**“School Base Web Access to Research Directory with Descriptive Analytics”**

**CHAPTER 1**

**Introduction**

**Background of the Study**

In today’s academic and research landscapes, effectively managing and utilizing data is crucial for fostering innovation and collaboration (Smith & Johnson, 2020). A Research Directory serves as a comprehensive system designed to organize and store information about research projects, publications, and researcher profiles, thereby facilitating easier access to essential academic resources (Smith & Johnson, 2020). This system enhances institutional information sharing, boosts the visibility of scholarly work, and promotes networking among researchers across diverse disciplines (Smith & Johnson, 2020).

This study focuses on analyzing historical data to uncover patterns, trends, and actionable insights, plays a vital role in this context (Lee et al., 2021). When integrated with research directories, descriptive analytics provides a clearer overview of an institution’s research output, highlights active research domains, and identifies key contributors (Lee et al., 2021).

Research has shown that digital research directories play a significant role in enhancing collaboration within higher education by linking departments and faculties through centralized databases (Smith & Johnson, 2020). These studies have primarily focused on the technical aspects of developing these directories, offering limited examination of how the data can be analyzed to provide meaningful insights (Smith & Johnson, 2020).

Despite these studies have contributed valuable knowledge, several gaps remain in the current literature (Smith & Johnson, 2020). Research on the complete integration of digital directories with advanced descriptive analytics is limited, which restricts deeper exploration of research patterns, collaboration networks, and institutional performance (Lee et al., 2021). Most existing studies emphasize basic metrics like publication counts and citation indices, often overlooking important factors such as funding allocation, interdisciplinary research efforts, and researcher engagement levels (García & Torres, 2022).

To address these gaps, this study aims to develop a centralized research directory system with integrated descriptive analytics to improve the organization and accessibility of research data. The system will store and manage research materials efficiently while providing analytical tools to identify trends, patterns, and gaps. It will support data-driven decision-making, enhance collaboration among researchers, and improve institutional research performance. The platform will be designed to be user-friendly and accessible to both novice and experienced researchers, promoting academic growth and efficiency.

**Objectives of the Study**

The main objective of this capstone project is to develop and implement a School Base Web Access to Research Directory with Descriptive Analytics.

**Specifically, the study aims to:**

1. Develop a system that will:
2. Provide research repository with search and filter;
3. Provide descriptive data analytics for monitoring;
4. Monitor research duplication;
5. Provide abstract as overview of research;
6. Track and monitor published and unpublished researches of faculty and students.
7. Determine the quality of the developed application based on the IT experts testing using the ISO/EC 25010 Software Quality Model Criteria.
8. Determine the quality in the use of the developed system in terms of effectiveness, efficiency, satisfaction, freedom from risk, and context coverage.

**Scope and Limitation**

The proposed School Base Web Access to Research Directory with Descriptive Analytics are intended only for the administrator, faculty, and students of Colegio de Sta. Ana de Victorias.

The focus of this system will enable users to efficiently search and filter research materials, provide descriptive data analytics to monitor research trends, and include tools to detect duplicate research to maintain originality. Each research entry will feature an abstract summarizing the study, and the system will track both published and unpublished works from faculty and students to offer a comprehensive view of academic output.

The system will be limited to CSAV faculty, students, and staff, excluding external users. Data analytics will focus on basic metrics without advanced analysis capabilities. Duplication detection may miss some forms of plagiarism, such as paraphrased content. Tracking unpublished research will rely on faculty and student participation, and abstract quality will depend on individual submissions.

**Significance of the Study**

This study is intended for the benefit of the research committee, academic affairs, program heads, faculty and staff, researchers, and future researchers.

**Research Committee**. This user is responsible for overseeing research development and ensuring academic integrity, will benefit from the system’s ability to monitor research outputs, detect duplication, and provide easy access to organized research data, aiding in the evaluation and approval of studies.

**Academic Affairs**. This user is responsible in tasked with managing academic programs and ensuring educational quality, will find the system valuable for tracking research trends and outputs across various departments. This data will support curriculum development and align research activities with institutional goals.

**Program Heads**. This user is responsible in oversee specific academic programs, can utilize the system to monitor the research performance of their respective departments. The ability to track both published and unpublished works will help them identify gaps, promote original research, and ensure that research aligns with program objectives.

**Faculty and Staff**. This user is responsible for contributing to the institution's research output. The system will help them manage their research, avoid duplication, and access previous studies for reference. Abstracts provided in the repository will allow for quick overviews of related research, fostering collaboration and continuous learning.

**Researchers.** Including both faculty and students actively involved in research projects, will benefit from the streamlined process of submitting, tracking, and accessing research materials. The system supports originality through duplication detection and provides tools for efficient research management.

**Future Researchers.** This study will benefit from easy access to a wealth of past research, aiding in literature reviews and guiding them in selecting unique research topics. The system promotes academic integrity by identifying potential duplications and serves as a foundation for building upon previous work.

**Definition of Terms**

In this study, this term refers to the practical implementation and functioning of a system or process where control, authority, and decision-making are centralized within Colegio de Sta. Ana de Victorias.

**School Based Web Access.** Smith (2021) defines school-based web access as a secure, centralized online platform designed to meet the unique academic needs of educational institutions. It allows students, faculty, and staff to access and manage digital academic resources efficiently.

This study focuses on developing a web-based system tailored for Colegio de Sta. Ana de Victorias (CSAV), ensuring that only authorized users such as faculty, staff, and students can upload, retrieve, and manage research materials. By restricting access to internal members, the system enhances the security and integrity of academic work while promoting a collaborative research environment within the institution.

**Research Directory.** Johnson & Lee (2022) describe a research directory as an organized digital repository where academic outputs like these, dissertations, and research papers are systematically stored and managed. It serves as a centralized hub that facilitates easy access and retrieval of scholarly work.

This study aims to establish a comprehensive research directory at CSAV, enabling users to search, filter, and manage academic materials effectively. The directory not only supports the preservation of institutional knowledge but also fosters academic collaboration by making research outputs more accessible to the CSAV community.

**Descriptive Analytics.** Davenport & Harris (2020) define descriptive analytics as the use of data aggregation and statistical techniques to summarize historical data, identify patterns, and present insights in a clear and interpretable manner. It helps institutions understand past performance and trends to inform future decisions.

This study integrates descriptive analytics into the CSAV research repository system to monitor research activities, track contributions from faculty and students, and identify emerging research trends. This feature will provide valuable insights that can guide academic planning, resource allocation, and future research initiatives within the institution.

**Web-based System**. Brown (2023) explains a web-based system as an application hosted on a web server, accessible through internet browsers without the need for local installations. Such systems offer flexibility, as users can access data and perform tasks from any device with an internet connection.

This study develops a web-based research repository for CSAV, allowing faculty, staff, and students to manage research materials remotely. The system enhances convenience by providing 24/7 access to research documents, streamlining the process of uploading, retrieving, and reviewing academic work, regardless of the user’s location.

**Published Research.** Anderson (2021) defines published research as scholarly work that has undergone peer review and has been formally released in academic journals, conferences, or institutional repositories. Published research is considered credible and serves as a reliable source for future academic work.

This study incorporates a feature to track and manage published research outputs from CSAV faculty and students. By documenting these works, the system showcases the institution’s academic contributions, enhances its scholarly reputation, and provides a rich resource for future researchers seeking credible references.

**Unpublished Research**. Taylor (2022) describes unpublished research as academic work that has not yet been formally published or peer-reviewed but may include theses, dissertations, research proposals, and ongoing projects. While not publicly available, these works represent significant academic efforts and potential contributions to their respective fields.

This study ensures that unpublished research is included in the CSAV repository, providing a comprehensive view of the institution’s academic activities. By tracking unpublished research, the system encourages collaboration, recognizes early-stage research efforts, and offers opportunities for further development and publication.

**Conceptual Framework**

**Figure 1.0**

*Conceptual Framework of the Study*

**Outcome**

• Enhanced Accessibility to Research Information

• Improved Decision-Making Based on Analytics

• Increased Collaboration among Researchers

**Output**

• Interactive Web-Based Research Directory

• Analytical Reports and Visualizations

• Searchable Research Database

**Process**

• Data Collection and Validation

• Data Storage and Management

• Descriptive Analytics

• User Interface Development

**Input**

• Research Data

• User Information

• MetaData

• Interview