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| Behind the Mandatory Implementation of Traceability in Board ná gCon. | Abstract  This research contained with this report critically evaluates and investigates the concepts, background and application that has made up traceability within the greyhound racing sport in Ireland. Traceability is an aspect that is integral to animal welfare, regulatory compliance, and sports transparency. Through the combination of quantitative and qualitative methodologies. The research contained within this report that will examine current practices, identify gaps, contrasts Ireland's position, apply data analysis methodology and shows the Ireland is the market leader delivering international best practices in traceability of greyhounds.  Donal Maher  Sba22178. Total Word count 17424. Actual word count 14221. Literature review word count 4219 |

# Introduction

Deep rooted into the culture and history of Ireland and over time has become a well-established and recognised sport. The Greyhound has been bred to run, leading to Greyhound Racing and Greyhound coursing. Breeding greyhounds and training them to chase/hunt a hare for the purposes of entertainment could now be considered cruel. Over this last number of years, the sport has been highlighted and areas within the sport have come under controversy with particular focus on the welfare of greyhounds involved in racing. Welfare is a very broad term and includes the welfare and traceability of Greyhound. Traceability, the tracing of the life cycle of a greyhound, whelped to death and medical treatments/veterinary treatments give, owners of, trainer of, when raced, when trailed, sampling and the events that occurred when death occurred. Poor traceability practices can give rise to animal cruelty, corruption, and scandal. This is a very important area, yet it’s not been fully researched area. The thesis will start with an exploration of the historical context of Greyhound Racing Ireland (GRI), then a literature review of systems associated with traceability and traceability.

# Aim:

The mandatory implementation of Traceability has forever changed the responsibility of owning/training and breeding Greyhounds in the republic of Ireland. The aim of this paper lay the foundations set the objectives for the deliverer of an analysis of the Traceability of Greyhounds racing in Ireland and deliver an in-depth examination of traceability system. Using traceability systems, complaint, and non-Complaint updates from RCÉTS, RMS and updates made for the several categories of deaths generated through the RCÉTS app from owners, trainers, and breeders as they update their Greyhounds. To prove that implementing traceability has made an impact on the Greyhound sector. The paper will present the reasoning behind the mandatory implementation of Traceability by Reviewing three key reports and four annual reports to extract metrics that will all the conclusions to be drawn. To explore and analyse the current state of the greyhound industry focusing on racing greyhounds and the challenges it faces, which may identify potential opportunities within the sector. And with the hope to shed some light on the present state of traceability but also contribute to the formulation of improved policies and practices that ensure a sustainable and humane future for the industry. And to make predictions using a machine learning model to detail the state of greyhounds that are subject to traceability in the areas of deaths, exports and rehoming.

# Objectives:

# To use machine learning to predict the optimal career length, give the number of updates (trails, racing, application updates, ICC) including the of all complaint updates made by owners and trainer since 2021.

# Implement an analysis and develop an accurate neural network model to determine overall effectiveness and potential use of significant features such as deaths in the form of died of natural cases, to develop a machine learning model, using the data mentioned above to accurately make predictions of Greyhound deaths.

1. Implement a Sentimental analysis of twitter comments and compare two methods of sentimental analysis.

# Validate the results and accuracy of a consolidate data system, collected from customer-facing applications and race Strada data to create model to determine deaths and exports and to pred the future occurrences. Sampling Method and Type.

# Probability sampling.

The technique of sampling where all the population has an equal change of being selected.

The sampling technique is simple random.

Simple random sampling on the population for Owner, trainer, and breeders for the give period. But give a larger sample size I would expect a greater accuracy. Using the library of “random sample” python will help give a random / pseudo random sample.

The information that I will collect but not limited to is the deaths, exports complaint and noncompliant updates.

While it must be noted here that other probability sampling methods could be used here as the total population could be broken down into three populations, breeder, owners, and trainer, but it must be noted that owners could be trainer and trainer can be owners, breaking down to apply stratified sample, and cluster (dividing each subgroup into subgroup) sampling. And while stratified sample is probability the correct one as I’m breaking down into time periods. I’m not sure such limitations will be and accurate.

Sampling random sampling at this stage could be the most effective method of probability sampling that will allow the performance of data analysis using the statistical techniques to explore patterns and relationships and tends within the selected sample size. [0]

By Implementing this probability sampling strategy, the project will benefit will ensure that the data that is collected representative of the different perspectives within the greyhound racing industry.

different perspectives within the

Primary Research Methodology:

Interviews and observation are the primary research methodology which will be a combination of qualitative and quantitative primary research methods.

Qualitative:

Interviews.

The interviews will be the backbone of this research, even though there could be a large amount of bias from each interviewee. Gaining a further insight into the industry and achieve result that could redirect the sport into a place where greyhound racing could be a more accepted form of recreation.

Quantitative:

The second is observation of the data, because of my location to the data, and in a position that will allow the data for be queried and for historical research.

The alternative to my selected primary research methodology

Conducted on key figures with the organisation, interim CEO, While the two should be conducted.

1. Surveys would be helpful in the adaption or uptake of the traceability system. But not necessarily as customer must comply with the system.

Interviewees.

1. IGB – Interim CEO John,
2. IGB – IRGT Barry Coleman
3. IGB – IT Manager Kevin Maher

The approach outlined here may enable the triangulation of the research data. Further increasing the reliability and increasing the validity of the overall finding in the research.

# Literature Review.

## Introduction

Greyhound racing has been around for a very long time developed from coursing back in 1926. The sport has deep roots within all of Ireland. A time where a greyhound entered a race, and the winner received the prize money. Greyhounds were neither racing nor coursing. Greyhounds that won races became sough after and were bred to sell their offspring for larger amounts of money. Many owners saw their Greyhound as a source of income and a family pet. In more recent years the spotlight has highlighted elements of a once simple sport that into a sport that bred large amount of greyhound in the hopes that one would become a greyhound that would be considered a pedigree greyhound that would generate large amount of money through winning races and breeding. In some ways the sport is linked to horse racing in more closely.

In 2016 Greyhound racing industry has around 10,300 job and generated €500m for the exchequer.

During the period from 2011 to 2013 there were 47,702 Greyhound were registered by giving the unique names by submitting the registering forms to the Irish Coursing Club (ICC). And in Ireland there were 18,690 greyhounds exported to the UK. Since 2001 Irish board of Greyhounds (IGB)/ Bord nag Con now the Greyhound Racing Ireland (GRI) has received about €174.5 million from the exchequer with €14.8 million from 2016. The total income in the industry peaked in 2007 with a large amount of 78 million which fell to €39.8 million a 49% decrease in by 2014. The recommendation of the committee’s report is that new and up-to-date information be gathered.

The same report recommendations an improved traceability system and a single register where each greyhound is held in central database to be held in Department of Agriculture Food and the Marine. Which contains whelped date and Microchip from both sources, GRI and the ICC.

Recommended that owners that abandon greyhounds are to receive increased penalties.

Increase the penalty for cruelty to lifetime bans. And giving back prize money and returning the prize money the exchequer.

A zero-tolerance policy is vital for prohibited substances and enhanced powers to the welfare committee. Published January 2016 highlighted. Was the recommendation of a community which was a requirement to implement a system that could trace the lifecycle of every greyhound in the republic of Ireland. [19][20][21][22][23][24][25][26][27][28][29][30]

Traceability phase1 comprises of several features including the customer facing RCÉTS application that allows owner, trainer, and breeders to enter mandatory updates on the condition and location of each of the greyhounds that they owner. But traceability is not just the RCÉTS app. Traceability is the life cycle tracing of each greyhound in the republic of Ireland. Data collected from RCÉTS has analysed internal procedures to generate complaints events which determine if updates are within regulation and welfare specified times. A two-way feed between GRI and ICC allows both organizations to collaborate to have the most accurate data on each greyhound in the republic of Ireland. This project will analysis the past, current state of Greyhound racing Ireland and use machine learning to predict. The results will show why traceability was implemented to act in improve the welfare of Greyhounds, and how its impact has affected the sector. That with increasing meeting result in reduced attendance.

## Body

The RCÉTS allows owners, trainers, and breeders to make updates to their greyhounds which will enable Greyhound Racing Ireland (GRI) to track each greyhound from birth to death inputs into traceability which updates the two-way ICC feed.

What is RCÉTS? RCÉTS (Rásaíocht Con Éireann/ Greyhound Racing Ireland Traceability System) is the newly developed traceability system for racing greyhounds. [1]

This Literature review will take in several key papers and a selection of annual reports from greyhound racing Ireland to detail the need for Traceability in the sector and to extract metrics from the published reports. This paper will attempt to show how with the aid of the research already conducted by Preferred Results Ltd and reports such as the Indecon report and Morris report state of the sector. This paper will take key metrics taken from annual reports which will be used to compare before and after the introduction of Traceability and the RCÉTS app of Ireland in this project. Delving deep into history behind and the contributors to the mandatory implementation of Traceability to become the model that other country’s use in the animal Traceability.

Traceability was applied in 2021. RCÉTS is backed up by a GRI scanner, welfare offices and control Stewarts.

The key behind traceability is welfare inspection where a welfare officer will carry a GRI scanner and expects to find each greyhound on a owners/trainer’s premises once RFID tag is scanned.

If an owner, trainer, and breeder does not make an update via the RCÉTS app (web, android or IOS) every 70 days for each greyhound they owner or train they will be suspended from racing.

The Scanner will be used to identify all greyhound, in welfare inspections and during race meeting, trails official and unofficial.

Greyhound Racing Ireland has 16 tracks across the nation of Ireland broken down into 14 tracks in the republic and 2 tracks in the north of Ireland. Traceability does require that owners, trainer, and breeders to make updates to their greyhounds on export, change of location and status, no traceability will be applied to owners, trainers, and breeders in Northern Ireland. Greyhounds with owners in the north will be subject to traceability if they wish for their greyhounds to race in the south of Ireland (republic of Ireland).

Greyhound Racing Ireland work closely with the Irish Coursing Club (ICC), where all greyhounds’ pups must be registered with the ICC. Date transfer between ICC and GRI is one of the key factors in Traceability.

Greyhound Racing Ireland is a semi-private company and is part funded under the horse and Greyhound racing fund.

This part of outlines the need for traceability. The business analysis conducted by Preferred Results Ltd [2]. On behalf of Irish Greyhounds Board (IGB) rebranded as Greyhound Racing Ireland (GRI).

**See table 1 in appendix 1.**

The table 1 in appendix 1, shows that the number of greyhounds that were breed from 2009 and 2016 major of which were exported to the UK for a fraction of their rearing cost. Which flooded the UK market with Irish Greyhounds.

From the report on average, it was estimated that 5,987 greyhounds were culled each year.

The breakdown:

1. "Those who failed to produce qualifying times" (2,673)
2. "Failure to produce desired entry level times" (1,989)
3. "Unacceptable decline in performance" (1,326).

In September 2017, the consultants delivered a presentation to the IGB's directors and its chief executive, Ger Dollard, on the findings from the work.

However, the subsequent report was not adopted by the board.[1]

This was highlighted by a RTE prime time report back in 2017.

Further to the finding of the RTE prime time investigates it was found that the ICC registered 86,754 [3] between 2013 -2017 approximately 31,231, 36% were exported to the UK. Reported died in the same period is 6720. Based on the annual report for 2017 and 2018. In the 2017 annual report the chairman speaks of the Indecon report [4] which was commissioned by the department of agriculture and the marine 2014.

Which outlines how the Irish Greyhounds board (IGB) now Greyhound Racing Ireland was to save money because its current financial state which includes 21 million of debt and a 6.8 million pension deficit. The Irish Greyhounds board (IGB) now GRI would be selling assets. Including the closure of 3 tracks, which included Lifford in Donegal with the sale of its famous Harold Cross Greyhound Stadium in Dublin.  
  
The opening statement from a publication on the opening statement, Irish Council Against Blook Sports (ICABS).

The Irish Council Against Blood Sports is a voluntary organisation that does a lot of campaigning for the end to the hunting of wild animals with dogs and other cruel sports that exploit and abuse animals.

Greyhound racing and coursing is inherently cruel, resulting in the premature deaths of thousands of greyhounds annually, while hares suffer terror and stress by being snatched from the wild, kept captive and used as live lures for greyhounds at coursing matches. The majority of legislators have turned a blind eye to the cruelty and voted the Bill down, despite the majority of citizens wanting to see hare coursing outlawed. The Irish Coursing Club advises greyhound owners not to give away unwanted greyhounds, as it is better to put them painlessly to sleep. Marion Fitzgibbon of Limerick Animal Welfare, who has been rescuing abandoned greyhounds for decades, said that there are up to ten thousand put to sleep.

RTE's Prime Time programme that aired in 26 June 2017 highlighted the dark side of greyhound racing, the doping and the cruelty. The public now knows where their taxes are going to fund a cruel, cheating, debt-ridden industry.

Using a method called Blooding to train a Greyhound to hunt the hare.

Blooding of greyhounds is a common training method in the greyhound racing industry, using rabbits, hares and other small animals. It is widely believed that to keep a dog keen to follow a mechanical lure, it must be blooded. In 2014, a tiny piglet was savaged by greyhounds as part of a blooding exercise.

In 1994, a high-profile case of blooding of greyhounds was recorded at a training track in Donaskeagh, Co. Tipperary. John Martin wrote in the Irish Independent *that greyhound racing would not continue to exist without blooding and that Bord na gCon would not admit it. Doping of greyhounds is a serious problem in Ireland, with the Morris review and RTE Primetime programme citing high-profile cases of doping. Exports of greyhounds to destinations with low standards of animal welfare are also a concern, with the Canidrome track in Macau being the only region of China where gambling is legal. If a greyhound does not finish in the top three in five races in a row, it is destroyed.* **[1.1]**

Greyhounds were doped, and the screening was non-random and easy to evade. IGB’s current sampling strategy perceptible of “no element of surprise” and that the existing functions of the control committee were “seriously hampered”.

The Indecon Report outlined the key challenges facing the industry and noted that between 2006 and 2013 there was "an overall decline in revenue from €63.5 million to €28.2 million. This represents a fall of 55.6% over the period.

As the IGB now GRI is heavily funded by Irish taxpayers to the tune of 20% of the allotted Horse and greyhound fund. The board’s chairman must answer to the Oireachtas agriculture committee which has funded the sport since 2001. Interest between 2001 and 2010 the allocated funds totalled 180 million.

As expect, following the financial crisis and Irish budgetary difficulties post-2008, there has been a sharp slump in the level of funding granted. As the Indecon report highlights, this has been coupled with a further drop in other revenues sources. It would appear the sport faces serious challenges in the years ahead.

The boards annual report 2017 references both Indecon report and the Morris report [5].

The Morris review and review of the Anti-Doping and Medication Review was commissioned in December 2014 publicised 14/06/2016 by the IGB now GRI and found that:

* “Longstanding and significant deficiencies in policies, processes, and [IGB] implementation that have been undermining the integrity and reputation of greyhound racing in Ireland”;
* Improvements being conducted by IGB are being disrupted by “the legacy of mistrust and lack of communication”;
* An “intelligence-led approach” to anti-doping measures is required alongside greater inter-agency co-operation, which could include the horse-racing and equine sectors as well as gardaí;
* Regulations and legislation could also be overhauled with existing measures such as the Animal Remedies Regulations not viewed as easily accessible to support medication control;
* “The current approach to the permissive use of ABPs [animal byproducts] in racing greyhounds in Ireland is incompatible with modern international standards of anti-doping and medication control”, with the review recommending “a total ban on use of category 2 ABPs”.
* On publishing the review, the IGB warned owners and trainers not complying with regulations that “they will be targeted and severely sanctioned from the sport”.
* It said out-of-competition testing is now possible through new statutory instruments introduced in the past month.[2]

Simple metrics that are extracted for annual reports 2017 🡪 2020.

**Table 2 see appendix 2.**

From the annual report 2017 [5] [],

The IGB also said its “comprehensive” response to concerns within the industry over the past year includes publishing all laboratory results where there is an adverse analytical finding, testing at greyhound sales and trials, and revoking the licences of trainers found to have committed anti-doping breaches.

Greyhound Racing Act 2019 [50][51][52][53]

This act replaces all previous act and instruction of the renaming of Irish Greyhounds Board, Board ná gCon to Greyhound Racing Ireland, Rásaíocht Con Éireann. Details among other the requirements of GRI to traceability.

Traceability of greyhounds – traceability database 28.

(1) The Board may, after consultation with the Minister, make regulations for the registration and traceability of greyhounds in relation to the following:

(a) making provision for the registration in the traceability database of owners of greyhounds or holders of licenses granted for the purposes of paragraph

(b) or both prior to engaging in greyhound racing activities, including trailing, breeding, training, selling, or racing’s) licensing of c

(c) requiring owners of greyhounds to register greyhounds intended for greyhound racing activities in the traceability database.

(d) making provisions for the conditions for registration and the information required to be kept in the traceability database.

(e) requiring the owners, breeders, or the trainers of such greyhounds to notify specified life events to the Board.

(f) specifying the life events which are to be notified in accordance with the regulations (which events may include birth, sale, acquisition, death, loss, 29 PT.4 S.28[No. 15.] Greyhound Racing Act 2019. [50][51][52] treatment for disease or injury, training, race entries, stud or breeding events, the collection of semen or embryos, periodic status reports, track injuries, tests and results, including adverse analytical findings in relation to substances regulations, appearance at sales, export, offences under the Greyhound Racing Acts 1958 to 2019 or racing sanctions).

(g) requiring the owner, breeder, or trainer of a greyhound to provide the Board with details of the keeper of and location where a greyhound is being kept.

(h) requirements in respect of the electronic identification of greyhounds (including the implantation into, or the attachment to, a greyhound of any electronic device).

(2) The Board may establish and maintain by it, or by another person on its behalf, a database for the registration and traceability of greyhounds (in this section referred to as the “traceability database”) to hold details of matters provided for in regulations made under subsection (1). (3) A person who contravenes a regulation made under subsection (1), and which is stated in the regulations to be a racing sanction provision, commits a sanction breach of the Racing code and is liable to a racing sanction. Welfare of racing greyhounds 29. (1) The Board, after consultation with the Minister, may make regulations for the health and welfare of racing greyhounds in relation to the following: (a) requiring measures to be taken by the owner, breeder or trainer of a racing greyhound to protect the health and welfare of the greyhound; (b) requiring an owner, a breeder or trainer of a racing greyhound to inform the Board of measures taken in respect of the greyhound to comply with the requirements of regulations made under this section for the purposes of paragraph (a); (c) the establishment of and administration of funds for the health and welfare of greyhounds, including to make provision for the rehoming of greyhounds, at the end of their racing or breeding careers; (d) making provision for a racing greyhound affected by disease or which may be affected by disease to be refused entry or removed from race tracks, trials and public sales; (e) making provision for the treatment of a racing greyhound that is affected by a disease or disease agent or injury. (2) A person who contravenes a regulation made under this section, and which is stated in the regulations to be a racing sanction provision, commits a sanction breach of the Racing code and is liable to a racing sanction

Compliance with EU Regulations – offence and penalty 62. The following section is inserted after section 36 of the Act of 2013: “36A.Where a person contravenes or fails to comply with an obligation imposed on the person by a provision of a Regulation of an institution of the European Union relating to animals or animal products, including disease, health, welfare, identification, movement, transport, import, export, traceability, sale or supply, which is stated in regulations made under this section to be a breach to which this section applies, the person commits an offence and where the contravention or failure is stated in the regulations— (a) to be a breach to which this paragraph applies, is liable, on summary conviction, to a class A fine, or (b) to be a breach to which this paragraph applies, is liable— (i) on summary conviction, to a class A fine or to imprisonment for a term not exceeding 6 months, or to both, or 53 PT.11 S.62[No. 15.] Greyhound Racing Act 2019. [2019.] (ii) on conviction on indictment, to a fine not exceeding €250,000 or to imprisonment for a term not exceeding 5 years, or to both.”.

Compliance with EU Regulations – offence and penalty 62. The following section is inserted after section 36 of the Act of 2013: “36A.Where a person contravenes or fails to comply with an obligation imposed on the person by a provision of a Regulation of an institution of the European Union relating to animals or animal products, including disease, health, welfare, identification, movement, transport, import, export, traceability, sale or supply, which is stated in regulations made under this section to be a breach to which this section applies, the person commits an offence and where the contravention or failure is stated in the regulations— (a) to be a breach to which this paragraph applies, is liable, on summary conviction, to a class A fine, or (b) to be a breach to which this paragraph applies, is liable— (i) on summary conviction, to a class A fine or to imprisonment for a term not exceeding 6 months, or to both, or 53 PT.11 S.62[No. 15.] Greyhound Racing Act 2019. [2019.] (ii) on conviction on indictment, to a fine not exceeding €250,000 or to imprisonment for a term not exceeding 5 years, or to both.”.

46. Giving effect to an act, or a provision of an act, of an institution of the European Union in respect of animals or animal products, including disease, health, welfare, identification, movement, transport, import, export, traceability or sale or supply of animals or animal products. [1.2]

The welfare of Greyhounds. []

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|  |  | (1) The Board, after consultation with the Minister, may make regulations for the health and welfare of racing greyhounds in relation to the following: |
|  |  | (a) requiring measures to be taken by the owner, breeder, or trainer of a racing greyhound to protect the health and welfare of the greyhound; |
|  |  | (b) requiring an owner, a breeder or trainer of a racing greyhound to inform the Board of measures taken in respect of the greyhound to comply with the requirements of regulations made under this section for the purposes of *paragraph (a)*; |
|  |  | (c) the establishment of and administration of funds for the health and welfare of greyhounds, including to make provision for the rehoming of greyhounds, at the end of their racing or breeding careers; |
|  |  | (d) making provision for a racing greyhound affected by disease or which may be affected by disease to be refused entry or removed from racing tracks, trials and public sales; |
|  |  | (e) making provision for the treatment of a racing greyhound that is affected by a disease or disease agent or injury. |
|  |  | (2) A person who contravenes a regulation made under this section, and which is stated in the regulations to be a racing sanction provision, commits a sanction breach of the Racing code and is liable to a racing sanction.[88] |

Oireachtas.[19]-> [80]

As Greyhound Racing Ireland (GRI) Bord nag Con is a semi state body funded by the exchequer it is subject to questions relayed to the Minister for Agriculture and Marine which get an answer within two weeks. This section follows the story from that point of view. The expectations here is to identify members of the house of the Oireachtais that would be key advocates and opposition to GRI.

ISPCA.[84]

The Irish Society for the Prevention of Cruelty to Animals (ISPCA). For 2017 the ISPCA took over 16,000 calls, had 3200 investigations which resulted in 21 prosecutions which included 18 months prison sentence for cruelty offences. Seizing 1250 animals, which included 785 dogs.

This report dated 09/05/2017 shows the concerns that the ISPCA has about Greyhound Racing Ireland. These concerns summarize into:

* 1. ISPCA is opposed to the use of animals in sports or entertainment. [ISPCA].
  2. That the IGB should have and end of life/retirement plan in place for each Racing Greyhound, which is deemed to be retired once the owner decides that the Greyhound is valueless.
  3. That Greyhound Racing Ireland and the Irish Coursing Club should take full responsibility for the disposal of “unwanted dogs” [84]
  4. It notes that quality over quantity is the best policy reefing to the British Greyhound Board, which reduced the breeding of Greyhounds from 10,000 to 1,000 per year.
  5. The culture of the disposal for a throw away dog must change.

From 2010 to 2015 a total of 3410 greyhounds entered dog pounds in Ireland 75% were surrendered specifically for euthanasia [44]. And noted a reduction of 672 surrendered greyhounds during the same period.

This begs the question. Given that the greyhounds now cannot be euthanized have surrounding then to pounds etc, given the pounds/

Question: how has the ICC taken measures to combat the effect of unwanted greyhounds?[30][48]

The Irish Retired Greyhound Trust (IRGT) is a registered charity established in 1997 that works to rehome greyhounds after retirement and promote them as domestic pets. It provides advice on veterinary procedures, coordinates transport, provides financial support, and supports public awareness of greyhounds as pets.

The main role of the IRGT is: Advising owners on what Veterinary procedures are required prior to the rehoming of their greyhounds i.e., neutering/spaying, issuing of pet passports, administrations of rabies shots, vaccinations and inoculations, flea, and tick treatments, etc. [85]

An opening statement from the joint committee on agriculture and food and the marine, Irish council against blood sports [86]

Back in 2004, greyhound racing got a huge boost as the late Late shows Pat Kenney owned a greyhound called “Late Late Show”, this greyhound was trained by Michael Foley, and during the greyhound, career won €218000. It was a time when the Marketing department gifted several greyhounds to celebrate.

Pedigree of Greyhounds Analysis conducted in 2015 by greyhound racing Ireland. The objective of this analysis is to study and quantify the genetic diversity and related population parameters of the modern Irish greyhound populations. Used to benchmark against international guidelines on the ideal generic diversity. Used to inform future studbook management. The conclusions shows that Irish Greyhound population has excellent pedigree information. The analysis concludes that rated of accumulation of inbreeding in recent years is 0.15% per year which is a 0.98% per year. The recommended threshold is 1% per generation set out by the world Food and Agriculture Organisation. Compared to the coursing inbreeding is greater that the track population. Recommends conducting performance testing o individual greyhounds to differentiate from inbreeding levels. [87].

Annual Report 2022.[90]

RCÉ aims to ensure the highest integrity standards in the sport, based on recommendations from the Morris and Indecon Reports and public consultation.

RCÉ plans to expand the Microchip Scanning Project in the first quarter of 2023 to identify greyhounds via microchip, enhancing traceability.

Regulation Review

During 2022 their greyhound racing Laboratory analysed 5141 sampled during 2022 with 9 Adverse Analytical Findings (0.17%) reported.

In Phase 2 development of RCÉTS will capture additional data, including injuries, notifications times, euthanasia, inoculations, medicines, sampling history, regulatory breaches, breeding events, and exports to the UK.

RCÉ allocated €3.6 million to Traceability Care, and Welfare in 2022, focusing on the well-being of ownership, an end of life.

Financial support is provided rehoming, including financial support, greyhound care centres, and fostering.

Initiatives to support greyhound rehoming, including financial assistance for neutering, health checks, and dental procedures.

Establishment of Greyhound Care Fund that supports various welfare initiatives.

Establishment of Greyhound Care Centres and Foster Care Centres to help transition retired greyhounds to new homes.

A dedicated fund, the Greyhound Care Fund, support various welfare initiatives.

A greyhound injuries support scheme provides financial assistance for injured greyhounds.

A confidential phone line allows the greyhound establishments, with random and targeted inspections.

Efforts to prosecute breaches of welfare regulations, with cases before the courts.

Collaboration with U.S rehoming agencies to rehome retired greyhounds in the U.S. and Canada.

A Kennel Improvement Scheme was launched to assist kennel owners in upgrading their facilities.

Additional welfare resources, including Welfare Officers, were introduced in Q1 of 2022.

## Literature Review Conclusions:

GRI is a sector that begin 1927, this type of legacy is hardcoded into greyhound owners/trainer and breeder many of which have a long standing in Greyhound Racing. Was it the impact of mandatory implementation of traceability on greyhound racing.

Owners, trainers, and breeders in the north of Ireland are not subject to Traceability, this is because both tracks in the north of Ireland. In the remaining tracks in the south owner, trainer breeder is in part taking ownership of past mistakes and are invested to make their sport exist in the future.

The industry was flooded with the over breeding of Greyhound. This is a finding of literature review which was reported in the business analysis conducted by Preferred Results Ltd. Shows that the sector had been flooded by the over breeding of greyhounds which has led to non-preforming greyhounds when culled or exported. The rejection of finds from these reports may have helped speed up the implementation of traceability.

The data contain with the annual reports show year on year decline in attendance of the attendances before 2020. Attendances a greyhound racing Ireland Strada is in decline of the number year before covid 19.

The attendance to greyhound Strada has declined year on year since 2017.

Rehoming of Greyhounds has steadily increased over the years since introduction.

In 2021 traceability went live which handed over racing suspension to owner, trainer, and breeders from non-compliance.

## Traceability in other countries.

Several countries have implemented various forms of greyhound racing traceability and do measure animal welfare, transparency, and accountability.

Australia: Has several different bodies that look after the welfare of greyhounds in Australia, 1, Victoria (GVR), Greyhound Racing New South Wales (GRNSW) and Greyhound Racing in New South Wales (RWWA) and others. Implemented traceability of racing greyhounds in New South Wales in 2020 and all greyhounds has an entry in a national database. But unlike the traceability model in Ireland the greyhound must be brought to a stadium where the representative i.e., control Stewart/ welfare Stewart will conduct a detailed inspection of each greyhound’s condition identification through earmark and microchip RFID tag. And employs a Greyhound Adoption Program (GAP). Despite the implementation of traceability and resulting welfare improvements the greyhound sport its faces criticism and challenges around this welfare and racing.

United States of America: United States has the National Greyhound Association (NGA) is a voluntary non-profit organization founded in 1906. Not unlike the ICC in Ireland the NGA registers greyhound and provides the unique earmark tattoo and sets the standards from the welfare (health, kennel conditions, and after racing care) through its code of ethics. And violation of the NGA’s set does suspend or expulsion from the organization for the owner, trainer, and breeder. They implement traceability through registration and identification through tattooing, while it is considered to be traceability welfare regulations varies significantly through each state and identification is one through earmark tattooing only. NGA has taken criticism for its lack of animal welfare standards. Not all states in the USA have racing greyhound and some have banned the sport completely. Since September 2021 the greyhound racing industry is in decline with only a handful of tracks still running.

United Kingdom: In the United Kingdom the greyhound board is called the Greyhound board of Great Britain (GBGB) and this board does the full implementation of registration, microchipping, and welfare. Generates the ethics, a single body for greyhounds in United Kingdom. Which compare to Ireland, where greyhound in Ireland must registered with the Irish coursing club (ICC). In 2018 GBGB launched plan called the Greyhound Commitment, and point plan [89] to ensure welfare and care of racing greyhounds in the United Kingdom. The points which are:

1. Registration and traceability:

Registered at birth, and a record is maintained throughout the greyhound’s life.

1. Health checks and veterinary care:

Veterinary care and regular health checks provided. This ensures that each greyhound owned gets the adequate treatments and care to ensure that all injuries and illnesses are treated.

1. Training and Socialization:

To provide the training to allow the interaction between greyhound to stop greyhound fighting, which can suspend and owner. And ensures that when retirement occurs that the greyhound can have a greater chance of transiting to a pet.

1. Housing standards:

Kennels are kept to the standard, which ensures that the greyhound has a nice place to live.

1. Retirement and rehoming:

All the above point gives the greyhound a better life and better chance at retirement.

*The "Good Life for Every Greyhound" commitment is a significant step towards ensuring the welfare of greyhounds in the racing industry. It brings together breeders, owners, trainers, kennel staff, and rehoming organizations to work collectively towards the goal of giving every racing greyhound a life defined by care, respect, and enjoyment.* [89]

The model differs between Ireland and Australia in that welfare inspections occur at the premises in which the traceability recorded the greyhounds’ locations in the Irish model the greyhound is inspected but also the conditions of the kennel. Many kennels would be granted by GRI to make necessary upgrades where required. Comparing Ireland traceability to the Australia and USA, while Australia’s traceability would be detailed, but Irish model is the market leader and many greyhound associations look towards Ireland as Ireland is the only traceability model that using a custom build IOS application. Both Ireland and Australia have programs from the adoption of retired greyhound and both export to the USA for rehoming.

Would the combination of Irish coursing club (ICC) and Greyhound Racing Ireland (GRI) be a better for the Greyhound racing in Ireland. One point would be that the Irish coursing club (ICC) has a worse reputation than Greyhound Racing Ireland (GRI) as the ICC used to collect and trap hare for the purpose of coursing which normally allowed the caught hare to be ripped apart but two chasing/hunting greyhounds. Which was cruel. But now the Irish coursing club does not allow the chasing greyhound to kill the hare. Which is an improvement, but still chasing a panic-stricken hare until its pinned down could still be considered cruel.

It can happen that greyhounds from Ireland travel to GBGB regularly, a commitment from both Greyhound Racing Ireland (GRI) and Greyhound board of Great Britain (GBGB) to exchange formlines to ensure that penalties applied in either area are show on either side. Greyhound that are recorded as exported are removed from traceability in Ireland, and the only way that they can be imported back into Ireland is to Trail which brings the greyhound back to being subject to traceability. The concern is that an issues with the greyhound in Ireland can be bypassed by exported to GBGB and no record of the infraction is recorded there, and vice versa.

Ethical Considerations:

Through the project I will adhere to the Ethical point that are listed below:

1. Informed Consent:

Participants will have the opportunity to agree to participate without any coercion and given the right to withdraw without penalty.

1. Confidentiality and Privacy:

Any personal data collected from interviewee will be kept confidential. Information should be anonymized, and any data will be securely stored.

1. Respect for Participants/ animals:

Interviewee will be treated with respect and dignity.

1. Avoidance of Harm:

This research aims not to harm participants physically or psychologically. During the interview and will not ask for an answer if the interviewee seems distressed.

1. Integrity:

Research collated will be conducted with honesty and transparency. This will include accuracy when reporting findings, acknowledge limitation and will not manipulate data.

1. Conflicts of Interest:

As an employee of greyhound racing Ireland, it would be a mistake if it was not stated from the from the outset this fact. It’s important that the research is unbiased and that results are not influenced by personal or financial gain. As and active member I will not alter the finding to favour the outcome towards Greyhound racing Ireland (GRI).

By implementing these ethical guidelines, they can ensure that research that is conducted responsibly, respectfully and with the utmost integrity. from the adoption of retired greyhound export to the USA for

# Analysis

The analysis is broken down into sections that cover the analysis.

Section 1:

Basic analysis.

**Abstract**

In this chapter the focus on the basic analysis of the databases data before the entries are merged.

On the two dataset that are merged on earmark of each greyhound. This is done using data for SQL databases.

**Introduction**

The question posed given all the events that compares to make up a greyhound’s career, the date the greyhound was whelped and date when the greyhound died, can a model be created to make an accurate prediction on the career of the greyhound. We are not recording the injuries occurred by a greyhound at present, but recording the injuries will drive a compliant update. And while no analysis can be done for injures at this time the owner or trainer will supply an update to make the greyhound complaint and that will show that the greyhound is not racing or trailing.

**Results/Discussion**

1. **Traceability database**. This database has only been collecting data since 2021.

|  |  |
| --- | --- |
| **NoticeSentBy** | **Count** |
| 2022 | 1294984 |
| 2021 | 24744 |
| Table 1 shows | |

|  |
| --- |
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Figure 1 shows the split of notices received by into RMS database in the complaint table.

The "NoticeSentBy" column shows the count of notices sent by different entities or sources in the years 2021 and 2022. Notices sent can be from the customer via the RCETS app, from Race Management system through trails/ racing which can be though the scanner or the racing manager, from the Irish Coursing Cub (ICC) and from the formlines that will be sent from G.B.G.B.

The Figure 1 show the split, as seen in this plot at in 2022 there were 1274984 entries made to update greyhounds and these updated were recorder by the system. And, in 2021 there are 24744 entries to update greyhounds’ status. Which makes sense as in 2022 the rollout was completed, and suspension were active for noncompliance greyhounds.

The conclusions that can be drawn from this data:

1. In 2022, there was a large increase in the number of notices sent to the customer to make an update the customers greyhounds compared to 2021. The count of notices sent in 2022 (1294984) is significantly higher than the count in 2021 (24,744). This suggests the implementation of the changes to welfare and regulation in the form of traceability and in communication or activity from these entities or sources is a success.
2. The very large increase in notices to update that was sent in 2022 could indicate that the implementation of suspension for noncompliant greyhounds within traceability and change in communication practices resulting in the increase.

In summary, the data suggests a significant increase in notices sent in 2022 compared to 2021, which suggest that in 2021 the was no consequences for the notification to make updates to the customers greyhound and with the change to the rule and the uptake of the changes lead to the significant number of notifications sent.

The data merge with a left joined on traceability which allows the greyhound in traceability and their owners/ trainers update made for those greyhound the question to be asked.

The question is “can a model be creating to predict the career length of a racing Greyhound?”.

The data contains whelp date and death, and all updates that are made against each greyhound.

The limitation of this data is that at present the injuries occurred are not recoded. Also, that records begin in 2021 for traceability.

1. **RMS database.** This is a race management system and collect all data from racing greyhounds only. This database records complaint updates, these are triggered to send a notification to the customers after 43 days since the last update if the greyhound has not trailed or raced during that time.

|  |  |
| --- | --- |
| **Whelp date** | **Count** |
| 2023 | 2621 |
| 2022 | 12390 |
| 2021 | 12088 |
| 2020 | 7691 |
| 2019 | 6654 |
| 2018 | 3099 |
| 2017 | 1114 |
| 2016 | 389 |
| 2015 | 72 |
| 2014 | 16 |
| 2013 | 2 |
| Table 1 count of greyhound whelp dates | |

|  |
| --- |
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The table above represents the count of greyhound whelp dates for each year from 2013 to 2023. It provides information about how many greyhound puppies were born each year during this time frame.

1. Yearly Variation: The table shows fluctuations in the number of greyhound pups whelped each year. For example, there is a significant increase in the number of pups from 2015 to 2016, followed by a decrease in the following years. This is a direct result of the over production of pups.

2. Recent Data: The most recent data (2020 to 2023) suggests a decreasing trend in the number of greyhound puppies born, with 2023 having the lowest count so far. Which could be a direct result of changes in welfare and regulations changes that paved the way for traceability.

3. Historical Data: In the earlier years (2013 to 2014), the number of greyhound pups born is relatively low compared to the later years.

4. Data Completeness: It's worth noting that the dataset is incomplete for the year 2023, as it may not represent the full year.

5. Data Interpretation: The interpretation of this data would depend on the context and purpose of the analysis. It could be used to assess trends in greyhound breeding or to make predictions about future breeding patterns.

The above table shows that count of complaint updates of greyhound whelped from 2013 to 2023. These are compliant updates made by the customers. The interesting thing to note here is that there are more greyhound’s complaint updates made on whelped greyhounds in 2022 that any other year since 2013. And, since the customers update only became mandatory in 2021 the results shown that would be expected. And for 2023 it would be expected that 2023 would be greater or equal to 2022.

This shows that traceability is working.

**Section Conclusion**

In 2022, there was a large increase in the number complaint updates received to update customer's greyhounds compared to 2021. The count of “NoticeSentBy” on Microchip in 2022 (1,294,984) is significantly higher than the count in 2021 (24,744).This suggests that the implementation of changes to welfare and regulation.

The data suggests that the rollout of traceability measures and the suspension resulting from noncompliant and the requirement for customers to update greyhound information have had a significant impact. This is evident from the sharp increase in complaints updates in 2022 compared to previous years.

Greyhound Whelp Date Trends:

The table showing the count of greyhound whelp dates provides insights into the historical trends of greyhound breeding. It indicates that there has been variation in the number of greyhound pups born each year, with recent years (2020 to 2023) showing a decreasing trend. The implemented changes in welfare and regulations with resulted in the complaint and noncompliant events may have influenced breeding patterns, potentially contributing to the declining number of whelped greyhounds in recent years.

In summary, the data indicates a significant increase in customers updates between 2022 compared to 2021, likely due to the implementation of traceability measures, changes in communication practices and noncompliant suspension. This suggests that these initiatives have been successful in increasing compliance.

## Section 2: Analysis of the status

Analysis of the status

**Abstract**

The updates of greyhounds focusing on their final updates, Retirement (REG), Euthanised (EUT), and Death (DIE).

**Abstract**

This analysis of the status dives into the status updates of greyhounds provided by owners and trainers, specifically focusing on their final updates categorized as Retirement (REG), Euthanised (EUT), and Death (DIE). The analysis highlights the distribution of days lived from Whelp Date to Retirement, revealing that lifespans do not strictly follow a normal distribution, which is expected due to the complex interplay of genetic, environmental, and health factors. This investigation of greyhound retirement status provides valuable insights into their life cycle path and the impact of different status categories.

**Introduction**

In this section the focus will be on the status of the greyhound that has final update that will be categorized as either Retirement, Euthanised and Death.

Greyhounds are often retired from racing for various reasons, one of which is breeding. When a greyhound is retired for breeding, it means that they are no longer actively participating in racing events, and instead, they are used for the purpose of producing offspring (pups) that can potentially become future racing, which give them a final complaint update and then removes them for requirement of making any further updates until their death. Inspections will note that the greyhounds are still at premises and it condition.

A greyhound that may be retired for a couple of reasons outlined below.

1. Retired for Breeding

Breeding retired greyhounds involves selecting suitable mates to produce litters of pups with desirable traits such as speed, agility, and temperament. These puppies are then raised and trained for potential careers in racing or coursing activities.

It's worth noting that retirement for breeding is just one of the many reasons a greyhound might be retired from racing. Others include injury, aging, or simply a decrease in performance. Retirement allows these dogs to transition into a new phase of life where a greyhound may contribute to the breed through breeding programs. Or they can live as pets through the IRGT once the transition is made from greyhound to pet there is no further requirement to make updates.

1. Other reasons.

Majority of retirement will be due to the reason outlined above, and when a greyhound is retired it will be handed over to Irish racing greyhound trust (IRGT). The work of organizations like the Irish Retired Greyhound Trust is essential in providing retired greyhounds with a second chance at a happy and fulfilling life as pets. They contribute to the well-being and happiness of these dogs while also promoting responsible ownership and a positive image of greyhounds as pets. See the literature review for more information on the IRGT,

Results

The Results the status:

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Figure 1.

Figure 1 shows the split of greyhounds that which are from the beging of recording of the updates which are made as a result of implementing traceability. The Majority seen above is the Racing updates (Rac) which take the majoriy of the updates, this is done from the RMS application, trails or racing. Second is recoded deaths (DIE) and thrid is Retired (REG). Which can be recorded by all sources.

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Figure 2

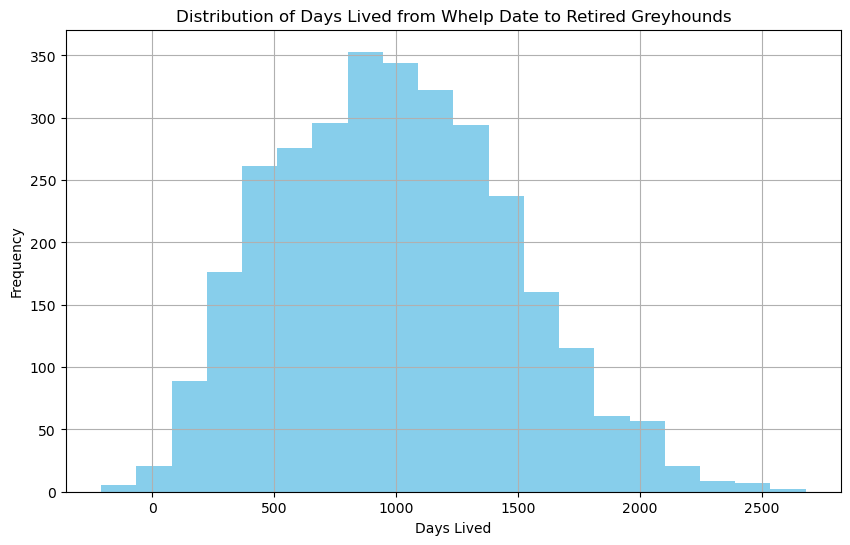


Figure 3

The chart above shows the distribution of the days lived, and looks like the data is normally distributed data, but the median and the mean do not match. The distribution of the time from "Whelp Date" to "Retired" is not typically expected to be normally distributed.  
The lifespan of living organisms, including greyhounds, can often follow more complex patterns due to various factors such as genetics, environment, health, and more. As a result, the distribution of lifespans can be skewed, have multiple peaks, or exhibit other non-normal characteristics.

median 1286.0

count 3129.000000

mean 1293.985618

std 466.391978

min 45.000000

25% 943.000000

50% 1286.000000

75% 1623.000000

max 2923.000000

Name: Days\_Lived, dtype: float64

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Description automatically generated

Again, the Frequency above shows that the last update make by the customers is Died. The count in this category is 10713. The average days between Whelped date and the last update made is 883 days.

The average number of updates to each

greyhound in the dataset is 12.76.

The average age of a greyhound with a last update of Died (DIE) = 883.3 days. In this category there are 10713 marked with the last update as Died (DIE).

count 10713.000000

mean 883.296462

std 341.741981

min -198.000000

25% 655.000000

50% 830.000000

75% 1047.000000

max 2913.000000

The Frequency Distribution above shows that data is not normally distributed and is skewed right.

A green graph with numbers

Description automatically generated

Again, the Frequency above shows that the last update make by the customers is Euthanized. The count in this category is 747. The average days between Whelped date and the last update made is 1067 days.

count 747.000000

mean 1066.820616

std 488.503265

min -16.000000

25% 700.500000

50% 1012.000000

75% 1408.000000

max 3200.000000

A chart with numbers and a green bar

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Figure 5

The above figure 6 shows the breakdown of the allowed updates broken down into year. It’s clear from the figure that RAC is the largest update for 2022 and 2023.

A graph of a distribution of status

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Figure 6

In figure 6 the status update died (DIE), Euthanised (EUT) and Retired (REG), this figure removes the racing (RAC) update. Which gives a clearer picture of the of the updates that have been received from the customer facing application. Also, seen in figure 6 is that retirement was largest updates from traceability from 2021 euthanised as second and died is third, similar for 2022 but a larger number of updates received. And for 2023 Died takes a greater number than retired which could be a cause for concern.

From the figure 5 the largest update for 2022 is Racing (RAC) which is racing. The Ignoring the RAC update gives a clearer picture of the of the status updates.

## Section 3: Building and Training a Recurrent Neural Network (RNN)

**Abstract:**

Creating a RNN for the question: Given the data, can an accurate prediction of the career length of a greyhound be accurately predicted done? The result will show that given the RNN prediction will have a mean squared error of 0.031. Using three layers with the Adam as an optimizer, batch size of 64, epochs of ten and mean square error.

**Introduction:**

The question of “predicting the career length of a racing Greyhound” extends beyond and is more than a recommendation of age. It encompasses various factors, including how much training has the greyhound undergone, the count of how many trails the greyhound has undertaking in its career and how many races has the greyhound participated in. This section will introduce a Recurrent Neural Network (RNN) as a powerful tool to help address and solve this question.

**Data:**

In the context of the dataset which is traceability based combined with a left merge with all the entries taken from the Race Management system (RMS) and append all the data from the greyhound that are in the traceability dataset. This interesting approach enables the enhancement of the traceability dataset to have more than just the standard entries which allows for the introduction and the padding of the traceability system to have multiple entries for each greyhound rather that whelp data and death date.

**Model Architecture:**

Here the is a Recurrent Neural Network (RNN) was employed, the data will contain updates made by the customer and the Race Management system (RMS) which generate a compliant event against the greyhound and the owners and trainers. This gives a maximum of 73 dates before the customer must make another update to that greyhound. Since this is a sequential prediction task, the data is structured the same where each earmark will have several entries which takes the form from the complaint updates ignoring the datetime of when the greyhound was registered.

There is three input LSTM layers in this recurrent Neural network (RNN) used to learn hierarchical features and used help the network maintain and propagate the information. Each of the layers can be a feature transformer that will learn relevant representations from the input sequence. The LSTM layers has a non-linear relationship in the sequence data. And allows Model Capacity which will improve its ability to capture the RNN’s complexity.

**Results:**

The result that the trained mode has a mean squared error of 0.030533

|  |  |
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| Figure 7 |
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| Figure 8 | |

* Figure 7 shows a random sample taken from the predictions made by the RNN model which is mirrored by the same sample size taken from the test data.
* Figure 8 shows a random sample taken from the test data, note that both are still in scaled.
* The first attempt the model was overfitted with the hyper tunning setting the rnn.add (Dropout to 0.4)
* The RNN has 10 epochs which took 48 minutes for each to complete. And the best loss is 0.035283.
* Mean absolute error = 0.07201
* Optimiser = Adam with a learning rate of 0.001 default
* Three layers with LSTM with

**Discussion:**

Employing a Recurrent Neural Network (RNN) architecture with three stacked Long Short-Term Memory (LSTM) layers, trained using the Adam optimizer is not an easy task but simplified by using TensorFlow. The primary objective is to make an accurate prediction using sequential data. The model exhibited a good performance, achieving a best loss of 0.0353 during the training process.

With the implementation of multiple LSTM layers, the model gained the capacity to capture complex patterns over extended sequences of data. The Adam optimizer was chosen for its proven effectiveness in handling a diverse range of datasets, which was well-suited to this problem.

During the training of the RNN neural network, the tuning hyperparameters was carefully applied, including the learning rate and batch size. The chosen learning rate facilitated stable convergence, while a moderate batch size balanced training efficiency and memory usage. The number of LSTM units in each layer was judiciously selected through experimentation, ensuring a balance between model complexity and generalization.[91]

Throughout the training process, we observed the loss, which steadily converged to be, the best loss of 0.0305. This loss value is particularly significant in our problem domain, signifying the model's proficiency in capturing critical patterns within the sequential data.

In addition to the loss metric, the accuracy was included accuracy to measure the performance of the RNN. The model consistently demonstrated strong performance across the metrics applied.

The model seems to exhibit robust will continue to make accurate predictions even when faced with challenging situations. to unseen data, with some indications of overfitting. This was further validated by assessing its performance on an independent validation dataset.

**Section Conclusion:**

In conclusion, the Recurrent Neural Network (RNN) model, featuring three stacked Long Short-Term Memory (LSTM) layers and trained using the Adam optimizer, has demonstrated relatively good capabilities in solving our domain-specific sequential data prediction task. With a best loss of 0.0305 and consistently strong performance across various evaluation metrics.

The decision to employ a multi-layer LSTM architecture to apply a demonstrated RNN during a tutorial which worked in this case also. And gave a wider understand which of the RNN and hyperparameter tuning, which proves crucial in enabling the model to capture the relationship between elements in a sequence within the data. The robustness of the model helps with overfitting, confidence in its predictive capabilities.

The implications are limited because of the lack of recorded injuries at present. The findings of this study and the model will be implementation will extend this study. The success of this RNN-based approach has potential to address critical challenges in our greyhound racing and more importantly greyhound racing in Ireland, offering valuable insights and solutions. It is envisaged that further research to refine our model and explore novel avenues for improvement and the application of advanced techniques.

0.0305 These results represent a significant step forward in our pursuit of accurate and reliable predictions, with the potential to drive advancements and innovation in our field.

### Section 4: Comparing Machine Learning algorithms.

**Comparing Machine Learning algorithms.**

**Abstract**

In this chapter the data will be used to find the best model between Machine Learning algorithms. Using regression algorithms and Lazy Predict to find the best regression algorithms.

**Introduction**

Given all the events that comprises to make up a greyhound’s career, the date the greyhound was whelped and date when the greyhound died, can a machine learning model be created to make an accurate prediction on the career length of a racing greyhound. As mentioned before, we are not recording the injuries occurred by a greyhound at present, but recording the injuries which will drive a compliant update. And while no analysis can be done for injures. But the injured greyhound does drive a event that makes the owner/ trainer make an update to all the greyhound not to go out of time before the injurie is healed. The chapter will focus to find the best machine learning algorithms with is done over two Jupiter notebooks files.

**Data:**

The dataset contains ten columns and 224190 rows. Three columns that are date and datetime, which are converted to integer. Three columns that are on string, where the Retirement Type column is converted to a double between 1 and 5. Career length column is manufactured by subtracting the OccurredAt column from the whelp date. The remaining are dropped. The data is then cleaned.

**Model Architecture:**

The Model has three independent variables,

1. **Whelp date,** type is integer, converted from date.

2. **OccurredAt,** type is integer converted from date.

3. **Status**, type is double which is a int representation of Retirement type which is a string.

And one dependent variable Career Length which is the result of OccurredAt – Whelp Date.

**Training.**

The models are trained with a split of 70/30.

**Results**

1. **Kaplan-Meier survival curves**

|  |
| --- |
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Figure 1 Kaplan-Meter survival curve

Perform log-rank test.

|  |  |
| --- | --- |
| **t\_0** | -1 |
| **Null\_distribution** | Chi squared |
| **Degress of Freedom** | 1 |
| **Test name** | Logrank\_test |
|  | One |
|  |  |

|  |  |  |
| --- | --- | --- |
| **Test\_statistic** | **P** | **-log2(p)** |
| 0.00 | 1.00 | -0.00 |

1. **Machine learning model Catboost**
2. Result show in Investigation of Times series Vs Machine Model, using the catBoostRegressor inputting 100 iterations with a learning rate of 0.1 and a depth of 5.
3. Results show that the mean squared error of 3.99.

|  |
| --- |
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| Figure 1 |
| A green lines on a white background  Description automatically generated |
| Figure 2 |

1. **Lazy Predict:**

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**Figure 3**

Figure 3 Shows the results of the Lazy Predict on the data.

1. **Linear Regression:** For the linear Regression.

Changed the date/datetime columns to integer.

|  |
| --- |
| **A graph with green lines  Description automatically generated** |
|  |
| **A graph with blue lines  Description automatically generated** |
|  |
| |  |  | | --- | --- | | **Mean square error.** 18343.9 | **R2** 0.885 | |

## Machine learning model

**Discussion**

1. The data does seem like it would be suitable for a time series analysis, unfortunately and it could be my limited experience in this area. There are not entries for each greyhound to build data to build a times series analysis model.

The dataset with has information about Greyhounds, including their names, characteristics, and timestamped events. However, this dataset has not got represent by the traditional time series dataset, as it lacks a continuous time-related variable with multiple observations over time. And instead, it has a consist of event logs associated with each Greyhound at different times.

To perform time series analysis, the dataset typically need data that captures a series of measurements or events recorded at regular time intervals over an extended period. Each observation in the time series should be associated with a specific timestamp. And it’s possible that this analysis of the traceability dataset is slightly premature. It’s envisioned that over time this will be applied.[92]

1. Using the Kaplan-Meier survival Curves and the KapLanMeierFitter() library in python as a survival analysis which will estimate the probability of an event occurring, most likely the survival of greyhound over time but can be applied to any time series analysis. It’s a non-parametric (not normal distributed) method that does not assume that the data is normal distributed.

In the log-Rank test which is used to compare the survival experiences. Figures out if there is a significant difference in the survival probabilities between the groups.

Works by using the null hypothesis (H0) where there is no difference between the groups compared. Alternative Hypothesis (Ha) states that there is a difference between two groups.

1. Using lazy predict. [1]

Is a python library, used to perform and evaluate many machine learning models on any dataset with the need for manual setup. Lazy Predict will automatically evaluate a variety of classification model for example Decisions Tree, Random Forest, Logistic Regression. And display their performance metrics, making it easy to identify which models perform well on the given dataset without the need for to preform hyperparameter tuning or model selection. Using the python library is only used for an initial assessment and not for fine-tuning or for optimization of the models. LazyPredict is very useful when you want to get a quick idea of how several machine learning models perform on the dataset. Its value as a tool for exploration of data and model section in data science and machine learning projects.

And provides a pooled model that combines predictions from all evaluated models. For regression tasks LazyRegressor in the same way as LazyClassifier.

Lazy Predict does the work but to understand with lazy predict does then a solid understanding of classification and regression models is a must.

Lazy Predict works by using data Preparation where You start with your dataset, which includes features (independent variables) and a target variable (dependent variable). And then, Model Selection, Instead of spending time fine-tuning hyperparameters and optimizing each model, you select a set of diverse machine technique to reduce overfitting by controlling the sequence that splits during decision tree construction. Can handle missing values effectively without the need for imputation.

1. Model comparison

In these sections the focus on the model used and comparing them on the dataset.

* 1. LinearRegression.

A widely used stats technique to model the relationship between independent and dependent variables [2]. The dependent variable in this case (target=Career length) and one or more independent variables (features) by fitting a linear equation to the observed data.

Assumes a linear relationship between the independent variables and dependant variables it fits a straight line to the data. The goal is to find the best-fitting line that minimizes the sum of the squared differences between the observed values and the predicted values. Using cross validation (CV) is used to assess the performance of a Linear regression machine learning model. It works by estimating how well it will generalize to new, unseen data. And it helps in evaluating the model's performance and detecting potential issues like overfitting or underfitting. Cross-validation involves splitting the dataset into multiple subsets, training and evaluating the model on different subsets, and then aggregating the results to obtain a more robust estimate of the model's performance.

Cross-validation helps in obtaining a more reliable estimate of a model's performance because it tests the model's generalization on different subsets of the data. It also helps in hyperparameter tuning and model selection.

* 1. RandomForestRegressor.

Random Forest is a popular ensemble machine learning algorithm used for both classification and regression tasks. It belongs to the class of ensemble methods, which combine the predictions of multiple individual models (in this case, decision trees) to make more accurate and robust predictions. Random Forest is known for its high performance, versatility, and resistance to overfitting.

Random Forest is based on decision trees and is an ensemble method that combines the predictions of multiple decision trees to produce a final prediction. Which helps reduce the risk of overfitting and improve the model's overall stability and accuracy. One of the key innovations of Random Forest is the random feature selection during the construction of each tree. At each node of a decision tree, a random subset of features is considered for the best split. This randomness helps reduce the correlation between individual trees and improves the model's generalization ability. And, uses a technique called bootstrapped sampling to create multiple training datasets by randomly selecting subsets of the original data with replacement. Each decision tree is then trained on one of these bootstrapped datasets. Has the ability to use Hyperparameter tuning. Since each tree is trained on a different subset of the data, the data points left out (out-of-bag) can be used to assess the model's accuracy without the need for a separate validation set. Random Forest can also provide insights into feature importance, which helps identify the most relevant features for making predictions.

* 1. GradientBoostingRegressor.

1. This is a great machine learning algorithm that belongs to the ensemble learning family, specifically the gradient boosting ensemble methods. It is used to build predictive models for continuous (numeric) target variables. Gradient boosting methods, including `GradientBoostingRegressor`, work by combining the predictions of multiple weak learners (typically decision trees) to create a strong predictive model. It involves optimizing a loss function (e.g., learning models (e.g., linear regression, decision tree, random forest, support vector machine, etc.) that are suitable for your problem.
2. Lazy Prediction: You apply each selected model to the dataset with minimal or default hyperparameters. The goal is to get a quick estimate of how each model performs without in-depth tuning or optimization.
3. Performance Metrics: For each model, you calculate relevant performance metrics (e.g., accuracy, mean squared error, F1-score) to evaluate its predictive power on the dataset.
4. Ranking and Selection: Based on the performance metrics, you can rank the models and select one or more models that show promise. These models can then be further optimized and fine-tuned for your specific problem.
5. The advantage of lazy predict is that it provides a fast and initial assessment of which models are likely to work well for your dataset. It can help you prioritize your efforts in model selection and hyperparameter tuning. However, keep in mind that lazy predict does not replace the need for more in-depth analysis and fine-tuning once you've identified promising models. It's more of a quick screening process to guide your initial model selection.

1. Which is the best model to use the discussion here will outline and give a summary of the model used in the comparison on the dataset.
   1. Catboost

Using Catboost used to for the machine learning part one of the comparison. Catboost is a gradient boosting library which can be used for both classification and regression task. Combines and build an ensemble of decision tree and sequential manner.

The features of Catboost uses a technique such as ordered boosting to work directly with categorial data. Gives a high performance, as it incorporates several techniques to optimizes training speed and predictive accuracy. And employees a

mean squared error for regression) by iteratively adding decision trees that minimize the loss. Gradient descent is used to find the optimal parameters of each tree (e.g., the structure of the tree and the values at the leaf nodes) to minimize the loss has various hyperparameters that can be tuned to optimize its performance, including the learning rate (shrinkage), the number of trees (n\_estimators), the maximum depth of each tree, and the minimum number of samples required to split a node, among others. Uses “Regularization” to prevent overfitting, `GradientBoostingRegressor` provides options for regularization, such as controlling the depth of the trees and setting the minimum number of samples per leaf. The algorithm can estimate feature importance, which helps identify which features have the most influence on the target variable. While gradient boosting is powerful, it can be computationally expensive, especially for large datasets. The `GradientBoostingRegressor` implementation in scikit-learn offers some parallelization options for improved scalability.

**Conclusion:**

In conclusion, this is a regression problem and not a classification problem. In the dataset some dependent require to transformed to use with the regression models and using the python Library Lazy Predict takes the heavy lifting out of selecting the correct mode. Lazy Predict has proven to be a valuable tool in the field of machine learning and data analysis even though it takes a longer than expected time to return if you done have a dedicated GPU. This Python library would have simplified the model selection and evaluation process if the objective was to deliver on a hardcoded deadline. Lazy Predict has ability to generate an array of machine learning models and provide initial performance metrics. The disadvantage to this is that with the dataset with 5000 rows takes a less than three hours to complete, and with the dataset for this project the max time is 13 hours. Even though it takes some time to process, it would stand to reason that if manually attempting to build, Hyperparameter Tuning Lazy Predicts output can guide the hyperparameter tuning process. Once promising models are identified each model to find the best may take the same time. It's important to note that Lazy Predict may not cover every possible machine learning algorithm or modelling technique. Therefore, it's advisable to use it as a starting point and explore additional models as needed.

After several attempts to draw a time series analysis on the dataset the findings are that the dataset is not robust enough currently to and complete enough to perform such and analysis currently. Seen through the Jupiter notebooks in the github repository.

Looking at the baseline performance and ignoring Lazy Predict the results show that the best model is when GridsearchCV is applied the best model is RandomForestRegressor and not just because it was easier to implement hypertuning that other models.

Random Forest is widely used in various domains, including finance, healthcare, natural language processing, and image recognition. Its ability to handle both categorical and continuous features, deal with missing data, and perform well on high-dimensional data makes it a versatile choice for many machine learning tasks. It is also less prone to overfitting compared to individual decision trees, making it a robust choice for many practical applications.

Catboost another strong regression model has advantage of being able to help with overfitting of the model.

In summary, Lazy Predict helps the initial stages of the machine learning workflow, by automating model selection and providing a quick overview of model performance, once the model returns which takes some time, it can then accelerate the model development process a. However, its is slow with large dataset unless you have an large amount of processing power or a dedicated GPU.

[95],[98],[99]

**Section 5 Sentiment Analysis**

**Sentiment Analysis**

**Abstract**

The analysis into twitter data taken from a dataset rather that scraping the data directly from twitter sentiment analysis of a dataset spanning 2014 - 2019 of twitter. The results will show that from all the entry in the database there 38 entries that contain the keyword “Greyhound”. The sentimental analysis investigates two methods a lexicon approach and Textblob approach. It examines the agreement and disagreement between sentiment labels assigned by lexicon and textblob based sentimental analysis.

The results show significant disagreement.

**Introduction**

Sentiment analysis using lexicon-based method, advanced sentiment analysis and the basic Textblob technique can return different results for several reasons. While all methods aim to determine sentiment in text, they have distinct approaches and characteristics. Lexicon and Textblob are both tools used for text processing and natural language processing (NLP), but they serve different purposes and have different features:

**1. Textblob**

The textblob library in python used for processing text data. Provides a very simple and consistent Application Programming Interface (API). Which is used for investigation into common natural language processing tasks, such as part-of-speech tagging, noun phrase extraction, sentiment analysis and translation.

In sentimental Analysis, Textblob includes a built-in sentiment analysis module that uses a combination of a lexicon-based approach (Pattern) and a machine learning-based approach (NLTK's Naive Bayes classifier) to perform sentiment analysis on text. With its ease of use the textblob is ease to user and has as user friendly API.[92] Its abstracts many complex Natural Process Language tasks into simpler method, which makes it possible of novices to NPL to use it without experience. And is customization using textblob allows user to train custom models for specific NLP tasks if needed, providing a degree of flexibility beyond prebuild lexicons.[93]

1. **The Lexicon-Based Sentiment Analysis**

Lexicon refers to a python dictionary or database of words or phrases with associated linguistic or semantic information, such as sentiment scores, part-of-speech tags, or definitions. Lexicon-based methods rely on predefined sentiment lexicons or dictionaries containing words or phrases with associated sentiment scores. The overall sentiment of a text is calculated based on the scores of individual words or phrases in the text. Lexicon-based methods are relatively simple and straightforward but may not capture the nuances or context of sentiment well. The accuracy of lexicon-based methods depends on the comprehensiveness and quality of the sentiment lexicon being used. These methods may struggle with slang, idioms, or language variations not covered in the lexicon.[]

[https://www.knime.com/blog/lexicon-based-sentiment-analysis ]

3. Advanced Sentiment Analysis Models

Some advanced models, such as machine learning models (e.g., Naive Bayes, Support Vector Machines, deep learning models) or pre-trained language models (e.g., BERT, GPT), can capture more complex patterns and context in text data. These models can generalize better to a wide range of sentiments and text types, including those with sarcasm, irony, or subtle sentiment. They can be fine-tuned on specific tasks or domains, making them adaptable to various applications and improving their accuracy. [94]

Because of these differences, lexicon-based sentiment analysis and advanced sentiment analysis models may not always return the same results. Lexicon-based methods tend to be simpler and may produce different results, especially when dealing with non-standard language or highly context-dependent sentiment expressions.

**Results**

|  |
| --- |
| A graph with blue rectangular bars  Description automatically generated |
| Figure 1 Textblob NPL sentiment analysis |
| A graph with blue bars  Description automatically generated |
| Figure 2 Lexicon based sentimental analysis |

The dataset spans from 2014 to 2019 and comprises over 500,000 entries. Upon filtering the data for the keyword "greyhound," it isolates 38 rows in the "contents" column where the term "greyhound" is present. The resulting analysis demonstrates the disparity between lexicon-based and sentiment analysis approaches.

Shown below is the Comparing both NPL and Lexicon-based sentiment analysis approaches on the data.

A graph of text and text

Description automatically generated with medium confidence

Figure 3 shows the comparison between both sentimental analyses.

1. There are a total of 38 rows or IDs in the dataset that contain the keyword.
2. The number of instances where the two columns align in their sentiment labels is calculated.
3. The agreement rate is derived by dividing the count of agreements by the total number of IDs, resulting in an agreement rate of approximately 36.84% (14 out of 38).
4. The disagreement rate is obtained as the complementary value to the agreement rate, equating to approximately 63.16% (24 out of 38).

Discussion

Lexicon and TextBlob are both tools used for text processing and natural language processing (NLP), but they serve different purposes and have different features.

Lexicon-based sentiment analysis uses sentiment lexicons to assign sentiment scores to words or phrases in text. It calculates the overall sentiment of a piece of text based on the scores of the words it contains. Common lexicons used for sentiment analysis include AFINN and VADER.

Lexicons are commonly used for simple sentiment analysis tasks, where the goal is to determine whether text expresses positive, negative, or neutral sentiment. They are also used in other NLP tasks, such as part-of-speech tagging or named entity recognition.

The main difference between Lexicon and TextBlob is that Lexicon typically refers to a dictionary or database of linguistic information, while TextBlob is a Python library that provides a range of NLP tools and includes a sentiment analysis module as one of its features. TextBlob 's sentiment analysis module combines both lexicon-based and machine learning-based approaches to provide a more comprehensive analysis of text sentiment.

4. Sentiment Analysis Evaluation:

It’s important to take the overall accuracy and performance of both sentiment analysis methods. Evaluation metrics such as accuracy, precision, recall, F1-score, or ROC-AUC can be calculated to assess their effectiveness in assigning sentiment labels.

5. Context Matters:

Sentiment analysis is highly context-dependent, and the choice of method should align with the goals of the analysis. Different methods may excel in different contexts or for specific types of text data.[96]

Conclusions:

In conclusion, the analysis show that using results using textblob greater that 20 are Neutral, more than 10 are positive and more that 5 are negative. While using lexicon-based analysis more than 17.5 are neutral, less than are positive and less than 5 are negative. This analysis underscores the importance of selecting the right sentiment analysis method based on the specific needs of the analysis and the nature of the data. It also emphasizes the significance of evaluating sentiment analysis results and considering the context in which they will be applied.

The data demonstrates that sentiment analysis results can vary significantly depending on the method used. It highlights the importance of carefully selecting the appropriate sentiment analysis approach based on the specific requirements of the analysis and the characteristics of the data.

From this comparison, it can be see that the "Sentiment" and "Sentiment\_Label\_lex" columns do not always agree in assigning sentiment labels. There is a relatively high level of disagreement, with approximately 63.16% of the IDs having different sentiment labels between the two columns.

1. Disagreement Between Sentiment Labels:

Large amount of disagremment where approximately 63.16% of the IDs have different sentiment labels in the "Sentiment" and "Sentiment\_Label\_lex" columns.

2. Agreement in Sentiment Labels:

Approximately 36.84% of the IDs have the same sentiment label in both columns.

The analysis reveals a substantial level of disagreement between the labels assigned by both analysis methods with appropriately 63% having different labels and approximately 36% of entries agree on sentimental labels. This indicates that sentimental signals are clear and unambiguous in the text.

Limitations:

Twitter data.

Twitter data scraping has become more challenging over the years due to several factors, including Twitter's efforts to protect user data, privacy concerns, and technical countermeasures to prevent automated scraping and even the financial cost of acquiring is a large amount.[97]

Overall Conclusions:

While this project has a significant amount of documentation that does proves the need for a traceability system, the systems itself is a relativity new and no analysis is conducted on this system. The systems were needed to be implemented because of the welfare neglect between Greyhound racing Ireland and the ICC on the greyhounds that were needed to keep the sport going.

This project will be a very interesting, it will combine analysis and research and the expectation that the research will help show that the welfare of greyhounds is a now the focus of Greyhound Racing. But to what cost?

What are the challenges? As this organization is seen as both Irish coursing club (ICC) and Greyhound Racing Ireland (GRI) I foresee that interviews are going to be tough because, there is no real differencation between ICC and GRI, I hope that with the direction from a supervisor that good questions can generated because I will need a lot of direction on that.

Another challenge is the author bias. While I attempted to become a observer, it must be know that I have a role in Greyhound Racing Ireland which I must keep and if the findings of the research do not look good on the side of Greyhound racing Ireland (GRI), I hope that it won’t be held against me.

What are the Gaps and Challenges? I don’t really see any gaps in this area, I’m close to the data. I’m close to know who to interview. The only gap is that of It his proposal is accepted. It may result in a NDA which I hope it does not, because if this research is published then it may be picked up through public channels.

To prove that this research paper could help to change public perceptions of the greyhound industry.

The industries image has been damaged, not just in the last number of years. I expect a certain amount of bias.

And, because I have direct access to the traceability system data and the racing management systems data.

Stakeholders’ engagement. This will be a changeling, not just because of the difficulty to delivering persons to interview but because this is one aspect of my own comfort zone. And, with the correct supervision I hope that his will expand my own skill set.

This project has shown a part review of the of state of Greyhound racing Ireland.

The key to this project will be the interviews, showing hopefully not just the members of the Greyhound industry but hopefully direct objectors to the industry.

With the project completed it hoped that reading such a paper will deliver a current view of how the sport has changed to reflect the welfare of Greyhounds.

It must be shown a true reflection of the industry.

The first phase of traceability provided a consolidation of 1. RMS and ICC, 2. Updates directly from customers. This is what traceability is all about, where owners/trainers and breeders make updates to reflect the status of their own greyhounds.

Traceability in now in its second phase which will improve with the implementation of the line between Great Britain Greyhound board (GBGB).

Large amount of bias expected in interview, obviously interviewees will have preconceived and predetermined option which could be for and against Greyhound racing.

# Validity

1. Accuracy:

RECTS will record the information and insert in Traceability, this is secondary but the in Accuracy coming in when Owners, trainers, or breeders’ updates to from the app. Mistakes are made for example breeder do name their pups, owner will have to name, the name must be unique and not have been used for at least year the death of a greyhound. At present there is no requirement for an owner, trainer, or breeder to validate that a greyhound died. For example, if a Greyhound is not running fast enough/ not wining and owner, trainer breeder may put down the greyhound, the app will accept any reason for the greyhound death, this has been highlighted as a flaw in the system.

1. Reliable

The data collected from the RECTS application and race management system (RMS) is data that owners, trainers or breeders which is inserted in a SQL table and from there reports are collated.

The source of the data will be extracted from the Traceability and RMS systems. The traceability system must be updated, or suspension will occur. This is backed up by welfare inspections where welfare offices will visit a kennel and expect to find the exact number of Greyhounds as the traceability system has recorded for that owner, trainer, or breeder. For the circumstances where a welfare officer finds a Greyhound that is alive when reported dead, this can have implication on the data. Officer reports and the system is amended to reflect that error.

Appendix

Table 1

|  |  |
| --- | --- |
| Year | Number of breed greyhounds(pups) |
| 2009 | 18,990 |
| 2010 | 18,018 |
| 2011 | 19,632 |
| 2012 | 17,880 |
| 2013 | 16,416 |
| 2014 | 16,806 |
| 2015 | 16,254 |
| 2016 | 15,120 |

Appendix2:

|  |  |  |
| --- | --- | --- |
| Annual report year 2017[6] | Samples | 5294 |
| Rehomed Greyhounds (combined) | 906 |
| Attendance | 514,546 |
| Meetings | 1566 |
| Prize Money | 8,001,782 |
| Kennel inspections | 477 |
| Annual report year 2018 [7] | Samples | 5288 |
| Rehomed Greyhounds (combined) | 1021 |
| Attendance | 506,142 |
| Meetings | 1586 |
| Prize Money | 9,100,000 |
| Kennel inspections | 422 |
| Racing Greyhounds | 93,412 |
| Annual report year 2019 [7] | Samples | 5702 |
| Rehomed Greyhounds (combined) | 985 |
| Attendance | 462,709 |
| Meetings | 1606 |
| Prize Money | 9,600,000 |
| Kennel inspections | 615 |
| Racing Greyhounds | 98,597 |
| Annual report year 2020 [8] | Samples | 4251 |
| Rehomed Greyhounds (combined) | 1775 |
| Attendance | 126,376 |
| Meetings | 1085 |
| Prize Money | 6,100,000 |
| Kennel inspections | 455 |
| Racing Greyhounds | Not reported |

Appendix 3

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Appendix 4:

Transcripts

Gill:

The Irish retired Greyhound Trust is a registered charity established by Ros Ron Eireann in 1997. It'll be celebrating its Silver Jubilee in 2022. It was established by Ros con Eireann to afford owners the opportunity to rehome their greyhounds upon retirement from racing activity. It was imperative that the industry created such a program so that there would be homes there for greyhounds once they retired. From 2015. To date, approximately 7,000 greyhounds have been rehomed either directly or indirectly through the Irish retired Greyhound trust scheme. 3,600 greyhounds were rehomed directly by the Irish retired Greyhound Trust, and an additional 3,400 Greyhounds were rehomed by private Greyhound rehoming organizations. In 2020, approximately 1800 greyhounds were rehomed through the I R GT I R G T assisted re-homing with 800 greyhounds alone, rehomed directly by the Irish retired Greyhound Trust. This year to date, approximately 280 greyhounds upstairs, March 21, we've been rehomed, and we'll hope to continue that momentum and achieve further records for 2021. And on March 21 alone, 145 greyhounds were rehomed directly by the retired Greyhound Trust. And look, that's the milestone we must achieve, and we'll try and match or even better that in future months,

Any owner that is looking to re-home their Greyhound will contact the I R G T and we will put their name on the re-homing list. We look for three photos and a short profile to be filled in about their dog. So, it just asks a bit more information about the dog's temperament, if they're good with children, with small dogs, any medical issues, and just their general personality. We will then share this information with our re-homing groups. Owners are also required to bring their dog to the vet for their pre-homing procedures. So, this involves neutering or spaying a pet passport. Rabies vaccinations, seven in one Kindle cough and treatment for flea and worms. All greyhounds have their own different personalities, their different needs. So, we will try and ensure that the new greyhound and the new family are a good match. So, all greyhounds will have a profile which gives us a better insight into their personality, and we can then see what kind of home that dog would suit. Our care center would also have a visitor center, so it gives owners the opportunity to meet the greyhounds, get to know them before bringing home their new pet.

Barry Coleman:

The Irish Greyhound Trust is funded by Greyhound owners through a 2% deduction of all win prize money. This amount is then matched by Rossi Kian. The Irish Tar Greyhound Trust would organize fundraising events and fundraising initiatives throughout the year. The Irish retired Greyhound Trust will be in receipt of voluntary donations from industry participants and members of the public, and the retired Greyhound Trust would be the beneficiaries of fundraising initiatives carried out by its industry participants. There are three main expenditure items for the Irish retired Greyhound Trust, and that's veterinary procedures prior to Rehoming. These procedures involve neutering being of greyhounds, vaccinations, inoculations, health checks prior to travel, dental treatments, flea, worm, and tick treatments. We also support private greyhound rehoming organizations through veterinary assistance as well. There's also transport costs as most of our greyhounds would be rehomed into Europe, eight countries in Europe. We also have rehomed to US and Canada in the past, and we rehome in Ireland. And the third expenditure item then will be the domestic rehoming incentive, which was set up in July 2019, whereby every private greyhound homing organization in Ireland would receive 100 euros for finding a home in Ireland for one of our retired greyhounds. It's important that there are greyhounds re-homed here in Ireland, and the more the merrier, the more greyhounds there around the street, the better chance other people would consider re-homing a retired greyhound.

Gill:

The owners also can re-home their Greyhound through the care center, so the Greyhound would have to be prepared, so all the pre-homing procedures completed, and then they can drop the Greyhound to the care center while they wait for their new home. So, the care center will help the Greyhound prepare for their new home. There's a socialization strategy for each of the greyhounds, which involves hands-on training and spending time in a realistic home environment, all of which will help the Greyhound adapt to their new home. The care center would introduce them to new environments, to the stairs, Hoover, different sounds. So, all these kinds of new environments, new homes and sounds that they might see in their new home. So, the Visitor Centre gives new families the opportunity to meet Greyhounds in the center. They can meet greyhounds that they have been matched with, get to know the dogs and spend time with them before they bring them home. Greyhounds make wonderful pets. They're very docile and easygoing dogs. They do not require a lot of exercise, so two 20-minute walks a day, and they're very happy to laze around on something soft and comfy. They have a very short, low maintenance coat, which requires minimal grooming. They also have a very gentle and laid-back personality, which helps them to adapt to their new home.

Barry Coleman:

We were home in Ireland. We rehome in the uk, eight jurisdictions in Europe, and we had entered a Rehoming program with Greyhound Pets of America National prior to the Covid. But unfortunately, air freight costs intruder roof, and we have ceased that for the moment, but I'm ambitious and hopefully we will get back to a point in time when air travel resumes and costs will return to what they were pre covid levels. And it's a very ambitious program with the Americans, and they're very much interested in rehoming, retired Irish greyhounds in US and in Canada.

Gill:

Anyone that is interested in adopting a Greyhound, they would contact the I R G T for Irish adopters. We will send them out an application form. It just asks a bit more about the family's background and what kind of dog would suit them. We will ask one of our welfare officers to carry out a welfare inspection. And now during the restrictions, we are carrying out virtual home checks. So, we look for photos and videos of the home and garden. So once the home check is approved, we will put the person in touch with someone in the care center who can talk to them about some of the dogs in the center and who they think would suit.

Barry Coleman:

Any rehoming organization in Ireland that's involved in rehoming, retired greyhounds. They can contact the I GT via email that's IGT at GR Ireland, i.e. And they can submit proposals or requests for funding towards their veterinary costs, et cetera. We will assess that the application, and we will decide then on whether funding can be provided in that proposal, if the organizations include their level of activity in relation to Greyhound Rea homing, also where they source their greyhounds from. And if they can commit on a monthly basis to keep us updated under their greyhounds in and greyhounds out, it'll give the I R G T greater understanding of the organizations activity levels and we can grant funding then based on receiving a suitable application.

Gill:

There is no fee for adopting a Greyhound through the Irish retired Greyhound Trust, but all donations are greatly appreciated. If anyone is looking for any information about the I R G T, they can visit our Facebook page. We share videos and photos of retired greyhounds. We follow up with some of the dogs that we have helped to rehome, and we also share some of the promotional campaigns that we are running now. So, now, we have a Van Stickers campaign where we ask individuals to brand their van with some graphics promoting greyhounds as pets. So, there are owners and trainers from the Greyhound industry all over the country that have branded their vans. These vans would be travelling the LinkedIn breadth of the country so they can be spotted by everybody when they're travelling to trials and races. So, there's great exposure for promoting greyhounds. We also have window stickers that you can put onto any vehicle. So, all these promotional campaigns, videos and photos, they're all just trying to dispel any myths out there that people still have about greyhounds and just really get the message out there that greyhounds Make wonderful pets.