- Security Report for Digital Mobility Solutions (Pvt) Ltd -

To : Digital Mobility Solutions (Pvt) Ltd
By : Mr. Ravindradaas Kogul Sager
Role : Student Researcher
Date : 03rd January 2021

1.1 Introduction of Organization

PickMe is a Sri Lankan taxi-ride hailing application software, developed and sustained under the trademark of Digital Mobility Solutions (Pvt) Ltd. PickMe software application is currently available for Android and iOS mobile devices and also usable using the official PickMe website, respectively. PickMe is a convenient system, where users are required to enter start and end location information in order to book a taxi ride. The system then diverts information to the desired driver and get the desired ride for the passenger.

PickMe was initiated on June 2014 by a serial entrepreneur Zulfer Jiffry. PickMe, a brand under Digital Mobility Solutions (Pvt) Ltd. was first established as a start-up prototype with three team members, after recognizing the requirement of transport technology development of the country. Later, PickMe was able to expand their group and develop their technologies further and come up with Sri Lanka's own taxi-hailing technology and applications. Eventually, the company started getting more investment opportunities and was able to develop the systems. PickMe now has 180 active employees in the company. (**Source:** PickMe Official Website)

Vision Statement:

Problem-Solving the Sri Lankan Transport Sector Through Technology.

Board of Directors:

Position	Name
Founder/CEO	Zulfer Jiffry
Financial Consultant	Tasnim Salie

Investors:

- Ajit Gunewardene (Chairman/CEO – Bluestone Capital (Pvt) Ltd)
- Ruchi Gunewardene (Managing Director – Brand Finance STING Consultants)
- Dinesh Rodrigo (CEO - Interblocks)
- Conrad Dias (Group CIO - LOLC)

1.1.1 Management Information System (MIS)

Management Information System (MIS) technology is mostly used to store and manage data in order to implement daily outputs or display purposes. These systems are mostly used in businesses and organizations in order to have a track of client information, to be extracted later. Moreover, company statistics and insights are also a major purpose of MIS.

Decision making is a major concept while managing businesses, whereas regular company growth reports are essential to make effective organizational decisions. Data stores in MIS can be extracted into growth statistics to analyse how well an organization performs.

Figure 1: Management Information System (MIS)

1.1.1.1 Benefits of MIS

- Better data accuracy in MIS decreases the need for results verification. Data extraction would be more reliable than manual analysis.
- MIS prevents accidental data duplication while entering and managing data, which is helpful in reducing human errors.
- Data is more accessible as MIS systems can be accessed using online technologies as all company data would be computerized and interconnected.
- MIS is convenient to implement and manage data backups, either using storage devices or store them online. (Guru99, 2018)

1.1.2 MIS Used in Organization

PickMe implements MIS in order to have a track of passengers and drivers. Location information is one of the essential data to be collected from its users. A passenger is required enter start and end location information in order to be provided with a suitable driver, which is an automated system.

PickMe passengers are facilitated with a passenger-based software application, which is available on Android and iOS devices. Moreover, passengers can also book a taxi in PickMe's official website. Global Positioning System (GPS) technology is an essential concept in all taxi-based organizations, which is related to PickMe too.

PickMe drivers are typically interconnected to 'PickMe Drivers' system, where drivers get registered by providing personal information along with vehicle confirmation data. Drivers are facilitated with a separate 'PickMe Drivers' application software to manage passengers booking information. Drivers are required to have the application running, by the time they are ready for a hire. The GPS location system must be active in their mobile device. When they have a new hire, the hire details will be shown on the application. The major detail will be the start location and end location of the passenger.

Passengers are required to use the official 'PickMe' application, or can use the web application too. Initially, passengers are required to provide personal information such as name, email address and contact number to sign up to the system. After registering, the passenger will be required to turn on GPS location system on their device. Then, the passenger must enter the specific start and end location and book a specific vehicle. This process will pass through the system and reach the nearest and free driver available. The passenger will also be able to view the location of driver of the order and certain basic information such as driver name and the vehicle type. The automatically end a trip after the passenger has reached the end destination.

1.2 Project Management Plan

1.2.1 Project Objective

The major objective of this project is to provide a professional report on tightening the security technologies of the PickMe application, where passengers and drivers are connected using a MIS system. The objective requires specific researches to be done on the company, regarding the security concepts. The project with objectify a security report, of certain security directions and vulnerability attentions of the organization, and it's MIS system. The report includes a complete analysis on the possible vulnerabilities of the application and MIS system.

The objectives can be broken down, as follows;

- Identify vulnerability issued of the chosen organization and assess solutions.
- Evaluate data confidentiality levels of the company data and provide recommendations.
- Evaluate potential MIS system security faults and suggest solutions.
- Identify potential data security issues of the organization and provide solutions.

1.2.2 Project Scope

The project scope of this report includes certain expert recommendations in order to strengthen the security of the selected organization. Management Information Systems are always vulnerable and require strong and regular maintenance in order to tighten the security of the systems. The project is also implemented to raise awareness among the company staff members on how any system would be vulnerable in different ways. It is also significant to point out the affectable areas of the organization in case of any security exploitations.

1.2.3 Milestone Schedule

Table 1: Milestone Schedule

Milestone Description	Start Date – End Date
• **Milestone 01** Evaluate project.	02/09/2020 – 12/09/2020
• **Milestone 02** Analyse themes for further implementation.	12/09/2020 – 21/09/2020
• **Milestone 03** Literature review	21/09/2020 – 03/10/2020
• **Milestone 04** Project structure and development planning.	03/10/2020 – 10/10/2020
• **Milestone 05** Vulnerability assessment.	10/10/2020 – 16/10/2020
• **Milestone 06** Analyse MIS system of organization.	16/10/2020 – 23/10/2020
• **Milestone 07** Gather details according to a methodology.	23/10/2020 – 30/10/2020
• **Milestone 08** Evaluate analysed data.	30/10/2020 – 08/11/2020
• **Milestone 09** Conclude assessment.	08/11/2020 – 18/11/2020

1.2.4 Project Schedule

The project schedule for the report is included with the specific requirements to be considered for the successful completion of the project. This also includes various factors during the creation of the project, which are defines below.

01. Cost

The project must be completed within a specific budget allocated. It is essential that all the costs are included in the budget, which must be well planned and made sure to not exceed the amount.

02. Scope

The primary scope of the report is to assess vulnerabilities of the company MIS system and provide an effective security report for the organization.

03. Time

The security report must be created within a certain time frame, which must be well planned before starting the project. The time allocation for the current project is two months.

04. Quality

The developed security report must be in a good quality, as it is presented to a well-known organization. It is important to maintain better standards while making the security report.

05. Communication

There are various individuals included during the creation of the report. Therefore, it is essential to establish good communication within the members during the project.

06. Risk

It is also essential to overcome certain risks while developing the report. One of the major risks in the current project is to collect accurate information about the company and its MIS system.

07. Resources Management

Limited amount of resources can be used while implementing the security report. It is significant to make sure to use the resources in an efficient manner.

1.2.5 Business Case

A business case is a proposal of written or verbal meaning that is meant to persuade and encourage a decision maker to take some sort of action. The paper itself, when written, is often alluded to as a business case. A spoken recommendation may be a business case. In particular, short-term behaviour leading to real results are the simplest to argue. In a clearly crafted study that describes the reader with knowledge about the costs and benefits involved in taking actions and, alternatively, not taking any action, a business case must be made.

MIS helps to handle multiple challenges by presenting qualitative knowledge and increasing the quality of decision-making by administration. In order to increase the quality of decision-making and contribute to the fundamentals of the business, management makes faster and better decisions, using quick and reliable data supplied by MIS.

The objective is to identify the connection between problems of availability and MIS security, to identify the connection among issues of credibility and MIS security, and to identify the connection between issues of MIS security and confidentiality. Danger vulnerabilities are security issues. Scientific concepts define study as a thorough examination of a specific issue or concern. This study aims to find explanations to the weaknesses in the MIS system and provide them with solutions. They are then able to secure information from hackers and unauthorized persons. Company data is the most significant asset of the enterprise.

1.2.6 Budget Plan

Table 2: Budget Plan

Requirement	Budget Allocated (Estimated)
Initiation Resources	Rs. 8500/-
Refreshments	Rs. 3500/-
Computer/Internet Usages	Rs. 7200/-
Data Collection Resources	Rs. 4400/-

Transportation	Rs. 8000/-
Total Expenses Required = Rs. 31,600/-	

1.2.7 Risk Management Plan

Table 3: Risk Management Plan

Risk / Risk Description	Probability	Impact	Mitigation
Risk of project not finishing before the set deadline.	High	Medium	Set accurate deadlines and ensure to finish sub-tasks.
Lacking data collection required for the data collection.	Medium	High	Pre-plan data to be collected and double-check regularly.
Losing data or requirement related to the research	Low	High	Organize research data properly and keep back-ups.
Exceed planned budget pre-planned for the research	Low	Low	Double-check planned budget. Do not overspend.

1.2.8 Project Resource Management Plan

Table 4: Project Resource Management Plan

Resource	Requirement Definition
Research assets such as contents, templates and survey tools.	To carry out essential research sections such as data analysis and evaluation.
Tool requirement such as computer and other devices.	To record and store essential research data.
Computer software and applications such as Microsoft Word and SPSS Statistics.	To simply research procedure with research tool applications.
Time management.	To schedule research tasks evenly.
Expenses	For the purchase of research equipments.

1.2.9 Communication Management Plan

The precise types of contact differ between groups, but at the beginning of the project, it is helpful to define the intended means. Classifying the project's planned periodic updates and communications, such as weekly progress reports, daily reviews, and communication as required. Define the reporting structures, content of reports and flow of information used to convey the status of specifications, timetable, expenditure, efficiency, risk and other status indicators to external stakeholders as well as within the project.

1.2.10 Cost Management Plan

The projected costs for activity workers should be included in the event budget and could include expenses for factors such as transportation, meetings, computer equipment, software, special testing and training facilities with administrative support, as needed. Using a spreadsheet and presented in tabular form, the project work budget can be created. In each category of asset in each event budget, a distinct line item should be established.

1.2.11 Quality Management Plan

The quality assurance emphasis is on the methods used in the project. Presenting how quality will be handled to ensure the quality of objectives in the implementation process of this project. Quality assurance guarantees the efficient use of project systems to achieve quality project deliverables. It includes adhering to and meeting goals, constantly enhancing project work, and fixing project flaws. Validation and verification, peer reviews, design reviews and product testing can include quality control procedures. In project management, quality control is very essential in ensuring that everything is only within project planning framework. Quality management requires activities used to determine whether the product or service complies with the quality criteria established for the project.

1.3 Completion Stages and Timeframes

1.3.1 Work Breakdown Structure

A Work Breakdown Structure (WBS) is a hierarchical decomposition of the work to be carried out by the project team in order to achieve the project goals and produce the necessary deliverables. It is planned to set up a shared understanding of the nature of the project. It is a hierarchical summary of the work to be performed in order to complete a project's goals and objectives. A progressively comprehensive overview of the project deliverables reflects each descending stage in the WBS. (Visual-Paradigm, 2019)

The WBS for the current project of the selected organization is shown below.

1. **Evaluate project / initiation.**
    - 1.1 Choose an organization.
    - 1.2 Decide the organization MIS.
    - 1.3 Finalize an analysed topic.
    - 1.4 Feasibility verification

2. **Project planning.**
    - 1.1 Project management planning.
    - 1.2 Project scope management.
        - Data/requirements collection.
        - Evaluate scope.
        - Design a work breakdown structure.
        - Examinate and verify scope.
        - Manage scope.
    - 1.3 Project cost management
        - Identify project sub-tasks.
        - Examinate approximate task costs.
        - Finalize an appropriate budget.

1.4 Project time management.

- Evaluate tasks.
- Design a Gantt chart.
- Create a handle an appropriate schedule.

1.5 Project management planning.

- Identify risks.
- Evaluate risks.
- Analyse risk mitigation.
- Prepare a risk management plan.

1.6 Project quality management.

- Analyse cost benefits.
- Benchmark
- Experiment designs.
- Quality costs.

1.7 Communication planning.

- Identify stakeholders.
- Understand the communication requirements of each stakeholder.
- Evaluate information regarding each stakeholder.
- Figure out a method and the efforts.
- Prioritize communication methods.
- Design a communication plan.

3. **Execute.**
4. **Controlling and monitoring.**

1.1 Control and monitor project tasks.

1.2 Change control integration

1.3 Verify scope.

1.4 Manage scope.

1.5 Schedule controls.

1.6 Control budget.

1.7 Implement quality control.

5. **Project conclusion plans.**

1.1 Verify project final deliverables.

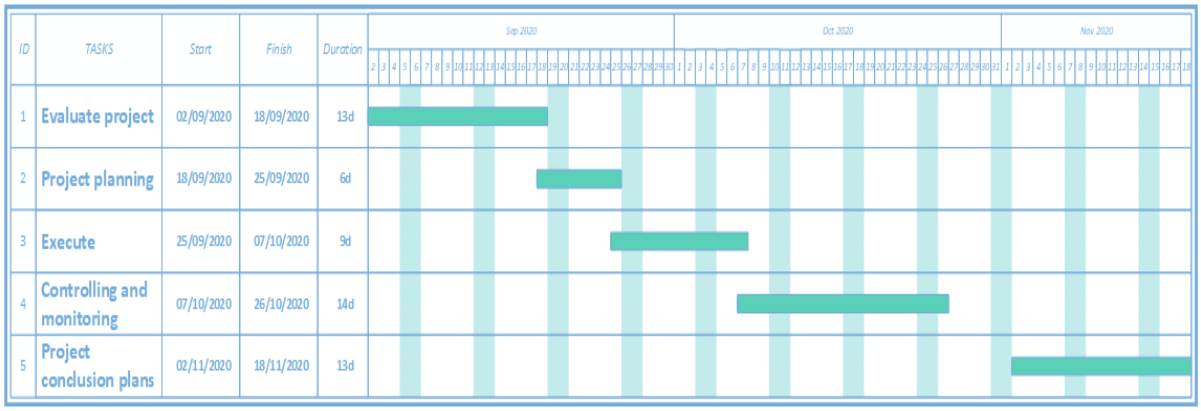
1.2 Host post-project evaluation and reviews.

1.3 Archive and complete final project records.

1.3.2 Gantt Chart

The Gantt chart below has been designed with the alignment of the work breakdown structure, providing a timeframe for each sub-section involved.

Specific time intervals are provided for each work structure task. The interval is also mentioned, which is mostly based on days.



ID	TASKS	Start	Finish	Duration
1	Evaluate project	02/09/2020	18/09/2020	13d
2	Project planning	18/09/2020	25/09/2020	6d
3	Execute	25/09/2020	07/10/2020	9d
4	Controlling and monitoring	07/10/2020	26/10/2020	14d
5	Project conclusion plans	02/11/2020	18/11/2020	13d

Figure 2: Timeframe Gantt Chart

2.1 Research

2.1.1 Introduction

Management information system has changed the physical layout of offices to accommodate local networks and departmental integrated systems. It is also a formalized procedure to provide management at all levels and in all functions with appropriate information from all relevant source to enable them make timely and effective decisions for planning, directing, evaluating, and controlling the activities for which they are responsible. A major task also facing management in almost every field of Endeavour is to plan carefully so that the quantity and quality of information obtained will be adequate to meet its needs.

A Management Information System (MIS) is a subset of the overall internal control of a business covering the application of people, documents, technologies, and procedures by management accountants to solve business problems such as costing a product, service or a business-wide strategy. Management Information Systems are distinct from regular information systems in that they are used to analyse other information systems applied in operational activities in the organization. (Munirat, 2014)

PickMe, a trademark of Digital Mobility Solutions (Pvt) Ltd., is the selected organization in this sense. As per the existing MIS structures introduced in the organization, this knowledge strongly encourages the further enhancement of organizational efficiency. The researcher understands that MIS performance problems occur and contribute to some negative business results. There is also a need to define the vulnerability problems and provide solutions to strengthen the processes of the company. The researcher chose this specific organization due to it's growing popularity all over the island. As much as this is a positive impact on the company, this also means that the organization would start facing more system security threats. The researcher understands that this vulnerability assessment could reduce these threat chances.

2.1.2 Problem Definition

In the current industry and everyday life, computer systems perform such a critical role that businesses need to make protection and control a top priority. Safety refers to the policies, protocols and technological measures used to prevent entry, modification, theft or physical harm to information systems from being unauthorized. Controls consist of all the strategies, procedures, and organizational processes that increase the safety of the properties of the company, the quality and reliability of its accounting records, and compliance with management standards operationally.

Vulnerabilities can derive from technological, organizational, and environmental variables exacerbated by poor management choices. There are vulnerabilities in each layer and in the communication between the layers in the multi-layer client/server computing environment shown here. By introducing errors or by accessing systems without permission, users on the client layer may cause damage. Without permission, it is possible to access data flowing across networks, intercept valuable data during transmission, or change messages. Radiation can also interrupt a network at different stages. Data contained in databases may be destructed or changed by those capable of penetrating corporate structures. (Paginas, 2018)

2.1.3 Research Questions

1. What are the impacts of system vulnerability on management information systems?
2. What are the impacts of system vulnerability on the selected organization's management information systems?
3. What are the online security threats that can be faced by the selected organization?
4. What can be done to prevent security issues/vulnerabilities to the organization?

2.1.4 Research Objectives

- Identify the impacts of security issues on management information systems.
- Evaluate different security threats that can be faced by an information system.
- Identify potential vulnerabilities faced by organization information systems.
- Examinate solutions to prevent computer security threats.

2.1.5 Literature Review

The combination of people, information technology, and business processes to achieve a business goal is information systems. There are people, processes, and information technology in every information system (IS). Many IS professionals actually add most of their valuation to working with individuals and procedures. The programmers are managed by them but generally ignore programming themselves. (SaylorDotOrg, 2018) Professionals work in the area of computer information systems to simplify the use of networked computers in business environments. These experts must learn how to improve business processes in order to be effective in this effort by implementing a computer information system that can handle their organization's specific needs. To run inter-organizational supply chains and electronic markets, information systems are being used. The information from such a scheme could then be used to develop policies in the workplace that better encourage the optimal use of working hours. In order to carry out and maintain their activities, communicate with their clients and suppliers, and compete in the marketplace, business firms and other organizations rely on information systems. (Zwass, 2020)

MIS is the use of information technology, individuals, and business processes to record, archive, and process information to generate information that can be used by decision-makers to make day-to-day assessments. Management Information Systems is the complete type of MIS. The aim of MIS is to extract knowledge from various sources and to obtain insights that drive business development. It processes data at a faster pace and retrieves information. This contributes to enhanced customer/customer support. Compared to a manual system, data validation and verification tests in a computerized system are straightforward to configure. Compared with manual information systems, computerized information systems are more effective. (Guru99, 2019) In the day-to-day activity of businesses, the reason why Management Information Systems are so essential is that these systems operate with individuals, organizations, technology and relationships among the people and organizations affecting the business. Its position and effect on a company's smooth operation can never, nevertheless, be overemphasized. That is the justification why these systems are used in one way or another by any successful business. This ensures that Management Information Systems can help achieve a high degree of productivity in a company's management operations when implemented properly. (Luenendonk, 2017)

Threats to information security may include software assaults, theft of intellectual property, theft of identification, theft of equipment or information, sabotage, and extortion of data. Threats can be something that can take advantage of a security breach vulnerability and adversely change, delete, destroy artifacts or objects of interest. Attacks on software mean attacks by viruses, worms, trojan horses, etc. Most users think that malware, viruses, worms, bots are all the same things. They're not the same, but the only link is that they're all malicious software. Malware is a mixture of two interpretations: Malware and Software. Malware, therefore, simply means malicious software that can be an invasive program code or something intended to execute malicious device operations. (GeeksForGeeks, 2019)

Three interrelated components are based on information technology: hardware, software, and the human element. In each of the above aspects alone, the explanations for end-technology vulnerability to a multitude of threats in terms of information security can be explored and reflect a complex set. (Mazov N.A., 2011) From the perspective of defence, the key explanation for the imperfection of information technology is its sophistication, which is also constantly growing with the growth of society every year. (Brinkley D.L., 1995) It is the obligation of information security-conscious corporate administrators to notify their senior management of the extent of threats posed by information systems. As the first phase of a risk analysis approach, this allows managers to perform vulnerability assessment. A lack of real-world data classification of security threats, however, produces a three-axis perception of the space of the risk. It establishes a probabilistic assessment framework for the effect of security threats and suggests a system of risk management consisting of a five-step approach. The aim is to determine the harms due to attacks and to manage these threats. (Fariborz Farahmand, 2003)

2.1.6 Conceptual Framework

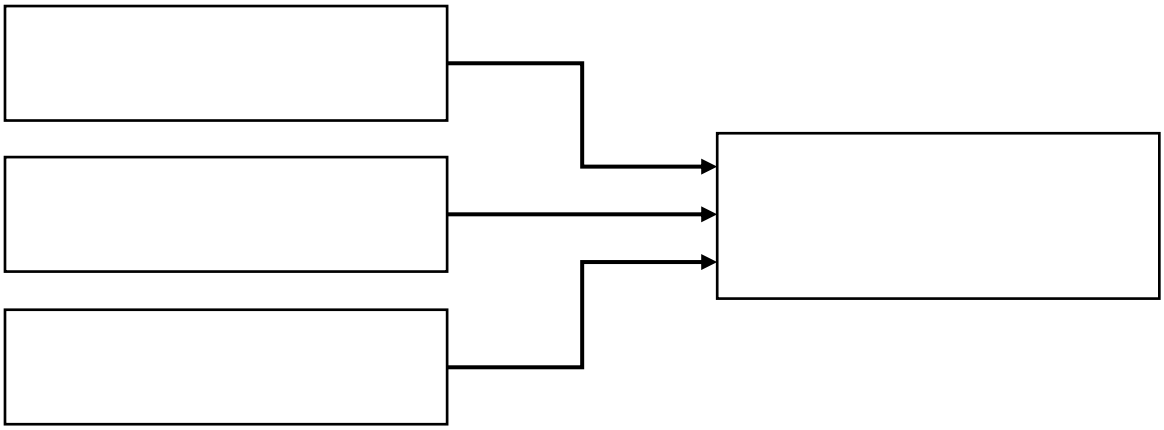


Figure 3: Conceptual Framework

2.1.7 The Researcher's Role

The researcher was able to figure out the problem of the context of the research to be followed. Eventually, the major target of the researcher was to identify the essential solution for the context problem. As a result, the researcher figured out the appropriate research topic to be followed. Further, the researcher was able to collect research information, over various sources related to the current research, which were utilised as 'Literature Review'. Moreover, the researcher was able to derive proper research questions associated with hypothesis. Then, data collection was carried out for the research context. Eventually, the collected data are also aligned according to the context. Added, a proper conclusion is provided to the research.

2.1.8 Research Methods

2.1.8.1 Qualitative Method

Qualitative research is described as a method of market research focused on data acquisition through open-ended and conversational communication. This is a method of social science research that gathers and operates with non-numerical data and attempts to interpret meaning from these data by observing targeted groups or locations to better clarify social life. To gather in-depth impressions and details of targeted groups, locations and events, qualitative researchers often use their own eyes, ears, and intellect. (Crossman, 2020)

2.1.8.2 Quantitative Method

Quantitative research provides deductive inference most frequently, in which researchers begin with theories and then gather information that can be used to assess if there is empirical evidence to support that theory. In the context of variables, quantitative analysis requires numeric details. In a number of ways, quantitative data can be obtained. Researchers may directly obtain quantitative data in laboratory settings or such data can be self-reported by study participants on a pre-test or post-test. (StatisticsSolution, 2019)

One type of quantitative research was implemented in the current research. Questionnaire, found at Appendix was prepared and shared among individuals for data collection. A questionnaire is a study tool consisting of a set of questions for the purpose of collecting respondent data. These data are eventually analysed and merged with the research findings.

3.1 Research and Data Analysis

In order to discover valuable information for business decision-making, data analysis is characterized as a process of cleaning, transforming and modelling data. The aim of data analysis is to derive valuable data from the data and to make decisions based on the analysis of the data. Different data analysis approaches exist, primarily focused on two main areas: methods of quantitative data analysis and methods of qualitative study. (Guru99, 2019)

3.1.1 Tools and Techniques for Quantitative Research

A technique involving the compilation of numerical data, a deductive interpretation of the relationship between theory and analysis, a support for an approach to natural science, and an objectivist interpretation of social reality is quantitative research.

The diagram below shows the steps involved in quantitative research;

Figure 4: Quantitative Research Steps

The systematic steps while implementing quantitative research are described below.

1. **Theory:** The idea that quantitative analysis begins with theory signifies the generally deductive approach in this practice to the relationship between theory and research.
2. **Hypothesis:** The major steps in quantitative analysis are generally outlined to show that a hypothesis is inferred and tested from the theory. Hypotheses are especially likely to be found in experimental research, but are also found in survey research as well.
3. **Research Design:** The next step includes selecting a research design that has consequences for a number of problems, such as the external validity of results and the willingness of researchers to ascribe causality to their results.
4. **Operationalising Concepts:** Operationalising concepts is a technique in which the researcher creates measurements of the principles to be studied. This includes breaking abstract sociological principles into concrete indicators that participants understand.
5. **Selection of a Research Site:** This may include the selection of a field site, such as a school, though site selection can be more diverse with survey research. In the selection of research sites, functional and ethical considerations may be a determining factor.
6. **Selection of Respondents:** Based on the hypothesis, functional and ethical considerations, this can include any number of techniques. If the inference involves contrast between two different classes, then this should be expressed in the sample.
7. **Data Collection:** Pre-testing respondents, adjusting the independent variable for the study community and then post-testing respondents are likely to be involved in this.
8. **Processing Data:** This implies translating information gathered into 'information'. This is a straightforward procedure with certain details. Other statistics must be translated into numbers in order for it to be analysed.
9. **Data Analysis:** To look for important associations between variables, the researcher uses a variety of statistical methods to see whether one variable has a significant impact on another variable.
10. **Findings and Conclusions:** The researcher would evaluate the results of the analysis on the context of the analysis of the data. It is at this point that the results will appear.
11. **Writing Up Findings:** For an academic audience or a customer, the report would be published, but either way, a write-up must reassure the audience that the process has been rigorous, that data is as accurate and reflective as possible. (Thompson, 2017)

The major characteristics of quantitative research are mentioned below;

- Typically, the information is obtained using standardized analysis methods.
- The findings are focused on broader sample sizes that are population representative.
- The research analysis, given its high reliability, can normally be replicated or repeated.
- Researchers have a well identified research issue to which they are searching for empirical answers.
- Until data is gathered, all aspects of the analysis are carefully planned.
- Data, often organized in tables, maps, figures, or other non-textual types, is in the form of numbers and statistics. (LibGuides, 2018)

Below mentioned are the most common and effective tools which can be used to collect sufficient data required for quantitative research;

- Histograms
- Linear Graphs
- Bar Charts
- Pie Charts
- Surface Plots

3.1.1.1 Questionnaire Distribution

A questionnaire is a study tool consisting of a set of questions for the purpose of collecting respondent data. The questionnaire developed for this research context could be found in the Appendix. Basic procedures were followed in order the collect essential data using these forms. This questionnaire form was distributed to various different individuals related with PickMe company. Each of the participants were instructed to fill these demographic and descriptive queries related with the current research context. These research data are crucial, because these are the information which must be collected and evaluated later for research findings.

3.2 Data Analysis Evaluation

Statistical analysis will be used in this study section to denote important assessments and their respective conclusions. The collected data was mixed together, first of all, with regard to data analysis. Then, it is important to view these data in an effective way that it is accessible for simple analysis. The questionnaire for this evaluation can be found at the Appendix section.

3.2.1 SPSS Statistics

A software package used for the study of statistical data is SPSS (Statistical Package for Social Sciences), also known as IBM SPSS Statistics. And although SPSS name reflects its initial usage in the field of social sciences, its use has since spread to other data markets. In healthcare, marketing and education research, SPSS is widely used. The data types examined using SPSS are widely varied. SPSS offers data analysis for descriptive and bivariate statistics, forecasts of numeral outcomes and predictions for classes to be defined. Data transformation, graphing and direct marketing features are also supported by the tool. (Rouse, 2019)

3.2.2 Descriptive Analysis

Descriptive Analysis is developed in order to describe data based on basic structures of the current study. Ultimately, the sample population is presented with proper questionnaires, where demographic variables are initially obtained. In order to clarify the demographic environment of the respondents to the survey, these factors are examined. In addition, it is even more comparable when showing the data in a graphical layout.

3.2.2.1 Gender Analysis

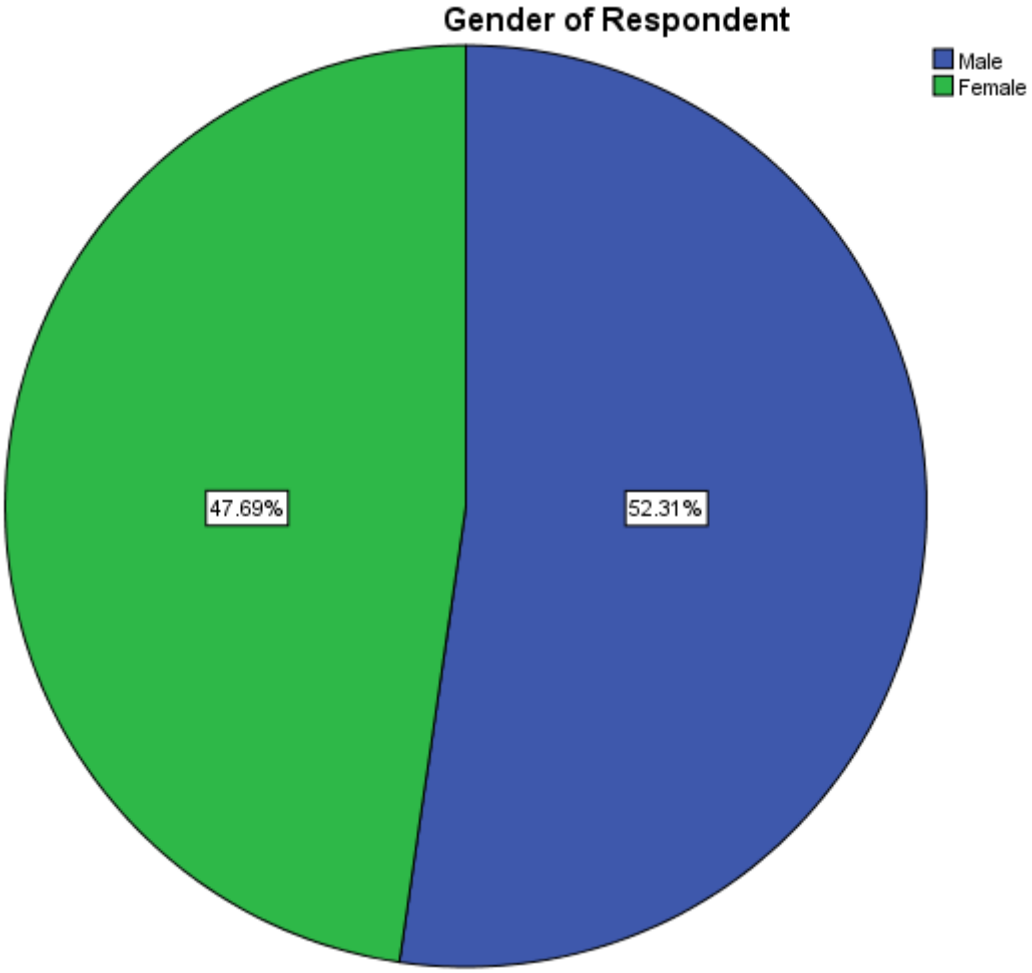


Figure 5: Gender Analysis

The majority of the respondents of the research questionnaire were Male, indicating approximately fifty-two percent (52%) of the total responds.

Approximately forty-eight percent (48%) of the remaining respondents were Female.

3.2.2.2 Level of Education Analysis

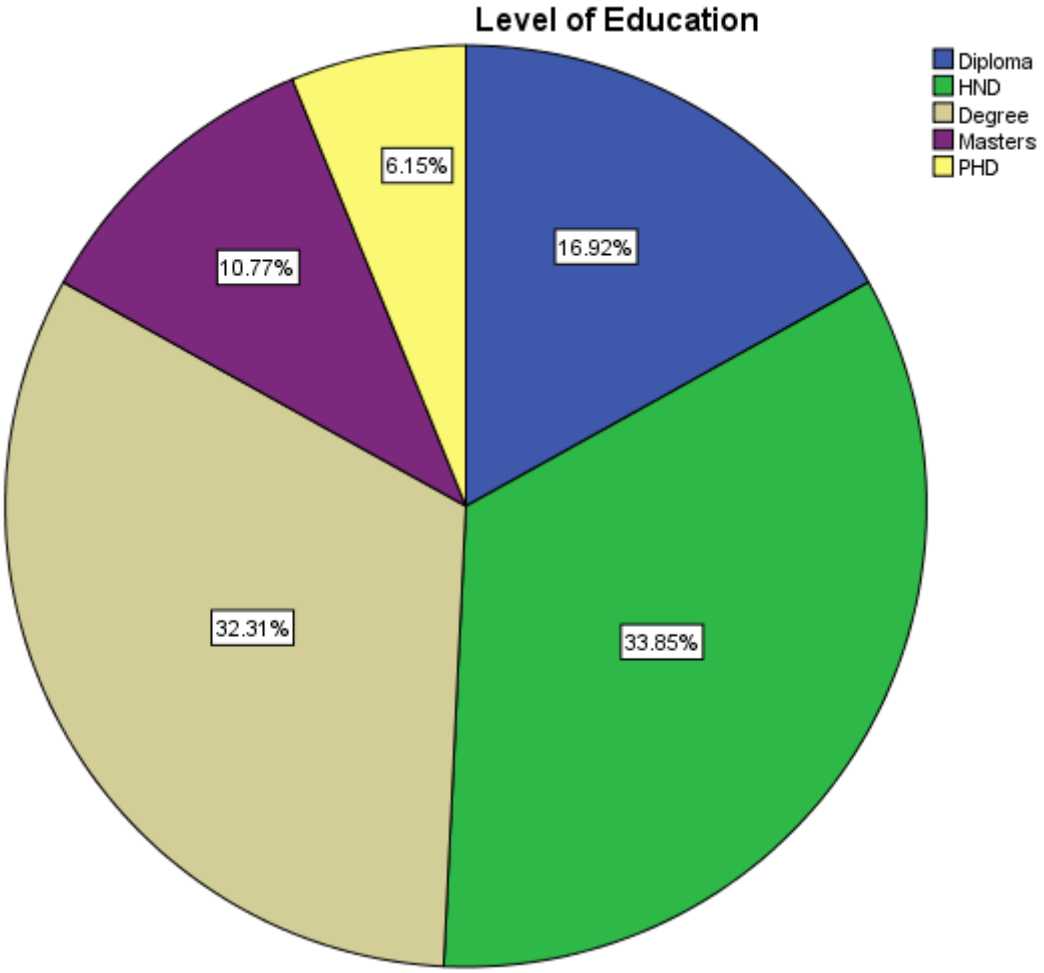


Figure 6: Level of Education Analysis

The majority of the research questionnaire records included respondents with an education level of a Higher National Diploma (HND), indicating approximately thirty-four percent (34%) of the total responses.

The second higher number of responses were recorded from respondents with a Degree-level education, indicating approximately thirty-two percent (32%) of total responds.

The third higher number of responses were recorded from respondents with a Diploma-level education, indicating approximately seventeen percent (17%) of total responds.

The fourth higher number of responses were recorded from respondents with a Masters-level education, indicating approximately eleven percent (11%) of total responds.

The least number of responses were recorded from respondents with a PHD-level education, indicating approximately six percent (6%) of total responds.

3.2.2.3 Work Experience Analysis

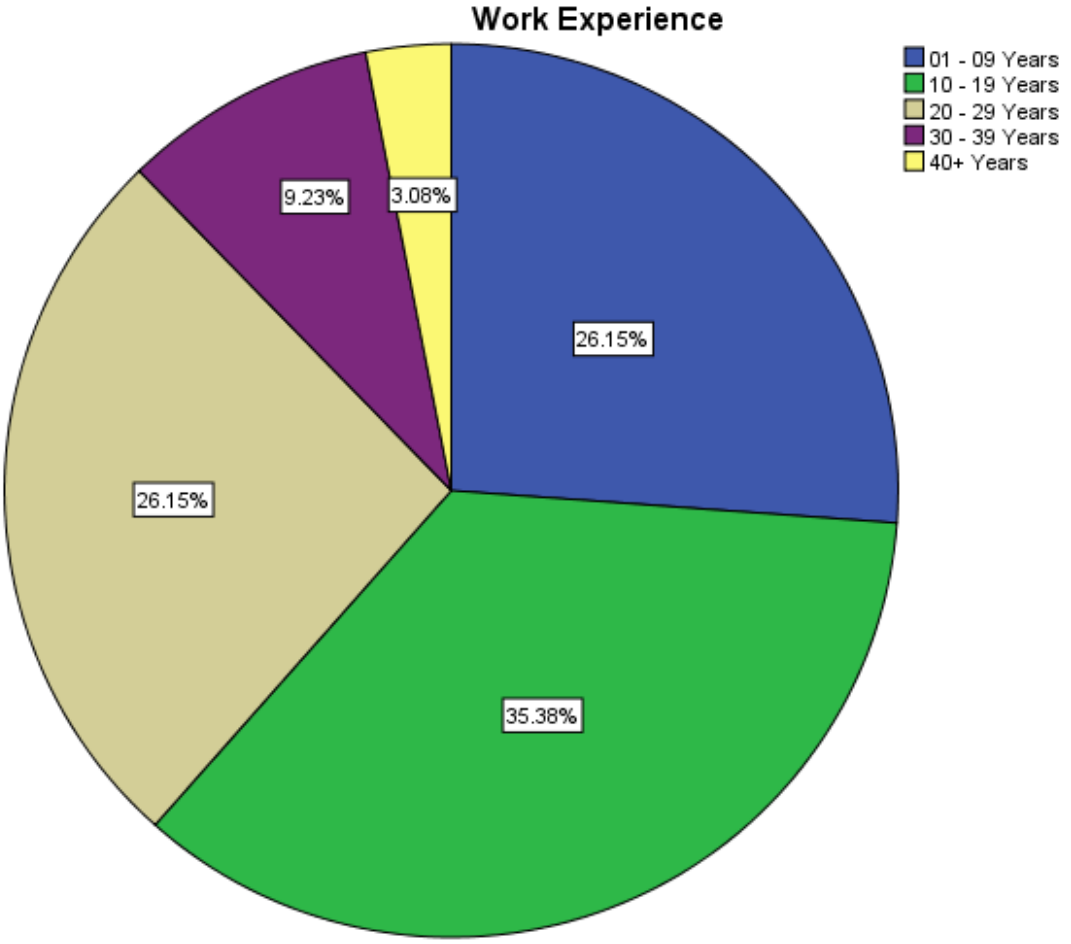


Figure 7: Work Experience Analysis

The majority of the research questionnaire records included respondents with 10 – 19 Years of work experience, indicating approximately thirty-five percent (35%) of the total collected responses.

Second higher number of responses were recorded from respondents with a work experience of 01 – 09 Years, indicating approximately twenty-six percent (26%) of total responds.

A connecting number of responses were recorded from respondents with a work experience of 20 – 29 Years, indicating approximately twenty-six percent (26%) of total responds.

The fourth higher number of responses were recorded from respondents with a work experience of 30 – 39 Years, indicating approximately nine percent (9%) of total responds.

The least number of responses collection were recorded from respondents with a work experience of 40+ Years, indicating approximately three percent (3%) of total responds.

3.2.3 Variable Analysis

3.2.3.1 Security Threats Analysis

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ST	65	2.00	2.00	4.00	2.8423	.45408	.206	.201	.297	-.561	.586
Valid N (listwise)	65										

Figure 8: Security Threats Analysis

Considering the questionnaire responses on the data mining algorithms variable, a Mean value of 2.842 is noticeable. A major reason for this is the mixing of high and low scores of the responses. The Standard Deviation of the total results denotes 0.454. The variance is 0.206. In view of Skewness, it has received a score parameter of 0.201, representing the approximate symmetry of the distribution. The Kurtosis score of the total responses stands at -0.561.

3.2.3.2 System Vulnerability Analysis

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SV	65	2.25	2.00	4.25	2.9115	.55098	.304	.141	.297	-.264	.586
Valid N (listwise)	65										

Figure 9: System Vulnerability Analysis

Considering the questionnaire responses on the data mining algorithms variable, a Mean value of 2.912 is noticeable. A major reason for this is the mixing of high and low scores of the responses. The Standard Deviation of the total results denotes 0.551. The variance is 0.304. In view of Skewness, it has received a score parameter of 0.141, representing the approximate symmetry of the distribution. The Kurtosis score of the total responses stands at -0.264.

3.2.3.3 Data Loss Risk Analysis

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
DLS	65	2.25	1.50	3.75	2.7923	.45623	.208	-.084	.297	.004	.586
Valid N (listwise)	65										

Figure 10: Data Loss Risk Analysis

Considering the questionnaire responses on the data mining algorithms variable, a Mean value of 2.792 is noticeable. A major reason for this is the mixing of high and low scores of the responses. The Standard Deviation of the total results denotes 0.456. The variance is 0.208. In view of Skewness, it has received a score parameter of -0.084, representing the approximate symmetry of the distribution. The Kurtosis score of the total responses stands at -0.004.

3.2.4 Recommendations

3.2.4.1 Firewall

Firewalls are considered to be an essential element while considering computer security. A firewall is a security-based device, which is capable of monitoring the two-ways traffic of the specific assigned computer network system. Firewall has an essential system which can track the different packets of data which travels over a specific network. Firewalls can be configured to allow only a certain set of devices, which is a great security measure for the network system as well as the company. Basically, firewalls could be set up as both a software or even as a hardware device. (ForcePoint, 2019) The PickMe company can consider firewall as a key feature for all systems in order to maintain a secure network system. Firewalls could also be used as device gateways in the network, in order to provide user standards. Functions of the PickMe company users could be restricted by using firewalls as gateways.