**CHAPTER II**

**REVIEW OF RELATED LITERATURE**

This chapter presents the various literature and studies from thesis, articles, blogs, and websites which help the proponents in understanding the context of the proposed system.

Beal, V. from Webopedia stated that Management Information System (MIS) is a computer-based system that provides managers with the tools to organize, evaluate and efficiently manage departments within an organization. MIS can include software, databases, hardware, decision support systems, people management and project management applications, and any computerized processes that allow the department to run efficiently. In simple terms, Management Information Systems as systems that provide information to management. The department responsible for computer systems is sometimes called the MIS department.

The idea that comes from Beal helps the proponents in developing the system. It helps the proponents to identify what management information system is, how it works, what are the components it includes, and what it can provide to the organization.

According to Christensson (2014), an MIS includes employees, departments, projects, clients, finances, and other types of [data](https://techterms.com/definition/data). However, it may also include non-computer based elements, such as the structural hierarchy of an organization. Many MIS solutions now include web-based interfaces as well aside from desktop applications.

The statement of Christensson supports the idea of the proponents about MIS and it strengthens the certainty about the proposed system as an MIS. The proposed system is designed to be comprehensive solutions that perform multiple MIS functions.

Martin (2017) discussed that Management Information Systems have four components used to collect, process, store and retrieve the information whenever it is needed. The Information System as a component in MIS, helps in the collection of data that is stored in the MIS. Another component which is the database management system aid in the storage and retrieval of data. Intelligence System is the component concerned with the processing of the data collected and presenting it in a manner that is easy to comprehend. Lastly, the research system component is concerned with identifying the main management problems in the organization and coming up with alternative decisions that can suffice in a particular situation.

Based on Martin’s statement, the four components of MIS are effectively delivering the information needed to decision makers. The proposed system is also incorporating the use of MIS components that makes the proponent recognize the system being developed is an MIS. The use of this components will help achieve a high level of efficiency for the users as well as the management.

According to Forte (2016), Web Application or specifically a web-based application is an application that can be accessed using a web browser. It is stated that as web browsers cross-platform, a web app will run on any operating system (OS). Their systems usually only require an up-to-date web browser and do not need to be installed individually. Web application user interfaces are easier to create and design activities.

The proponents decided to make a proposed system with the use of web-based application because a web-based application is an application that uses a website as the interface or front-end. Users can easily access the application from any computer connected to the Internet using a standard browser. The proponents come up with this idea because it may help the proponents to create a system easily and more dynamic.

Temere (2017), explained that Bootstrap help to build the user interface faster for web and mobile applications. For example, menus, buttons, and lists for user experience development. There is no need to create all of HTML, CSS classes and styling from scratch. The style button just pops in the class name.

The proponents decided to use bootstrap as the front-end framework to make a better design for common HTML elements. Bootstrap is the solution of the proponents’ problem in designing front-end. It helps to build a friendly UI for the design in the proposed system.

Reenskaug (1978), invented the Model-View-Controller (MVC) pattern when he was visiting scientist at Xerox Palo Alto Research Laboratory (PARC). He stated that MVC was conceived as a general solution to the problem of users controlling a large and complex data set. It separates the application into three parts: the model, the view, and the controller. A Model represents knowledge. A model could be a single object (rather uninteresting), or it could be some structure of objects; the view is a (visual) representation of its model. It would ordinarily highlight certain attributes of the model and suppress others. It is thus acting as a presentation filter, and; controller is the link between a user and the system. It provides the user with input by arranging for relevant views to present themselves in appropriate places on the screen. It provides a means for user output by presenting the user with menus or other means of giving commands and data.

The proponents seek an opportunity to use this development pattern in developing the proposed system to control the complexity of it. MVC helps to balance the vast amount of users who access it. The proponents comprehend what the MVC is and how it works. With that understanding, the proponents decided to integrate the use of MVC in the proposed system.

Ellis (2006), created CodeIgniter as a powerful open-source PHP framework with a very small footprint. It is based on the MVC development pattern which separates application logic from presentation. It was made for rapid development of both websites and web applications with a simple and elegant toolkit.

The proponents decided to use the CodeIgniter framework for developing the proposed system because they saw that it simplifies PHP syntax. Also, the proponents saw the potentials and exceptional features of the CodeIgniter such as it is easy to install, has in-built security tools, and provides error handling.

Based on the study conducted by Anttonen (2018), the main purpose of the thesis was to follow the process of developing a mobile-friendly web application by utilizing the MVC design pattern and the latest available set of technologies for responsive web application development. The application was developed by using Codeigniter 3 PHP framework in combination with Bootstrap 3 frontend component library and MySQL database. Additional technologies such as jQuery, HTML5 and CSS were also used in order to build the user interface and frontend functionality of the application.

The proponents acquire this reference and use this all framework for the proposed system. The proponents decided to use MVC to support rapid parallel and asynchronous technique in development. With the use of CodeIgniter PHP framework with the combination of bootstrap, it helps the proponents to develop the proposed system in a better way and faster than writing a code from the scratch. It is expected to adjust the layout of the design depending on the device being used.

Morris (2018) notes that the AJAX technique ignores unnecessary page data and only handles requests for updated information and the updated information itself. It emphasizes that JavaScript automates the updating process, the request for updated content is formatted in XML to make it universally understandable, and JavaScript again kicks in to refresh the relevant content for the user viewing the page.

Morris explained how AJAX works and what it can do. The proponents find it useful as the proposed system will be developed using AJAX for front end development together with bootstrap. It is important to know what AJAX means and how it works in order to do it and gain an insight and understanding about it.

Jonsson (2009) described that AJAX (Asynchronous JavaScript and XML) has proven to gain a higher extent of usability when used compared to ordinary web applications. When implemented, it has also been proven that performance gains can be achieved.

The proponents decided to use AJAX for making it possible for user to interact with the UI without having to wait for a response. Using AJAX as technique to enhance the usability along with performance standard such as response time for end users.

Elias (2012) explained that dashboards can provide an effective solution to the overwhelming amount of data that business users experience every day. Also, dashboards are tailored to fit specific requirements, and a dashboard does not need to fit a single category in order to be successful. Rather, it needs to provide clear and immediate information in order to improve decision making and understanding of data.

The proponents learned the importance and uses of dashboard that is why the proponents decided to integrate it in the proposed system to enable the PESO get a clear view of their business at a glance. Dashboard would be a vital tool for them as it compresses data into one picture for the manager to make valuable decisions.

Karim, M. (2015) discussed that online recruitment or e-recruitment through websites and job boards are increasing the firm’s competitive advantage as well as giving more opportunity to the jobseekers. E-recruitment integrates the use of the Internet to search for jobs which have been advertised electronically. Thus, the employers advertise the job opportunities, save the resume of applicants, contact the jobseekers who are qualified. In this study, it was found that online recruitment for job seekers is influenced positively.

        In relation to the study above, the proponents found out that nowadays, jobseekers preferred using the Internet in jobseeking rather than in newspaper classified ads. It is proven that online recruitment helps both the applicants and the company. The study gives more certainty for the proponents to develop the proposed system in order to help job seekers as well as the management.

        Mansourvar and Yasin (2014) develop a job web portal for the students in the Faculty of Computer Science and Information Technology (FCSIT), University of Malaya (UM). A job web portal provides an efficient search for online information on job vacancies for job seekers. The system is created to help job seekers especially fresh graduates have access to job vacancies and find a job after graduation.

        The system developed by Mansourvar and Yasin support the students and gives students a variety of choices in available job vacancies that match their skills and qualifications. It is relevant to the proposed system as it has a web portal that allows the user to find job vacancies.

        Based on the research of Karim, A. (2011), Management Information Systems (MIS) aids in the decision-making for strategic planning in an organization. It helps the organization to make informed business decisions as MIS provides information needed to manage organizations effectively.

        The study shows the significance of the MIS in the organization’s strategic planning. It makes the proponents understand the importance of MIS and how data or information is vital in an organization.

**Synthesis of the Related Literature and Studies**

The literature and studies cited here are all interrelated to the area of the proposed system, which helps the proponents to come up with the new ideas. The different concept of studies helps the proponents be more familiarize about what framework can really suit in their software development. With the help of reviewing previous studies gives the proponents an insight on how to make the proposed system more efficient and better than the other existing system.

Most of the studies presented here have similarities in using a web-based application framework such as PHP CodeIgniter, MySQL, MVC, Bootstrap, Ajax, jQuery, CSS, and HTML. These all framework stated that, with the use of this framework particularly in CodeIgniter, it supports rapid parallel technique in development which help the proponents to have a fast development and responsive web- application. Some of the studies here are successful and some are not, which gives the proponents to learn further their recommendation, this will help the proponents on what and where to improve more.

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