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|  UNIVERSITY OF MAKATI RESEARCH ETHICS COMMITTEE | | | |
| APPLICATION FORM FOR ETHICS REVIEW | | UMREC Form No. | 0013 |
| | | Version No. | 4 |
| | | Date of Effectivity | |

Instructions to the Researcher:

Please accomplish this form and ensure that you have included in your submission the documents that you checked below {in Section 3: Checklist of Documents}.

| 1. General Information | | | |
|--|--|---|--|
| Title of Study | RVCare: Veterinary Clinic Management System Utilizing Multiple Linear Regression For Diagnostic Tool | | |
| UMREC Code <small>(To be provided by UMREC)</small> | | Study Site | Taguig City |
| Type of Review <small>(To be provided by UMREC)</small> | | | |
| Name of Researchers <small>(First name, Middle name/ initial, Last name)</small> | Contact Number | Email Address | |
| Primary Researchers | | | |
| Fionah Irish Beltran I. | | fbeltran.k12149965@umak.edu.ph | |
| Members: | | | |
| Jordan C. Frando | 09947698314 | jfrando.k11941615@umak.edu.ph | |
| Mark Angel O. Mapili | 09513733696 | mmapili.k12150551@umak.edu.ph | |
| Miguel D. Rojero | 09193552396 | mrojero.a12345146@umak.edu.ph | |
| Adviser/s: | | | |
| Prof. Ma. Corazon Benosa | | corazon.benosa@umak.edu.ph | |
| College/ Department | College of Computing and Information Sciences | | |
| Institution | University of Makati | | |
| Address of Institution | J.P Rizal Extension, West Rembo, Taguig City | | |
| Type of Study | <input type="checkbox"/> Clinical Trial (Sponsored) <input type="checkbox"/> Clinical Trials (Researcher-initiated) <input type="checkbox"/> Health Operations Research (Health Programs and Policies) <input type="checkbox"/> Social / Behavioral Research <input type="checkbox"/> Public Health / Epidemiologic Research | | <input type="checkbox"/> Biomedical research (Retrospective, Prospective, and diagnostic studies) <input type="checkbox"/> Stem Cell Research <input type="checkbox"/> Genetic Research <input type="checkbox"/> Others (please specify) <hr/> |
| | <input type="checkbox"/> Multicenter (International) | <input type="checkbox"/> Multicenter (National) | <input type="checkbox"/> Single Site |

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| Source of Funding | <input type="checkbox"/> Self-funded <input type="checkbox"/> Government-Funded <input type="checkbox"/> Scholarship/Research Grant <input type="checkbox"/> Sponsored by Pharmaceutical Company Specify: _____ | <input type="checkbox"/> Institution-Funded <input type="checkbox"/> Others (please specify) _____ |
| Duration of the study | Start date: August 28, 2025 End date: December 01, 2025 | No. of study participants: 20 participants |
| Has the Research undergone a Technical Review/pre-oral defense? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Has the Research been submitted to another UMREC? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Checklist of Documents | | |
| Basic requirements: | | Supplementary Documents: |
| <input type="checkbox"/> Application for Ethics Review of A New Protocol <input type="checkbox"/> Research Protocol Informed Consent Form English version <input type="checkbox"/> Filipino version <input type="checkbox"/> Others (please specify) Assent Form (if applicable) English version <input type="checkbox"/> Filipino version <input type="checkbox"/> Others: (please specify) Questionnaire English version <input type="checkbox"/> Filipino version | | <input type="checkbox"/> Endorsement Letter from Research Adviser <input type="checkbox"/> Curriculum Vitae of the lead researcher or adviser <input type="checkbox"/> Technical review/pre-oral defense (Any documentary proof) <input type="checkbox"/> Data Collection Forms (if applicable) <input type="checkbox"/> Product Brochure (if applicable) <input type="checkbox"/> Philippine FDA Marketing Authorization or Import License (if applicable) <input type="checkbox"/> Permit/s for the use of company name <input type="checkbox"/> Permit/s for special populations (please specify) <input type="checkbox"/> Others (please specify) |
| Accomplish: | | |
| <hr/> Signature over printed name | | |
| Date submitted: | | |
| ----- To be filled by the UMREC Secretariat ----- | | |
| Completeness of Document | <input type="checkbox"/> Complete <input type="checkbox"/> Incomplete | |
| Remarks | | |
| Date Received | (place stamp here) | |
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| UNIVERSITY OF MAKATI RESEARCH ETHICS COMMITTEE | | |
| RESEARCH PROTOCOL | UMREC Form No. | 0033 |
| | Version No. | |
| | Date of Effectivity | |
| | | |

Instructions to the Researcher: To ensure a thorough and efficient review process, completely accomplish this form. Include all relevant information to facilitate a comprehensive review by the Ethics committee. For fields that are not applicable, write N/A.

| |
|---|
| I. Title of the Study Indicate the complete title of the research. |
| RVCare: Veterinary Clinic Management System Utilizing Multiple Linear Regression For Diagnostic Tool |
| II. Introduction Provide the introduction of the study, which includes an overview of the study. |
| <p>Humans use animals for a variety of purposes, from warfare and agriculture to emotional support and companionship. As a response to a plague that affected the cattle in 1761, since the horses and cattle are used for warfare, Claude Bourgelat established the first veterinary school (Mark & Hornblower, 2020). Another role of pets for humans is providing emotional support to their owners; studies show that pets can reduce stress, anxiety, and depression while increasing levels of serotonin and dopamine, hormones associated with happiness and relaxation (Robinson & Segal, Ph.D., 2024). Just like human beings, these animals need suitable healthcare, preventative care, and instant medical care when their well-being is compromised, hence the role of veterinary clinics for pet owners who want to provide health, safety, and quality of life to animals.</p> <p>Routine check-ups, grooming, surgery, and prescription of medication are just a few of the services the veterinary clinics offer that are necessary to keep pets healthy. Additionally, veterinary clinics benefit not just animal well-being but also public health and emotional well-being, as healthy pets create healthier, happier, and more humane human communities.</p> <p>However, despite the importance of the veterinary clinics, many veterinary clinics still rely on manual and traditional methods. Processes such as record management, relying on phone calls or walk-ins for consultations, verbally relaying information to clients, and phone calls for vaccination and appointment reminders. Even though these methods have been around for quite a while now, they often fail in the fast-paced and technologically advanced world of today. Studies indicate that a number of clinics still use a physical filing system and record keeping which is time consuming and are prone to errors (Jamil et al., 2023).</p> <p>According to Pet Parent Research Report by PetDesk(2025), the majority of pet owners prefer digital ways of communication to manage their busy lives, and expect the same convenience and accessibility from their veterinary providers. These include features such as online appointment scheduling, automated reminder notifications and access to pet health records. This created a wider change in our current society that puts an importance on efficiency, accessibility, and ease. Similar to how human healthcare has advanced, veterinary medicine is starting to see the benefits of utilizing digital technologies.</p> <p>In accordance with inefficiency, inconvenience, and manual processes, the research recommends a creation of a browsable website for RaphaVets Pet Clinic that incorporates digital components to maximize its operations. Through the provision of vital services like booking appointments online, information on services, and client inquiries, the website will also delve into incorporating a chatbot. The chatbot function will serve as a virtual aide able to provide general</p> |

pet care advice, and guide clients through the clinic's services. This application is intended to immediately respond to frequent issues, and be an accessible point of contact even outside normal clinic timings.

RaphaVet Pets Clinic can create an enhanced approach to service that is not only at the cutting edge of technological advancements but also adaptable to the evolving needs of pet owners by fusing the flexibility of artificial intelligence with the effective features of web-based solutions such as online appointment bookings, automated reminders, and electronic medical records. Studies show that implementing online booking appointments can reduce phone call intakes by up to 30% and increase work efficiency (Peters, 2025). Similarly, the implementation of electronic medical records (EMRs) had shown the reduction in errors, sped up data retrieval, and smoothen the workflow in veterinary practices (Ahmed et al, 2023). Also, studies show that most veterinary clinics using online scheduling and automation software report enhanced client satisfaction and minimize delays (Vetstoria, 2024). Through the implementation of these innovations in technology, RaphaVet Pets Clinic can enhance operations, improve accuracy when handling records, and deliver responsive, dependable, and client-focused pet care services.

III. Background of the Study

Include the reason for embarking on the study, the historical background of the study, and the research gap.

The healthcare industry is embracing patient-centered care which prioritizes patient involvement, and effective communication. This improves patient satisfaction, and improves workflow efficiency (Piskorz-Ryń et al., 2024). These benefits are further empowered by the ongoing digital transformation in healthcare facilities, as it reinforces communication and patient autonomy, while also optimizing clinical workflow by minimizing repetitive tasks (Diez et al. 2023). The effects of the COVID-19 pandemic accelerated the adoption of digital technologies, yet the animal healthcare sector lags behind (Beyer, 2023a; Diez et al., 2023; Shaver, 2022). Additionally, some studies suggest further adoption of digital systems such as appointment scheduling systems, electronic medical records, and artificial intelligence from innovative and data driven perspectives (Beyer et al., 2025; Khasu, 2025).

Similar trends regarding patient-centeredness, and digitalization can be observed in Philippine healthcare systems (Della, 2025). Benefits similar to what was observed in global healthcare are also observed in the Philippines (Barbadillo et al., 2024; Guo & De Leon, 2024). However, animal healthcare in the Philippines is hindered by the lack of infrastructure, unwillingness to adopt, and low digital literacy among users (Guo & De Leon, 2024). Because of this, many small scale veterinary clinics fail to integrate modern technologies into their system, missing out on the benefits of digital healthcare tools.

One example is RaphaVets Pet Clinic, a small-scale veterinarian-owned veterinary clinic situated at Pembo, Taguig City. Specializing in feline and canine care, it provides basic consultations, vaccinations, laboratory tests, confinements, and certifications. Their clinic currently houses one veterinarian and two veterinary assistants, but they do employ veterinarians who show up once a week to allow the main veterinarian some rest. However, the amount of clients visiting the clinic each day tends to be sporadic, making it difficult to determine the exact daily average; instead they provide that they receive up to ten clients on a busy day. RaphaVets Pet Clinic's mission is to administer economic, empathetic, and excellent veterinary care. In the foreseeable future, the clinic aspires to empower a community that compassionately cares for their companion pets.

Despite these goals, the clinic still relies on phone call appointments, manual reminders, and paper based forms and records. While manual systems can be perceived as efficient and convenient as they require less training, they also pose challenges such as: phone call appointments are unreliable, (Beyer, 2023a), reminders can be automated by available technology (Edeh et al., 2024), and paper based records must be manually retrieved and summarized, which can lead to inefficiency (Ariyanti et al., 2023). These challenges, if supplemented by digital solutions, can improve clinical workflow and client experience.

Accordingly, this study addresses this gap by developing a web-based clinic management system following the suggestions of Khashu (2025) and Beyer et al. (2025). Through this system, pet owners can book appointments outside office hours, and not have to wait for the clinic to answer their calls. The system would also provide automated reminders to reduce the burden on staff, and prevent missed appointments. Additionally, the record keeping system allows pet owners to keep track of the history of their pets, while the clinic benefits from efficient retrieval. Overall, the system is expected to improve the satisfaction of the pet owners, and optimize the flow of clinical operations.

IV. Objectives of the Study

Include the general and specific research problems/objectives of the study.

Objectives of the study

The general objective of this study is to design and develop a Veterinary Clinic Management System Utilizing Multiple Linear Regression For Diagnostic Tool.

1. To gather the demographic information of the respondents, including their age of pet owners, gender, types of pets owned, number of years of pet ownership, frequency of clinic visit per year, level of digital literacy and comfort in using online platforms, and preferred communication channel (SMS, email, app, or calls).
2. To design and develop a web-based application with the following core features:
 - a. Appointment Management
 - i. The system shall enable online appointment booking with automated SMS and email reminders. (*Pet Owners, Staff*)
 - b. Predictive Diagnosis
 - i. The system shall utilize multiple regression analysis to generate possible diagnoses and predictive insights. (*Veterinarians*)
 - c. User Management
 - i. The system shall allow users to facilitate the creation, editing, and deletion of accounts. (*Staff*)
 - d. Pet Care Information
 - i. The system shall provide a dedicated page containing pet care tips. (*Pet Owners, Staff*)
 - e. AI Assistance
 - i. The system shall integrate an AI chatbot that offers general pet care guidance. (*Pet Owners*)
 - f. Breed Detection
 - i. The system shall include a cat and dog breed detection feature for pet identification. (*Pet Owners*)
 - g. Missing Pet Finder
 - i. The system shall feature a missing pet finder page for reporting and tracking lost pets. (*Pet Owners, Staff*)
 - h. Staff Administration
 - i. Staff shall be able to monitor reports and manage system content. (*Staff*)
 - i. Data Analytics
 - i. The system shall implement tools for collecting and analyzing data. (*Veterinarians*)
3. To create the system with the following tools:
 - a. HTML and Tailwind CSS to structure the web pages and create a modern, visually appealing, and responsive design that ensures a user-friendly interface.
 - b. React JS, Express, JSON Web Tokens, and Node.js were used to manage both the front-end and back-end development, enabling dynamic user interfaces, server-side processing, and secure application functionality.
 - c. OpenAI and WebSockets were utilized to provide intelligent features such as natural language processing and real-time chat communication, enhancing the platform's overall functionality and user interaction.
 - d. MySQL to manage the database structure, ensuring reliable storage, retrieval, and organization of user data, reports, and pet records.
 - e. Figma for collaborative design and prototyping, helping create visually consistent and engaging interface layouts throughout the platform.
4. To evaluate and measure the performance of the system's diagnosis model using the following evaluation metrics:
 - A. Evaluation Metrics
 - I. Accuracy
 - II. Precision
 - III. Recall
 - IV. F1 Score
 - V. Confusion Matrix

5. To assess RaphaVet using the ISO/IEC 25010 standards of functionality, latency, learnability and operability, efficiency, and maintainability.
6. To document the system.
7. To evaluate the functionality and usability of the system through client feedback and technical testing to determine whether it improves the workflow efficiency, reduces miscommunication, and increases client satisfaction.

V. Scope and Delimitation

Provide the locale, topic, and respondent inclusions and the exclusions.

Scope and Limitations

The scope and limitations of this study explain what the study can do and the boundaries of its functions. This study specifically covers the RaphaVets Pet Clinic located in Pembo, Taguig City. The veterinarian, its staff, and its clients or what we call pet owners are the main users of the system. The scope includes the development, use, and evaluation of the online appointment module, diagnostic tool, account management features, pet care information pages, AI chatbot, breed detector, missing pet finder, staff management tools, and basic data analytics designed to support daily clinic operations. It focuses on the features designed for the veterinarian, the clinic staff and the clients, showing how the system will help in daily operations and services. At the same time, it points out the restrictions and challenges that may affect its performance. This section makes clear what the system covers and what it cannot fully achieve.

The main feature of the system is the online appointment booking, which allows clients to schedule consultations directly through the website without relying on phone calls or texts. It automatically sends SMS and email reminders to notify clients about their upcoming visits, helping reduce missed appointments and improving time management within the clinic. Staff members can view, approve, and manage bookings through the staff panel to keep the schedule organized. However, this feature depends on a stable internet connection and accurate contact details provided by the clients. Its reminder functions also rely on external SMS and email services, which may sometimes cause delays. The system does not include online payments or queue management for walk-in clients.

Another core feature of the system is the diagnostic tool that assists veterinarians during consultations by generating possible diagnoses based on symptoms entered into the system. This predictive tool supports the veterinarian by providing data-driven insights that can guide initial assessments and help improve consultation efficiency. Although it helps in forming preliminary evaluations, it cannot replace professional judgment and is limited by the completeness and accuracy of the input data. It cannot handle laboratory results, imaging outputs, or emergency medical situations, and its accuracy depends on the quality of the dataset used to train the model.

The system facilitates user account creation, editing, and deletion, allowing client information to stay organized and updated. Only staff members are allowed to register or create customer accounts to ensure accuracy and proper verification. Once registered, customers can log in and update their personal information as needed. This feature depends on staff availability for account creation and does not include automated identity verification or more advanced security methods. Incorrect or outdated information may affect the accuracy of notifications.

A dedicated page for pet care tips is included to provide pet owners with information on proper nutrition, hygiene, preventive care, and other general pet health practices. This helps educate pet owners and promote responsible care. However, the content is limited to general guidance and cannot provide personalized recommendations or replace veterinary consultations. The accuracy and usefulness of the information also depend on regular updates made by the staff.

An AI chatbot is integrated into the system to offer general pet care guidance and respond to common questions. It provides quick access to information and helps users navigate the platform more easily. Despite its convenience, the chatbot cannot diagnose illnesses, handle emergencies, or provide professional veterinary advice. Its responses are based on predefined data and AI patterns, which may not cover complex or unique cases.

The system includes a cat and dog breed detector that allows users to upload pet photos to identify potential breeds. This provides an engaging and informative feature for pet owners. Its accuracy depends heavily on the clarity, lighting, and angle of the uploaded image. Poor-quality or partially visible photos may lead to incorrect results, and mixed-breed or rare pets may not be

accurately identified. This feature is intended only for general informational use and not for professional breed identification.

A missing pet finder page is also part of the system, allowing users to report lost or found pets by posting photos, descriptions, and contact details. The page is publicly accessible so that both registered users and guests can view the reports and help in the search. Its effectiveness depends on the participation and consistency of the users who update or check listings. The system cannot track pets automatically, and outdated posts may remain visible without manual updates from owners or staff.

Tools for staff monitoring and content management are also included in the system. Staff members can review reports, manage user posts, and update the information displayed on the website. This ensures that the system remains organized and the content stays accurate. However, these tasks require regular manual checking, as the system does not include automated moderation or additional features such as financial tracking, inventory management, or staff scheduling.

The system offers data collection and analysis tools that summarize information such as appointment trends, frequently used services, and common pet concerns. These insights help the clinic evaluate its performance and make informed decisions. However, the analysis is limited to basic summaries and does not include advanced analytics such as financial forecasting or integration with external databases. Its accuracy depends on consistent and correct data entry by both users and staff.

Since the system is web-based, it requires a reliable internet connection to function properly. Users with unstable connections may experience delays or difficulty accessing certain features. The study also assumes that staff and clients have basic digital literacy. Although the interface is designed to be user-friendly, individuals with limited technical experience may need assistance navigating the system, uploading photos, or filling out forms correctly.

VI. Related Literature & Studies

Write the related literature and studies that support the objectives/problem.

Veterinary Healthcare Interventions

A) Appointment system

Appointment systems are tools that help clients and service providers schedule a meeting ahead of time. Studies show that these systems were designed to reduce client waiting time and improve client satisfaction, a common concern in veterinary healthcare (Koca et al, 2025; Radwan et al., 2024). However, several Polish pet owners recount that veterinarians fail to pick up when attempting to schedule an appointment through the phone, something that can reduce client satisfaction (Beyer, 2023a). This issue can be supplemented by online appointment systems, which allow pet owners to request appointments even outside business hours, improving client satisfaction, and reducing burden on staff (Ostadmohammadi et al., 2025). Furthermore, the COVID-19 pandemic influenced pet owners' preference towards scheduling online (Beyer, 2023a).

Online appointment systems also have challenges of their own, such as low digital literacy among users (Ostadmohammadi et al., 2025). This of course prompts developers to improve the accessibility of such systems . For example, a system developed by Chaudhry et al. (2021) incorporated text-to-speech functionality, which significantly enhanced usability for the semiliterate users. In the veterinary field, a web-based appointment system was developed by Rosmani and Mokhtar (2023), which focused on the functionality and usability of their system. They suggested implementing a payment system to reduce the need for bringing cash to the clinic.

Guo and De Leon's (2024) study is indicative of the benefits of online appointments in terms of patient satisfaction by enhancing patient-centeredness. However, they did point out the data privacy concerns, and the necessity of training to be provided for staff members. In another example, students from Mapua University Makati developed VetConnect, a platform that combined e-commerce and veterinarian services. The platform provided information of the veterinary

clinics, doctors, products and services, while facilitating online appointments (De Guzman et al., 2021).

While web-based appointment systems are well-established technologies, various integration approaches have demonstrated benefits according to their target users. Although most of the literature reviewed focuses on human healthcare, the principles remain applicable to veterinary clinics as they address similar healthcare service challenges.

B) Multiple Regression for Predictive Diagnosis

A statistical method called multiple linear regression (MLR), or just multiple regression, makes use of a number of explanatory variables in order to forecast the value of a response variable (Hayes, 2025). In healthcare analytics, multiple linear regression serves as a foundational and interpretable tool for predicting continuous outcomes like patient recovery times or risk scores. Its principles underpin more complex machine learning models now dominating the field of clinical predictive analytics (Waring et al., 2020). For instance, Farooqui and Ahmad (2020) demonstrated a practical application of this family of models by implementing a disease prediction system using MLR and Support Vector Machine, in their system, MLR first analyzes different patient symptoms to figure out how much each one contributes to the risk of being sick. This risk score from the MLR is then given to another smart computer program that does the final job of naming the specific disease. By combining these two methods, their system was able to predict diseases very accurately. This reflects the broader and transformative trend where machine learning models are being developed to predict patient outcomes, thereby supporting more proactive and personalized clinical care (Alowais et al., 2023).

In the Philippines, government agencies have begun promoting greater use of data analytics and digital health systems to support improved care and decision-making. For example, the Department of Information and Communication Technology (DICT) states that “data and ICT statistics serve as our guide in ensuring that the government is steering national ICT development initiatives on the right course... Data gathered can help government agencies monitor programs and develop evidence-based projects and policies” (DICT, 2020). At the same time, the Philippine Health Insurance Corporation (PhilHealth) and the Department of Health (DOH) introduced the National Health Data Repository Framework (NHDR) which emphasizes unified data architecture, analytics and reporting in health-care service delivery (National Health Data Repository Framework, 2022). These initiatives show that local research and health-care operations are moving toward predictive modeling and statistical tools such as regression analysis, paving the way for systems like yours to apply these methods to veterinary settings.

RVCare applies multiple regression analysis as part of its web-based management system to support veterinarians in making data-driven diagnostic assessments.

C) User account management

According to Koller (2025), account management ensures that only authorized users can access the system, which helps maintain data security and privacy. Account creation allows new users to register their basic information, such as name, email, and password, which gives them a personalized experience and secure access to the system (Green et al., 2022). The ability to create an account also improves user engagement and retention, as it allows users to store their preferences and access system features that require authentication (Pohn & Hommel, 2023). Furthermore, maintaining an organized user registration database allows administrators to monitor activity and provide technical or medical assistance when needed (Solis, 2025).

Account editing, on the other hand, allows users to modify their personal information when changes occur, such as contact details or passwords. Pohn and Hommel (2023) emphasized that continuous data help reduce errors and keep system records accurate. In this way, features like email or SMS notifications can reach the correct users, improving the reliability of clinic operations (DataReportal, 2025).

Lastly, account deletion ensures that outdated or inactive user data are removed from the system, promoting both privacy and efficient database management. According to Jurzik and Steuwer (2025), removing old accounts limits unauthorized access and enhances system performance. Green et al. (2022) also pointed out that having a deletion process is crucial to prevent pre-hijacking attacks, a type of cyber threat that targets dormant or incomplete user accounts. Additionally, the right to delete one's account aligns with the ethical data management and global privacy standards, such as General Data Protection Regulation (GDPR) (Solis, 2025).

D) Telehealth

In today's digital world, information and communication technologies (ICT) are becoming increasingly available to the public. The American Veterinary Medical Association (AVMA) defines telehealth as the use of ICT in providing health information, education, or care (AVMA, n.d.). Telehealth includes components such as telemedicine, the sharing of medical details through ICT in order to provide care; teleconsultation, asking medical professionals and consultants for advice through similar means; and triage, which is the proper and safe assessment of the urgency of the pet's condition electronically .

Despite the accessibility of these practices, a recent study finds that it was more widely adopted during and after the Corona Virus Disease (COVID-19), and gained positive feedback from both patients and medical professionals (Shaver, 2022). In this context, telehealth solutions such as consultation via video conferencing have been adopted, allowing pet owners and veterinarians to coordinate remote consultations effectively (Abu-Seida et al., 2024; Bishop et al., 2021). While Shaver (2022) finds that telehealth services can be equivalent to in-person care, veterinarians and pet owners agree that online consultations are inferior to in-person consultations mainly due to the lack of proper observation leading to diagnosis inaccuracy (Sigesmund, 2022).

During the COVID-19 pandemic, The Children's Hospital of Fudan University in Shanghai, China utilized the internet and a social application called WeChat to provide pediatric telemedical care and online consultation services. A cross-sectional study by Zhai et al. (2021) revealed that while it was very effective in combatting illness as a remote option, there were limitations in the accessibility of lab results and physical observations. In 2024, Nigerian developers provided a web-based medical consultation platform where medical professionals from various fields of study can offer their services online (Onwe & Oghenekaro, 2024). However, there were no details on the effectiveness of their platform, only concluding that they successfully provided a micro job website for medical professionals.

Similarly in the Philippines, a study conducted during the COVID-19 pandemic finds that Filipinos generally approve of telemedicine, as they were safe and convenient alternatives, but reported that the quality of care may have been compromised (Noceda et al., 2023). Aban et al. (2024) attributed telemedicine's rise during the pandemic to patient satisfaction, availability of technology, and government interventions such as the quarantines.

Some not peer-reviewed developments in the field include Jiji Pet care (n.d.) that allows continuous access to veterinarians through affiliated insurance

companies. On the other hand, Buddydoc (n.d.) developed a module to assess symptoms via veterinarian-approved series of survey questionnaires. While their development process and effectiveness are not revealed to the public, these programs demonstrate how telehealth is being adopted to the web in practice.

In light of these findings, it is evident that ICT, and the convenience of digital integration, is increasingly accepted by the healthcare field, especially after the COVID 19 pandemic. However, there is still resistance to adopt modern technology, likely due to limited technological literacy among both practitioners and patients.

E) Chatbot system

Veterinary care is changing at a fast pace as clinics aim to provide more convenient and efficient services. One significant development is the implementation of AI-driven chatbase systems, which are also known as chatbots. They aid clinics in handling client communication twenty-four hours a day. Chatbots enable pet owners to book appointments, obtain answers to frequently asked questions, be reminded of vaccinations and visits, and receive personalized care advice for their pets. Empirical evidence indicates that such features enhance client satisfaction through making information more comprehensive and interactions simpler, which are key determinants in adoption in respect to accepted frameworks of technology adoption (Huang et al., 2020). More recent innovations include chatbots contributing to telemedicine, enabling veterinarians to perform initial remote consultations and help in prioritizing patients better (Santos, 2024). For example, one study explored the use of ChatGPT in supporting diagnostic decisions, noting its potential to assist veterinarians with complex cases while emphasizing that it should not replace professional clinical judgment (Jokar et al., 2024).

Chatbase systems have various pragmatic benefits, such as automating appointments, providing immediate feedback to customer inquiries, and monitoring pet health through veterinary clinical records. They also offer assistance outside regular clinic hours, allowing customers to get advice in case of emergencies and offering clinics useful continuous feedback to enhance service (Celeritas, 2024; Crowdly.ai, 2025). Through AI technology, such chatbots are capable of identifying early slight changes in health, encouraging preventive treatment, and facilitating fewer unnecessary visits to the clinic, all beneficial to save time and money and enhance outcomes for animals (Santos, 2024; Jokar et al., 2024).

Aside from chatbots, most veterinary clinics utilize integrated management systems which merge electronic medical records with inventory management, billing, and AI-powered diagnostic support. These systems enable veterinary staff to work more efficiently by creating structure around information gathered from consultations and tests, which aids in establishing improved treatment plans and tracking patients over time (Beyer, 2023b; Larkin & Lefebvre, 2023).

F) SMS and Email Reminders

Short Message Service (SMS) and Electronic Mail (email) are modern modes of communication that have been widely adopted by healthcare professionals for communicating with patients. In the Philippines, Republic Act No. 10639 provides free mobile text alerts during disasters and emergencies; this shows the importance of SMS as a reliable communication channel. The biggest advantage of SMS is that it can work without the internet, and it comes with most modern phones, making it very accessible

Rahman and Bhuiyan (2024) explained the benefits and challenges of SMS in healthcare, more specifically, for telemedicine. In the article, they discussed that SMS presents an opportunity for personalized instructions, timely monitoring, and improved appointment adherence, while also mentioning concerns pertaining to data security and privacy. In recent developments, a Nigerian designed application incorporates SMS and email services in their medical record management system, giving timely notifications while using the same media as modes of communication for both doctors and patients (Edeh et al., 2024). Similarly, in Malaysia, Rosmani and Mokhtar (2023) from Universiti Teknologi MARA developed a veterinary appointment system that provides email notification for appointment confirmation.

In the Philippines, the effectiveness of SMS reminders towards medication adherence was studied by Barbadillo et al., (2024). The study was conducted on hypertensive patients in an outpatient clinic, and found no difference from before and after the SMS reminders were introduced to the patients.

In conclusion, automated reminders are effective methods in reducing missed appointments, but the accessibility for the users have to be studied. It can also be noted that such interventions can be cost-effective, and therefore beneficial for both patients and healthcare providers.

G) Lost Pets Board

The increasing rate of lost animals has prompted the emergence of several lost and found mechanisms that pool community support, organized shelter procedures, and technological solutions to enhance rates of pet recovery. As per Human Animal Support Services (2023), a successful procedural framework termed "48 Hour Program" in which those finding healthy stray animals are asked to keep them until they have some guidance and resources from shelters. This method keeps the pets closer to home and drastically enhances return-to-home rates, with various shelters involved reporting almost threefold reunification after adopting the system (Human Animal Support Services, 2023). In addition, the PawBoost platform illustrates the power of online lost and found systems, with over two million pets being reunited through online posting and neighborhood notices. Statistics show that about 48% of the cases have a successful reunion, with 80% of them being achieved within only three days, highlighting quick information dissemination and online presence (PawBoost, 2024). Evidence also confirms the effectiveness of systematic lost and found systems. The UTAR capstone thesis by Chin (2020) suggested that a proper lost-and-found system is important because traditional methods are inefficient, fragmented, and prone to human error. The study was implemented to provide a centralized, digital platform that improves recovery rates, reduces stress of the owners, and strengthens community collaboration in reuniting lost pets., highlighting the benefits of local search systems. On a similar note, The AdoptiPaw (2024) study from the National University Philippines concluded that its platform effectively supports shelters and pet owners by providing a reliable and user-friendly reporting tool for lost pets, with intuitive features, seamless integration, and real-time updates that make tracking missing animals and reporting abuse cases efficient. Combined, these results show that systems integrating digital participation, community collaboration, and systematic search protocols significantly enhance pet rescue rates and identify technology and systematic control as critical determinants of contemporary animal welfare.

H) Monitoring and Content management

Businesses have increasingly relied on Content Management Systems (CMS) in creating websites without prior programming knowledge (Newcomer, 2025). However, in this special project, the researchers are focusing on the admin-side content management system (ACMS) that is custom built for similar reasons. The ACMS would allow administrators to manipulate the content displayed

on their website even without programming knowledge, or having to contact technical support.

Role-Based Access Control model uses roles to decide the privileges of a user, which simplifies administrative management. However, it paradoxically creates blind spots as privileges may apply to multiple users which demonstrates the necessity for proper monitoring and auditing of user actions, especially for processes that are sensitive (Altulaihan et al., 2023).

In the Philippines, industry professionals and students from Lyceum of the Philippines University - Cavite campus joined in a collaborative effort to develop a cross platform educational application which features Chindynamic content management (Tacda et al., 2025). In this mobile application, the CMS was accessible through an administrative user role which can export, edit, add, and delete user or portal information.

Meanwhile, students from Isabella State University, Philippines implemented RBAC along with information classification and cryptography to provide high-level security protection against data breaches for an intranet document management system (Bumalod & Velasco, 2024). The role of RBAC in this system was to simplify access control administration, and screening the user's access to resources. The system further improves security by applying log trails wherever necessary such as log in, password management, and document requests.

This special project may benefit in the proper and consistent assignment of user roles as entry point for the ACMS, which enables fresh content that may increase user engagement. Furthermore, log trails and auditing may increase staff accountability and content security.

I) Data Collection and Analysis Tools

With the rise of efficient data handling technologies, the value of data further elevates as a key decision-making input. McCloud et al (2023) emphasizes the importance of systematic data collection and using the responsive feedback approach to continuously improve by monitoring real time data. Furthermore, data analytics proves to be an indispensable tool in the business sector, now capable of predictive analytics through artificial intelligence (AI) and machine learning (ML). This not only analyzes past trends, but also analyzes the future through pattern recognition to mitigate risks (Tiwari, 2024). Toure and Chukwuba (2022) meanwhile caution against misleading data, and suggest the need to verify the quality of data, so that it does not lead to incorrect conclusions.

Studies in the Philippines are evaluating the effectiveness of Electronic Medical Records (EMR) in collecting and analyzing data to measure healthcare performances (Conjares et al., 2025; Diaz, 2025). Conjares et al. (2025) points out the need for proper data governance and data standardization as medical records tend to be sensitive and verbose. While Diaz (2025) suggested the need for better infrastructure such as reliable internet, and backup systems.

Challenges and Limitations

The user of digital health tools like telemedicine and online systems still faces some problems. One of the main issues is limited internet access and low digital skills. For instance, Zhao et al. (2021) found that many older adults encountered difficulties using internet-based home care services due to limited digital literacy, concerns about privacy and safety, and lack of familiarity with online platforms. Similarly, a recent multicenter study of older adults with chronic conditions in rural China reported that perceived ease of use (PEU) and perceived usefulness (PU) strongly influence intention to adopt telemedicine indicating that lack of comfort or trust with digital tools remains a barrier (Du et al., 2025). Another concern is that online consultations are sometimes seen as less accurate than

face-to-face checkups since doctors or veterinarians cannot do a proper physical examination (Sigesmund, 2022).

In the Philippines, internet use continues to grow, but stable connections are still a problem in many areas (Kemp, 2024). This affects the use of digital veterinary systems that depend on a strong internet. Younger people usually adapt faster to online platforms, but older adults may find them difficult to use without help (Tu et al., 2021). These challenges show that while web-based systems are useful, accessibility and readiness remain issues in the local setting.

For veterinary clinics, especially smaller ones, adopting new technologies can be difficult because of limited budget, equipment, and staff training. Rosmani and Mokhtar (2023) noted that appointment and management systems can make work easier, but they require proper resources and skilled staff. Some clinics also face financial problems or resistance to change, which slows down the adoption of new systems. This shows that having the technology is not enough, the clinic also needs to be ready and capable to use it well.

VII. Research Methodology

Indicate the research design of the study.

The researchers used descriptive research methodology to evaluate the RVCare: Veterinary Clinic Management System Utilizing Multiple Linear Regression For Diagnostic Tool. In order to assess the system's effectiveness and usability, this research design focuses on gathering data to measure its impact and overall effectiveness. This will provide us details of everyday interactions (registering, book, cancel, and use the chatbot and other features), capture the clinic's workflow changes (phone call volume, front-desk time spent on staff tasks), and measure basic technical performance (uptime, response time, errors) alongside simple accuracy checks for AI features such as the breed detector and regression predictions.

This approach is centered on describing the system's functions and analyzing user feedback to determine its performance as well as gathering information and data from other existing systems or studies . This descriptive methodology will be implemented for the researchers to evaluate the system through client feedback and technical testing. This will provide statistical data and analysis on the effectiveness of the software by objective measurement, which is essential for understanding user satisfaction and system quality. Analysis will emphasize clear, simple accuracy rates for AI features, and qualitative feedback findings. Ethical safeguards include informed consent for any interviews and surveys that will be conducted, secure storage of identifiable data, and a safety policy that frames all AI outputs as advisory only and requires clinician confirmation before any clinical action. This approach produces a human centered, realistic evaluation that caters directly to the clinic's needs and provides concrete recommendations for more improvement.

In addition from the descriptive method, the developmental research design will be used in the study to support the systematic creation, refinement, and development of the system during its development cycle. This design navigated the researchers through iterative processes such as planning, designing, prototyping, testing, and evaluating system features based on users' experience, how well the system performs, and the feedback given by the people using it. With the inclusion of developmental research, the system was progressively enhanced to ensure increased functionality, reliability, and closer approximation to real clinic processes. Thus, the project evolved to a much more functional and user-centered platform, and such final implementation met the technical requirements while concurrently meeting end-user expectations.

VIII. Population, Respondents, and Sample Size for Quantitative Research

Include the population of the study and indicate the number of respondents.

Participants for Qualitative Research

Indicate the participants of the study.

The participants of this study will comprise of clinic staff, veterinarians, and clients or what we call pet owners of RaphaVets Pet Clinic, the study will also include software development experts to assess the system.

IX. Sampling Technique for Quantitative Research

Present the sampling technique for quantitative.

Criteria of Participants for Qualitative Research

Write the criteria for choosing participants.

This study will employ purposive sampling. Participants will be deliberately selected to include 1 veterinarian, 2 clinic assistants, 1 administrative/records staff member, and 1 IT professional, since they are the ones who directly experience the workflow of the clinic and of the system. Judgment sampling will also be employed in selecting 15 pet owners aged 18 years old and above, who could provide meaningful feedback. These includes regular clients, first-time users, those whose pets had recent visits, or owners whose pets have been reported lost.

According to Bullard(2023) and Nikolopoulou(2024), purposive sampling is a non-probability method in which the researchers deliberately select individuals, cases, or events based on predetermined criteria, specific characteristics, or unique knowledge that aligns with the study's purpose. It is also called judgmental, selective, or subjective sampling.

This methodology ensures that the system is tested by participants whose opinions are most relevant to its performance, usability, and workflow impact. Feedback from IT professionals will cover technical functionality, veterinarians will appraise clinical accuracy, clinic staff will assess workflow efficiency, and pet owners will provide user experience insights.

The sample size will be sufficient because this study investigates the system against standards for software quality such as ISO/IEC 25010, which focuses on functionality, learnability, operability, latency, maintainability, and efficiency. Usability testing research indicates that the majority of usability and workflow issues are determined by a small, targeted sample, which provides meaningful, actionable data while keeping testing practical and manageable.

X. Research Instrument and Validation for Quantitative Research

Describe the details of the questionnaire or Interview/FGD Questions.

Interview/FGD Questions for Qualitative Research

Describe the details of the Interview/FGD Questions.

The primary research instrument used for this study is a structured questionnaire administered through Google Forms. The questionnaire is designed to gather quantitative data regarding the effectiveness, usability, and functionality of the RVCare system, ensuring that it meets the needs of its target users.

Research instrument details:

- Type: Online survey questionnaire
- Method of distribution: Google Forms
- Target respondents:
 - RaphaVets Pet Clinic Staff, and Veterinarians
 - Pet Owners or Clients of RaphaVets Pet Clinic
 - Software development experts

The questionnaire consist of multiple sections:

1. Informed Consent and Data Privacy Form - Ensures that participants voluntarily agree to take part in the study after understanding its purpose and confidentiality policies.
2. Demographic Information - Collects basic details including their age of pet owners, gender, types of pets owned, number of years of pet ownership, frequency of clinic visit per year, level of digital literacy and comfort in using online platforms, and preferred communication channel (SMS, email, app, or calls).
3. Platform usage and features assessment - Measures the ease of use, accessibility, and overall experience with RVCare system.
4. System functionality evaluation- using the ISO/IEC 25010 standards of functionality, latency, learnability and operability, efficiency, and maintainability.
5. Feedback and Recommendation- Allows respondents to provide qualitative suggestions for improving RVCare system.

XI. Statistical Treatment of Data for Quantitative Research

Indicate the statistical tool of the study.

Data Analysis for Qualitative Research

Indicate how the study will be analyzed.

Treatment of Data

This section describes the statistical tools and procedures used to analyze the data gathered from all respondents, including the IT expert, internal users (veterinarians and clinic staff), and external users (pet owners/clients). The functionality and usability of the RVCare system were evaluated using a four-point Likert scale as part of the survey instrument. Respondents were asked to rate each criterion on a scale of one (1) to four (4), corresponding to qualitative judgments such as "Poor" to "Excellent" depending on the type of question. Each response was assigned a corresponding numerical value, enabling the quantitative analysis of qualitative perceptions.

The data collected were subjected to statistical computation to determine the mean and overall mean, which serve as the basis for interpreting the level of user satisfaction and system performance. The mean represents the average score for each criterion, while the overall mean indicates the general performance across all criteria.

Mean Formula

| | |
|-------------------------------------|---|
| Mean Formula: $M = \sum fx/n$ | Where: M = Mean f = frequency (number of respondents who chose a particular answer) x = score n = total number of responses on that criterion |
| Overall mean = Sum of X/n | X = sum of all scores in each criteria n = total number of criteria |

The following scale was used as the basis for interpreting the computed mean values for each criterion:

Mean values

| Scale | Range | Rating | Description | Mean Interpretation |
|-------|-------------|-----------|----------------------------------|--|
| 4 | 3.26 - 4.00 | Excellent | Greatly surpasses expectations | The mean value indicates a high level of user satisfaction and exceptional system performance. |
| 3 | 2.51 - 3.25 | Good | Meets expected standards | The mean value signifies satisfactory system performance and positive user experience. |
| 2 | 1.76 - 2.50 | Fair | Falls short of expectations | The mean value reflects moderate satisfaction, suggesting that certain areas need improvement. |
| 1 | 1.00 - 1.75 | Poor | Requires substantial improvement | The mean value indicates low user |

| | | | | |
|--|--|--|--|---|
| | | | | satisfaction and inadequate system performance. |
|--|--|--|--|---|

Evaluation of Diagnosis Tool

The performance of the system's predictive diagnosis model was assessed using standard classification metrics. These metrics provide a quantitative evaluation of the system's ability to generate accurate and reliable predictions.

For the Predictive Diagnosis Model, the collected dataset was divided randomly into 70% training and 30% testing. The training set is used in developing multiple regression-based and AI-based predictive models, while the testing set shall be utilized in their performance evaluation on unseen data. This will ensure that the evaluation metrics, such as Accuracy, Precision, Recall, and F1 Score, reflect the system's ability to generalize to new cases while avoiding extensive memorization of the training data.

The performance metrics will be calculated based on the testing set, and a confusion matrix was constructed in order to visualize true positives (TP), true negatives (TN), false positives (FP), and false negatives (FN). These procedures, along with the survey data, provide a comprehensive review of the usability of the system and diagnostic effectiveness.

| Metric | Definition | Formula | |
|----------------------|---|---|---|
| Accuracy | Measures the proportion of correct predictions out of all predictions | $\frac{(TP + TN)}{(TP + TN + FP + FN)}$ | Reflects overall correctness of the system |
| Precision | Measures the proportion of predicted positive cases that are actually correct | $\frac{TP}{(TP + FP)}$ | High precision indicates few false positives |
| Recall (Sensitivity) | Measures the proportion of actual positive cases correctly identified | $\frac{TP}{(TP + FN)}$ | High recall indicates few false negatives |
| F1 Score | Harmonic mean of precision and recall | $2 * \frac{(Precision * Recall)}{(Precision + Recall)}$ | Balances precision and recall |
| Confusion Matrix | Tabular representation of prediction results | See table below | Shows TP, TN, FP, FN counts; helps visualize system performance |

Confusion Matrix Table

| | Predicted Positive | Predicted Negative |
|-----------------|--------------------|--------------------|
| Actual Positive | True positive(TP) | False Negative(FN) |
| Actual Negative | False Positive(FP) | True Negative(TN) |

XII. References (Main Themes Only)

Indicate the main references of the study.

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**UNIVERSITY OF MAKATI
COLLEGE OF COMPUTING AND INFORMATION SCIENCES**



INFORMED CONSENT

**RVCare: Veterinary Clinic Management System
Utilizing Multiple Linear Regression For
Diagnostic Tool**
Title of the Study

Researchers:

Fionah Irish Beltran, Jordan Frando, Mark Angel O. Mapili, Miguel Rojero
University of Makati - College in Computing and Information Sciences

Email:

fbeltran.k12149965@umak.edu.ph
jfrando.k11941615@umak.edu.ph
mrojero.a12345146@umak.edu.ph
mmapili.k12150551@umak.edu.ph

Dear Participant(s),

Greetings!

We are 3rd Year students from the College of Computing and Information Sciences of the University of Makati. We are currently conducting a study entitled **RVCare: Veterinary Clinic Management System Utilizing Multiple Linear Regression for Diagnostic Tool**. We kindly invite you to participate in a survey designed to gather insights about your experience with our system, which will greatly help us evaluate its usability, effectiveness, and overall performance for future improvements.

Purpose of this study:

The purpose of this study is to gather insight from veterinarian, clinic staff, software development professionals, and pet owners regarding the usability, technical functionality, and overall usability of RVCare platform. The collected data will contribute to improving the system's features and ensuring its alignment with user needs.

Description of the Research:

If you agree to participate, you will be asked to complete a survey questionnaire and may be invited to participate in a system evaluation. The estimated time require to complete the survey is **15-20 minutes**. The survey will collect the information regarding your experience with the platform, its ease of use, and effectiveness in streamlining services from the clinic.

Voluntary Participation:

Your decision to participate in this study is completely voluntary. If you decide to not participate in this study, it will not affect the relationship, care, services, or benefits to which you are entitled.

Risks and Inconveniences:

There are no known risks associated with participating in this study. However, if you experience any discomfort while answering the questionnaire, you are free to withdraw from the study.

Potential Benefits:

By joining this study, you may gain a better understanding of how digital tools and AI features can help make veterinary clinic services easier. Through your experience with the system, you may discover more convenient ways to book appointments, access pet records, receive reminders, access pet care information, and follow clinic updates. Your participation may also give you the chance to share your needs and concerns directly. In addition, you may benefit from learning about features that could make managing your pet's health or your clinic's workflow more efficient.

Reimbursements:

The respondents will not receive any amount of money as compensation but will receive a certificate as participant of the study.

Confidentiality:

No names or other identifying information will be used when discussing or reporting data. The investigator will safely keep all files and data collected in a secured Google Drive personally owned and will only be accessible to the researchers. The data collected from Google Forms will not be accessible to anyone other than the researchers. Confidentiality will be maintained to the degree permitted by the technology used. Your participation in this online survey involves risk similar to a person's everyday use of the internet.

Sharing the Results:

The results of this study may be presented in academic conferences or published in research journals. Findings may be used only for educational and research purposes.

Right to Refuse:

You have the right to refuse and withdraw from the study. You have also the opportunity to give review on your remarks on questions and erase part or all of the answers or notes.

Whom to Contact:

If you have any questions or concerns regarding this research, please contact:

Fionah Irish Beltran
University of Makati - College of Computing and Information Sciences
Email: fbeltran.k12149965@umak.edu.ph

Authorization:

By signing this form, you authorize the use and disclosure of your records, any observations, and findings found during this study for education, publication and/or presentation.

CERTIFICATE OF CONSENT

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked were answered to my satisfaction. I understand that I will be given a copy of this consent form. I consent voluntarily to be a participant in this study.

Printed Name of Participant: _____

Signature of Participant: _____

Date: _____

I have accurately indicated the information sheet to the potential participant to the best of my ability and made sure that the participant understands that the following will be done:

1. Carefully read and agree on the content of the informed consent form
2. Participate in the study conducted by the researchers subject to a voluntary clause
3. Publication of the data in the journal for dissemination may be done

I confirm that the participant was given an opportunity to ask questions about my study, and all the questions asked by the participant have been answered correctly to the best of our ability. I confirm that the individual has not been coerced into giving consent, and the consent has been freely and voluntarily.

A copy of this informed consent form has been given to the participant.

Printed Name of Researcher/s: Fionah Irish Beltran

Signature of Researcher/s: _____

Date: _____

Printed Name of Researcher/s: Jordan Frando

Signature of Researcher/s: _____

Date: _____

Printed Name of Researcher/s: Mark Angel Mapili

Signature of Researcher/s: _____

Date: _____

Printed Name of Researcher/s: Miguel Rojero

Signature of Researcher/s: _____

Date: _____



**RVCare: Veterinary Clinic Management System
Utilizing Multiple Linear Regression For
Diagnostic Tool**

Quantitative Survey Questionnaire

RVCare Web-Application Evaluation Survey

Section 1: Demographic Information(IT and Non-IT)

1. Age

- 18-25
- 26-35
- 36 - 45
- 46 and above

2. Gender

- Male
- Female
- Prefer not to say

3. Type of pet owned

- Cat
- Dog
- Other(specify):

4. Years of pet ownership:

- 1-2 years
- 3-4 years
- 5-6 years
- 5 years and above

5. Frequency of clinic visits per year

- 1-2
- 3-4
- 5-6
- 5 and above

6. Digital literacy (Beginner / Intermediate / Advanced)

- Beginner(little to no experience)
- Intermediate(Comfortable navigating through forms and websites)
- Advanced(High experience with digital tools and online platforms)

7. Preferred communication channel (SMS / Email / Calls / Messenger / Others)

- Email
- SMS
- Calls
- Viber
- Others(specify):

Section 2: Platform usage and Features(Non-IT)

8. Which feature did you use?(Select all that apply)

- Appointment booking
- Pet care tips
- Chatbot
- Breed detector
- Lost Pets Board

9. How often do you use the platform?

- First time only
- Rarely(1-2 times a month)
- Occasionally(3-4 times a month)
- Regularly(weekly)

10. What was the main reason for using the platform?

- Schedule an appointment
- Check pet records / history
- Ask questions through the chatbot
- View pet care information
- Try the breed detector
- Report or view lost pets

11. Which feature was the easiest to use?

- Appointment booking
- Chatbot
- Breed Detector
- Pet records
- Pet care tips
- Lost pets board

12. Which feature was the most difficult to use? Why?

- (Open-ended)

Section 3: User Experience Evaluation(4-Point Likert Scale)

Please rate the following statements on a scale of 1 to 4

- 1 - Strongly Disagree
- 2 - Disagree
- 3 - Agree
- 4 - Strongly Agree

A. Functionality(IT and Non-IT)

13. The website is easy to navigate and user-friendly.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

14. The system provides the essential functions I expect from a veterinary clinic platform.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

15. I can easily find the features I want to interact with(appointment, Your pets, chatbot, pet care tips)

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

16. I am able to conveniently use the features(Appointment, chatbot,Pet care tips) of the website.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

17. The system accurately stores and displays pet information and medical history.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

18. The system responds well with the features I interact with(e.g. no lag).

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

B. Latency(IT and Non-IT)

19. The system responds quickly when I perform actions (e.g., clicking buttons, submitting forms).
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 20. Pages load without noticeable delays.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 21. The system handles requests smoothly even during busy hours or heavier usage.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 22. Animations, transitions, and UI elements appear without lag.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 23. There is no long waiting time when uploading or retrieving information.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
-

C. Learnability and Operability(IT and Non-IT)

24. The system is easy to understand and navigate even for first timers.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 25. The layout and buttons are well organized and easy to navigate.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 26. The platform provides useful feedback whenever I perform an action(e.g. success message, alerts).
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 27. I can complete tasks (booking, browsing, updating profile) without confusion.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
 28. I am satisfied with my overall experience using the system.
 - Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
-

D. Efficiency(IT and Non-IT)

29. The system loads quickly and responds without delays.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
30. Booking appointments and navigating pages feel fast and smooth.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
31. The system performs well even when handling multiple operations (forms, uploads, chats).
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
32. Notifications (SMS/Email) are received within an acceptable time.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
33. The system does not lag or freeze during use.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
-

E. Maintainability (Staffs only)

34. Its easy for me(staff) to manage the content, reports, appointments, and users on the platform.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
35. The system has a user-friendly administrative interface for managing system settings.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
36. The system modules are organized logically for maintenance.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
37. The system allows for efficient handling of user feedback and concerns.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
38. The system's documentation and support resources make it easy to understand and manage administrative tasks.
- Strongly Disagree
 - Disagree
 - Agree
 - Strongly Agree
-

F. Accuracy(IT and Non-IT)

39. The chatbot provides correct and helpful responses.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

40. The system correctly retrieves and displays my pet's records and information.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

41. The Breed Detector provides reliable and believable breed predictions.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

42. The system shows correct appointment schedules, dates, and reminders.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

43. Forms, inputs, and uploaded information appear correctly without errors.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

G. User Satisfaction (IT and Non-IT)

44. I am satisfied with how convenient it is to use the system.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

45. The design, layout, and interface are appealing and comfortable to use.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

46. The system meets my expectations as a veterinary clinic platform.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

47. I feel confident relying on the system for appointments, pet information, and services.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

48. I would recommend this platform to other pet owners or users.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Section 4: Open-ended questions

49. What feature of the system do you like the most and why?
(Open-ended response)

50. What feature(s) need improvement and why?
(Open-ended response)

51. Do you have any suggestions to improve your experience with the system?
(Open-ended response)

December 24, 2025

Prof. MARK PHILIP C. PADERAN, M.A. LIT.

Chairperson

University of Makati Research Ethics Committee

University of Makati

Taguig City, Philippines

Dear Prof. Paderan,

I am writing to formally endorse the research study titled "**RVCare: Veterinary Clinic Management System Utilizing Multiple Linear Regression For Diagnostic Tool**", conducted by **Fionah Irish Beltran** and their co-researchers **Jordan Frando, Mark Angel Mapili, and Miguel Rojero** from III-A AppDev of **Diploma Program in Application Development**, who are currently enrolled in the **College of Computing and Information Sciences** at the University of Makati. This study aims to design and develop a veterinary clinic management system aimed to provide a more convenient for pet owners while also utilizing multiple linear regression for diagnostic tool at RaphaVets Pet Clinic.

As the research adviser, I have thoroughly reviewed the researched proposal, including its objectives, methodology, and ethical considerations. I confirm that the study adheres to the ethical standards set by the University of Makati Research Ethics Committee and follows the guidelines necessary to ensure the integrity and welfare of all participants.

Given the significance of the this study and its potential contributions to pet owners regarding the medical care of their pets at RaphaVets Pet Clinic. I highly recommend its approval for ethics clearance. Should you require further information or clarification please do not hesitate to contact me at corazon.benosa@umak.edu.ph.

Thank you for your time and consideration.

Sincerely

Dr. Ma. Corazon E. Benosa, Ed. D

Course Adviser, III-A APDEV

Diploma and Services Program

College of Computing and Information Sciences

University of Makati

Noted by:

Assoc. Prof. Anna Charisma De Chavez

Department Head, Diploma and Services Program

College of Computing and Information Sciences

University of Makati

Prof. Joel B. Mangaba, DT.

Dean, College of Computing and Information Sciences

University of Makati

December 04, 2025

Prof. MARK PHILIP C. PADERAN, M.A. LIT.

Chairperson

University of Makati Research Ethics Committees

Dear Prof. Paderan:

I trust this correspondence reaches you in good health and high spirits. I am writing to formally endorse the following groups for Ethics Review. These groups have successfully defended their proposals for the course **Special Project**, under the mentorship of **Dr. Ma. Corazon E. Benosa**.

| | |
|-----------------------------|--|
| Gonzales, Ashley Nicole C. | LDC-DENTSYS: A WEB-BASED APPOINTMENT BOOKING AND RECORDS MANAGEMENT SYSTEM WITH AI SUPPORT FOR LANDERO DENTAL CLINIC |
| Jana, Kenneth L. | |
| Padilla, Vince Henrick P. | |
| Sabado, Von Jeres E. | |
| Bernardez, Lars Ulrich G. | WRIMS: Document Request System For Barangay West Rembo |
| Pacis, Eivrian Nicholson S. | |
| Raguhos, Clark Kent B. | |
| Tomales Marvin B. | |
| Buensuceso, Jason | One-ENC: A One-Stop Centralized Booking and Scheduling System for Every Nation Campus in Bonifacio Global City |
| De Jesus, Hanz Aaron | |
| Lepiten, Charmmain | |
| Ramos, Angelo Charles | |
| Bulatao, Jerome | UMAKFIT: Fitness Tracker for Umak Students |
| Mendoza, Mark Cyrus | |
| Motea, Jhimar Carl | |
| Tapalla, Miguel Carlo | |
| Beltran, Fionah Irish | RVCare: Veterinary Clinic Management System Utilizing Multiple Linear Regression For Diagnostic Tool |
| Frando, Jordan | |
| Mapili, Mark Angel | |
| Rojero, Miguel | |
| Marcelino, Alvin T. | PING-TRACK: Web-Based Table Tennis Player Performance Using a Statistical Tracking System |
| Pertez, Franz Genesis | |
| Santos III, Benjamin E | |
| Viernes, Rhina Marie | |

The proposal defense transpired on **November 24 , 2025** between **8AM and 2PM** at **Admin Bldg. 3rd Floor ACR**

Thank you very much.

Warm regards,

Assoc. Prof. ANNA CHARISMA DE CHAVEZ

College Research Coordinator