surrounding community despite many charities being in charge of the adoption process. For instance, recently, the Dublin Society for Prevention of Cruelty to Animals has updated its webpage with an entire page dedicated to the "Adoption Process". However, it is not implicit if the procedure applies to all charities in Dublin or only their internal process (HOME AND ADOPTION, 2022).

Although, according to Billock (2021), over the years, the process has changed, becoming more complex and time-consuming due to the demands and problems of this new society. One of the problems is the return of adopted animals. For example, lots of people felt encouraged to adopt a companion animal during the pandemic[1] due to having that "extra time" to spend with them, although, only a few months later, charities began to receive massive requests to return those animals (FREYNE, 2022; MCCULLAGH, 2021). Nevertheless, even before the pandemic, some studies already showed that almost half of animals adopted from shelters were returned (BRADLEY AND RAJENDRAN, 2021). To the researchers Bradley and Rajendran (2021), this problem could be solved using machine learning. Machine Learning is the capacity of a computer system to learn by itself, anticipating what is coming next. Thus, if machine

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[1] The COVID-19 pandemic began in the Republic of China in late 2019 and peaked in early 2020. The COVID-19 pandemic was caused by the new coronavirus (SARS-CoV-2) has presented itself as one of the greatest global health challenges of this century (Chatterjee et al., 2020).

learning could predict what people are looking for, it would boost adoption and diminish the percentage of return to shelters.

Finally, the benefits of the human-animal relationship are perceived, and the adoption process's relevance is also evident, with charities playing a crucial role in this process. Even though these processes are unclear, we can notice it has changed as time goes by. Besides, considering the progress made by civilisation, these adoption processes have advanced, highlighting the use of technology in this process.

1.2. LITERATURE REVIEW

The following databases were used to compose the literature review in this research: Google Scholar, EBSCOhost Research Database, CORE database and Research Repository UCD. Subsequently, the research was conducted under the specific keywords: animal adoption process; the animal adoption process in Ireland; animal adoption Dublin; pet adoption Dublin; technology in animal adoption; technology applied in pet adoption. As a result, it was found 273,653 articles; and from these results, 156,070 are related to technology.

Considering the application of technology and its use concerning animals, was found studies that featured animal welfare and agriculture (OSAWE, LÄPPLE AND MEE, 2022; GROHER, HEITKÄMPER AND UMSTÄTTER, 2020; KALER AND RUSTON, 2019; FILIPPINI, MARESCOTTI, DEMARTINI AND GAVIGLIO, 2020; WANG et al., 2020; RAILEY et al., 2018; KALER AND RUSTON, 2019). In other words, these papers focus on how technology can improve farm production, for instance (D'AGARO, ROSA AND AKENTIEVA, 2021; KALER AND RUSTON, 2019; LIMA et al., 2018; DAWKINS, 2021).

Lima et al. (2018) study show that the main factor in farmers adopting technology in a sheep farm, for instance, is considering how practical and useful the technology can be. Also,

they are more likely to take up any technological tool if they suffer external pressure (government mainly) to adapt. Finally, positive feedback from other farmers is another fact that convinces farmers to adopt new technologies.

Researches about the use of technology to animal welfare has appeared frequently (HORZINEK, 2006; OSAWE, LÄPPLE AND MEE, 2022; RAILEY et al., 2018; DAWKINS, 2021). However, Dawkins (2021), for example, puts in check if the use of precision technology would be benefit or malefic to the animals' welfare since the main objective of precision technology is to improve the productivity and efficiency of farmed animals.

Furthermore, considering the under the "pet adoption Dublin" extractor, 3,982 studies were found with focus on the PET technology. PET is an abbreviation for the term **Positron Emission Tomography**, an advanced image system capable of producing 3d images. The system is the new MRI version (Magnetic Resonance Imaging) and the images produced by PET can help medical staff to reach a more accurate diagnosis assisting in the treatment of humans and animals suffering from neurological complications (MUSAFARGANI et al., 2018; LIDDY et al., 2020; BUSSINESS WIRE, 2018; ZHU AND ZHU, 2019; OSAWE, LÄPPLE AND MEE, 2022).

Therefore, in attempting to find studies related to animals, the word pet was substituted then by the word "animal" since using the term pet as an extractor resulted in finding studies unrelated to the researched theme. Thus, we found the study of Wang et al. (2020) that highlights the interaction between adopters, animals and shelter staff to discuss the needs and find solutions for optimising the adoption process. The study in question took place in Taiwan, where euthanasia for abandoned and rescued animals is prohibited. Therefore, many shelters end up having a very high number of animals occupying a restricted space resulting in stress and suffering for both employees and animals. As a measure to increase the number of adoptions and decrease returns, employees and the community met to discuss possible

resolutions. The outcome of these meetings was that the adoption process could only be optimised if the community was re-educated and willing to slow down the adoption process. Slowing the adoption process and breaking it into cycles would be the solution for increasing animal adoption and reducing the return rate. Although its considerations are related to management, technology was not mentioned as a tool in this process.

There are many reasons why adopters return animals, and it could be minimised if we could track the pet to know what is happening. The pilot study by Alcaidinho et al. (2015) monitored dogs through a smartphone app, for instance. The experiments were conducted with only fifty-five dogs but showed promising results. The study concluded that the time the owners spent interacting with their dogs was interlinked with the rate of return of these dogs (ALCAIDINHO et al., 2015). The results from Alcaidinho et al. (2015) were validated by Powell et al. (2022). Powell et al. (2022) made a five-year reflective investigation in the archives of one of the most important charities in the Northwest United States of America. The investigation completion detected that animal behaviour was the number one cause for adopters to return their companions to shelters.

Finally, the lack of studies on the subject emphasises the relevance and need for studies that address the use of technology in the adoption process. Considering not only animal welfare or their benefits to agriculture; but the use of technology in the organisations and functioning of charities that carry out the adoption process, as well as aspects of the culture and life in Dublin city.

1.3. RATIONALE FOR THE STUDY

The different organisational structures, funding, and time of existence were considered during the research. Thus, in the Literature Review process, the absence of studies that

proposed an understanding of how these organisations were arranged and operated was accentuated. Moreover, considering the advancement of technology in society and its importance in the adoption processes (ALCAIDINHO et al., 2015), we can highlight, still the absence and the need for studies that can understand how the technology was inserted into the adoption process, especially in the city of Dublin. Therefore, the scientific and social relevance of this study is in the search for understanding these processes and the insertion of technology, particularly in the existing organisations in Dublin city, contributing to a more efficient, safe and transparent activity in front of our society.

1.4. STATEMENT OF THE RESEARCH OBJECTIVES

Given the aspects mentioned above, our research problem is: **how has technology impacted the animal adoption process in Dublin?** This way, the research's primary aspiration **is to investigate how these organisations are arranged and operate and what technologies are involved in these processes.** To achieve the objectives, the research proposes identifying, comprehending and analysing the processes and the use of technology inserted in the adoption processes. With a more specific objective, the research aims to:

• Identify, characterise and describe the adoption processes used by charities;

• Identify, characterise and describe the technologies used in the adoption and later monitoring process of those who promote animal adoption in Dublin;

• Analyse how the technologies have impacted the animal adoption process in Dublin.

1.5. INFORMATION GATHERING & DATA COLLECTION

From a qualitative approach, the present study is characterised as a descriptive study, involving semi-structured interviews (BAUER AND GASKELL, 2000; STAKE, 2010; FLICK, 2009; COHEN, MANION AND MORRISON, 2007) with their respective content analysis (BAUER AND GASKELL, 2000; STAKE, 2010; FLICK, 2009) and triangulation of results (COHEN, MANION AND MORRISON, 2007; FLICK, 2009; STAKE, 2010).

1.6. EXPECTED OUTCOMES OF THE STUDY

Considering the recent facts involving abandoned animals in Dublin (TUTTY, 2022; MCCULLAGH, 2022), the research expects to comprehend the animal adoption process in Dublin. It is relevant to say that there are different characteristics of the institutions, and in some cases, the lack of financial resources does not allow the increment of advanced technologies or the hiring of professionals who dedicate its time to it. So, it is a reality possible to be found. Furthermore, the analyst of this project envisages to collect facts and data allowing to determine which the steps towards the adoption process in Dublin and what is the relationship with the technology in that process. Consequently, we expect to collaborate with the scientific community, in advanced of the science, and cooperate for a better instructed community.

METHODOLOGY

2.1. JUSTIFICATION FOT THE ADOPTION OF THE METHOD

In an attempt to understand how charities work, a literature review was conducted. The purpose was to understand how organisations are arranged and operate in Dublin. The literature review included what kind of technologies were involved in the adoption processes. The search included official sources like the city council website and the official charity's website. It resulted in a lack of plausible information through the cited resources.

While conducting the Literature review, studies about animal adoption were not encountered. Thus, the lack of studies highlighting the adoption process and the use or impact of technology contributes to the method adoption. It is also worth mentioning the absence of qualitative studies that seek to understand the scenario from the perspective of organisations that work in this process.

2.2. AN OUTLINE OF SAMPLING TECHNIQUE AND SAMPLE SIZE

The main objective was to investigate how charities were arranged and operated and what kind of technologies were involved in their adoption processes. We sought to identify, characterise and describe the adoption processes used by charities in Dublin, how it was formulated, and how it works in approaching such charities responsible for this process.

For this purpose, online search engines such as Google and Firefox were preliminarily used. It identified fourteen charities operational in Dublin (to check the complete list, check Appendix V).

Afterwards, these charities were contacted via email or telephone, provided on their official pages or acquired by the search engines Google or Firefox. One of the contacts was obtained through an indication, and another was contacted over their web page (see Appendix V).

Once these charities were identified, we introduced the theme and research objective and, in the end, invited them to participate in the research. From fourteen charities invited, two accepted to take part in the research. In this way, it was expected to reach different perceptions about how the organisations responsible for the adoption process in Dublin proceed and which technologies they have used, as well as analyse how the technologies have impacted the adoption process in Dublin.

2.3. EXPLANATION OF WHAT ANALYSIS METHOD EMPLOYED

The data analysis process followed Bauer & Gaskell (2000) and Stake (2010) orientation to analyse the content. The data codification should be structured based on the research objectives in consonance with the authors. This way, reference titles were created, organised, and reorganised throughout the analysis course as the research question gained meaning. The categories formed received a column title and what each interviewee said as if they were lines. Thus, as suggested by the authors, we structure the data by linking the answers to form a usable database. In the end, an organisational plan was conceived for the final report. It benefits researchers in constructing the synthesis and keeping track of the fragments during the analysis. This organisation was changed, reformulated and received additional data throughout the analysis process (Stake, 2010)[2].

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[2] To check the structure used in the study and suggested by Stake (2010), for the construction and organization of the final report, access Appendix VIII.

After building the organisational plan for the final report, as suggested by the authors, we sought to use reflection and intuition to create relationships with reality and deepen related ideas. Therefore, the process of understanding and construction of meanings arises, separating the data relevant to the research from those that are not. This understanding was justified by Strauss and Corbin (2008).

Finally, the data were triangulated. According to Cohen, Manion & Morrison (2007), the triangulation of results explores issues inherent to the subject with more incredible richness and complexity. Also, in compliance with Flick (2009), when the data collected during the research go through the analysis process, different perspectives on the topic emerge intertwined with a theoretical approach, producing additional knowledge about what would be impossible by adopting a single perspective.

Stake (2010), triangulation was also seen as a way of understanding researched data. That is, it makes it possible to clarify particular meanings through the repetition of observations and interpretations made, thus expanding the interpretations made to the data. However, knowing that no observation or interpretation is ideally repeated, triangulation was used to clarify meanings after observing different ways in which the theme was seen. Triangulation has excellent relevance when trying to understand a social phenomenon, as is the case of the present study. The documental analysis of the interviews and the reference literature can generate a more realistic picture of the situation (COHEN, MANION & MORRISON, 2007).

2.4. ETHICAL SECTION

As advised by Cohen, Manion and Morrison (2007), ethical issues were observed since enquiries can sometimes be invasive to personal space. The participants of the study were

informed of the interview procedures, such as recording the interview and agreeing on a time and place or means for the interview.

Among the procedures mentioned, the possible risks and discomforts for the interviewee and plans to mitigate the situation were introduced. Regarding the possible risks, such as the interviewee being identified due to his/her/its public position, the information collected in the research could indicate what charity she/he/it represents. Hence, given the risks mentioned above, the acronyms Charity number one (C1) and Charity number two (C2) were used to refer to the two charities participating in the research. In reference to the research participants and representatives of these charities, the acronyms Charity Representative 1 (CR1) was used for C1 and Charity Representative 2, respondent 1, (CR2.1) and Charity Representative 2, respondent 2 (CR2.2), were used for C2.

The respondents' participation in the research was voluntary, allowing them to cancel their participation at any time. In addition, they were assured the anonymity of their identity and the confidentiality of the information presented.

The researcher saved all researched documents in the Cloud (One Drive)[3], and, on the researcher's laptop. Finally, the recordings were transcribed into a Word format document. The transcriptions will be available for access by researchers for two years. After this time, the transcriptions and records will be eliminated from the researcher's laptop and cloud, respectively.

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[3] OneDrive is a technological solution for storing files in the cloud developed by Microsoft. The cloud is a technology that allows users and companies to store, maintain and access data on servers via the internet (JOHNSON, 2020).

EMPIRICAL FINDINGS

After data analysis and in order to respond to the research objectives, the data presented will be divided into: (a) description and characterising of the charities and how they are organised, what are their adoption process; (b) description and characterising the technologies used in the process and; (c) analyse technological implementation, difficulties and challenges.

3.1. IDENTIFICATION OF ORGANISATION, ARRANGEMENT, ADOPTION PROCESS AND TECHNOLOGIES USED BY CHARITIES.

Two charities were researched during this process; both are based and operate within the same area in North Dublin.

In C1, an average of seventy people was identified as working for them; from these seventy people, they have two employees on their payroll. One is the trapper (the person who traps and captures the feral cats), and the second is their official driver. However, the number of people working with C2 varies as the kitten season approaches. The charity has between twenty to thirty people approximately. Everybody working there is a volunteer. They do not have a payroll.

In terms of organisation, C1 organised themselves around departments and had an annual plan for what they do month by month. A monthly meeting is conducted to reorganise activities by the month as well. It helps them go through the year and constantly prepare for emergencies. On the other hand, C2 organise itself as the population of cat increase or decrease.

The two charities mentioned that part of their annual or monthly plans counts on the contribution made by the Department of Agriculture, Food and the Marine of Ireland. Annually

the Department awards charities around the country promoting animal welfare[4]. However, CR2 says *"it is beneficial to receive this support, but we cannot rely only on this help to continue working"*. They stretch themselves to raise funds if needed, and most of the time, they rely on regular donors to sustain the organisation. CR1 confirms that this financial support is indeed not enough due to the scale of their work; they also count on the help of the general public through donations. Gratefully, CR1 says one of their elderly supporters passed away and left its property under the charity's name. It means they can count monthly on the rent collected by that property and annually on the government funds. So, it makes C1 have a more regular income than C2, making it slightly easier for C1 to plan anticipated.

Regarding their activities, Rescuing and TNR (Trap, Neuter and Return) is the main activity performed by C1; their main focus is to control the feral cat population in the area. They also rescue dogs, but on a small scale. Meanwhile, C2 main activities concentre on rescuing and re-homing the cats. They try to re-home as many cats as possible, and only in the last case the cat returns to the wild.

In resume, both charities maintain a focus on rescuing activities, although, they differ when it comes to returning and re-home. C1 believes it is crucial to neuter as many cats as possible to control the feral population. *"So that is the purpose of the charity today, to catch a feral animal, neuter it and return it to their colonies"* (CR1). C2, on its turn considers re-homing more necessary. *"It is always a process, and there's always never rushed to get cats into a home; we take our time"* (CR2.1). They both agree that time is significant to re-home a cat. Although, C2 is willing to spend more time to domesticate and re-home a cat, but C1 understands that the time they spent to domesticate a cat could be used to neuter more cats.

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[4] www.gov.ie.(2021). *Minister McConalogue announces record animal welfare funding*. [online] Available at: https://www.gov.ie/en/press-release/2d3bb-minister-mcconalogue-announces-record-funding-to-animal-welfare-organisations/ [Accessed 3 Nov. 2022].

Concerning animal adoption, for C1, the first sign that a cat is ready to be adopted is its health state; if the cat is not healthy, it is not ready to go through the adoption process. The animal's behaviour is also contemplated, but health comes first. The animal also receives two vaccines and is microchipped before being considered for adoption. The second step would be to post a photo of the animal in question on their website and social media. The third step in the process, with the CR1, is attracting people. Once the charity gets people interested in an animal, these people will fill out an online form (on the website) and point out their interest in adopting a specific animal with them. Their adoption team developed expertise in matching possible adopters to the animals according to family size and routine, among other details provided in the online form. An overall evaluation is conducted based on the form filled out online; among the main factors noted for somebody to be able to adopt an animal are a financial stability if they had animals before, if they own a property or rent. If they rent, they will be asked to present a document to confirm that pets are allowed on that site. The charity considers people who are not economically or socially unstable as possible surrenders. Students who are not Irish or European citizens are also not considered apt for adoption. Finally, if the adoption team is happy with the answers, they can let the animal be adopted. The adopters receive instructions on how to look after the animal, what they eat, how they behave, Etc. Later, they will give one last call to see if everything is okay and offer the adopters support if needed; they will also be requested to pay a fee covering vaccines and animal neutering/castration. From this point, the adoption process is acknowledged as concluded; there will be no more contact with the adopters.

For CR2, the adoption process starts with a call. It is very informal initially; somebody typically indicates the charity for animal adoption, and people contact them via email or telephone after seeing a post on social media or their website. The charity asks questions about house/apartment ownership and the household's location (if it is near the main roads). The

landlord/landlady's permission is requested if people rent a place. The charity has an adoption sheet, although it is not mentioned when it is delivered to the adopter. The animal is considered apt for adoption if it is domesticated and can interact with people. If the animal is not used to interacting with humans yet, they stay with the host family to keep adapting to humans. A video is made to get to know the people adopting an animal with them; before the pandemic, they used to do house inspections. During this process, when the charity is getting to know possible adopters, they investigate, for instance, if this family/ individual owns an animal with a transmissible disease or has a history of surrendering animals. If it is confirmed that the family or individuals have an animal at home suffering from a transmissible disease or if they have returned animals before, the charity will eliminate them as possible adopters. Although if the adopters do have any of those issues, they introduce the adopters to the animal routine. They prepare the adopters for life with a companion animal, offering support in all possible ways, and the animal adoption process moves forward. In the end, a donation is suggested to cover expenses with neutering/castration and vaccines to complete the adoption process. The communication between the parties in the post-adoption period comes from the adopter. Charity ceases contact as soon as the animal is adopted, but it is open whenever the adopter wants to contact them or if they need any assistance. Most of the time, a friendship is established due to the informality of the process. It means that people return to them to ask for help with their animals, donate something or even indicate charity to a friend looking to adopt a companion animal.

About the technologies identified in animal adoption, C1 uses digital documents, and online forms are mainly applied. Online messengers also have a primary preference then phone calls. Communication between departments happens virtually, and meetings are only done to discuss crucial matters. It was not clarified if the monthly meeting was virtual or not but based

on assumptions, we would agree it is. They have a website and are present in all social media possible. With the animals, they are chipped before being available for adoption.

On C2, the use of technology is restricted, but social media is largely used by people working with them. Telephone calls are the main mean of communication between most of the volunteers. They hold a website and are currently on social media to introduce animals suitable for adoption to the public. It was identified that the Charity has a few elderly members, they are the founders of the Charity and are still part of the leadership, and it is hard for them to accept some technological changes. For those people, even emails or online messages are challenging for them. Therefore, the use of technology is minimum at C2.

ANALYSIS AND DISCUSSION OF FINDINGS

4.1. ANALYSING TECHNOLOGICAL IMPLEMENTATION AND DIFFICULTIES AND CHALLENGES AND THE FUTURE OF TECHNOLOGIES IN THE CHARITIES.

As a result of the empirical findings, we now understand that the two charities researched for this paper differ in many aspects, such as organisation, size, and funds received. Besides, the insertion and use of technology diverge from one Charity to another.

According to CR1, the insertion of technology in a charity will depend on Charity's structure and fundraising power and it will undoubtedly influence technological implementation. However, in small charities, the leaders (due to their age) probably would resist the technology implementation.

> *It depends a lot from one organisation to another. For example, the Yellow Charity* organisation they are ready and prepared. They have a lot of money, and many employees, so it is different for Charity Brown* too. And, in smaller ones, smaller charities like us ****, first because whoever is in these charities has been there for years... and then these people have difficulty with technology. Leaders are sometimes people with a little older age, so they have a certain difficulty in accepting technology (CR1).*

As the investigation progressed, the CR1 declaration was later confirmed by the CR2.2, who said they had had issues with some of their leaders using emails. Older people are perceived to be more reluctant to use technology.

> *Like I said, the older people are great; they are here from the start, and one is particularly reluctant to use emails. We've got work around them, and we do work around it (CR2.1).*

This issue is confirmed by another co-worker who said:

> *There are a few, yeah…they don't…because they are older, they won't…like, sometimes you have to print emails to send, to post to them or to deliver it to them, so … because they don't even have an email account (CR2.2).*

Meanwhile, the CR1 member determines that concerning technology, they have no issues introducing technology to their collaborators.

> *We do not have any problems implementing technology because when we implemented the smart sheet, we went process by process and implemented it normally; The only thing that was missing was training. There was no implementation problem at all. The problem is financial if the technology is costly, then it will be a problem but for instance, what we are using now is not very expensive (CR1).*

So, we have two different scenarios here. One of the Charities is embracing the technology even though it has financial limitations, while the other is suffering to implement it due to generational differences. Withal the use of technology within the organisation has changed in recent years since both charities considered the Pandemic a trigger, forcing everyone to use technology.

For CR2.1, the changes became evident as they were forced to adapt to video call meetings, for instance. *"When Covid started and meant we could not do physical home checks…kind of things moved more, you know to video calls"(CR2.2)*. In addition to boosting the use of technology in general, the Pandemic also contributed to more animals being adopted.

> *When the Pandemic started, we were going: - Oh my gosh, how the hell are we going to home animals now?! So, you know what I mean ?!!... But we went from doubting to the thought: - Oh my God, everybody wants a cat, and this is amazing ... we worked around them to do videos which worked really well (CR2.1).*

The fact that more people started adopting an animal companion during the Pandemic confirms the phenomenon mentioned by Freyne (2022); with the arrival of the Pandemic, more

people became interested in adopting a companion animal. However, all this interest ended with the end of the Pandemic, when many people started returning to their working routine and began to return or abandon their companion animals (MCCULLAGH, 2021).

> *In addition to caring for our cats, many owners get in touch with us by surrendering cats they adopted from elsewhere. Other organisations do not have this process (CR1).*

Only two charities were part of this research; therefore, we could not confirm the affirmation that the other charities do not offer to accept their animal's return if the adoption does not work for those individuals.

Powell *et al*. (2022) approached the behavioural aspect in their five-year research on a charity in the United States of America. They discovered that the main reason many people would return their animals was animal behaviour. Even though they did this research in the United States of America, we can establish a correlation here where people adopt a companion animal and later perhaps realise they behave differently than they thought. We cannot confirm that the behaviour is the case why this charity receives a call from people trying to return their companion animals. Still, we can speculate based on the study.

Furthermore, Alcaidinho et al. (2015) studied the behavioural issue associated with the rate of animal return in Denmark. Their pilot study equipped dogs with monitor tagging, which connected via Wi-Fi or Bluetooth. The tag would send info about the dog's activity to an app installed on the dog's owner's mobile telephone.

So, if behaviour plays a massive role in this case, is it not sensible that charities, when putting up an animal for adoption, could not explain the animal's behaviour better? CR1 reported that a potential surrender is exactly what they try to identify while interviewing the possible adopter.

We do a detailed interview to ensure that person is the right person. And what happens during the interview is that after we give them more information on having a companion animal, this individual realises that he does not want a cat; he wants a dog, for example. He says - A cat has nothing to do with me; a dog would suit me better. This individual was a potential surrender, but we made them change their mind before the adoption and potential surrender. And it is interesting to identify if that family has surrender potential. If this family or individual has the potential to surrender, we don't let them adopt because surrender is... It isn't good for the cat and the organisation (CR1).

Going through a detailed interview to avoid animal return validates what was assessed by Wang et al. (2020). The author proposed that breaking the process into parts and giving the population more information about animal adoption could reduce the rate of animal return.

This educational aspect was suggested by the CR2.2, when she proposed that *"maybe you can have the families come over to meet them first...because not always they can get to meet them before"*. The re-education of the community seems very important regarding animal adoption. Many people have never had experience having a companion animal, and it could be challenging for them and the charities during this whole adoption process.

Apart from community education, machine learning is another option to reduce the number of animal surrendering (BRADLEY AND RAJENDRAN, 2021). But among the challenges faced in animal adoption by Charities is the economic challenge; both CR1 and CR2.1 agree that the search for financial support is ceaseless and the search for volunteers tireless.

The organisation's challenges are, firstly, financial... always bringing money because it is a relentless quest for money. Second is having volunteers because the volunteer makes the organisation run (CR1).

[…]...like it just means you have to work harder at getting money in... You got to do the bills ...do you know what I mean, still to mean like you know so it's not easy... (CR2.1).

So while charities need help implementing essential technologies due to economic matters or people's age, the plausible machine learning solution is still far away from their realities.

Further, another element raised by CR2.2 as a challenge in the adoption process is the fact that the use of technology in the process is not always positive. Sometimes it can be harmful because everybody can see online what animals are available for adoption. And sometimes, people can get outraged if they cannot adopt them. For instance, the possible adopters will not be given another cat if they own a cat with a transmissible disease. But when those cats are on social media for adoption, everybody can see them, and you never know if the same person will try to reapply to adopt that cat, and it can be a problem.

> *I suppose, like, sometimes people will get annoyed if they want a certain cat, you know, and then we go: - ohh, you can't have that cat because you already have a cat that... And this cat has FIV and, the owner or the person who wants to adopt get annoyed and if they see them up on social media they go kind of like: - ohh. can I have them? that is something that we struggled quite a lot...there is a lot of I don't know how do you call? Like trolls online... people just in the comment giving out ...You know and that...probably it doesn't help then...so we are afraid to post certain cats because that person is going to come back again and give out (CR2.2).*

Finally, technology has affected and impacted the adoption process in many ways. Another issue raised as a challenge in the coming years that might impact the animal adoption process is the GDPR[5] (General Data Protection Regulation) requirements. It is believed that the regulation will slow down the adoption process.

> *GDPR has come in the last four years or so. And that's can be a bit of an issue because you know people might...the fosters might want to stay in touch with people who adopted the cat you know, they want to know how things are going on long-term, which is fair enough. But*

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[5] GDPR (2018). *General Data Protection Regulation (GDPR).* [online] General Data Protection Regulation (GDPR). Available at: https://gdpr-info.eu/.

then, do you know it's kind of a dilemma like can we hold on to people's numbers when we don't really need them? And ...so, we kind of will have to start to ask for permission – oh can we contact you long-term and that's kind of just more and more data and it can start complicating things. I think data protection probably will be something that will slow down the whole adoption process because we might have done you know to delete data…in that sense not to be in touch with people and it just add more admin, you know, for people (CR2.2).

On the other hand, the insertion of technology has improved a lot the adoption process. And for the two charities and their three representatives, it would be easy to imagine the future of animal adoption with technology's help.

I couldn't imagine doing whatever without technology. I think it would be difficult if you didn't have WhatsApp or if we couldn't do the videos; we'd have to go to people's houses and see their houses, but this was the old way (CR2.1).

I think it will be beneficial because it is more time effective. I can tell it will save us a lot of time in the future (CR2.2.)

There's no way to separate technology; it's straightforward. There's no way to go back; there's no way to put adoption back on paper; Quite the contrary. It's how we capture the best adopters and the right adopters for our cats (CR1).

In summary, from the perspective of the charities interviewed, technology is viewed positively. However, it has limitations and some obstacles to be implemented. One of the main obstacles is people's age. The elderly avoid using technologies which are handled in the best possible way. The other obstacle is financial. As its income is irregular, the charity has restricted technological access. However, in the end, technology has been seen as beneficial and can improve animal adoption in the long term.

CONCLUSION, LIMITATION & SUGGESTIONS

As we noticed, the Pandemic has altered how charities work, but despite the changes suffered, the benefits of modern technology are yet to come to the charities. The animal adoption process in Dublin varies from charity to charity, as it seems a mile away from having a standard procedure.

The research was limited to the number of people who participated in it. Fourteen charities were invited, and only two were accepted to participate. As a result, we could not accurately picture how charities in Dublin are organised and operated. Thus, future studies to better comprehend the reality of the other charities and how technology has affected their realities are suggested – further studies addressing the impact of the GDPR on the adoption process in Dublin are also suggested.

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APPENDIX I – INTERVIEW SCRIPT

1) How have you come to work with animal's charity? What brought you here? May you talk to us a little bit about your personal history?

2) What is your position and function into the organisation? How long are you in this position/function? Could you comment a little bit about your activities here?

3) What are the main activities performed by the organisation now?

4) What is the kind of financial resources do you have here at moment? Is it enough?

5) How many employees does your organisation have? And how many employees, if there are, do they have pay slip? Do you have volunteers? In general, are they enough?

6) About the Animal adoption…How does it works with your organisation?

7) In your opinion, the adoption process has changed over the years? What kind of changes have you seen?

8) In animal adoption, what are the challenges your organisation has faced in your perspective?

9) Besides the adoption process, what are the others the challenges faced by your organisation? In your perspective, what could be done to sort out this problem?

10) In your organisation, do you use any types of technology? Which one and how?

11) In your organisation, do you face any challenges to implement technology? What is it? And, in your perspective, how it could be resolved?

12) In your opinion, how the technology has been inserted in adoption process over the years? What are the biggest challenges in this process nowadays?

13) How do you see the relationship of the adoption process with the technology to the future?

14) I am trying to find more people to understand better how the adoption process works in Dublin. Could you recommend anybody else or some organisation who would be available to talk to help us in this research?

APPENDIX II – E-MAIL SENT TO ORGANISATIONS WHO PARTICIPATED IN THE RESEARCH

To: (charity name/shelter/non profitable organisation),

I, Magli Klock da Silva, a BA (Hons) in Business Studies student at the Independent College, along with my supervisor, Professor Klaus Walter, currently, we study "**THE IMPACT OF TECHNOLOGY ON THE ANIMAL PROCESS ADOPTION IN DUBLIN**" we are looking for to identify, comprehend and analyse the processes and the use of technology inserted in the adoption processes in Dublin.

In this way, we propose to identify, characterise and describe the adoption processes used by charities; and the technologies used in the adoption and later monitoring process of those who promote animal adoption in Dublin. Also, we propose to examine whether, from the point of view of representatives of those organisations, the animal adoption process have been impacted by technology and how it has changed the approach to animal adoption.

Therefore, we would like to invite you to participate in our study, through an **INTERVIEW**, with a representative indicated by the organisation, which can be carried out on a date and time agreed between the interviewee and the researcher.

We take this opportunity to send you our sincere thanks in advance and, we are available to respond any questions that may arise.

Many Thanks,

Magli Klock da Silva

Mobile phone (353) 83 xxxxx83 / E-mail: magliklock@gmail.com;

Professor Klaus Walter / E-mail: klaus.walter@independentcolleges.ie.

APPENDIX III – INDEPENDENT COLLEGE DUBLIN – CONSENT FORM

You are being invited to participate in a study with Magli Klock da Silva, a BA (Hons) in Business Studies student at the Independent College, along with her supervisor, Professor Klaus Walter and Dr. Daniel O'Sullivan (School of Business ICD). They are representatives of Independent College Dublin - ICD.

NATURE OF THE RESEARCH: the present study aims to identify, describe and analyse the e adoption process steps within organisations and the impacts caused by technology.

RESEARCH JUSTIFICATION: recent cases involving abandoned animals in Dublin have highlighted the importance and need for organisations working to protect, rescue and re-home abandoned animals. This perspective brought to light the usefulness of understanding how these organisations are arranged and operate in Dublin. Also, with the advancement of technology it becomes primordial to comprehend how it affected the animal adoption process in Dublin.

COORDINATION: The study is part of the research project of the student Magli Klock da Silva and has as her supervisor Professor Klaus Walter from the Independent Colleges in Dublin (ICD).

INVOLVEMENT IN THE RESEARCH If you accept the invitation, you will participate in the study through an interview that will address questions about how the organisation is arranged and works, how the adoption process is structured, and your experience working within the organisation.

INTERVIEW PROCEDURES:

● The interview will be carried out individually. We can do it in person or via an electronic application like a regular telephone call, Skype, Zoom, Google Meeting, WhatsApp, or another communication software/application to be previously agreed with the researchers.

● The interview will occur at a pre-defined date and time in common agreed upon between you and the researchers.

● The interview will be recorded and will have a maximum duration of 45 minutes.

● The recorded interview will be transcribed into a word document and sent to you by e-mail. If you think it is needed, you can change the transcribed text so that the final document expresses your view on the subject as accurately as possible.

● You will have a period of 4 days, counting from the date of receipt of the transcribed document, to verify the information and return the paper to the researchers.

● You will return the document's final version in Word format to the researcher to the following e-mail address magliklock@gmail.com.

● The researcher will save Audio recordings and transcripts on a USB device. The researcher will keep the originals and forward a copy to Independent College Dublin. After exam board exams and approval, the researcher will keep a transcription of the interview in which all identifying information is already removed. The transcription will be retained for two years from the date of the exam board approval. Also, for two years, the transcriptions will remain available to be consulted by other researchers.

RISKS:

● Depending on your function/ position in the organisation you might find discomfortable talking about events that happens or happened within the organisation.

PRIVACY MEASURES:

● Your name will be withheld, described only as (a) a representative of a non-governmental (b) a representative of a governmental charity A, B, C.

● If you mention somebody who can identify you or identify the organisation, mentioned people will receive fictitious identities (such as John, Peter, Anne, Elizabeth, etc).

● We will also preserve the name of the organisation, charity or shelter in which you work, referring only to the characteristic of the organisation, charity or shelter, if appropriate.

EXPECTED BENEFITS:

By participating in this research, you will not have any direct benefit. However, it is expected that the study will bring future contributions to perhaps an standardised adoption process. Also, it will bring to light how organisations work and promote this adoption process in the community.

CONFIDENTIALITY:

● All information collected in this study is strictly confidential and used for scientific purposes only. As well you are guaranteed privacy and the protection of your identity.

● Your identity and the identity of the organisation you are representing will have identity protected during all phases of the research. There will be an exception if your wish is the contrary by an explicit statement, even after the research has ended.

SAFEGUARDS:
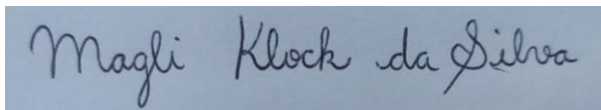
● You are free to decide about your participation, and you may withdraw your consent at any stage of the research if you decide to do it so.

● Your participation will be voluntary; there will be no remuneration for your participation in the study.

● You are guaranteed that the researcher will not use the information obtained in research to the detriment of its participants.

● Researchers are committed not to generating, maintaining or increasing situations of risk or vulnerability for you. In terms of self-esteem, prestige or economic-financial guarantees that cultural, social, moral, religious and ethical values, habits and customs, will always be respected.

● The researchers will be available to clarify or assist you if you have questions related to the research and rights reserved to you before, during or after you participate in the research. From Monday to Friday, from 10 am to 8 pm, you can contact Klaus Walter, the supervisor of this research, by e-mail klaus.walter@independentcolleges.ie and Magli Klock da Silva, the undergraduate student, by phone (353) 83 xxx xx83 or e-mail magliklock@gmail.com.
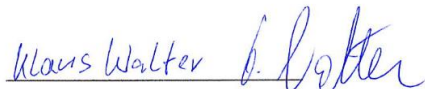
If you are interested, the final research report will be sent to you by e-mail, free of charge, just indicate below that you wish to receive it. I wish to receive the final report ().

Your signature on this form indicates that you understood the information about participating in this study and agree to participate. In no way does this consent make you waive your legal rights, nor does it release researchers from their personal or professional responsibilities.

_____
Printed name and Signature of the Participant.

Printed name and Signature of the Researcher.

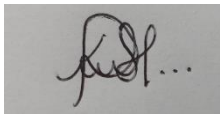Printed name and Signature of Research Supervisor Professor Klaus Walter.

APPENDIX IV – TERM OF AGREEMENT

I declare that, as a representative of _____that, I agree with the conduct of the research "**THE IMPACT OF TECHNOLOGY ON THE ANIMAL ADOPTION PROCESS IN DUBLIN**", under the responsibility of researcher Magli Klock da Silva and her supervisor, Professor Klaus Walter. Our organisation/charity/shelter accepts to grant an **INTERVIEW** on a date, place and times defined in common agreement between the interviewee and the researcher.

We are aware that the interviewee will be a representative of our organisation/charity/ shelter, appointed by us to participate in the study on the previous topic.

Dublin, _____of _____, 2022.

Best Regards,

_____   _____

Magli Klock da Silva
Klaus Walter

_____

Participant:

APPENDIX V – CHARITIES CONTACT

Organisations by name	E-mail	Contacted by e-mail	Telephone Number	Contacted by Telephone
CatsAid	catsaid@gmail.com	yes	not available	no
Dogsaid	info@dogsaid.ie	yes	353 87 294 4310	yes
Dogs Trust	enquiries@dogstrust.ie	yes	353 01 879 1000	no
CDPA	info@cdpa.ie	no	353 85 861 1220	yes
Dogs in Distress	dogs@dogsindistress.org	yes	not available	no
DSPCA	info@dspca.ie;adopt@dspca.ie	yes	353 01 499 4700	yes
North County Dublin SPCA	ncdspca@gmail.com	yes	353 01 8375630	no
TNR Dublin area	dublinnorthanimalrescue@hotmail.com	yes	353 87 961 2119	yes
TNR West Dublin Rescue	tnr.rescue.westdublin@gmail.com	yes	not available	no
Ashton Dog Pound	ashtonlost.found@gmail.com	yes	353 01 838 3236	yes
Irish Horse Welfare Trust	info@ihwt.ie	yes	353 04 023 0773	yes
Phibsboro Cat Rescue	info@phibsborocatrescue.ie	yes	not available	no
Fingal SPCA	info@fingalspca.ie	yes	353 89 461 2537	yes
Fingal SPCA * contacted via website	_			

APPENDIX VI – FORM A

Form A: Application for Ethical Approval

Undergraduate/Taught Postgraduate Research

This form should be submitted to the module leader for the relevant initial proposal and/or the relevant supervisor is the proposal has already been accepted.

Please save this file as *STUDENT NUMBER_AEA_FormA.docx*

Title of Project	The impact of technology on the animal adoption process in Dublin.
Name of Learner	Magli Klock da Silva
Student Number	51691841
Name of Supervisor/Tutor	Dr.Daniel O'Sullivan

Check the relevant boxes. All questions must be answered before submitting to the relevant lecturer / supervisor. Note: only one box per row should be selected.

Item	Question	Yes	No	NA
1	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	
2	Will you tell participants that their participation is voluntary?	☒	☐	
3	Will you obtain written consent for participation (through a signed or 'ticked' consent form)?	☒	☐	
4	If the research is observational, will you ask participants for their consent to being observed.	☒	☐	☐
5	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	
6	Will you give participants the option of not answering any question they do not want to answer?	☒	☐	☐
7	Will you ensure that participant data will be treated with full confidentiality and anonymity and, if published, will not be identifiable as any individual or group?	☒	☐	
8	Will you debrief participants at the end of their participation (i.e., give them a brief explanation of the study)?	☒	☐	
9	If your study involves people between 16 and 18 years, will you ensure that passive consent is obtained from parents/guardians, with active consent obtained from both the child and their school/organisation?	☐	☐	☒
10	If your study involves people less than 16 years, will you ensure that active consent is obtained from parents/guardians and that a parent/guardian or their nominee (such as a teacher) will be present throughout the data collection period?	☐	☐	☒
11	If your study requires evaluation by an ethics committee/board at an external agency, will you wait until you have approval from both the Independent College Dublin and the external ethics committee before starting data collection.	☒	☐	☐

Item	Question	Yes	No	NA
12	If you are in a position of authority over your participants (for example, if you are their instructor/tutor/manager/examiner etc.) will you inform participants in writing that their grades and/or evaluation will be in no way affected by their participation (or lack thereof) in your research?	☐	☐	☐
13	If you are in a position of authority over your participants (for example, if you are their instructor/tutor/manager/examiner etc.), does your study involve asking participants about their academic or professional achievements, motivations, abilities or philosophies? (please note that this does not apply to QA1 or QA3 forms, or questionnaires limited to market research, that do not require ethical approval from the IREC)	☐	☒	☒
14	Will your project involve deliberately misleading participants in any way?	☐	☒	
15	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort?	☐	☒	
16	Does your project involve work with animals?	☒	☐	
17	Do you plan to give individual feedback to participants regarding their scores on any task or scale?	☒	☐	☐
18	Does your study examine any sensitive topics (such as, but not limited to, religion, sexuality, alcohol, crime, drugs, mental health, physical health, etc.)	☐	☒	
19	Is your study designed to change the mental state of participants in any negative way (such as inducing aggression, frustration, etc?)	☐	☒	
20	Does your study involve an external agency (e.g. for recruitment)?	☐	☒	
21	Do your participants fall into any of the following special groups? (except where one or more individuals with such characteristics may naturally occur within a general population, such as a sample of students)	☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	

If you have ticked any of the shaded boxes above, you should consult with your module leader / supervisor immediately. **You will need to fill in Form B Ethical Approval** and submit it to the Research & Ethics Committee **instead** of this form. There is an obligation on the researcher to bring to the attention of the Research & Ethics Committee any issues with ethical implications not clearly covered by the above checklist.	
I consider that this project has **no** significant ethical implications to be brought before the relevant Research & Ethics Committee. I have read and understood the specific guidelines for completion of Ethics Application Forms. I am familiar with the codes of professional ethics relevant to my discipline (and have discussed them with my supervisor).	☒

Name of Learner	Magli Klock da Silva
Student Number	51691841
Date	18/05/2022

I have discussed this project with the learner in question, and I agree that it has no significant ethical implications to be brought before the Research & Ethics Committee.	☒

Name of Supervisor/Lecturer	Dr. Daniel O'Sullivan
Date	18/05/2022