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Master of Engineering and Management

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Analyze and investigation on SMEs in Piedmont region which use CRM processes and marketing automation, their benefits and effectiveness before and after implementation of CRM and impacts on customers.

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Introduction

Successful long-term relation with customers will result when we can improve our customer loyalty in regular and profitable business for our company. Customer Relationship Management (CRM) is defined as a key element that performs a main role in corporate strategy of organizations, large and small. CRM can be defined as customer management because of its connection to all activities that are connected with the creation and development of individualized customer relationships. The goal of management of customer relationship is establishing some kind of relationships and developing them to make profits for the company and shareholders and the interest of customers. To reach the success, businesses need to have a proper system for measurement and marketing, in terms of their use of customer resources. But how CRM should be implemented? Information technology should have roles to play in enabling Medium sized companies, especially, to maximize their profitability. SMEs needs to be competent because they are fundamental parts of the economy. There are some ways to becoming competent that we should consider them as some resources to use successful CRM systems by SMEs. In this research, we have divided these factors to three categories which are Organizational Factors, Strategic Factors and Technical Factors. Besides of organizational resources, technology can assist in managing data needed to realize customers so that CRM strategies can be adopted by the corporation, and at the same time, the use of IT technologies transform raw data into useful and important metrics in company's effort when describing the economic parameters and life-time value.

Chapter 1: The need for Management of customer relationships by companies.

1.1 Some definitions

Of course, the new organization will not be self-stablished. An organization very rarely wants to change itself. These types of organizational restructuring occur mostly due to external forces or pressure from above. In this kind of radical change, the development and implementation of a new strategy requires set up of a new organizational structure and the introduction of a new corporate culture and development of a new incentive system [1].

It is clear that managing customer relationship is an effective manner means to provide the organizations and all of their customer-facing employees with a single complete view of every customer at every touch point and across all the channels, and to provide the customers with a single, complete view of the company and its extended channels [2].

Management of customer relationship aims at establishing new relationships and developing them to best serve the interest of the company and shareholders through profitability, and the interest of customer through value added. CRM creates long-lasting relationships by combining modern technology with modern way of thinking. Thus, CRM enables companies to really focus on one or several groups of customers, which is not possible in traditional marketing. The current trend is that customers no longer stay in one company but easily switch to another. They have triggered a new era of creating competitive advantage through customer orientation [3].

Management of customer relationship can be used to manage the whole customer lifecycle from beginning to the end. Still based on the results achieved, it has to be noted that isn't not the most effective way to concentrate on the whole lifecycle. When including all different sectors, unavoidably also some unnecessary work is done. Usually there are only couples of parts inside different sectors that companies should focus their CRM on. When including every sector in the CRM program, it is hard to evaluate which parts are bringing value to the company and which are not. CRM planning program is not cheap nor quickly taken into use. When implementing CRM, there should be a clear target in mind. It is no use to make the whole system a target but to identify the key issues in the company that have an effect on its competitiveness [4].

Successful Management of customer relationship plan uses marketing, selling and service operations all together in some amount, in order to achieve three stages in relationships. First, a company needs to acquire the special types of customer or market segments that it finds important. Secondly, the strategically significant relationships are retained and developed. Thirdly, as the relationships develop, the company can offer the best value proposition for the most important customers. In order to achieve all this, the company must have close cooperation with its suppliers and other operators in its business network.

If the focus of the operation of a company is to be changed so drastically, it should be accompanied with the revision and, if necessary, the restructuring of the staff motivation system. The adequate internal motivation of staff guarantees that they perform their jobs with maximum efficiency. The excellent professional competence of colleagues or merely creating appropriate physical and environment conditions is not enough. The internal process, including the process of client management, will changed in the restructured organization [1].

It is important that the company define its focus on CRM implementation, from the start point and carefully chooses the functions from the first steps that should be made in order to gain the best returns. It should also be considered that the experiences together with the implementation can improve the outcomes of now and future projects.

Initial purpose of the management of customer relationship is to help small and medium enterprises to understand their customers better and to build a good relationship with them and to see them as a profitable resource.

The secondary purposes are: Identification of a firm's customers, the creation of customer value, the management of complex customer relationships, the adoption of a firm's customer offerings and communications strategy to different customers, the cultivation of customer-firm dialogue [5].

1.2 Resources required to run a successful CRM system

Successful businesses, put attention to the customers and employees both and know that the best way to deliver their services that indicates them in the top level would be motivating and training their customers and users. The motivation of employees is a main point of effective customer management. So, this has a main impact on customer satisfaction, retention and profitability. Customer Relationship Management can be seen as a collection of skills and a kind of approach that needs appropriate knowledge of using applications, communication with customers and how to deal with a category of their information.

However, success in this area is not easy and hard to sustain, especially in SMEs that are looking for best ways to reduce the costs and increasing the revenue.

The most important aspect for the success of a business is to satisfy the customer. The business environment is changing permanently, and marketing and business practices have to match themselves to this trend of growth and should focus on customer's needs. The focus on the product and the solution offered has been sidelined. That is why knowledge of customers, their focus, their needs, their financial possibilities and their potential are very important. We have to say that every customer is important. However, it is necessary to categorize customers based on criteria. It is usually more beneficial and less costly to keep existing customers and could be more effective in delivering proper services to them than to constantly try to find new ones. The companies on the market are aware of this trend, so it leads to their introduction of various CRM systems. In order to meet customer expectations, companies have to accept marketing strategies to high quality relationship with customer or users to ensure the company's success.

The adoption of CRM by small and medium-sized enterprises would provide them with valuable information and increased knowledge.

SMEs should be competent since they are seen as a back bone to the economy of the developing countries. There are some ways to becoming competent, in other words, there are some factors which could be seen as resources to use more successful CRM system by SMEs [6].

Here, we have divided these factors to three categories which are Organizational factors, Strategic factors and Technical factors.

1.2.1 Organizational resources

In the world of business today, customer is the main object, is a key to success of each organization. Many marketing experts know this that just CRM technology cannot keep the competitive advantage and the failure of companies in many cases is just because they rely on technological factors. There are many elements that affect success of a company and for hitting goals set by companies from the first day, they should put their attention on all of the elements that think could affect the success.

So, we can say that the sustainability of organization activities depends on keeping customers and attracting new ones and considering a certain category of factors. With the advancement of communication technology, organizations are faced with different customers, and customers also caused some changes because of their easy access to information and having the right to choose. Thus, in today's world, customers are thought to be the main source of any organization capabilities and as a result, the organizations require a long-term relationship with customers. To stay competitive, an effective step will be taken toward the accomplishment of organization activities by using the CRM system and adopting cooperation of employees with that system, which as a result leads to profitability and success of the organization. Therefore, considering the effective factors in CRM adoption is necessary in organizations.

CRM solutions provides an integrated view of customer interactions which start with software applications that catch these interactions and with the analysis of data to explore the hidden and important information required for improving the relationship of firm with the customers. We have extracted some organizational factors which affect the success of a CRM system. These factors are

motivation of staff, top management commitment, communication among staff, organizational culture, training of customers, clear definition of CRM process between management and staff and keep old customers and identify new ones.

CRM systems could be very complex which deals with human motivation. Generally, motivation means reasons for people to do something. Motivation can also be described as a direction of a person's behavior. In some cases, it could mean causes that makes person to repeat his or her actions. Motivation is a key component of human personality. Motivation is also defined as individual's desire to get something done. Motivation is examined in many research fields and maybe the primary reason to make the people productive [7].

The break of CRM success depends also on the influence of the top management. Thus, CRM should not be initiated without a fully commitment management team. Even, the most brilliant CRM deployments and implementation initiatives are going to fail without the top management supports and commitments. One role of the top management is to assist CRM performance through the creation of an environment that accepts CRM as an important factor of a successful business and by dealing in activities that shows their commitment to CRM performance. If top management effectively considers the fact that CRM is a part of the company's strategic orientation, this will leverage the effectiveness of their commitment.

The communication among staff could be a kind of method to collecting data about the CRM system itself, old customers, new ones…. In this way, they will have proper and up to date information to work with the system. The communication could be existed in several types, like via internal calls, social media, meetings or even when staff are in a short break. It is very useful in running a successful CRM system.

People with different values in an organization, may learn similar actions, in the practices and actions learnt by employees, organizational culture is rooted. Different people with different behaviors and maybe from different countries, should adopt a special framework of behaviors and policies to be in a cooperative way to catch the goals of the organization. Cultural aspects are important in determining the success or failure of CRM implementations. We can say that organizational culture is a set of assumptions that a group accept and develop on learning how to deal with problems. Culture acts as a dynamic model that is learnt and modified. CRM will not succeed unless a proper cultural foundation exists; an organizational cultural environment,

information sharing, cross functional teams, rewards according to employee's performance, relationship with support, responsive attitudes to change and a higher degree of risk-taking and innovation, is more likely to be associated with successful CRM system implementation. An organizational culture, that encourages learning could have a positive impact on cross-functional and interdepartmental cooperation. A right organizational culture that considers the need for the customer information (especially marketing and IT functions), reaches desired CRM outcomes. The cooperation between different functions in order to share customer information needed for a successful CRM implementation, affect a lot by the organizational culture [8].

Operational CRM generally involves finding and attracting a customer or client, with the end goal of providing them with a service or product. The intention of CRM is to keep these business relationships with customers to keep customer satisfaction and to give them a reason to come back again. Operational CRM covers the lifecycle of the interactions with the client or customer, from prospect through to repurchase. This goal would not be reached unless the organization teach the employees. They should be able to use the different applications and systems of the companies which they can see new information, be updated and put their comments. One example of a CRM practice is observing interactions between users through company's website or emails or other media.

Effective use of people in the right place at the right time is called people management, and is very essential. The job roles assigned to the employee in accordance to their skills and capabilities. At the initial stage, an effective strategy is adopted and followed by work force analysis. The analysis of work force includes analysis of their skills and development. Finally, the strategy which is required for the development and change, is implemented. So here, the role of top management in defining a clear definition of CRM process and how it should be run and continued, is very important in using a CRM system. Top managers are responsible for controlling the entire organization. They set goal and contribute to develop of goals, the policies related to company and strategic plans. Therefore, in running a successful CRM system and planning a correct progress and monitor it, the role of top management is very significant.

CRM supports businesses keep path of their customers and come up with more efficient ways to market. Both small and large businesses have found ways to implement CRM practices in their business processes in an effort to understand their customers better, serve them better and

eventually increase sales and build loyalty. The organization can occasionally adjust the level of service offered to reflect the importance or status of the customer. Improved awareness and understanding among the business employees result in better customer service. CRM systems are valuable in identifying potential customers. They keep track of the profiles of the prevailing clientele and can use them to determine the people to target for determined clientage returns. New customers for an organization are an indication of future growth. However, a growing business utilizing CRM software should encounter a higher number of existing customers versus new prospects. Growth is only essential if the existing customers are maintained appropriately even with recruitment of new prospects [9].

1.2.2 Strategic resources

Strategic factors significantly influence firm performance and offer many benefits. This is because by such activity firms are placed in a position to manage the key strategic factors for survival. So, firms could be in a position to know the kind of resources to move to the success. The main objective is to examine a strategic factor determine the performance of the firms [10].

CRM is a kind of a key strategy for companies especially SMEs. SMEs should use CRM processes on their business to reach their competitive advantages. Therefore, this matter is very important that how companies have to face some challenges with a proper strategy. These issues are strategic factors of implementing CRM systems. Successful implementation of a CRM system describes appropriate usage of strategic resources that are related to the system. When the companies are not prepared to run a CRM system, runs some risks relying to the technology and features that are all related to the strategy of the company. The strategic factors are investigated here are: Align business and IT operations; Measure, Monitor and Track, Top management support, Awareness of strategic potential of IT in CRM, Customer involvement, Willingness to share data, Considering the quality of information received from customers, Decision making according to customer needs and customer behavior, Management of interdepartmental integration and Customer satisfaction.

The package system of an enterprise aims to close the needs of the companies like sales or management of reporting, etc. These kinds of large packages have important effects on SMEs and can help them to meet their generic goals and requirements. In this way, technology will help

companies to be more efficient because they help to improve the information and reports with better strategic decisions and improved customer services.

A CRM system track and monitor the information gained from activities and the market which help the management team in strategic decision making and to develop the business. Monitoring and control are one of the most important factors to have successful implementation of CRM systems and are counted as the strategic factors in the category of main resources of CRM systems. Referring to the results of some analysis, the lack of the capability to track and monitor of the implementation of a CRM system could be an important threat for companies. For a business manager, a main part of the CRM system is when they have required quality of the customer information. Customer information is valuable for the CRM system to become successful. The company's revenue and the overall business result is important data that a good implemented CRM system should measure. The measurement shows the automation process of the company's sales, marketing and customer service functions work in a good manner or not.

CRM system improves the understanding and help the management team to control the expenses by measuring the productivity of individual sales people and sales team. By reaching a high CRM system alignment, the sales people can become more productive, cover more areas and managing relationship with customers more effectively. Top management can be a strong and effective means to assisting the improvement of relationship and for meeting customer's needs. Supports from firm top management is a key success factor in CRM performance. Top management support is a significant factor in influencing SME's intention to adopt CRM. The involvement of top management is core to a successful CRM performance as they enable the simulation of change through communication and reinforcement of values embedded in the articulated vision which addressed how customer centricity will assist in facing challenges in the future market place and how CRM can be utilized to enable lasting interactions with customers in a way that both parties derive value. However, some researches have been conducted on the spirit of top management support with a combination of project managers. These researches show that what practically support of management is and they explain why top managers support some projects and why others. But totally, almost all of them agree that they definitely support the implementation of CRM systems as they believe is one of the main factors for a successful and beneficial company.

Regarding of how much of employees in a SME know about the strategic potential of using a CRM system in order to increasing the benefits of the organization, a CRM system could use in a right way and successful implementation. This could be the first step when an organization decides to use a CRM system to connect the employees via a system or application, to share any data and information about customers. Therefore, the first step they have to do, is that they should be aware of strategic potentials of IT and enough knowledge they should have to use IT when they want to use a CRM system. The main point here is knowing potentials of IT and IT managers in running the systems.

Involvement is a motivational action in customer behavior. It describes the level of customer interest, search or complex decision making in a marketplace. Customer involvement motivates them to identify products offerings, their consumption patterns, it puts customers into a purchase decision. When customers involve in the CRM system or even putting feedback when the process is finished, can help the system, the sales staff and other employees, to make the changes according to customers' needs. So, customer involvement could lead the CRM system to be more useful and effective for both organizations and customers.

Sharing personal data contains some uncertainty about recipients. Companies may share the data of their customers with some business partners. Willingness to share data comes from trust, customer satisfaction and loyalty. This is very important that SMEs make this trust between themselves and customers. They can give this trust by using international rules and also no need of very private data from the side of customers. Here, designing a CRM system becomes important because trust its influence on customer's willingness to provide the information is essential to build the strong relationship with an organization. This factor, is one of the most important factors to make a customer relationship successful.

A few companies reach good standards in this area and there is a risk for them that data they have received not being able to support their CRM strategies. Data quality does not only mean data accuracy. There are also other issues such as completeness and currency are important for more characterize the data quality. The consequences of poor quality of information and data received from customers are often experienced. Similarly, the duplication of received data sometimes is happened. Data quality exists in different contexts, like statistics, management and computer science. Data in CRM has a very important role in all activities in the company and could be

counted as a valuable asset. These data stored in the CRM system include contact details. By integrating customer information into one, accurate and correct record, companies can rely on a segment to drive their treatment of customers.

Any kind of decision should be along with what customers need. As long as managers know this important issue, they make all arrangements in the corporation such as marketing management, manufacturing management, human resource management, service management, sales management and research and development management according to what services are supposed to deliver to the customers. The process of Marketing Management is responsible for identifying, anticipating and satisfying customer requirements. So, marketing managers should link and sequence operational activities of all commercial areas. Marketing managers should know this issue that what is the real value of their products or services to their customers. So, market research and analysis are required. Then, the process of decision making will be easier, as managers now know what they should deliver to their customers.

Improved interdepartmental integration can lead to improved products development performance. It means interaction among the various departments involved in product development. In other words, more formal information between R&D and marketing and manufacturing, acts as a kind of collaboration. Interdepartmental integration emphasizes departments will accomplish their goals by cooperation. On the other hand, it may lead to service innovation – the enterprise provides customers with different services in any form, because they want to increase convenience behaviors of customers – and progressive innovation which is defined as “the innovation that the enterprise modifies old products or deficiencies of services and improves its performance to provide customers with new value”. The management of interdepartmental integration is a very important part of the responsibilities of managers to increase the satisfaction of customers. It should always move toward the improvement of the products and services in such an innovative way with the research of proper teams to get the level of satisfaction high.

1.2.3 Technical resources

The study of technical resources helps us define the most important activities that are essential for a successful implementation of a CRM system. These resources are the number of areas in which results will ensure the successful performance for the organization. They are keys where things must go in their right ways for the company and for the success in implementation of a CRM system. CRM is a technology of dealing with organizational, strategic and technical factors. In order for the adoption to be efficient, it needs that this adoption be managed as a whole process. Without attention on the organizational and strategic factors, technical factors can be failed. Technical factors in CRM are such a process that their purpose is to bring together the different sections of information received from customers, sales, marketing and market trends. Technical factors have become a new approach in success in organizations when doing business.

Technical factors must be concerned. Because if we do not have these elements, implementing a CRM system in an organization is impossible and lack of each one of elements can be led to fail. Technical factors are related to technology and are important elements for doing business and CRM. Strategic factors are complete configuration between organizational and technical factors. Strategic factors take their advantage from technology with the ability to collect and analyze the data received from customers, interpreting the behavior of customer, developed models, correct communication and reaching value from the product and services to customers. Companies tend to spend a lot of money on the tools they need for technical sections and pay attention on accuracy of data. Before going into strategic factors, it is important to gather data from the side of customers into the database to make sure that the information of customers exists accurately in the company. We have defined some technical factors here. They are Customer service, Management of information related to customers, Information system integration, Having proper technological information, Software customization, Extensive IT support, Sales automation and System architecture.

Customer services are what companies do for satisfaction of its customers. They help to reach profit from what they have sold. The organization is involved in running the customer service system because all parts of the organization have this role to meet customer needs. Customer services could present such a barrier against the competition and bring for the company customer loyalty. Profits that are received from customer services are towards the company and also customers. Most of companies know that strategy of differentiation of customized services is an

important opportunity to avoid a price war among competitors. When companies use CRM systems, it will be important to have a very good customer services to follow the problems related to customers, they should keep their connection with customers while they are using products. So, it is necessary for the team of customer service to know proper technics and IT knowledge. Customer services should be managed referring to the expectations of customers. The customers should be under their attention and customer satisfaction must become the priority for customer service team.

Gathering information related to customers is done by technicians and managers do management of it. Customer information is an asset related to an economic value of customers owned by an organization. Analysis of information are complex for using in the process of CRM to create value for both customers and organizations.

It's a challenge that company's information system has to be integrated. The main advantage of integration is reducing in the cost of keeping of several information systems to do the work flow. To define the meaning of integration of CRM systems with other systems, results are also related to a system that could be very complex and sometimes very difficult to upgrade. The topic is that a number of companies are into an integration of information systems together with integration with Business Intelligence. While the benefits of integration of information systems in the CRM systems is well defined among employees, we can get the quality and also the efficiency, minimum of costs and supports in decisions.

Companies invest in technologies. So, leading to new forms of interaction. The activities done in the value chain in integrated IT affect the relationships. And also, there should be technicians who know the proper knowledge which they can use in the company. Otherwise, it leads to waste the amount that is invested in the company and should be used to facilitate interactions. So, any person has to have proper knowledge of working with the system.

In a CRM system, software should deliver appropriate levels of quality to the users. So, the effect of software customization is considered to the relationship among customers and organization. Any customization should consider the modifications to the characteristics CRM applications. So, software providers need to put cautious and make assessments for the customization. The attention must be on the external quality of software, that is difficult to measure when they are doing the process of development. It is important to put the attention on the category of customization for assessing both impact and the risks with special types of the customizations.

Extensive IT support has been used in many organizations in order to provide technical support for both employees and customers. IT support should be added to the CRM systems to run the interactions between users and systems more easily. The developed systems can be used by any technician that may not have adequate knowledge about problems. An interactive and flexible user-interface is also added to the system to make it easy for the user with the system. In facing such these problems like internet connections, computer securities and other hardware and software problems, IT support technicians should be very expert on how to solve certain problems. Sales automation has been in use in the sales world. Sales automation tools are very systematic which can provide for the members of sales and also for managers some kind of functionalities like: Tracking the leads, manage contacts, control the customer relations, monitor all sales processes, forecasting sales and watching the performance of employees. The goal of sales automation is to raise the efficiency and effectiveness of sales. The CRM process acts as a link between development of marketing actions and profit maximizing that are related to customer relationships. So, advanced tools for sales activities could create such effects on the process of sales for small and medium-sized companies.

The combination of components for building a good CRM application has been investigated a lot. The main idea for the architecture of system is to offer a kind of a web-based platform in which service providers and consumers could be matched together. The most important functionality of this platform, is the presentation of functionality of the services of service providers. They offer an interface of a CRM administration, which allows providers to integrate their services into the application and publish an additional multi-media information on their services. All participants could share information and status concerning the subtasks of service provisions. This kind of service handling demonstrates a CRM application.

Chapter 2 The method of collecting the data and type of analysis

In this chapter we explain the research method and design that were used to conduct the study and describe the actual procedure used to conduct the study. “How the study was conducted”. Before that, let us explain the data analysis steps as a whole.

2.1 Data Analysis consists of the following phases:

Data requirement gathering

We should think about why we want to do an analysis. All we need is looking for a goal of doing this. We have to make a decision which kind of persons we are going to use.

Data collection

We receive a clear data on things we should analyze. When we gathered data, the data should be proceeded in a right way via various sources. Then we have to keep our data.

Data cleaning

The data that is collected might have some duplicated records. They should be cleaned without error. This process has to be done before analysis, then we will be closer to our results.

Data analysis

As we manipulate data, we will find what we need. So, we should use appropriate tools and software to help us to understand the meaning of the results.

Data interpretation

For interpretation the results we should choose the type of data analysis. Therefore, we can use the results of the data analysis.

Data visualization

Data visualization will appear in the form of charts or graphs. Then they will be more easily to understand and explain. They often used to explore the facts that are unknown. By observing the relationships of datasets, we can find the best way to clear the information.

2.1.1 Data requirement gathering

Techniques describe how tasks are performed under specific circumstances. A task may have none or one or more related techniques. The following are some of the well-known requirements gathering techniques.

- Brainstorming which is used to get ideas from a group of people. Brainstorming generally used to define possible solutions for problems, and shows any details of opportunities if exists.
- Document Analysis. When we review the documentation of a system, it can help us when creating process document, and also gap analysis for scoping of all parts of projects. In reality, we would even review all requirements that leads to create of a system.

- A focus group is a team of representative people that are users or customers because we need their feedback. The feedback can be about the needs or opportunities to clear the requirements.
- Interfaces for a product of a software could be human or a machine. Integration is just another interface. User centric design with certain approaches will be effective as it ensures us to have a usable software.
- Interviews are essential to creating an appropriate software. Without understanding the goals of the users, we cannot satisfy our customers. We also should recognize the perspective of each interviewee, in this way, we can address their inputs.
- By observing users, an analyst can define the process and steps to have improvements. Observation should be active. Passive observations are better for getting feedback, where active observations are more effective in receiving an idea of current process.
- Prototyping is a modern technique for reaching requirements. In this approach, we gather requirements because we want to use to drive a solution. You show this to the client, then he will give you additional requirements. Then we can change the process according to the client requirements. This process is repetitive and continues until the product meets the business needs.
- Workshops are also effective for gathering requirements. One way to capture the collaboration is with creation of domain-model artifacts.
- Reverse Engineering. When a migration project does not have access to sufficient documentation of the existing system, reverse engineering will identify what the system does.
- Survey/Questionnaire. When we collect data from people, a survey can be used. The survey is used to rate something and select something among many choices by responses.

2.1.2 Data collection methodology

Before entering to the concept of Data Collection methodology, we should say that we are going to gather numbers, so the method will be Quantitative Method.

2.1.2.1 Quantitative Method

Measurement instruments are data collection tools (e.g., surveys, observations, tests) that are used to measure changes in dependent variables or variables of interest. The data are recorded in numerical format like score. After data are analyzed, the hypothesis is either confirmed or unsupported. Quantitative method may have large samples or multiple groups. The researcher has limited direct interaction with the participants in the study. Once the data are collected, descriptive or inferential statistics are applied to inform the results.

To begin calculating survey results more effectively, follow these 4 steps**:**

1. Take a look at your top research questions
2. Cross-tabulate and filter your results
3. Crunch the numbers
4. Draw conclusions

2.1.2.2 Online Survey

Online survey for gathering data from SMEs. Online survey or internet survey is one the most popular data-collection methods that we can find our target group and then send the questionnaire to them to receive their answers online.

This method is used by companies to receive the feedback of their customers about products or services. With this process, more organizations will depend on online data received from online surveys to make some changes in their functioning. Therefore, organizations should have advanced and clear online survey tools.

In this research we use online survey to collect data from SMEs in the Piedmont Region which use CRM systems and then we will investigate the effects of using CRM systems on their performance and on their customers.

Online surveys should have some characteristics which can demonstrate the purpose of the company.

Defining the purpose of the survey could be the most important characteristic of an online survey. Researchers have to decide the objective of online survey, in this way they can have the results exactly on what the purpose they have set for their online surveys about their products or services.

Second, online surveys should have accurate research design. A researcher should decide which type of design must be selected. The type of design of the research will help market researchers to collect data and information using online survey and how they can analyze the data they have collected.

Another important characteristic, is that an online survey should have cleared and structured questions. The questions in the survey must designed in a way that can obtain the information required from the target group. The designers demonstrate the purpose of the survey in the form of questions, they should be able to collect information needed from survey. Our survey in this research is structured by scaled questions that each participant has to score questions in the range of one to ten. So, when someone score nine to one question, it means that in his/her point of view, the factor he/she has been asked, has an important effect on a successful implementation of a CRM system.

The researcher has to define the target sample, a sample which is representative of target respondents who provide the characteristics for research. After defining a sample target, the number of people that will be in the sample, shows the sample size. Our sample target here are about seventeen SMEs in the region of Piedmont, and so the sample size will be seventeen because we will gather the data from one person in each company.

The researcher collects and analyze the respondent feedback. Feedback can lead to productive results only if the collected results are well-analyzed, then he makes a proper decision according the results for the company. When organizations use online survey, their researchers can receive analyzed data on a dashboard which keeps updating real-time a participant take the survey.

After gathering and analyzing data by the researcher, he/she should create transparent reporting from what is obtained, then share data to stakeholders of the organization.

2.1.2.3 Advantages on online survey

In comparison with other kinds of gathering information techniques, online survey is faster in collecting feedback from participants. With online survey, researchers can analyze data in real-time. They take prompt actions. Because online surveys need minimum required resources, they are as much cheaper than other methods. Unlike traditional methods, participants directly answer the surveys, without extra involvement of a mediator. Errors in this case, are very limited. Online surveys are very easy to answer and respondents could answer the questions by a click. They are very quick to configure and save the time of researchers. Respondents are also more truthful because researchers allow them to answer anonymously [11].

There are some helpful tips in online data collection.

1- One type of mistake that sometimes can be seen is the starting point when we are going to collect data online and should notice that it is a experimental design into a web browser. But what works for the lab does not mean that it will work for the web! Collecting data from many a lot of participants with little experiments, can open a door to some kinds of investigations in labs. For example, we can collect data from one hundreds of people with simple designs, and produce meaningful data. Validated tasks, can show individual differences that could not be seen in the labs.
2- Having more control does not mean that is better. Psychologists can value a high degree of control when they are collecting data. Collecting data in the form of online needs giving up this control. Furthermore, this shows some sources of noise. Maybe some of the subjects have the TV blaring in their background or they distract by Facebook while they are in your task schedule. Some of these noises have such impacts that can be overcome with a larger size of sample. But this is correct if you gather errors randomly referring experimental condition. Uncorrelated sources of noise can be a benefit in demonstrating the effectiveness of a manipulation in such an environment speaks to the robustness.
3- Understanding what users think. Resources are not just pools of a lot of workers. They are communities with participants that could be organized. It is a point to many researchers to discover that their tasks are discussed on Reddit. It is very important for researchers to put more time as participants. Participating in people's online experiments will give you this point that which part of your work are correct and which parts are not.

4- Considering the incentives. Psychology pool participants do not have the same incentives. The incentive of online participants is an element that ensures the quality of data.
5- Just as a well-designed website can engage us in leading to improved compliance and lower rates that are dropout. For instance, of you are asking a set of questions or demonstrating a set of images, defining scroll to click the Submit button for irritating people.

There are some important points that analysts have to know. One essential point in a survey is an easy access to the online data collection. Web surveys also have to designed in such a way of simple completion. And also, they should have a security system to ensure credibility and then require only a minimum of computer skills for their completion. One issue that should be considered is about the fraudulent respondents. In online surveys, attendees may not answer correctly. It is advisable to incorporate some means of personal identification to have more control on a group of respondents. The limitation in using online data collection is a technical nature. There are some external technical problems that arises maybe from the internet service providers and the attendees may have no proper knowledge to work with online surveys. When we hit our target by online methods, we face some limitations of collecting data. A way of designing an online survey could be making a link between the survey and home pages and then ask to fill out the surveys. However, no randomness is a problematic issue. The method for collecting the data is according to volunteers rather than probability sampling.

With online surveys we have some additional challenges: they can only hit persons who are online. Still, the online population differs from the general ones. Two questions prompted the launch of Google Surveys: 1- Could access to online contents causes persons to answer short surveys, and 2- Would the results be accurate? We think that the answers to both questions could be “yes” [12].

2.1.2.4 Google Forms

The Google Form is a tool which is cloud-based and used for designing web-based questionnaires. Google Inc is the provider of this tool and it is available freely on Google to anyone. The access to Google forms is too easy anytime and anywhere which made it very popular for the researches of students and analysts. The topic requires the data regarding the status of users. Each step starting

from design the survey and then development, then analysts will receive data to analyze and discuss [13].

Step 1: Design the Web-Based Questionnaire

The Google Forms provide a web interface for designing web-based questionnaires. The Google Form shows a lot of options for receiving data from a target group or a defined group of people. The person that designs the questions, needs to collect the information which is needed for the research.

Step 2: Web-based Questionnaire for Data Collection

In the first step the designer should make the questionnaire ready, then the questionnaire has to be hosted on web. He can create an automatic web URL then send it as a link. Online forms are usually used in the social media to be sent to target group

Step 3: Data Response

When the request sends to attendees, there is a possibility to them to share it to other participants. This can be a good advantage of an online survey. We can have a lot of participants with data and also having real-time data. Then we can analyze data in a format that is suitable. By Google Forms we can record out packages.

Step 4: Data Analysis and Graphical Representation of data

We can do data analysis and presentation online. When we get our results, the data will be recorded automatically in Google spreadsheet and we can make it ready graphical presentation.

2.1.3 Data Cleaning

Data cleaning means facing to some problems when they occurred. We should use some strategies for preventing errors so we can reduce problems. We show data cleaning by a process that contains three stages, like repeated cycles of screening data and editing of their errors. Figure 1 shows us three steps.

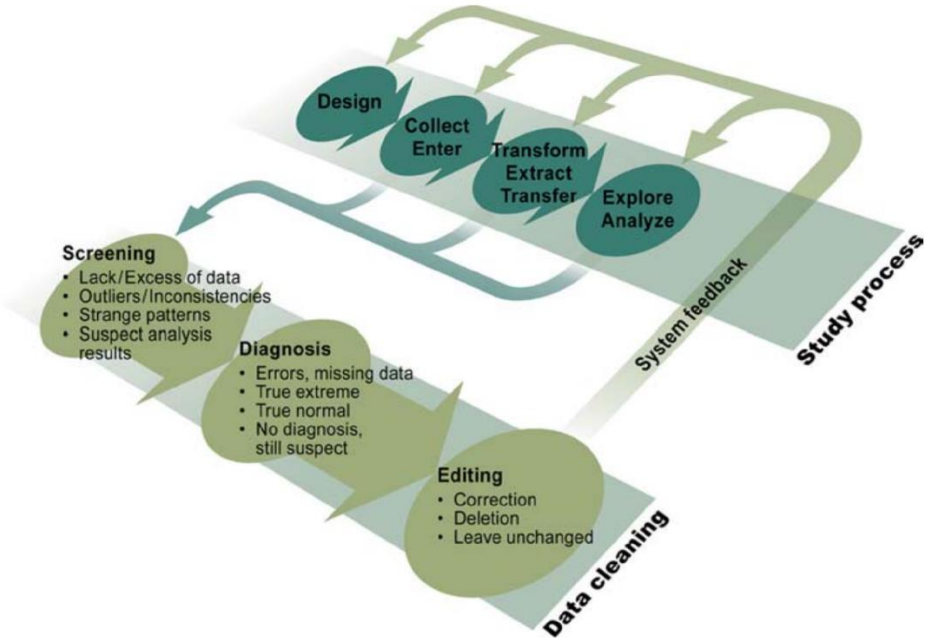

Figure 2.1 A data-cleaning framework

A lot of data errors are created while we are doing activities related to study, however, when we can detect errors by searching for them it will be more efficient. What we need for detecting is necessary for a careful examination. We should not lose some values reaching from data flows. So, rules for dealing with errors are counted as a part of a good practice. The treatment phases of data cleaning need an insight and kinds of errors in all of stages. Data flow is an essential meaning in this context.

- **Screening Phase**

  When we screen data, it is important to think of four basic oddities: lack of data, data that is outlier, strange pattens and some analysis results that are unexpected. The method for screening should be statistical. Many outliers are explored by nonconformity and of course according to initial expectations. The detection also can happen during the action of review or maybe after the publication. We should use simple descriptive tools to allow the researcher to understand the data better.

- **Diagnostic Phase**

In this phase, the goal is to define the nature of data points. Diagnoses are as follows: erroneous, true extreme, true normal and idiopathic. Some data points can be seen very clear logically.

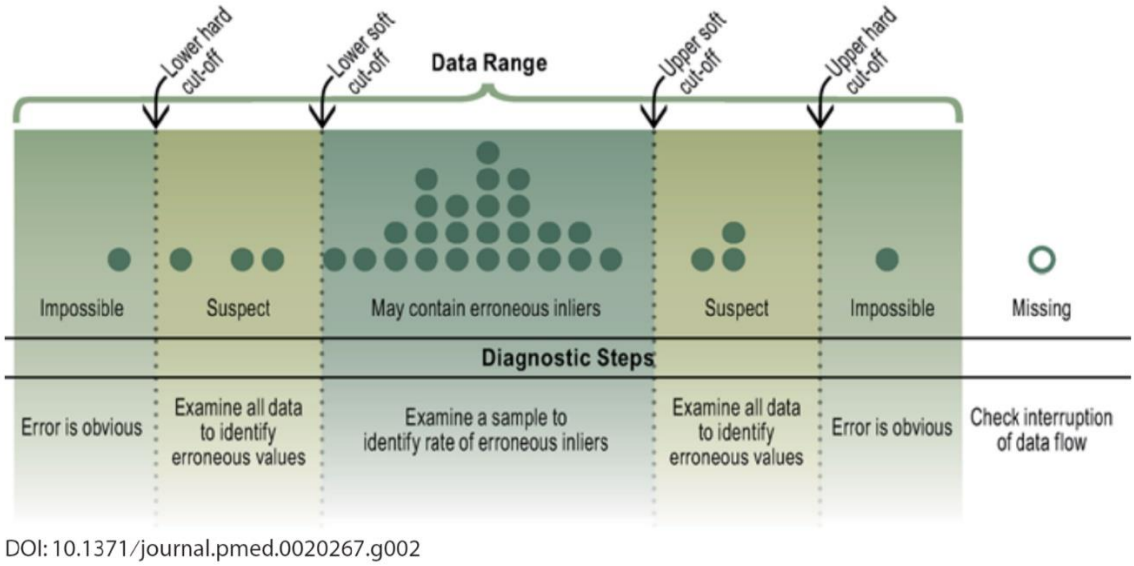

Figure 2.2 Areas within the range of a Continuous Variable Defined by Hard and Soft Cutoffs for Error Screening and Diagnosis with Recommended Diagnostic Steps for Data Points Falling in Each Area.

Sometimes errors can be seen between the soft and hard cutoffs. In this case, it is a good idea to apply a combination a procedure of diagnostic. One procedure is going to last stages of the data flow to see if the values are the same or not. A second procedure is looking for some information which confirm a right extreme status about a data point. A third procedure could be collecting some additional information, and accordingly repeating the measurement. These procedures can only happen if data cleaning starts after collecting the data and sometimes, we decide to measure them again. During this phase, one should reconsider expectations or review the procedures. This phase can result the cost-effectiveness studies. Costs can be lower if the data cleaning process is done very well.

- **Treatment Phase**

Then we have treatment phase. Missing values and true values. We should decide what we are going to do with the observation. There are some rules that show us what option to use. We should

consider also impossible values. What should be done with true extreme values and with values that are still suspect after the diagnostic phase? The investigator can have more influence on such data points, individually or as a group, the results before deciding whether or not to leave the data unchanged. Statistical methods exist for helping us to investigate such data points on parameters.

2.1.4 Data Analysis

Data analysis point out some specific procedures. But, before we use these procedures and methods, we know that it is important to see analysis of data as a main part of the process. So, we mean that data analysis contains targets; relationships; decision making; and also, some ideas. Data analysis includes ways of how we work with our information or we can say data to support the work and plans. We have also found, that there are many different ways of understanding the data analysis process [14].

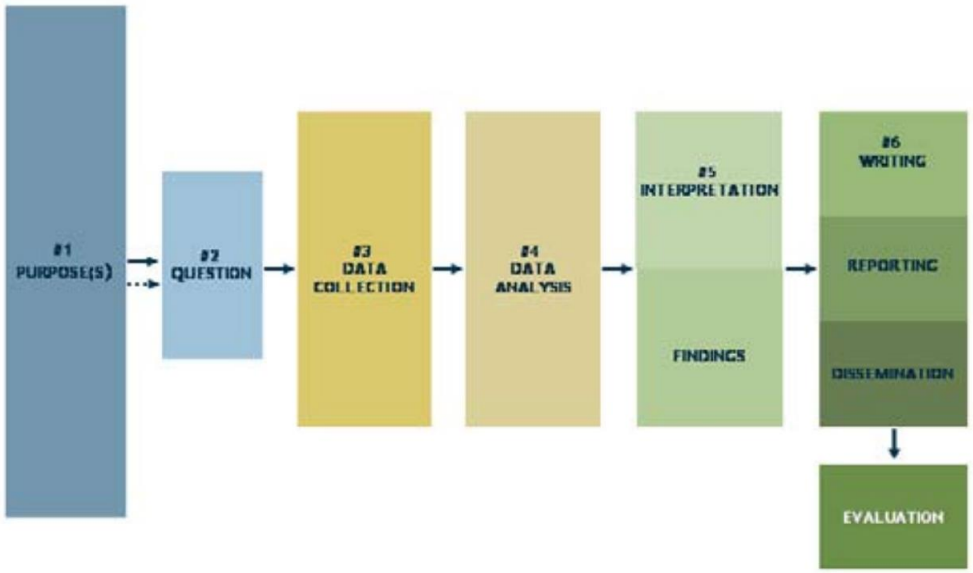

Figure 2.3 Data Analysis in Linear terms

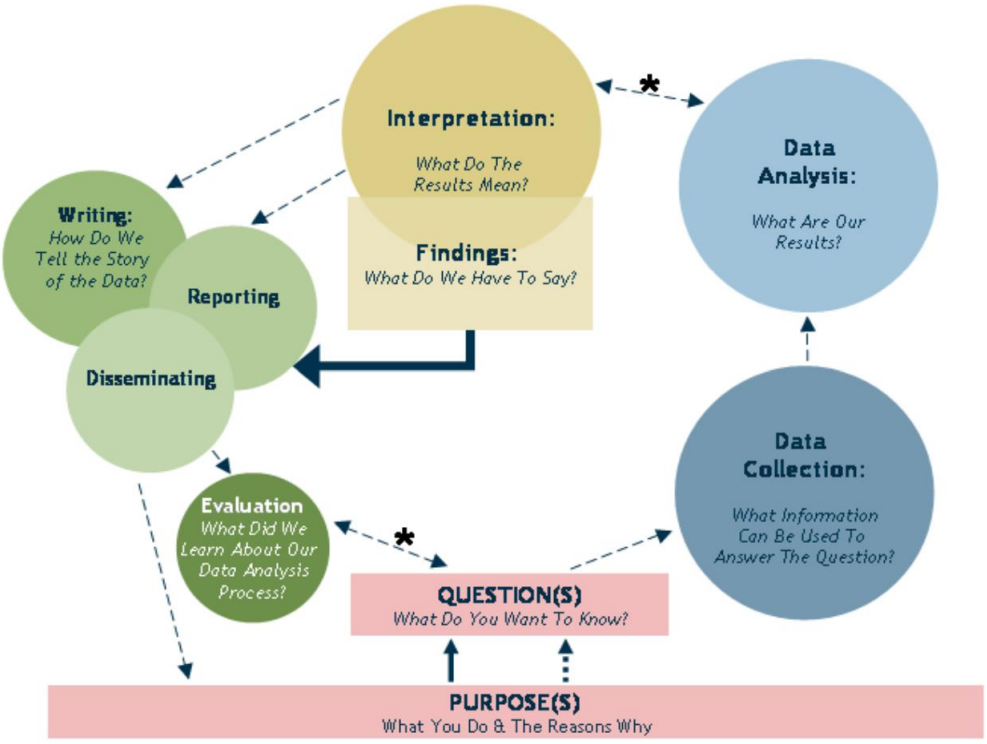

Figure 2.4 Data Analysis in Cyclical terms

2.1.5 Data Interpretation

Researchers face a lot of challenging tasks of interpreting the data received from their questionnaires and how they should make the best decision accordingly. This is caused, for example, increasing in the necessity of using quantitative approaches in the context of business strategies and business value. In the area of empirical research, there is a need to come up with sufficiently general context-oriented evidence on the effects of software technologies based on data from individual or multiple studies.

Data Interpretation

There is a very important point that we should understand the effects of software engineering techniques under different conditions that be seen as a very important prerequisite referring to the

project planning and software quality. There are some evidences that show the effects of techniques and also processes for specific concepts that can be gained by some kinds of studies. According to the fact that a software development is human-based, the data received in these studies has several limitations and dependent on contexts. Effective data has to support the derivation of results which are general and acceptable in a significance level.

- During the last years, we have seen some trends relevant to interpretation of data specially for individual studies that are:
- New techniques and tools
  - For analyzing of little data sets.
  - For combining of expert opinion and quantitative data
  - And for data mining
- Tools with new capabilities,
  - Visualization tools
  - Tailorable product for measuring tools
- We use these needs as they are important regarding to data interpretation:
- Effective predictions of results for different stakeholders.
- Developed and quantitative models for different goals.
- Preprocess of data sets that are imperfect as a prerequisite to apply some techniques for analysis.
- We see some essential challenges in researches referring to data interpretation for individual studies:
- How to combine different analysis techniques?
- How to guarantee the validity of data in industrial category?
- How to preprocess imperfect data sets for analysis and interpretation?
- How to choose quantitative models according to available data?
- How to Visualize data?

2.1.6 Data Visualization

This term, visualization, is defined by the use of computer-supported, representation of visual data. Unlike static data visualization, selecting the right type of data visualization gives the users this

possibility to specify the format they are going to use for displaying data. There are some common visualization techniques:

- Line graphs: Demonstrate the relationship among variables. It is used to compare more than one time period.
- Bar charts: Are used to compare quantities of categories.
- Scatter plots: They are two-dimensional plots that are using to show variations of items.
- Pie charts: They are used to compare two parts or some parts of a whole.

Therefore, it is important to understand what type of chart or a graph we are going to use for our data.

For data visualization we use computer graphics, to show relationship among elements of the data. Colors are selected to show the special types of visualization. We have to choose specific colors to make differentiates among data elements.

In data visualization, data should be summarized. Spatial variables like position and shape demonstrate key elements in the data. So, we expect a visualization system perform a data reduction, transform and project the original dataset.

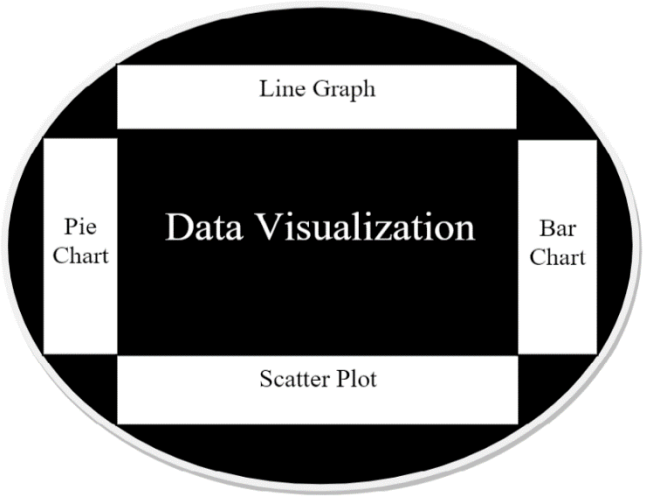

Figure 2.5 Commonly used data visualization techniques.

2.1.6.1 Presentation and Exploratory Graphics

There is a difference between the types of graphics for presentation and the types of graphics for exploration and this difference related to the form and the practice. Presentation for graphics is static, and a single graphic is used for demonstrating the information to be presented. So, we have to show them with high quality and complete definitions of the variables in the graphics. Presentation graphics should offer support for the conclusion.

Exploratory graphics, are used for searching the results. Many of them are used, and they should be fast and informative. They are not used for presentation, so captions and explanations are not necessary. One presentation graphic is designed for demonstrating by thousands of readers while thousands of exploratory graphics are designed to support the investigation of data of just one analyst.

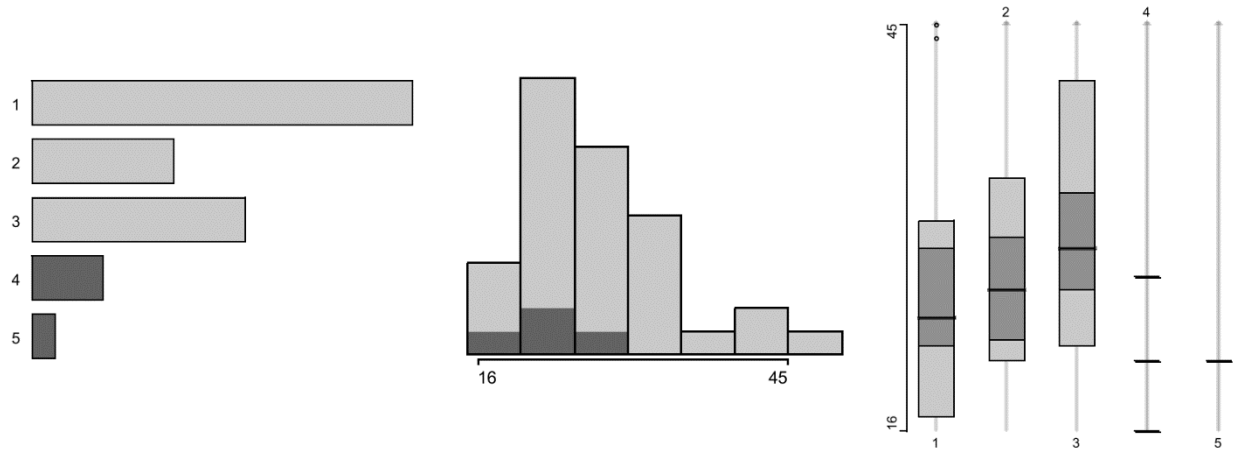

Figure 2.6 A bar chart of the number of authors per paper, a histogram of the number of pages per paper, and parallel boxplots of length by number of authors. Papers, with more than three authors have been selected.

Data used in the media present summary of information, like the results of some surveys of politics (like the surveys about the people support one special party), the development of financial measures over time or making a comparison among some groups of populations.

Presentation

How we can present a mass statistical information? There are little things that can go wrong. A graphic is linked to three types of text: a caption, a headline and an article. All three should be consistent and must complement each other. A graphic could be successful as a display and it depends on the subject, context and aesthetic. It depends on us, how we want to show them or what form we will choose and also on the audience.

2.1.6.2 Scientific Design Choices in Data Visualization

The type of characteristics certainly affects the type of graphics. Transformation of the data depends on the distribution of them and also the purpose of using the graphics. It is different to choose what kind of graphics which can display the distribution of kinds of categories of variables. The kind of decision to be taken for a multivariate graphic is related to the form of display that the choice of variables is also important. For choosing the type of graphical form, whether what type of graphical form should be chosen, depends on the type of data that are decided to be displayed and on what is going to be shown. It is very important to get the right type of graph at the start. But there is always not a unique optimal choice and can be equally good in different ways, referring different aspects of the same data. When an appropriate form has been chosen, there are many options that have to be considered.

Chapter 3: Data gathering and making comparison to extract the results

3.1 Introduction

The purpose of this chapter is to analyze the results received by the surveys which was sent to a sample group of SMEs in Region of Piedmont, Italy. As we had divided the Critical Success Factors of the successful implementation of a CRM system in SMEs in three categories that were Organizational, Strategic and Technical success factors, the survey was created according to these three categories and we have mentioned some factors for each of them. We asked the participants to score these factors and their effects on a successful implementation of a CRM system one by one from one (the lowest) to ten (the highest), which means in their points of view each of these elements has specific score that they marked in the survey.

3.2 Introducing method: the method we decided to use is distribution of variables.

The distribution of a variable is a description of the relative numbers of times each possible outcome will occur in a number of trials. In other words, the distribution of a data set is the shape

of the graph when all possible values are plotted on a frequency graph (showing how often they occur). Usually, we are not able to collect all the data for our variable of interest. Therefore, we take a sample. This sample is used to make conclusions about the whole data set. To be sure that the results of our sample will give us an accurate reflection of the whole data set we need to understand also the limitations of sampling.

From a distribution we can calculate to probability of any one particular observation in the sample space, or the likelihood that an observation will have a value which is less than (or greater than) a point of interest. The function of a distribution that shows the density of the values of our data is called a probability density function.

Distributions of Discrete Variables. First of all, we need frequency table and it describes the distribution of frequencies.

3.3 Research question, hypothesis and variables

The subject is investigating SMEs in the Region of Piedmont that use CRM systems and we want to know using CRM systems has benefit for companies or not. Therefore, we considered a sample group contains 17 SMEs in this province, then we created a survey to send them in order to get answers for this research.

For creating the survey, we needed to define the factors which impact the successful implementation of a CRM system. In reality, there could be a lot of factors that have influence on a CRM system that we could not describe all of them. We decided to define some of the most important ones that more than other factors impact on the CRM system. The best way to explain these factors was making categories and put each of the factors in related category. We made three categories of factors that have the main impact on CRM, they are Organizational Factors, Strategic Factors and Technical Factors. So, we organized factors related to each of these three categories. For each, we defined eight or nine factors so in this way we had categorized factors that could be placed in a survey.

In the survey, by defining three categories and their related factors, we designed our questions. The questions were about if existing these factors are important for a successful implementation of a CRM system and if so, what score each of the participants would give between one (the lowest) and ten (the greatest).

The factors are our variables. From the results received from the participants, means the different scores they gave to each of the questions, we received our different results from different variables. Now, we could be able to analyze the variables and for this purpose we chose the method of distribution of variables to make charts and then defining the correlation among variables.

3.3.1 Procedures and instruments

3.3.1.1 What is a Histogram?

A kind of distribution that shows how often each value in a collection of data can occur. A histogram is the most commonly used graph that is used to show a distribution. It looks like a bar chart, but there are important differences among them. We use histograms when:

- The type of our data is numerical.
- We are going to see the shape of the data's distribution.
- Analyzing a process can see and investigate the customer's requirements.
- Analyzing what the output from a supplier's process looks like.
- Seeing whether a process change has occurred from one time period to another.
- Determining whether the outputs of two or more processes are different.
- We wish to communicate the distribution of data quickly and easily to others.
- Each bar in a histogram covers a certain range of value, not a particular value. To analyze a histogram [15].

3.3.1.2 Interpret key results for Histogram

- Step 1: Helping the key characteristics. We should test our data distribution. We consider any undesirable items on the histogram. We can see the symmetry that it could be right skewed or left skewed. Some distributions, like normal distribution are symmetric.

- Step 2: Searching of multiple modes and outliers. Outliers indicates conditions in data. Multi-modal data shows that important variables are not yet accounted for. Outliers are data values but the point is that they are far from other data values. When we consider histograms, bars that are isolated identify outliers.
- Step 3: We can add a fitted distribution line to help if the data follow a special distribution, like the normal distribution.
- Step 4: Helping to make a comparison of groups. If we have groups in histograms, we compare the center and also spread of groups [15].

3.3.1.3 Measure of mean and median

One measure of center is the mean. The mean is defined by μ while the sample mean used is defined by $\bar{x}$. Both values are calculated in a similar way.

If a histogram is skewed, the median is a better estimate of the center of histogram. The median is the middle of the data. Almost half of the observations are less than it. The median is equivalent to the 50^{th} percentile. It could be the average of the middle two data values. Median describes us the value that would be in the middle of our list of values. The mode is the most frequent data value in the population or sample. Modes are used for nominal data. And finally, the midrange is the average of the highest and lowest data values.

Measure of spread

We often want to know how "spread out" the distribution is, this gives us an overview of values then we have taken from distribution.

The range is the difference between the highest and lowest values of the distribution, it is usually reported by listing the minimum and maximum values that have be seen during measurement. It is affected by values that are presented in the distribution. Another measure of spread is done with mean which is the average distance. The mean is the most important measure of center.

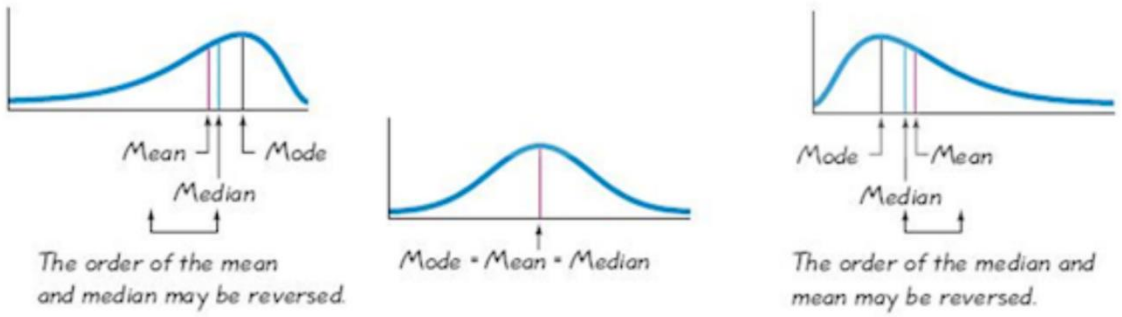

Figure 3.1. skewness (or outliers) measures

As we can see here, when skewness is present, it could be seen that mean and median will end up in different points. By turning around, if the mean and median are in the places that are far enough, we can define that our observed skewness is significant [16].

3.4 Analyzing the results

Now it is time to investigating of the results received from the surveys that had sent to our sample group. As we know, we have divided all the variables to three categories of Organizational, Strategic and Technical variables. Here we will analyze them one by one and compare the results. We created Histograms for every factor and the analyze will be done according to the charts.

3.4.1 Analyze of organizational variables

By calculating the mean, median, range and mode of each histogram which we have received from our sample group, we can investigate and make comparison among the variables we defined for each category. According to the charts of score received by the participants, we find that the histograms of each variables, with a shorter range and greater median, will have more importance in comparing variables.

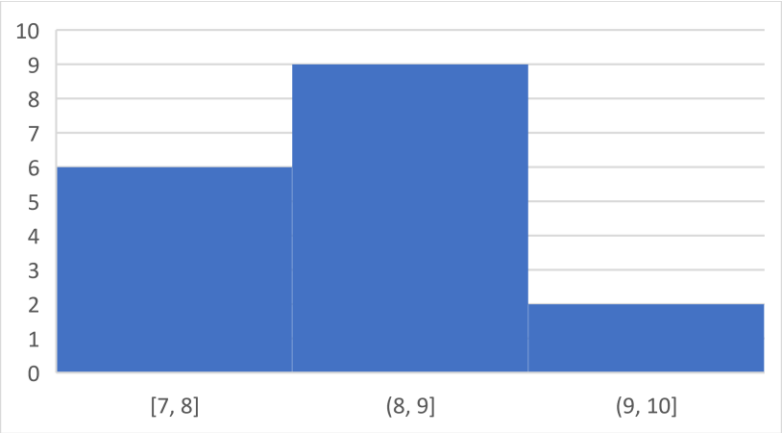

Figure 3.2 Top management commitment

median	9
mean	8.588235
range	3
mode	9

In the category of Organizational factors, the factor of commitment of top management, with the median of 9 and range 3 could be an important factor from the view of our participants.

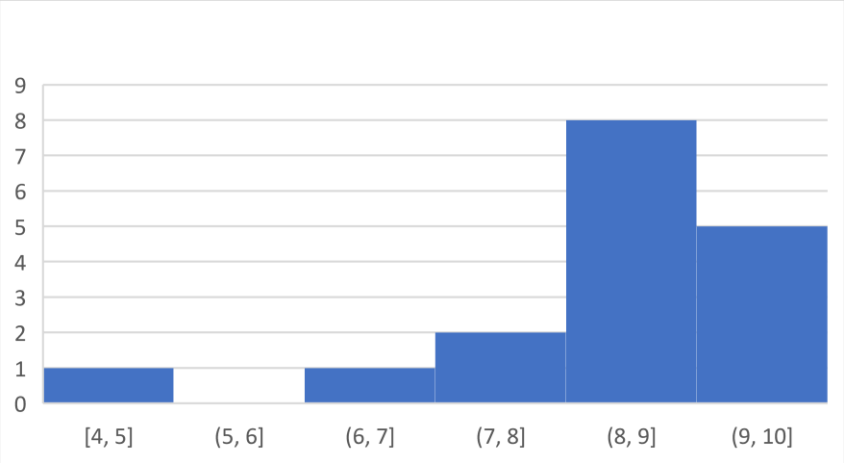

Figure 3.3 Identify new customers with all information needed

median	9
mean	8.764706
range	6
mode	9

The factor of identifying new customers with all information needed, could also be an important factor with the median of 9, mean of 8 and the range of 6 that shows data did not very dispersed in the chart. So, participants almost believed to put a high score on this variable. As we see in the chart, we had an outlier, means one person who put the score of 5, but as the most scores are 9 and 10, we conclude that except one representative of a SME, others agreed that this factor is important. So, we regret the outlier.

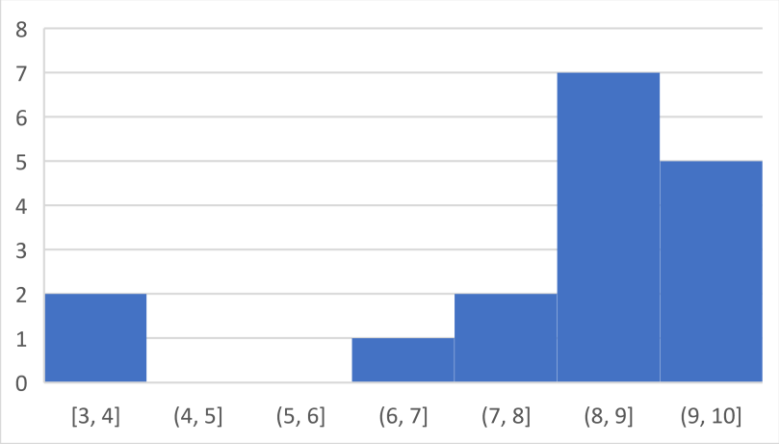

Figure 3.1 The company along with reaching new customers, should keep its attention to the old customers.

median	9
mean	8.411765
range	7
mode	9

The next factor, the company should keep its attention to the old customers, besides of reaching new customers, with the median of 9, mean of 8.41 and the range of 7, is also important for our attendees. Seventh of them have given the score of 9 to this factor.

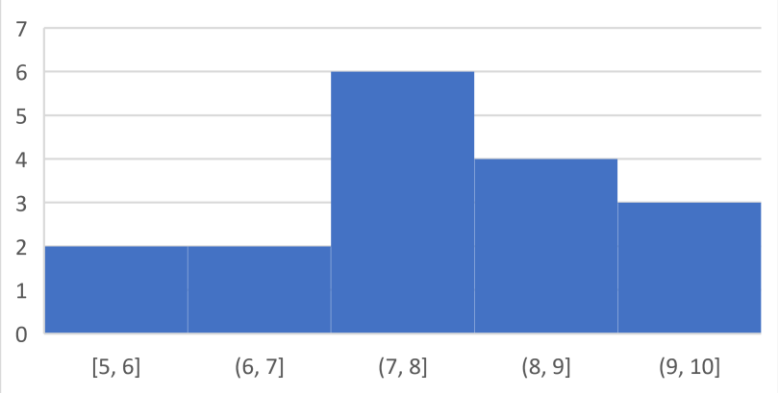

Figure 3.5 Communication among staff

median	8
mean	8.176471
range	5
mode	8

The factor of communication among staff, with the median of 8, mean of 8.17 and the range of 5 shows that almost the participants believed to put score 8. This factor could be important but not very much.

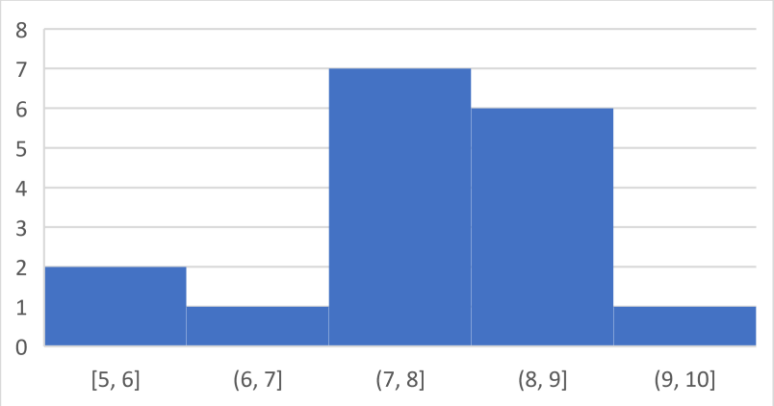

Figure 3.6 Clear definition of a CRM process between management and staff.

median	8
mean	8.117647
range	5
mode	8

The next factor is clear definition of a CRM process between management and staff. The median of scores was 8 with the range of 5. Like the previews factor, most of attendees believed that it could be important factor but not very much.

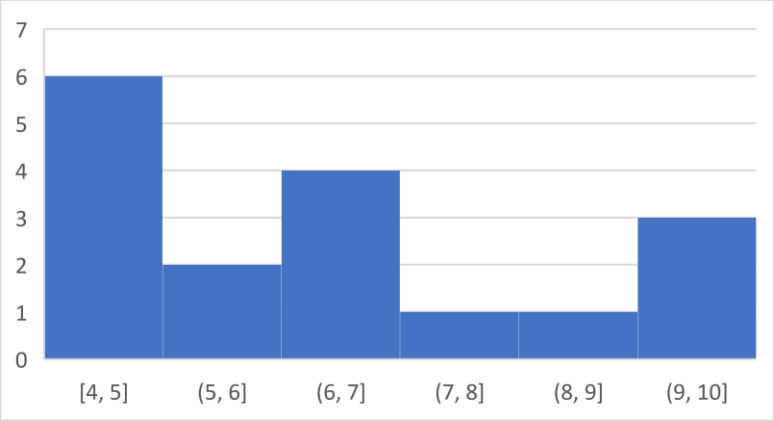

Figure 3.7 Training the customers.

median	7
mean	6.647059
range	6
mode	7

This factor, training the customers, shows the median of 7 and the range of 6, most of attendees thought it is not very important and so, put the score of 7, as the mode is 7.

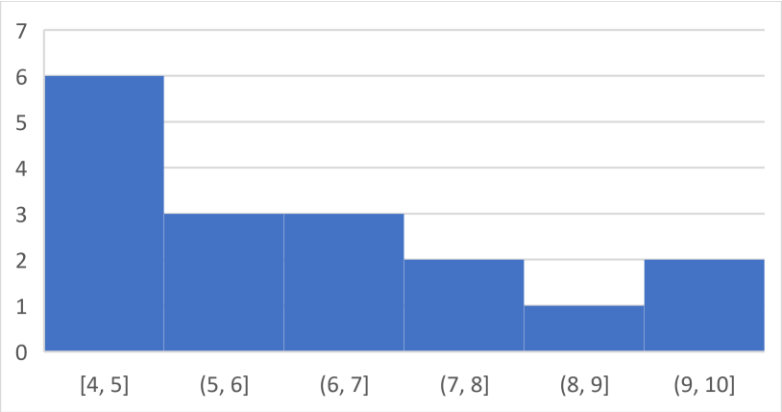

Figure 3.8 Motivation of staff.

median	6
mean	6.588235
range	6
mode	5

The nest factor, is motivation of staff that can have influence on the CRM system, with the median of 6 and range of 6. Most of participants believed it should get score of 5.

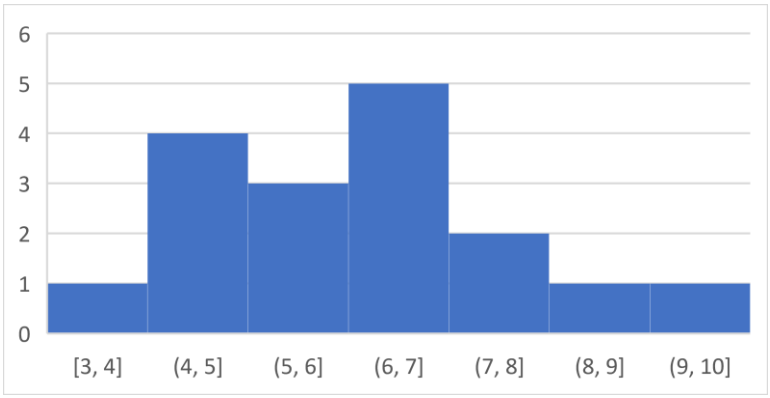

Figure 3.9 Culture of organization.

median	7
mean	6.529412
range	7
mode	7

And the last factor, according to attendees, is the effect of the culture of organization on implementation of the CRM system.

3.4.2 Analyzing the Strategic Variables

From the replies received by the Second category, strategic factors, we reached an order of the strategic factors that attendees have scored.

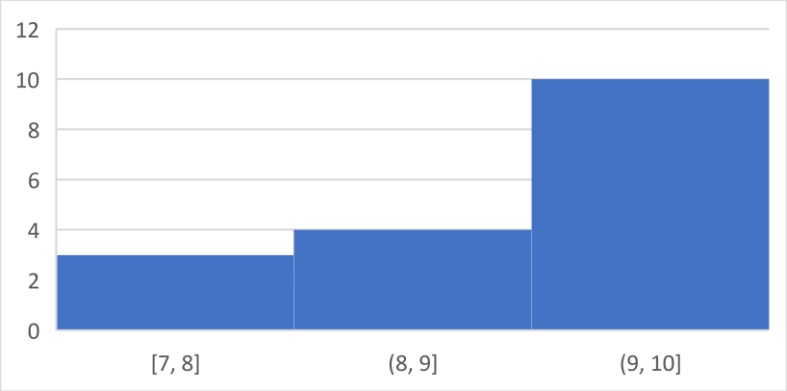

Figure 3.10 Considering the quality of information received from the customers.

median:	10
mean	9.352941
range	3
mode	10

For the factor of quality of information received from the customers, with the median of 10 and the range of 3, indicates that most of our participants believed to score 8, 9 and 10, and 10 of them put the score of 10. It can be very important.

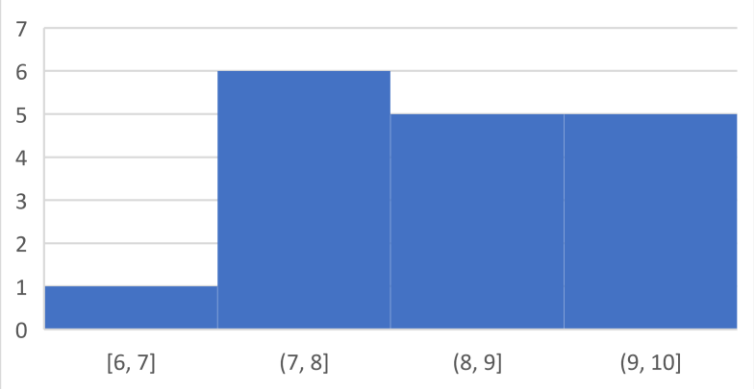

Figure 3.11 Alignment of IT and business operation.

median	9
mean	8.764706
range	4
mode	8

The scores factor, alignment of IT and business operation, are 8, 9 and 10 which attendees replies in the range of 4.

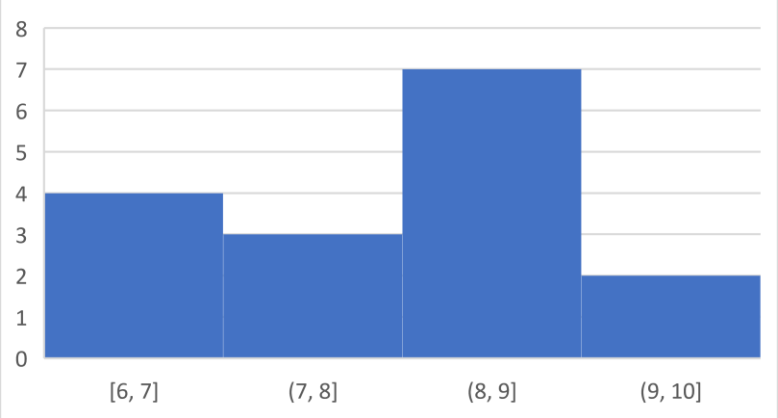

Figure 3.12 Customer satisfaction.

median	9
mean	8.375
range	4
mode	9

The next factor, is the customer satisfaction with the median of 9 and range of 4. So, in the shorter range, we have closer numbers and most of attendees scored 9.

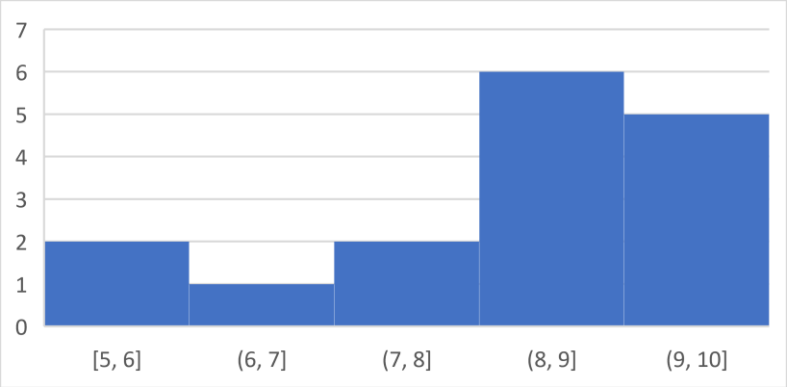

Figure 3.13 Awareness of strategic potential of IT

median:	9
mean	8.625
range	5
mode	9

This factor, awareness of strategic potential of IT, has a median of 9 in the range of 5. In this case, which the most scores are 9 and 10, is demonstrated that the SMEs believed the importance of this variable.

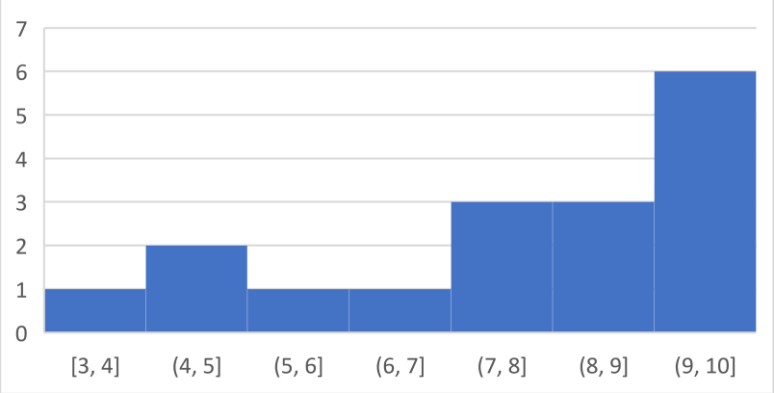

Figure 3.14 Customers' willingness to share data.

median	9
mean	8.058824
range	7
mode	10

The factor of customers' willingness to share data which six attendees put score of 10 on it, indicates that it is maybe an effective factor, but we have a range of 7. The data may not be consistent.

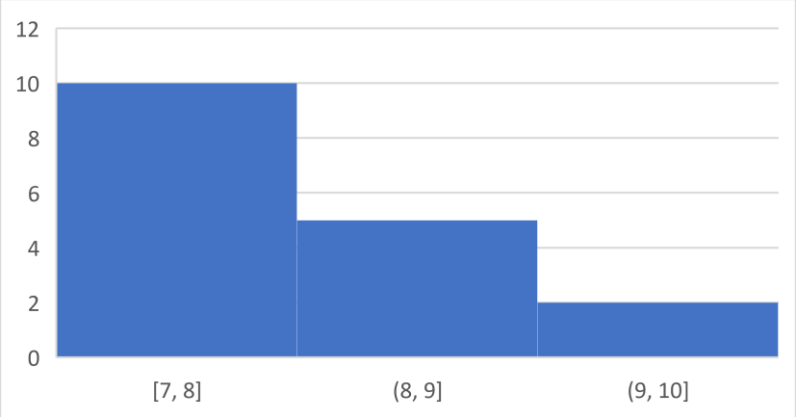

Figure 3.15 Top management support.

median	8
mean	8.411765
range	3
mode	8

Top management support, with median of 8 in range 3 and mode 8, demonstrate that 10 of SMEs, believed that this factor has 8 score.

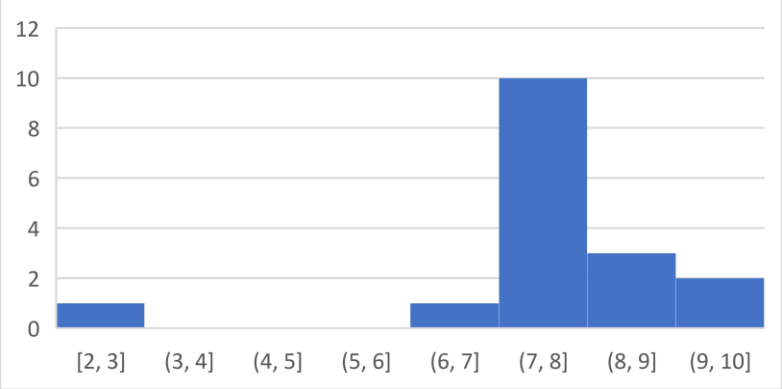

Figure 3.16 Decision making according to customer needs and customer behavior.

median	8
mean	8
range	8
mode	8

This factor, decision making according to customer needs and customer behavior with the median of 8 and range of 8, because of one data of 3, that is an outlier here.

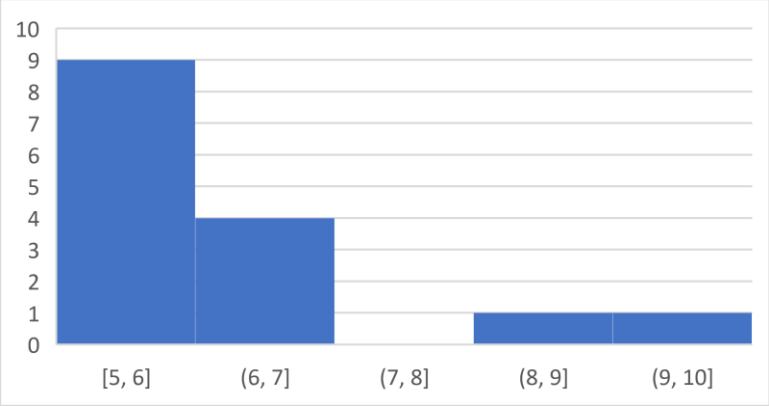

Figure 3.17 Managing the interdepartmental integration.

median	6
mean	6.466667
range	5
mode	6

Managing interdepartmental integration with the median of 6 and range of 5 and mode 6 indicates this variable does not have a remarkable importance in the point of view of participants.

3.4.3 Analyzing the Technical factors

By comparing the histograms of the third category, Technical variables, we can find the most important variables in the point of view of the sample group.

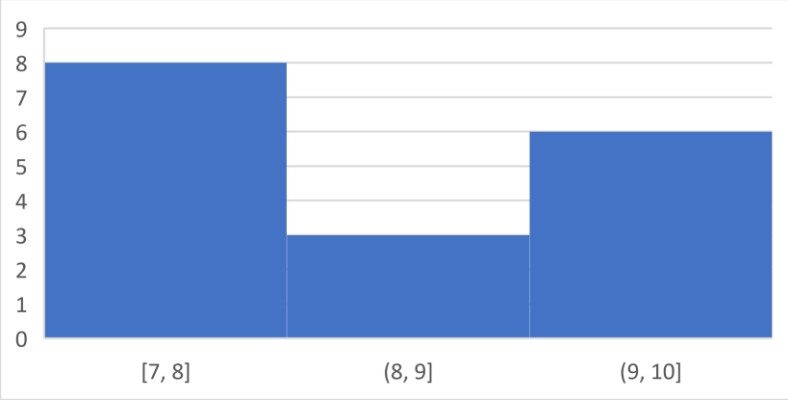

Figure 3.18 Having proper technical information.

median:	9
mean	8.192926
range	3
mode	10

Having a proper technical information, has a medina of 9 and range 3, the mode also is 10.

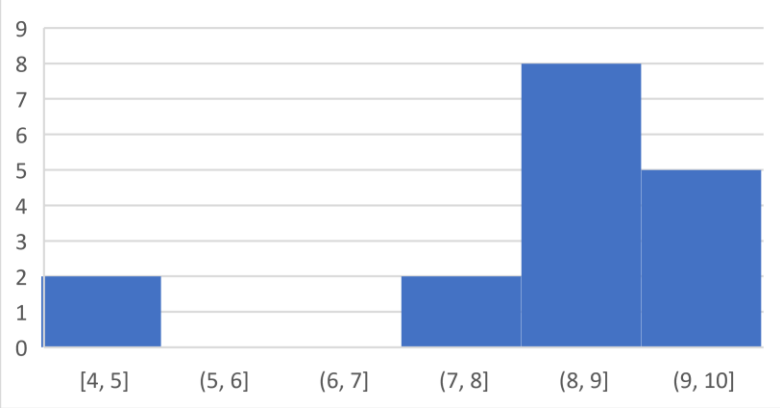

Figure 3.19 Management of information related to customers.

median	9
mean	8.588235
range	6
mode	9

The next factor, management of information related to customers, has a median of 9 in the range of 6 and mode 9. We can define an outlier here that is five, because these two data are far from other data.

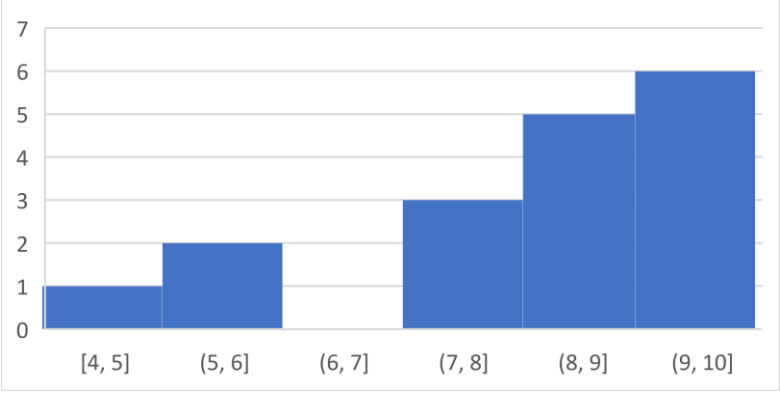

Figure 3.20 It's necessary to have an extensive IT support.

median	9
mean	8.529412
range	6
mode	10

The variable of being necessary to have an extensive IT support, has the median of 9 and range of 6 and a mode of 10, means majority of attendees left 10 score to this variable.

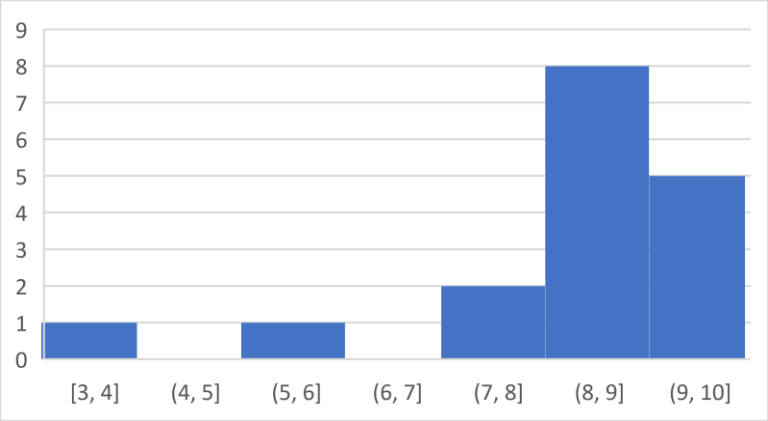

Figure 3.21 Strong customer service

median:	9
mean	8.647059
range	7
mode	9

Strong customer service has a median of 9 in the range of 7 and mode 9.

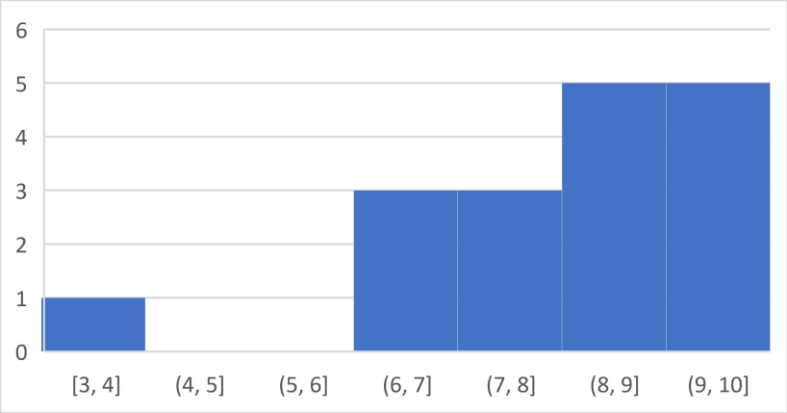

Figure 3.22 Integration of information systems.

median	9
mean	8.411765
range	7
mode	10

Integration of information systems, has a median of 9 in range of 7. Here, we also have an outlier of 4 that can be counted out of range of our data.

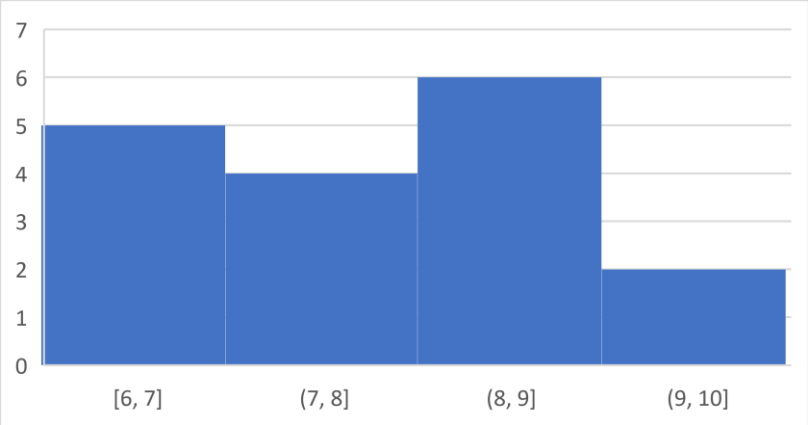

Figure 3.23 A program for an automated sale

mean	8.235294
median	8
range	4
mode	9

A program for an automated sale, has a median of 8 in the range of 4. We see here that participants have almost the same belief on this factor.

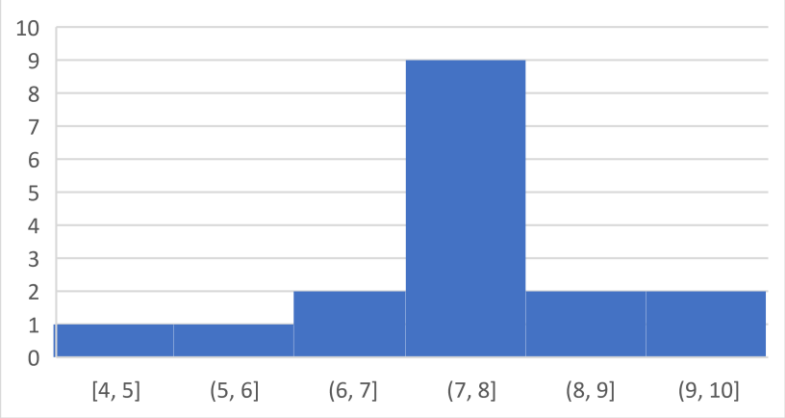

Figure 3.24 The possibility to customizing the software.

mean	7.882353
median	8
range	6
mode	8

The possibility to customizing the software, does not have a good median, in the range of 6 and mode 8.

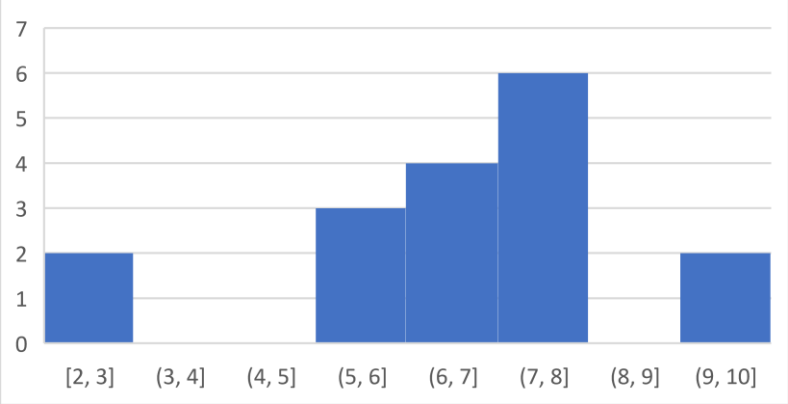

Figure 3.25 Designing an appropriate architecture.

median	7
mean	7
range	8
mode	8

The variable of designing an appropriate architecture, has a range of 8, so, the data are not very consistent. On the other hand, the median is 7 that is a middle score, not very good.

3.5 Application of a correlation matrix

There are three broad reasons for computing a correlation matrix:

1- To summarize a large amount of data where the goal is to see patterns.

2- To input into other analyses. For example, people commonly use correlation matrixes as inputs for exploratory factor analysis, confirmatory factor analysis, structural equation models and linear regression when excluding missing values pairwise.

3- As a diagnostic when checking other analyses. For example, with linear regression, a high amount of correlation suggests that the linear regression estimates will be unreliable.

3.5.1 Linear relationship between variables

We use the Pearson correlation coefficient to see the strength and also the direction of the relationship between each two variables.

When we define the correlation as a Strength, the correlation coefficient can be closer to +1. So, for the Pearson correlation, an absolute value of 1 shows a perfect linear relationship. When a correlation is closed to zero indicates some kind of no linear correlation among variables.

The sign of the coefficient defines the direction of the relationship. If one variable tends to increase as the other decreases, we see that the coefficient is negative, so the line that represents the correlation tends to be downward.

Chapter 4: Results and Conclusion

The purpose of this chapter is to summarize the collected data and the statistical treatment, and/or mechanics of analysis. The purpose of this research is analyzing and investigation on SMEs in the Region of Piedmont which use CRM process and their benefit and effectiveness of using CRM systems and impacts on customers. First, we should consider the resources required to implement a successful CRM system. For defining the resources required, we defined three categories which are the main resources and factors of using CRM systems in organizations. According to this concept, we described some related factors which we were supposed to investigate. Now, we knew what factors should be under our consideration. The organizational factors, contain Motivation of staff, Top management commitment, Communication among staff, Organizational culture, Training of customers, Clear definition of CRM system between management and staff, keeping old customers and identify new customers. Strategic factors contain Alignment of business and IT operation, Top management supports, Awareness of strategic potential of IT in CRM, Willingness to share data, Considering the quality of information received from customers, Decision making according to customer needs and customer behavior, Management of interdepartmental integration and customer satisfaction. And finally, Technical factors contain Customer service, Management of information related to customers, Information system integration, Having proper technological

information, Software customization, Extensive IT support, Sales automation and System architecture.

The object is investigating these variables as resources that affect a successful CRM in SMEs of the region of Piedmont. In the next step, we tried to find some SMEs in Piedmont which use CRM systems and asking them about the importance of our variables in their points of view.

Therefore, we designed a survey using our CSFs as main variables and asked our attendees about the impact of them in their SMEs with the level of influence on a successful CRM system. We sent surveys via Google Forms to companies and we received 17 replies and gathered the answers.

According to the responses we created histograms for each of the factors, then we could see in each of the category which of the factors has higher score, in other words, the level of effectiveness on a successful implementation of the CRM process.

4.1 Results received from Organizational variables

In the category of organizational variables, we found that the most important factor from the point of view of the sample group, is the factor of commitment of top management for a successful implementation of a CRM system. It shows the most of participants in the group, score the high value to this factor. In fact, the top management commitment gives such impression to the staff of the organization that in the case of any problem in using the CRM system, they act with confident and could count on top management support.

The second important factor, is identifying new customers with all information that have a positive impact on an implementation of a CRM system. So, SMEs should put their attentions to this factor to have a successful CRM system.

The third factor, is keeping the attention to their old customers along with attracting new ones. Keeping old customers in comparison with new ones, for a CRM system is very essential. By the system, it is possible to keep all of customers, new and old ones, updated and therefore, could be more productive.

The Fourth factor, is existing the communication among the staff for exchange of information. So, we see that our participants believe that the internal communication, has influence on improvement of a CRM system, as they can exchange their useful information for the CRM system.

The fifth factor, is a common definition of the CRM system between management and staff. They should understand this issue that what is the purpose of using a CRM system and this fact must be a common definition among all of them. In this way, they move in a certain direction to the organizational goals. Our attendees are aware of this goal and they know a common definition of a CRM system should exist among them.

The sixth factor, is the plan of the organization for training of customers. Most of the participants believe that it may not a very important factor as they score 4 and 5 to this question. We can consider it as a variable that exists in the middle of the range of important factors.

The factor of motivation of staff, stands in the seventh place because according to the chart, most of participants scored it 5. So, they believed using such a CRM system in an organization is not related to motivation of staff.

And in the organizational factors, the last factor is the culture of organization which our sample group does not agree it is an important factor for a good implementation of a CRM system.

From the results have been received from the first category, we find that the most important organizational variable from the view of our sample group that are attendees from seventeen SMEs in region of Piedmont, is Commitment of top management of the organization for a successful implementation of a CRM system. Their commitment on decisions have been made for choosing a proper CRM system, using it, and keeping their attention on improvement of productivity in the organization, should be considered more than any other variables.

Figure 4.1 Organizational variables

4.2 Results received from Strategic variables

The first factor of this category from the replies received from SMEs, is considering the quality of information received from the customers. In their point of view, the first and most important factor, with the mean of 10 and range 3, that show how it has been important for them, was the factor of considering the quality of information received from customers. Therefore, in a successful implementation of a CRM system, this factor plays a very considerable role.

The second one, alignment of business and IT operation, measure, monitor and track. So, this factor also has a very high impact on a CRM system. So, we understand that participants know this fact very well that the operations done in a CRM system is closely related to a proper IT knowledge.

The third factor, is customer satisfaction. It shows that companies, in our research, know that they should put their attention also on their customer satisfaction, in this way, they can implement and handle the CRM system in a proper manner.

The fourth factor, is awareness of strategic potential of IT in CRM. With the median of 9 and range of 5, we can see that this factor has a high importance as the sample group belief. This factor, refers to the aspects of implementation of IT that influence on the decisions of top management.

The fifth factor, is customer willingness to share data. In a CRM system, there should be a security that customers trust to share their data. The chart shows that our sample group has had a different belief on it (range 7). But still median 9 tells us it could be important for a good implementation of a CRM system.

The sixth factor, explains this fact that top management support as a strategic variable, may have an impact on a CRM system but not as much as the previews ones.

The seventh factor, is decision making according to customer needs and customer behaviors. Well, this factor could not reach a high score maybe because of this fact that our participants in the survey believe that designing a CRM system is something separate of like customer behavior and it is defined by some standards that most of software designers follow.

The eighth factor is management of interdepartmental integrations. The range 5 and median of 6 show that almost all participants believe this factor from the strategic point of view, is not very related to a successful implementation of a CRM system.

Figure 4.2 Strategic variables

4.3 Results received from Technical factors

The variable of having proper technical information, by each of staff is the most important factor. Therefore, for implementing a successful CRM system, in the category of technical variables, this factor is the first, from the level of importance.

We go to the second level variables, the variables of information received from any type of information systems should be managed by the CRM system and it's necessary to have an

extensive IT support with the median of 9 and range of 6, will be placed in the second level. They could be placed in a same level.

The variables of existing of a strong customer service to solve the problems of customers and integration of information systems with the median of 9 and range of 7 place in the third level. 8 of participants scored 9 to the variable of strong customer service, from their point of view, this variable creates trust in the customers and for other users. The variable of a program for an automated sale, makes CRM with higher quality in the fourth place. The median here is 8, it means that most of participants believe that this factor could be in the category of important ones. We see that six of them put the score of 9.

The possibility of customizing the software in the fifth place. 9 of participants put 8 score. In the range of six, the median is 8, two of them 9 and two of them 10. So, from their points of view, this could be important in some cases.

And finally, designing an appropriate architecture, with the median of 7 in the range of 8. We can consider 2 outliers with the scores of 2 and 3.

So, we could make an order for the variables which extracted from the scores that our sample group considered for each variable.

Therefore, we can interpret that the first technical variable that can have a strong effect on the implementation of a successful CRM system, is related to the staff and the proper technical information or knowledge of them.

What should be more considered here, is teaching the employees of an organization, who work with a CRM system, continuously. In this way, we can keep them trained during the time and this causes effective use of the CRM system and accordingly being more productive.

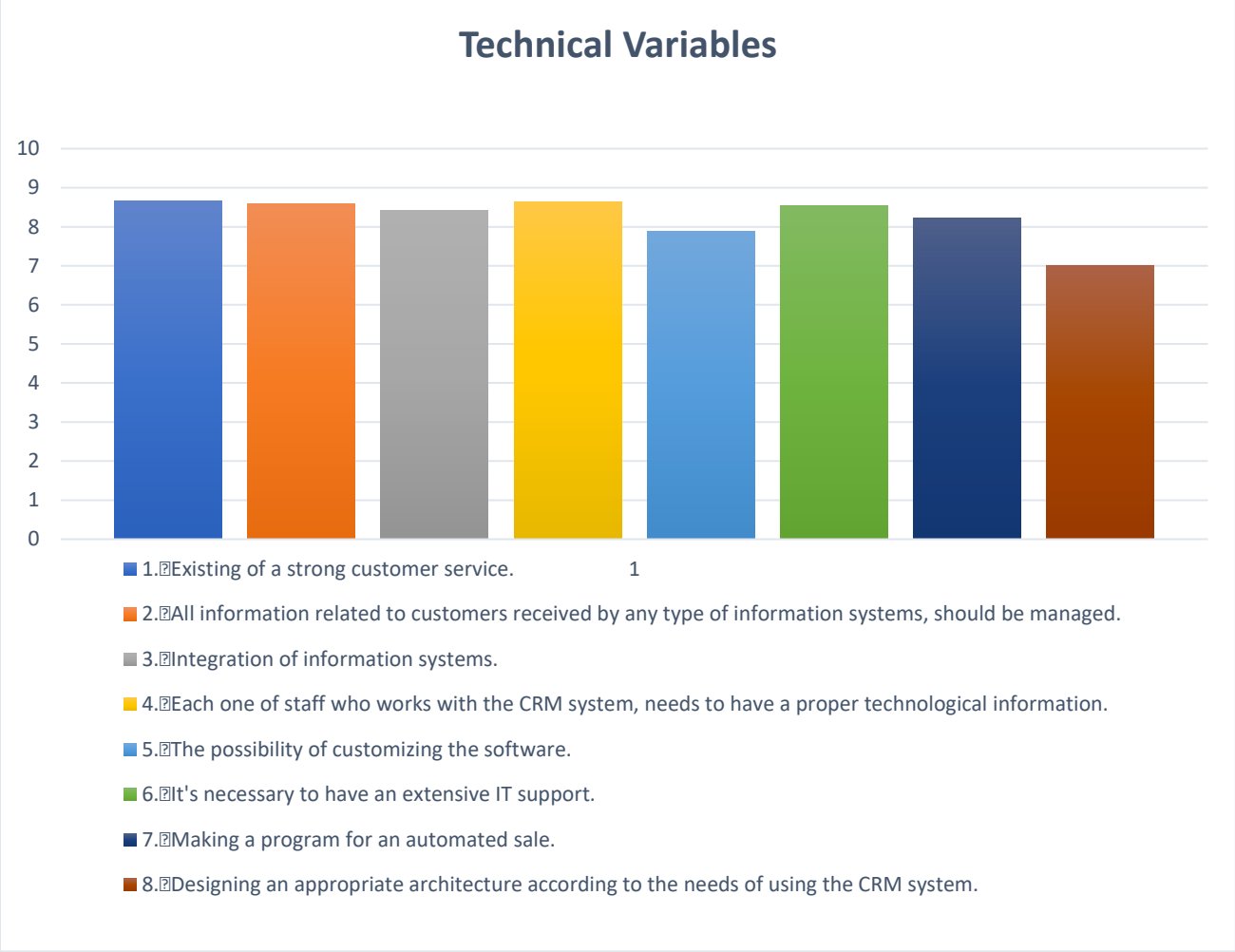

Figure 4.3 Technical variables

4.4 Correlation table of variables

. The motivation of staff has positive impact on a swization stay ie exchangefluence oncould demction of a Claching new CRM systeure, Monit for using creness of use trust of a qualified ir and custoffect the mrole in maks in anytimns, should mproved dnho works v possibility ɔusly, it's ne CRM progM system, i																														
1. The motivation of staff has positive imp	1																													
2. Commitment of the top management c	0.283397	1																												
3. Existing communication among staff in	-0.20828	0.1559884	1																											
4. The culture of each organization has in	0.438024	0.4973211	0.330679	1																										
5. If the organizations make the plan for t	0.655478	0.3828063	0.001223	0.425048	1																									
6. The management and staff should have	0.049067	0.2087455	0.13553	0.028393	0.487593	1																								
7. For improving a CRM system, the comp	-0.32454	-0.0038507	0.306668	-0.17555	-0.00747	0.836961	1																							
8. Identify new customers with all inform	-0.4131	0.2406094	0.419342	-0.22062	-0.00798	0.605261	0.7404	1																						
1. Alignment of business and IT operation	-0.13963	0.3263347	0.361264	-0.0971	-0.11601	0.257051	0.412614	0.350449	1																					
2. Support of top management is importa	-0.04212	0.3732836	-0.11633	0.30816	-0.11639	0.010399	-0.03117	0.22546	-0.08903	1																				
3. When in an organization, the managen	-0.46642	0.1095051	0.51321	-0.10488	-0.05037	0.660416	0.796934	0.866986	0.256685	0.313851	1																			
4. It's necessary for the organization to at	-0.49379	0.074147	0.582253	-0.22984	-0.04836	0.613306	0.789703	0.804471	0.508968	-0.01366	0.822719	1																		
5. It's very important for a CRM system to	-0.44111	0.4622012	0.483355	-0.08591	-0.15043	0.291471	0.479576	0.834575	0.394183	0.272121	0.698491	0.733137	1																	
6. The process of decision making accordi	0.208266	-0.0768295	0.052296	-0.02123	0.414237	0.799424	0.692286	0.219393	0.363684	-0.24878	0.397523	0.400157	-0.11622	1																
7. Management of interdepartmental inte	0.768412	0.5746483	-0.07456	0.764455	0.657375	0.414755	-0.11647	-0.196	0.145361	0.253613	-0.23521	-0.29283	-0.29917	0.662919	1															
8. Considering customer satisfaction, play	0.155453	0.4546989	0.239618	0.046677	0.250195	0.560132	0.513471	0.503269	0.320975	0.009156	0.177686	0.460515	0.498747	0.126111	0.362473	1														
1. Existing of a strong customer service to	-0.21304	-0.3191971	0.309308	-0.16291	0.095611	0.746608	0.844007	0.492319	0.343401	-0.26558	0.664056	0.659996	0.156475	0.817459	-0.11706	0.168763	1													
2. All information related to customers re	-0.33669	-0.0681005	0.375181	-0.24578	-0.02295	0.775848	0.934214	0.719797	0.478051	-0.19984	0.668374	0.775891	0.454973	0.608235	-0.08648	0.628963	0.837799	1												
3. Integration of information systems cou	0.053407	0.0331716	0.173106	-0.18086	0.283297	0.758489	0.801149	0.492566	0.473922	-0.31985	0.446733	0.613333	0.323364	0.774761	0.058732	0.696905	0.729414	0.765801	1											
4. For a successful implementation of a CI	-0.33473	0.3011336	0.669438	0.125685	-0.14371	0.071605	0.162835	0.262243	0.543164	0.027663	0.394405	0.481092	0.445821	0.029535	-0.08551	-0.0808	0.170427	0.237253	0.013602	1										
5. To have a practical CRM system, the pc	-0.36828	0.3388889	0.49349	0.132005	0.14857	0.518117	0.563488	0.794981	0.427941	0.347798	0.79302	0.781256	0.747926	0.204879	-0.01759	0.429292	0.434463	0.510754	0.371521	0.33744	1									
6. To work with the CRM system continuc	-0.26997	-0.2411966	0.584592	0.110859	0.069033	0.23455	0.306237	0.148766	0.366676	-0.23601	0.59841	0.523434	0.109113	0.436432	-0.25935	-0.28402	0.635581	0.326977	0.270384	0.594462	0.435807	1								
7. Making a program for an automated sa	0.04708	0.2115166	-0.18577	0.028277	-0.01472	-0.06574	-0.23174	0.034638	0.14681	0.460294	0.118987	-0.0311	0.151375	-0.18872	0.2466	-0.04006	-0.11071	-0.15856	-0.29695	0.285905	0.211517	0.121814	1							
8. Designing an appropriate architecture	0.143164	-0.2904738	0.263625	0.267516	0.403713	0.447767	0.35793	0.020481	0.027778	-0.13935	0.397706	0.322191	-0.13019	0.665133	0.149946	-0.24032	0.669633	0.263752	0.479632	0.074444	0.301232	0.750813	-0.05285	1						

Figure 4.4 Correlation table of variables

In our correlation table, we see some factors have negative relation with each other. It shows that there is no correlation between them.

In organizational variables, the negative correlations are between variables communication among staff in the organization and the motivation of staff. In this analysis, I mentioned the stronger correlations among variables.

Keeping the attention to the old customers with the motivation of staff, also keeping the attention to the old customers with the commitment of top management, Keeping the attention to the old

customers with the culture of the organization, keeping the attention to the old customers with the plan for training the customers have negative correlations.

The factor of identifying new customers with all information needed with the motivation of staff, the culture of organization and plan for training the customers also has a negative correlation.

In the category of Strategic variables, the factor of alignment of business and IT operations like measure, monitor and track has negative correlation with factors of motivation of staff, the culture of organization and plan for training the customers.

The factor of supporting of top management with the factors of motivation of staff, existing communication among staff, plan for training the customers, keeping old customers and the alignment of IT and business operations has negative correlations.

The factor of awareness of using a proper IT application for running a CRM with motivation of staff, culture of the organization and plan for training customers has negative correlation.

The factor of attracting trust of customers has negative correlation with motivation of staff, culture of the organization, plan for training the customers and support of top management.

The factor of using qualified information of customers has negative correlation with factors of motivation of staff, the culture of organization and plan for training customers.

The factor of making decision according to customer behavior and customer needs has negative correlation with commitment of top management, the culture of organization, support of top management and using qualified information of customers.

The factor of managing the interdepartmental integration with the factors of existing communication among staff, keeping company attention to old customers, identifying new customers with all information needed, awareness of using a proper IT application, attracting trust of customers and using qualified information of customers has negative correlation.

The factor of considering customer satisfaction does not have negative correlation with any of variables.

In the category of Technical variables, the factor of existing a strong customer service with the motivation of staff, commitment of top management, culture of the organization, support of top management and managing of interdepartmental integration has a negative correlation.

The factor of information related to customers received by any type of information system with factors of motivation of staff, commitment of top management, the culture of the organization, plan for training the customers, support of top management and managing of interdepartmental integration in the organization has negative correlation.

The factor of integration of information systems with the factors of culture of the organization and support of top management has negative correlation.

The factor of each of staff should have a proper technical information has negative correlation with the factors of motivation of staff, plan for training customers, managing of interdepartmental integration and considering customer satisfaction.

The factor of the possibility of customizing the software has negative correlation with motivation of staff and managing the interdepartmental integration.

The factor of having an extensive IT support with the factors of motivation of staff, commitment of top management, support of top management, managing interdepartmental integration and considering customer satisfaction has negative correlation.

The factor of making a program for an automated sale, has negative correlation with existing communication among staff, plan for training customers, common definition of a CRM system, keeping attention to old customers, attracting trust of customers, making decision according to customer behavior and customer needs, considering customer satisfaction, existing strong customer service, information related to customers received from any type of information system should be managed by the main CRM system and integration of information systems.

And the last factor, designing an appropriate architecture according to the needs of using the CRM system, could be the first step, with the factors of commitment of top management, supporting of top management, using qualified information of customers, considering customer satisfaction and making a program for an automated sale has negative correlation.

4.5 Conclusion

When top management of the company increases its commitment in the way of right direction of implementation of a CRM system, the motivation of staff increases and will have positive effect on the good implementation of the CRM system. We can expect the culture of the organization also increases.

When the alignment of business and IT operations increases, the commitment of top management will be increased accordingly. By increasing in the business and IT operation alignment like measure, monitor and track, we can see making a plan for training the customers will be decreased. The company will also increase its attention to keep its old customers.

While the interdepartmental integration has a good manager, it increases the motivation of staff and could be led to a strong implementation of the CRM system.

We see a strong positive correlation between management of interdepartmental integration with the culture of the organization. By increasing in the level of management of interdepartmental integration, the organization put more effort on the plan of training of customers and also the process of decision making by keeping its attention to customer behavior and customer needs will run more.

When we have a stronger interdepartmental integration management, it increases the motivation of staff and consequently, more impact on a good implementation of a CRM system, it also can make a stronger organizational culture and may lead to create a plan for training of the customers to improve the CRM system. On the other hand, it makes the process of decision making easier according to customer behavior and customer needs.

Increasing the customer satisfaction shows that there is a common definition of a CRM process among management and staff, it also demonstrates that the company is successful to keep its old customers along with attracting new ones, so, they can better identify new customers with all information needed and it will be very important to use qualified information from the customers. Therefore, to be more practical, it’s very important to increase customer satisfaction.

When there is a common definition among management and staff, it leads to improve the customer service. Existing a strong customer service for a CRM system, have a very positive correlation

with keeping old customers along with attracting new customers. It also helps the process of decision making according to customer behavior and customer needs.

By increasing the data received from any type of information systems and make an integration with the CRM system, the company could have access to customers data precisely and finally keep old customers. On the other hand, it helps customer service to provide more successful support to customers, running a better CRM system. All of this process exists when in the company there is a common definition of the CRM process. In this way they can identify new customers with all information they need.

Having a proper IT knowledge for those who work with the CRM system, could be improved when the staff have communication in the organization, it improves alignment of business and IT operations, like measure, monitor and track.

The possibility of customizing the software increases especially when the number of total customers includes the old and new ones increases, and we can say it also increases by using proper IT applications. It depends on how the company can attract the trust of customers, then they share their data willingly.

Using a program for an automated sale, demonstrates that it needs support of top management more than any other variables. We also can say that how much we have increasing in the instalment of automated sale, we will have decrease in communication among staff, this may because of transferring data directly into the application and though do not need to communicate face to face among staff.

When we decide to use an appropriate architecture for the CRM system, it means along with using this system, staff should have a enough knowledge according to it, and whatever we have a stronger architecture, we need more knowledge accordingly. The other point is existing an extensive IT support, in this way, we will have the CRM system continuously.

Therefore, we have the most important factors extracted from three categories, which are commitment of top management, identifying new customers with all information, keeping the attention to old customers beside attracting new ones, the quality of information received from the side of customers, alignment of business and IT operation, measure, monitor and track, customer satisfaction, having proper technical information, data received from any type of information

system and the necessity to have an extensive IT support. What we reach from this category, explains us how a CRM system implements in a right way and on the top of variables, which of them are the most important ones. These variables demonstrate their effects specially when we investigate SMEs on benefits because their roles are more remarkable.

The access to CRM systems has become increased via any kind of devices by users and along with that their cloud-based solutions have increased. With all the benefits I pointed out during this research, companies are going to increase their investment in such these systems to raise their sales and benefits accordingly.

Today CRM systems have become the greatest software market in the world. The results received from a lot of researches show that using CRM systems have succeed to raise the sales of the products and services especially in SMEs. The difference between using and not using a CRM system in companies, could be seen in the level of being productive of companies. CRM systems make the market more competitive and companies more productive.

References

[1] R. Reicher and N. Komaromi and A.Szeghegyi, «The possible success factors of introduction of CRM system at Hungarian SMEs,» 2015.
[2] M. Balaram and B. Adhikari, «Managing Customer Relationship in Service Organizations, » 2009.
[3] J. Ylinen, «Managing Customer Relationships, » Centria University of Applied Sciences, 2014.
[4] F.Buttle, «Customer Relationship Management,» chapter 9, managing the customer lifecycle: customer retention and development, first edition, 2003.
[5] S. Yadav, «Customer Relationship Management is the need of today, » International Journal of Humanities, Arts, 2016.
[6] D. Matt and E. Raugh, «SME 4.0: The role of Small – and Medium – Sized Enterprises in the Digital Transformation, » 2020.
[7] R. Petasnoro, «How to motivate salesforce to use CRM system efficiently through gamification elements, » 2017.
[8] O. Ertosun and Z. Adiguzel, «Leadership, Personal Values and Organizational Culture, » 2018.
[9] M. Pohludka and H. Stverkova, «The Best Practice of CRM Implementation for Small and Medium-Sized Enterprises, » 2019.
[10] O. Berko and O. Damoah, «Strategic factors and firm performance in an emerging economy, » 2013.
[11] G. Lupyan, Online data collection: The good, the better, and the advantages, 2017, « Online data collection: The good, the better, and the advantages – Psychonomic Society Featured Content»
[12] K. Sostek and B. Slatkin, «How google surveys work, » 2018.
[13] N. Vasantha Raju, «Online survey tools: A case study of Google Forms, » 2016.
[14] «Introduction to Data Analysis Handbook, » Migrant & Seasonal Head Start Technical Assistance Center, 2006.
[15] Interpret the key results for Histogram, « Interpret the key results for Histogram - Minitab Express, » 2019.
[16] Shape, Center and Spread of a Distribution, « Shape, Center, and Spread of a Distribution (emory.edu), » The department of Ma`thematics and Computer Science, Oxford college.

List of SMEs participated in this research

[1] Newired srl. https://www.newired.com/

[2] Slow Food. https://www.slowfood.com/

[3] ISAG srl. https://www.isag.it/it/

[4] MAINA PANETTONI Spa. https://www.mainapanettoni.com/it/homepage

[5] AL.CE srl. https://www.al-ce.it/

[6] DPV S.p.a http://dpv.it/en/

[7] ICONA Group. http://www.icona-designgroup.com/

[8] Fantini. https://www.fantini.it/

[9] ERA S.r.l https://www.eraspares.com/

[10] Dentista.tv https://www.dentista.tv/

[11] ABC Farmaceutici Spa. http://www.abcfarmaceutici.it/

[12] DAMOTEK. http://www.vanzettiequipment.com

[13] SOLUZIONI EDP srl. http://www.soluzioniedp.it

[14] IGC srl. http://www.igcsas.it/

[15] BEOND srl. https://www.linkedin.com/company/beondsrl/about/

[16] CARIOCA. http://www.carioca.com

[17] Villa Crespi. https://job.antoninocannavacciuolo.it/villa-crespi/