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ERP-BASED MANAGEMENT OF THE GARMENTS INDUSTRY

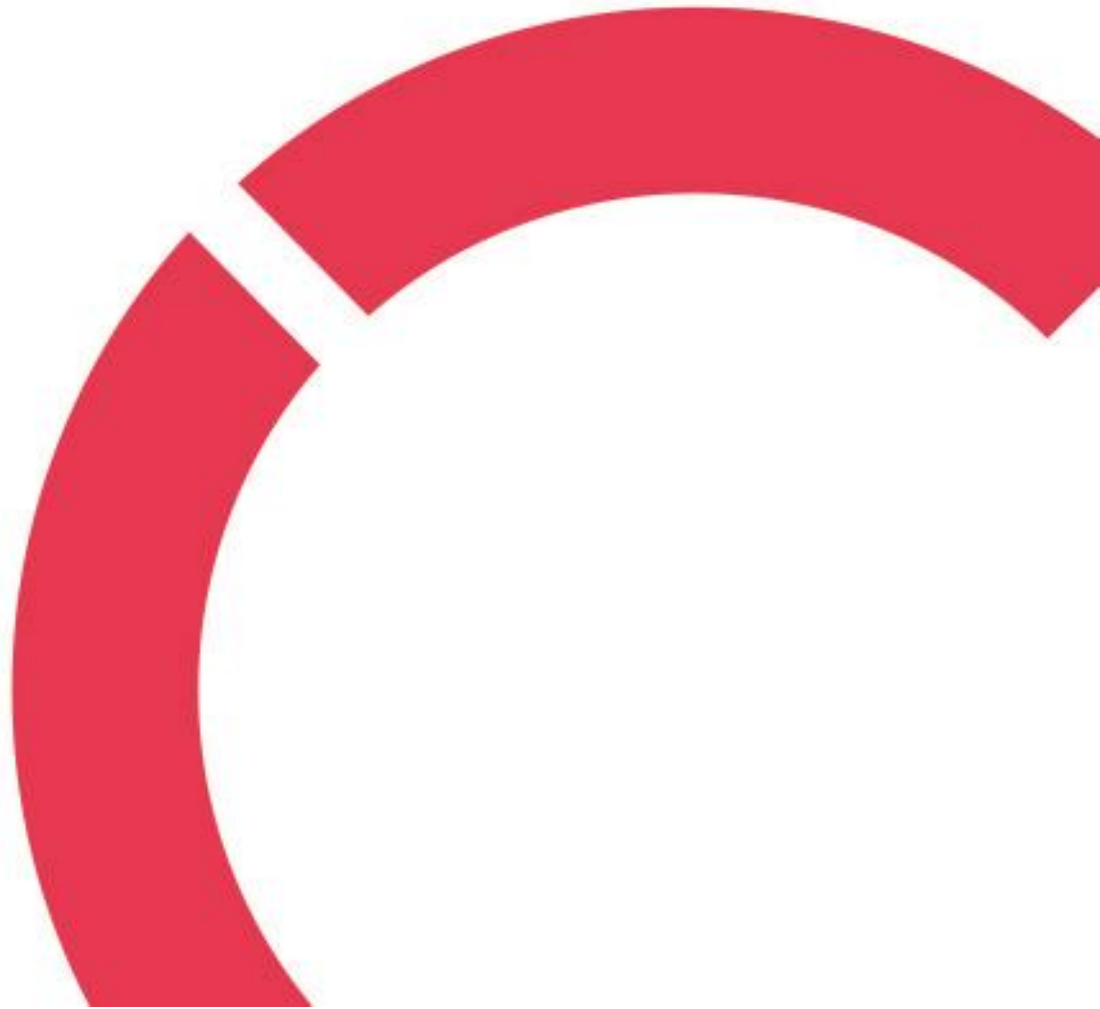
Using ERP can make garment industry management more successful

Thesis

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ABSTRACT

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| Name of thesis ERP-BASED MANAGEMENT OF GARMENT INDUSTRY. Using ERP can make garment industry management more successful | | |
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| <p>The management of the garment industry links to the production of elements, gather and manage the resources plus integrate the resources in some efficient manner for accomplishing goals. This paper is about implementing ERP in garment industry. Through data provide by ERP the firms can make major decisions. The product and business criteria are quite different in the fashion industry. This is imperious to have ERP system, which is designed specifically to handle the inventory items, pricing, business structure, campaign management plus purchase management.</p> <p>ERP characteristics include the system which have large amount of data, it uses the approach of top-to-bottom approach which permits the management of production chains to be alert, which the comprehensive management of ERP system is realized. ERP system has created a better hold on the chains of production in different firms.</p> <p>In this paper I have discussed what are potential benefits of using ERP in clothing firm. The data in this research was extracted from different academic sources and it included various other sources like reports etc. the findings and recommendations were discussed in the end of the research paper.</p> <p>Finally, in today's hyper-connected, data-driven environment, manufacturing businesses can benefit from ERP systems if employees receive adequate training and accurate data since the usefulness of ERP systems directly depends on data quality.</p> | | |

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| <p>Keywords Communication, ERP, garment industry, innovation, implementation, management, manufacturing, resource, technology</p> |
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CONCEPT DEFINITIONS

| | |
|---------------|----------------------------------|
| ERP | Enterprise Resource Planning |
| BI | Business Intelligence |
| BOM | Bill of materials |
| MRP I | Material Requirements Planning |
| MRP II | Manufacturing Resource Planning |
| CRM | Customer Relationship Management |
| SOA | Services Oriented Architecture |
| SaaS | Software as a Service |
| POS | Point of sale |

ABSTRACT
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1 INTRODUCTION

An ERP application integrates business processes of different departments and functions in an organization through a centralized application. Using the information provided by ERP, we can make all major decisions. Business and product criteria are complex in the fashion industry. It is imperative to have an ERP explicitly designed to handle inventory items, pricing, business structure, campaign management, and purchase management. ERP is a software tool used to run a business. It was initially called manufacturing resource planning (MRP) software, which automated keeping production lines stocked with materials to meet orders as they arrive.

Manufacturing enterprises' product quality is also improving with people's living standards. To compete in the fierce market, research on cost management has become a focus for manufacturing enterprises. A modern ERP system plays a crucial role in the cost management of manufacturing companies. ERP system has the advantages of high efficiency, systematic strength, multiple values, and low error rate.

In ERP, information is entered about various transactions occurring in a firm's department; and that information is acquired as reports for the operational and management teams to look at and act as a necessary platform. It can be used as a one-stop shop for obtaining information from various textile departments.

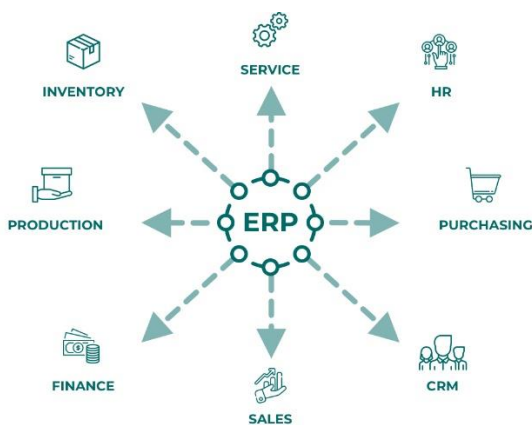


FIGURE 1. Different Departments of ERP (adapted from Vilmate LLC 2019)

For instance, when the merchandising department receives a new shirt order, they enter it into the computer system. The exact order can be opened by the planning department to use the system to plan the distribution of materials, people, and machines and to build an online production order. The procurement department gets access to the created production order. They will use ERP software to determine whether materials are available in the retail department and then place an order with the vendor. The material will be delivered by the order, and the inventory department will input it into the ERP system.

This example shows that ERP has created better control of the production chains of various companies, enabling the production chains to play an essential role in the enterprise's development. (Ma 2019.)

ERP software empowers the sales department by offering vital information about the customer irrespective of time, device, and place. With the help of purchase behaviors and looking at the stage of the journey of the buyer client is in, administration can design suitable strategies, board exact audience for certain operations, consider specific actions of follow-ups.

ERP properly equips management to manage the vendor and customer queries, this is due to the automated inventory and manufacturing processes. The teams of customer information can have instant access to the information of the customer and resolve issues of supply chain on the go too. This software will help in upholding consistency in purchasing behaviour from trade business, tracking online dealings, manage the times of deliveries and calculate the general sales depending on the changing margins. (Wijewardhana, Weerabahu, Nanayakkara, & Samaranayake 2020.)

The main aim of my research here is to examine how the textile and garment industry can use modern ERP software to optimize manufacturing processes. Total quality control and just-in-time manufacturing are two operational goals that have been combined during the previous two decades. Companies are understanding that improving quality may lead to lesser inventory, which aids in the detection of concealed quality issues. Interfirm benefits may be seen in two key areas: supplier and customer relationship management. The thesis is based on the following research questions:

What is the role of ERP system in the manufacturing industry?

What are the potential benefits of utilizing ERP software for clothing companies?

The research is carried out in analysing the potential benefits of ERP in garment industry along with analysing the role of ERP in manufacturing industry. They also discuss the internal and external conflicts plus difficulties faced by the ERP implementation process.

The qualitative technique will be employed in this study, and data will be acquired from two types of data sources: primary and secondary sources. Primary data sources are data received directly from informants, whereas secondary data sources are documents, books, literature, and internet surveys obtained indirectly from informants. Data will be gathered from the garment and textile industries. The second stage of this study will find a way to contact the management team via social media platforms like WhatsApp, Facebook, and LinkedIn, as well as email, and request that they take part in an online survey.

2 THEORETICAL FRAMEWORK

Manufacturing businesses of all magnitudes can take advantage of ERP systems. It is compulsory for latest industrial companies to utilize answers and devices that can aid them accelerating the growth and establish data-driven values to make knowledgeable decisions.

Today's hyper connected and data-driven environment makes the power of analytics and big data incalculable. ERP frameworks not only improve production and distribution, but also offer a 360-degree view of the entire business by integrating diverse internal processes.

In order to implement the right manufacturing ERP system, we need to consider several factors, including our budget, implementation objectives, deadline, and required structures. Enterprise Resource Planning can be extremely effective venture for many businesses. (ERP For Manufacturing: Importance, Features and Benefits | SPEC INDIA 2021.)

Seethamraju & Sundar found that, despite ERP systems being designed to offer an enterprise-wide solution, many companies maintain separate legacy systems for certain (critical) aspects of their business (eg: laboratory quality control, project management, payroll) and interface them with their ERP system on a point-to-point basis, as they don't feel that the standard ERP modules or industry vertical solutions are adequate. Ultimately, ERP application quality comprises of system configuration, project management, and administrative willingness consisting of leadership engagement and organizational fit determining the ultimate success of the ERP program. Zhu et al. suggest that leadership involvement and organisational fit positively affect ERP post-implementation success. (Waters & Waters 2013.)

2.1 ERP as a success factor of garments industry

The textile industry's management is largely involved with yarn, cloth, and apparel design, production, and distribution. The processing methods and techniques involved in producing clothes on a big scale for commercial reasons on an industrial level. For both Asia and Europe, the textile and garment industry are an important economic, social, health, and environmental sector. In Asia's fast-rising economy, the textile and garment sectors constitute a single source of development.

Garments industry uses heavy machinery operations requiring effective operations of complicated manufacturing procedures. Therefore, Bangladeshi companies often utilize ERP systems for their operations. Here, we will discuss Ha-Meem Group and Squares fashions limited to know their utilization.

2.1.1 Ha-Meem Group

Ha-Meem Group is an ideal example of Bangladeshi company effectively using ERP. Currently, it is using framework designed by Logic Software Ltd. a Bangladeshi software company creating a dynamic ERP solution. This company has chosen this ERP software due to its availability to promote business and process automation and it keeps continuation of development helping to face the Industry 4.0 challenges.

It utilizes ERP systems to gather and consolidate key business data and aid organizations smoothly operate lean and well-organized operations. These ERP mechanisms combine essential commercial functions such as finance, project management, industrial, inventory and order management, marketing, human resources, customer communication, and sales.

2.1.2 Squares Fashions Limited

Squares Fashions Limited is one of the largest manufacturing Bangladeshi companies. It has hired qualified and skilled employees specializing in Enterprise Resource Planning (ERP) business process management software procedures to enhance the performance of an organizations' inner company processes.

This company prioritises ecological harmony, the preservation of nature, and sustainable development. In order to complete the biological treatment of by-products, it established a Bio-logical Treatment Plant, Comprehensive Energy Saving Program, and Effluent Treatment Plant (ETP) in its dye house. The local ecosystem has been delicately preserved, and the entire industrial site blends in beautifully with the magnificent landscaping in its surroundings.

The company manufactures a variety of ready-to-wear knit garments, including polo shirts, t-shirts, tank tops, pants, hooded jackets and cardigans, sportswear, undergarments, men's and women's clothing, children's clothing, and circular knit fabrics in open as well as tubular widths and in various weights. The employees of this company have practiced all the required skills needed for procurement workers like analytical approach, negotiation capability, communication power, relationship management tools, teamwork, tech Savvy, Change Management Skills etc.

2.2 Supporting Theories

There are some supporting theories are given below.

2.2.1 Contingency Theory

Contingency theory states that there is no one optimal technique to operate a business structure or a team for making choices. Conversely, the finest way of action is dependent on both the internal and external situations. Leaders implementing these theories are flexible in their decision-making and selection of precise approaches to impart changes in the setting at a particular point in the organizational operation.

With regard to effective business strategy, enterprise structure, and ERP systems, the new contingency model, the DERG-ERP, serves as a guide for ERP suppliers, information systems management, and operations managers. (Clegg & Wan 2013.) I will study the processes of my selected Bangladeshi companies that have contributed to a large amount of research related to the post-implementation design, considering SMEs and reporting structure, objectives, and various success measures using contingency theory as the backdrop.

2.2.2 Resource Based View

Resource Based View states that a company's capability to sustain a competitive superiority depends on its access to valued, unique, and non-replaceable operational resources. (Barney 1991.) Therefore,

the ability of companies to produce or get these properties has an influence on their efficiency and affordability compared to competitors.

An ERP upgrade is a costly endeavour and needs an extensive evaluation and execution time. It requires a significant amount of additional expense in re-training users and hiring outside consultants. An update project may interfere with regular corporate operations, which will result in some financial losses. Additionally, an ERP upgrading endeavour needs a thorough grasp of current business processes.

Here based on the resource-based view (RBV) theory of our selected companies, I will assess a research model connecting three determinants; ERP use, cooperation, and data to explain the ERP value in three effects individual productivity, and management control. I will do this by the sample population of the two Bangladeshi companies' expert in textile manufacturing.

2.2.3 The dynamic capabilities theory

The dynamic capabilities theory states that senior executives of prosperous companies should develop plans for acclimatizing to stark discontinuous changes while keeping minimum capability benchmarks to attain their organisations' competitive survival. Whenever an industry historically depended on a particular manufacturing process adopts a new technology such as ERP, then it is not always easy to change this procedure on a short notice. (Chang et al. 2015.) Therefore, managers should adjust their own procedures to get maximum out of their current resources while also developing plans for procedural changes in the future as the resources age. Similarly, the theory highlights internal capabilities rather than just concentrating on external economic motivators when defining changes.

This study first assesses the tactics employed by the selected Bangladeshi textile companies to carry out organisational change using the notion of dynamic capabilities. Process, position, and path are the three primary constructs of dynamic capacities. (Teece et al.1997.) Process looks at an organization's resource integration, reconfiguration, and organisational learning capacity. Position refers to the important assets, such as technological, reputational, structural, systemic, and market assets, that can strengthen a firm's competitive advantages. Last but not least, path is used to determine the future business activities' directions by looking at path dependencies or technical potential.

2.3 Research Objective

Firstly, the objective of my thesis is partly exploratory since I want to evaluate an ERP deployment in the context of key success criteria and comprehend the circumstances surrounding an ERP implementation. Since my research has a well-defined objective and I need to have a clear picture of the phenomenon I want to collect data on before I can begin, I am partially descriptive. Additionally, it has an explanatory purpose in that it occasionally looks at a situation or a problem to shed light on the correlations between various variables. However, most of it is descriptive.

Secondly, the purpose of this research is to learn about the operation of ERP systems in the manufacturing industry and the possible benefits of implementing ERP software for textile enterprises.

Finally, the purpose of this research is also to study an ERP system for textiles and apparels utilizing a single database that allows departments to communicate with each other without maintaining multiple copies of data. With the software, textile production is better managed in critical areas such as raw materials, finance, inventory, quality, plant management, and so on. All these functionalities can be interconnected and interoperable. (Samant 2018.)

3 ENTERPRISE RESOURCE PLANNING

The basic objective of this chapter is to discuss the secondary literature sources regarding ERP (Enterprise Resource Planning) and its effectiveness in the Bangladesh textile industry. It will carry out detailed discussion on the ERP history and how it has progressed in the Bangladesh textile industry.

3.1 Introduction of ERP

ERP also known as Enterprise Resource Planning is a linked software framework built to assimilate the main serviceable components of a company's business processes into one united system. ERP software regulates, streamlines, and assimilates business processes such as human resources, finance, purchasing, supply, and other related divisions. (Buck-Emden 2000.)

In 1990, Gartner introduced the terminology ERP to define the manufacturing resource planning (MRP II) and material requirements planning (MRP) that extended outside manufacturing into other zones of the company typically finance and human resources. Major components of ERP are material management, distribution and sales, planning of production, management of production, quality management, costing, HR/payroll and finance and controlling.

3.2 Historical Perspective of ERP

The ERP history is divided into different phases and following are some of its most important stages.

3.2.1 Inventory Management & Control (the 1960s)

The ERP history started with the realization that industrial sectors need a mechanism that could handle, and observe, and regulate inventory stock. Therefore, engineers, software experts and business experts developed an inventory management and control system integrating a computer technology and commercial processes to keep the suitable inventory level in a store.

The inventory management actions included recognizing inventory requirements, reporting inventory status, observing item practices, setting targets, reconciliation of the stock balances and providing replenishment techniques along with options. The effectiveness of an inventory control system, which is used to maintain inventories in the intended state while continuing to sufficiently serve consumers, depends on maintaining accurate data on a regular or on-going basis.

Modern inventory control systems frequently rely on inventory management software to provide timely and accurate analytical, optimization, and forecasting solutions for challenging inventory management issues. This kind of software frequently has the following features.

Firstly, tools for inventory tracking and forecasting that employ review cycles and customizable algorithms to find anomalies and other potential problems. Secondly, Tools for optimising lot size, inventory calculations, and automated and human replenishment components are used in inventory procurement and replenishment. Thirdly, Forecasting and lead time variability management for safety stocks.

3.2.2 Material Requirements Planning (MRP) (the 1970s)

The next phase of the ERP history is related to material needs and its planning that was developed to fulfil the industrial requirements. (Ptak et al. 2016.) Material requirements planning (MRP) uses IT software for the development of manufacturing processes. MRP produces calendars for processes and raw material buying. Scheduling is normally based on lot-sizing procedure for each operation, current inventory levels, production system structure and production requirements for finished goods.

A material requirements planning (MRP) system determines what raw materials, components, and sub-assemblies are needed, as well as when to assemble the completed items, in accordance with demand and the bill of materials.

MRP gives businesses visibility into the inventory needs necessary to meet demand, which helps the organization improve inventory levels and production schedules. Businesses may better manage their

inventory levels and production schedules thanks to MRP, which provides visibility into the inventory requirements needed to satisfy demand. The MRP process begins by ascertaining consumer demand and the needs necessary to supply it through the entry of client orders and sales forecasts.

After accounting for any necessary sub-assemblies utilizing the bill of materials (BOM) required for manufacturing, MRP breaks down demand into the individual components and raw materials needed to complete the construction. (Langenwalter 2020.)

3.2.3 Manufacturing Resource Planning (MRP II) (During 1980's)

The next ERP stage is related to industrial supply scheduling. In the 1980s, business owners and technologists improved manufacturing procedures to create a stress-free and more precise process and this new framework was named as manufacturing resource planning (MRP II). (Sheikh 2003.)

Manufacturing Resource Planning or MRP II uses software applications for organizing developing processes. It also includes procedures from parts buying, product preparation, and inventory regulation to product delivery.

For efficient decision-making in scheduling, design engineering, inventory management, and cost control in manufacturing, the system is intended to centralise, integrate, and process information.

The initial materials requirements planning (MRP I) system has been expanded with MRP II. One of the first software-based integrated information systems intended to increase corporate productivity is materials requirements planning (MRP).

Enterprise resource planning (ERP), a method through which a business, frequently a manufacturer, controls and integrates the crucial elements of its operation, is viewed as a forerunner to both MRP and MRP II. Planning, buying, inventory management, sales, marketing, finance, and human resources are just a few of the areas that are integrated by an ERP management information system.

3.2.4 Enterprise Resource Planning (ERP) (the 1990s)

The industrial sector took a new turn when first time The Gartner Group utilized the terminology ERP in early 1990's. According to its definition, ERP is a software mechanism that utilizes multi-module application software platforms. It has many technological advanced mechanisms that are used for the performance enhancement of the inner business procedures. (Shanks et al. 2003.)

An ERP system frequently integrates business activities through well-designed divisions including items scheduling, component procuring, stock control, product supply, completion and to order tracing. ERP software structures could include application segments for backing up sales & marketing, human resources, finance, accounting. During this era large companies implemented it to get complete advantage. Yet, majority of minor and medium-sized companies were not included due to the additional initial charges.

3.2.5 Web Functions along with internet-based technologies (ERP II) (the 2000s)

Web-based ERP system is just an ERP solution that is distributed over the Internet and is viewed through a web browser. The web application and database may be housed in a third-party data centre or on-premises at the company's location. The classic software licencing model (per named user, per concurrent user, per module, etc.) or the cloud-based, subscription model are two ways that a web-based ERP system might be offered to a company.

Web ERP software offers lots of convenience and versatility, so it's understandable why so many people use it. The system is located off-site and is accessed over a network using a web browser, enabling its users to do almost any function while on the go with just an internet-enabled device, the ERP URL, and a web browser.

The web browser is used as the front-end interface of web ERP software, which eliminates the need for a dedicated workstation by securely storing and making all of the critical data available over cloud servers. This enables customers to complete numerous jobs quickly and effortlessly, saving a significant amount of time, money, and other priceless resources in the process.

ERP enabled systems integrated more advanced features in 2000's such as internet-based web functionalities. These attributes were most important components of ERP II system. For instance: It has an ability to integrate with CRM structures. Technological progression retrieving information utilizing web-based browsers and cellular devices was made quite probable. ERP II altered technical development with Services Oriented Architecture (SOA).

3.2.6 Cloud Computing based ERP (the 2010s)

Commercial applications are also delivered as a Software as a Service (SaaS). IT Servers are implemented on the cloud platforms and retrieved by using Android, APIs, browser, iOS, and applications established for supplying ERP application in the SaaS framework. These commercial applications are aiding small and large sized businesses to properly use ERP systems as the upfront of cloud ERP systems is comparatively lower compared to others.

Majority of the recognized top ERP companies are delivering services over the cloud. Cash flow is the essence of small and medium sized companies, and growing profit margins is always its main focus. Maintaining a close eye on operating costs working capital, and funds is necessary to build balance sheet reserves and support growth. All of these aims can't be achieved in a vacuum. Cloud ERP integrates inner and outer business processes with accounting processes so that everything can be precisely documented.

Software utilized for the purpose of enterprise resource planning, or cloud ERP, is accessed online. Cloud ERP software serves as the foundation of an organization's IT architecture and offers cutting-edge capacity for all crucial business activities. On a provider's cloud computing infrastructure, cloud ERP is frequently offered "as a service" (software-as-a-service or SaaS ERP). Customers pay an annual or monthly subscription to lease the program rather than purchasing it outright. There are no upfront hardware expenditures; the supplier takes care of application upkeep, innovations, data storage, and security.

3.2.7 Progress of non-proprietary software ERP solutions

Non-proprietary software guided by ERP arrangements are evolved along with these technologies. These frameworks are mostly fulfilling the requirements of small, medium and large-scale companies

as there is small amount of initial cost attached during applying these techniques, and companies with fewer budgets can also afford it. Moreover, there is an increase in service suppliers who aid, implement and tailor open-source ERP solutions.

An enterprise resource planning (ERP) software system is referred to as open source if its source code is made available to the public. With open source software, businesses may access the ERP system's code and make changes using their own IT employees without having to pay additional fees for vendor modification services and licenses, as is typically the case with closed source programs. Companies need an IT workforce with strong ERP development and programming expertise if they want to use open source ERP software. Due to the fact that vendor-operated software support frequently excludes customizations, internal ERP support capabilities are also crucial.

Enterprise resource planning-based software allows one to manage routine schedules in an appropriate and organized way. It encourages integrated database support and aids management in optimizing every resource. ERP nurtures sophisticated strategic planning, prompt and diligent decision-making, improved speed, improved synchronization, and the efficient administration of large lumps of data. For example, The Texsavvy ERP software is a web-based platform that is intended to provide an all-in-one ERP solution for textile.

4 IMPORTANT COMPONENTS OF THE ERP IN TEXTILE

ERP software incorporates financials, manufacturing, human resources, and other modules to automate the back-office functions of an organization. It is critical for businesses to stay competitive in the textile and fashion industry by using a well-coordinated manufacturing process. Common challenges range from demand fluctuations to last-minute supply chain issues, and modern ERP software offers businesses the ability to optimize their manufacturing processes.



PICTURE 1. Garment Industry (adapted from Wikipedia, Textile industry in Bangladesh)

Today, many companies in India have implemented ERP systems, and in the near future it is expected that 60% of them will also implement one or more ERP systems for gaining a competitive edge. (Vadivu & Sudalaimuthu 2008.) Enterprise resource planning software today's textile and clothing industry makes a significant contribution to maximizing profits across a variety of textile and apparel industries. Those are mentioned in the following:

Enterprise Resource Planning software for yarn manufacturing industries

ERP software for weaving factories

ERP for home textiles

ERP software for textile processing factories

Enterprise Resource Planning software for garments manufacturing factories

ERP for HR (Human Resource) department of textile and garment factories

ERP in apparel buying houses etc.

(Islam 2016.)

Here let's discuss some important components of a comprehensive ERP system that helps in the smooth functioning of company.

4.1 Human Resources

ERP systems compile all business data into a single database. This database contains information from the HR department as well as information from other corporate divisions. An ERP solution also gathers data on human resources, which is helpful for company analysis, along with sales, inventory, and financial data. As a consequence, authorized users may easily access employee-related information that is gathered in one location, such as tax withholding, hours worked, remuneration data, credentials, and union membership.

Businesses looking to purchase ERP software take the HR functionality that the system under examination offers very seriously. The ideal ERP system for the business will include all the HR management capabilities needed, whether the business needs to hire and monitor job candidates, expand employee self-service choices, or guide career development.

The majority of HR modules in ERP systems on the market also feature employee self-service websites. Employees may update personal profile information on these portals, including their address and the number of dependents they have, as well as check benefits, confirm tax withholding, download income tax forms, and more. If HR experts could just make this information available to every employee through a self-service portal, they may spend less time each week on administrative activities.

The arm of the company in charge of supervising employee lives, growth, and much more is the human resources department or team, sometimes known as HR. This team frequently manages hiring, onboarding, training, placements, skill maintenance, and exiting individuals across the organisation.

The top priority should always be managing staff as no textile corporation can survive without them. ERP system can easily handle processes related to on boarding, off boarding, benefits management timekeeping, and HR component should be able to handle the comprehensive range of personnel management.

Payroll software is the most important element of the typical ERP system. It takes a lot of effort to manually complete payroll and deliver out direct deposits, and it's really not worth the time. An HR component as compared to handling payments manually automates tax and benefit deductions. Researcher might need to automate payments to the hourly workers with an integrated timekeeping feature, eliminating the need for the company to manually enter their timesheets. (Kaplan et al. 2003.)

HR module in ERP system has capability of accurately managing the employee attendance. In addition to that, it also records their complete skill set to correctly assign tasks when required. Payroll is also integrated in the module so that the payroll is generated on time without any backlog. This automated procedure requires no human intervention and increases ERP software efficiency. Human resource ERP module is a robust solution for handling diverse human resource challenges in the textile business. ERP for human resource management satisfies all the needs and demands of contemporary business. ERP for HRM provides services that streamline all of the HR-related procedures.

A reliable solution for all industries that must manage significant human resources is Lighthouse ERP for HRM. The Lighthouse ERP HRM module offers a comprehensive approach to streamlining the workflow. All sectors need HRM, but those that deal with large amounts of human resources especially. Steel, textile, mining, construction & infrastructure, and casting foundry companies are just a few of the ones using Lighthouse ERP for HRM to successfully run their businesses.

With the use of enterprise resource planning solutions, the company may set up a screen to analyse the entire performance of the company, its goals, and how many people should need across all departments or specifically for a project. The system offers a place to record the credentials needed for each position and has processes to guide HR hiring practices. The tool may also monitor hiring practices and employee productivity.

4.2 Customer Relationship Management

Customer Relationship Management is the top priority of a good textile company as without it business cannot exist in a true sense. It's possible that the business will have to manage all of its customer and lead data inside of its ERP system using a customer relationship management (CRM) component. A CRM may be used to optimize marketing and sales efforts.

Keeping track of the clients' purchasing histories is one of the key objectives of a CRM. Using this information, researcher can easily advise additional acquisitions through cross-selling or upselling. Moreover, this framework also helps us to offer them a relevant product or service whenever they might not otherwise be as likely to do so. A CRM can also be used to track the history of conversations with leads.

An organisation can manage its relationships with the customer in a systematic way thanks to the Customer Relationship Management (CRM) software. CRM software typically consists of three primary modules such as Marketing, Sales, and Consumer Service. The CRM software is not limited to these three primary modules however these are the most used ones. The Enterprise Resource Planning (ERP) software, which organises data gathered from various company levels to give management of an organisation relevant information, can and should include the CRM modules.

The CRM module can be added to the ERP software to improve its default features. As a result, businesses will be able to enhance the elements that make them up, including supply chains, finances, projects, and human resources, among others.

4.3 Business Intelligence

A very new development is business intelligence. For typical ERP components, it is at least the primary scenario. However, it has quickly evolved into one of the core components of ERP given how many businesses are attempting to establish data-driven decision-making processes. The BI module of the ERP software collects and examines data to provide helpful insights into how the business operations are running.

Business intelligence (BI) is the transformation of data into insights that may be used to make decisions more effectively and quickly. Business intelligence ERP systems can act as the eyes and ears of the company, enabling one to keep an eye on the chosen key performance indicators and make adjustments when necessary.

Data and BI have long been important to businesses and at the heart of sound corporate decision-making, but over the past several years, the amount of data that can be collected and stored has increased dramatically. With so much data available, a method of organising it all so that it makes sense for organisations is required. This is where business intelligence in ERP comes in.

ERP can generate dashboards that senior management, end users, and everyone in between may view by fusing cloud technologies with BI. Users are now able to change data sources both inside and outside of abas to construct a user-centric dashboard that is relevant to them in addition to seeing it. Anyone with authority can use.

One frequent example is sales forecasting, which may also be used in the production process to determine which colours sell best at particular times of the year. For instance, if machine performance data is being recorded, it may be able to ascertain machine failure rates in order to forecast the need for and schedule for machine maintenance rather than waiting until a machine breaks down. BI software enables people to delve down into the specifics to discover root causes once the pattern has been established. All of this encourages wiser choices for the following actions. Making smarter judgments about sales, production, inventory, and distribution is possible.

The most effective BI ERP modules present these insights in reports. The most crucial component of a BI is a solid reporting tool that allows one to understand the data it has studied. A few reports are presented as tables of numbers. The finest reports, however, are visual so people can quickly see trends. Otherwise, it will be much more difficult to understand those insights.

4.4 Supply Chain Management

Supply Chain Management is the quite complicated process in the textile industry. Therefore, it needs a comprehensive ERP system to make it a success. ERP is quite successful because of real-time data

gathering. It is a plus point as real-time data enables one to monitor the supply chain so companies can identify and address problems as they arise. (Gronwald 2021.)

Predictive analytics are also made possible by it. Demand planning can be assisted by the SCM component with the use of real-time data so researchers can create but not exceed it. Here are some important parts of ERP based Supply chain management.

4.4.1 Demand and Planning

An ERP system created for supply chain management may automatically generate demand when orders are received. The supply chain is made more efficient by ERP, which enhances work scheduling. Managers are able to view the precise resources being used and consumed in real time as a consequence. This allows them to set product delivery times. When all of the raw materials and inventory are used up, then is the best moment to begin manufacturing. ERP ensures that manufacturing procedures are in accordance with demand, replenishment is accomplished on time, and inventory is kept to a minimum.

4.4.2 Procurement

The supply of goods, services, and other resources across the whole supply chain may be managed more effectively with an ERP created for SCM. Management of production and warehousing resources, as well as the regulation of transportation and execution procedures, are all handled by ERP solutions. Automation of a variety of manual tasks is made easier by ERP, including keeping track of and connecting with vendors and suppliers.

4.4.3 Production

The ERP system may be used to construct the bill of materials (BOM) for each item. As soon as production starts, all records for labour and machine resources are produced and updated in real time. All

shipment paperwork is recorded utilizing the ERP system for appropriate supply chain management, which reduces errors caused by manual methods. In order for deliveries to be made on time, the system can ensure that orders are placed promptly. A feature-rich ERP enables work orders and job assignments to be modified to take into account any impromptu changes, ensuring that the manufacturing process is completed on schedule.

4.4.4 Shipment

After the goods has been sent, the ERP software can produce an invoice, which has to be delivered to the client. An ERP system helps maintain a central repository for client shipments and all delivery data in order to ensure that items are delivered on time. System functionality also assists in creating criteria for quality inspection of both internal and external packages and in choosing packaging techniques. Businesses can use ERP to resolve disputes about resources on the job list.

4.5 Inventory Management

The inventory management system is a key element of ERP. Inventory management coordinates with the SCM component and overseas operations like sales and warehousing. Order fulfilment and warehouse inventory management processes are governed by these fundamental operations. The top inventory management tools have tracking capabilities that virtually go away with manual inventory control. These functions include tracking revision level and multi-level serial number tracking, as well as a variety of units of measurement according to product ID or SKU.

There are a few solutions available if companies are seeking for a centralised system to handle all of the inventory control processes. Many companies decide to spend money on an all-inclusive ERP inventory solution to handle everything from warehousing to replenishment, purchase orders to distributor management. However, there are other methods that are more effective, adaptable, and affordable for online retailers and wholesalers.

Order management, inventory management, point of sale (POS), customer relationship management (CRM), and other essential ERP inventory system features are all provided by Omni channel retail operating systems like Bright pearl while yet being more adaptable and affordable.

These specialised solutions were created to cater to the requirements of expanding multichannel internet merchants. Companies will be able to streamline all of overall retail-specific procedures across several channels and all under one roof instead of taking a one-size-fits-all approach.

4.6 Financial Management

A financial management system is built for many different sorts of financial transactions to be created, connected, stored, and reported, but its primary function is ultimately just counting money. International and national accounting standards establish guidelines for both public and private businesses. These benchmarks standardise financial information by establishing clear norms, definitions, and procedures. But these requirements are constantly altered. Recent years have seen the implementation of new regulations, such as IFRS 15 and ASC 606. The most recent accounting standards should be supported by a financial management system, which should also have the adaptability to accommodate future modifications as they are implemented.

ERP software can do more than just perform basic accounting functions. It can also improve budgeting, forecasting, and planning, allow for thorough and properly classified expense management, offer seamless banking system integration, allow for more accurate audits, and maintain detailed tracking records of all assets and liabilities.

Simply put, a company could not function without some sort of ERP based accounting software as every firm needs mechanisms to control the flow of money into and out of the company at the most fundamental level. A fully efficient financial management system, however, may also evaluate cash flow, calculate tax liabilities, maintain long-term business sustainability, and improve profitability. Here are important functions of ERP based financial system for textile industry.

4.6.1 Profit Monitoring

Profit tracking is a key feature of ERP financial management modules. The profit tracker will assist in offering a top-down perspective of the company's overall financial health and resource leveraging. By

keeping track of earnings, companies can identify other revenue sources and calculate the return on any purchase.

The tracker determines how much money the company makes as a result of the efforts using the costs and receivables. Some applications use historical sales and spending data to predict future profits. On the other hand, ERP financial management software can assist businesses in keeping track of costs. This competency includes assessing particular cost centres, top-down procurement, and the way the company spends money.

4.6.2 Account Management

Another essential feature of ERP financial systems is ledger management. An extensive record of all financial transactions is available in a general ledger. It connects with all of the other ERP modules, including customer relationship management and inventory management.

The general ledger (GL) is where entries are normally made, however depending on the system, companies can might be able to make entries anywhere in the programme. In either case, company will be able to access all of the entries in one place. Among the many things company may monitor are assets, liabilities, capital accounts, revenue, and expenses.

Having all of financial information in one location can make filing tax returns easier and aid in budgeting. Any suspicious transactions or fraud will be easy to see, and certain ERP financial systems will alert companies to them automatically. The GL gives financial department superior visibility and gives company a wider picture. It serves as the foundation for drafting the financial statements necessary to assess the financial situation.

4.6.3 Risk Management

Risk is at the heart of a lot of business, and executives want to feel secure in their company's security. Tools for risk management help forecast, evaluate, and handle crises. These circumstances can include everything from money problems to even natural calamities. Security, legal liabilities, compliance, and

reputational risks are all additional potential disasters that could need to be managed with risk management systems.

Because they are constantly changing, compliance standards can be hard to follow. The risk management tool could alert the management in the event of contamination or any other problems throughout the manufacturing process of food and beverages. It will be keeping an eye on how much money is coming into and going out of the company from a financial perspective. (Okungbowa 2015.)

4.6.4 Reporting

Analytics give the company immediate access to financial information, which is essential for keeping the finances in order. The company can use the visibility to make data-driven predictions and decisions about the financial health of business.

Reporting and analytics will, at a basic level, reveal where the revenue is coming from. However, the dashboard is capable of much more, including showing the sales, projected sales, expenses, and numerous other financial elements. The dashboard is often customisable, allowing the company to select the categories management want to view. Review real-time data in graph formats to swiftly grasp the financial health of the firm.

4.6.5 Tax Management

The functions of tax audit and tax reporting are provided by tax management solutions, which also maintain system taxation settings. We can utilize these parameters throughout the system to offer a reliable method of collecting sales and VAT taxes.

The time-consuming task of figuring out the sales tax jurisdictions of ship-to addresses may be finished by the tax management function, which may also employ pre-built tax intelligence to process sales transactions in accordance with the appropriate legislation. Depending on the needs of the business and the ERP financial system company use, this accessory's capabilities will vary. In either case, implementing tax management within the company is a terrific approach to save time on repetitive procedures.

5 RESEARCH METHODOLOGY

Qualitative and quantitative research methods are mainly applied to carry out research studies of interest. According to Myers (2013), following are important features of qualitative and quantitative research techniques: Qualitative method was created for studying natural sciences and its phenomenon. It includes study methods such as laboratory experiments, surveys, econometric and mathematical modeling etc. Quantitative study primarily relies on numerical calculations. In order to help researchers better understand social and cultural phenomena, the qualitative research methodology was developed in the social sciences. Grounded theory, action research, and case study research are all examples of qualitative research. The following are some examples of the data sources used in qualitative research: observations, interviews, questionnaires, documents, participant perceptions (gathered during fieldwork), and the researcher's feelings and/or impressions.

The purpose of this research is to learn about the operation of ERP systems in the manufacturing industry and the possible benefits of implementing ERP software for textile enterprises. In addition to managing entire business process, an ERP system for textiles and apparels utilizes a single database that allows departments to communicate with each other without maintaining multiple copies of data. With the software, textile production is better managed in critical areas such as raw materials, finance, inventory, quality, plant management, and so on. All these functionalities can be interconnected and interoperable. (Samant 2018.)

5.1 The qualitative research approaches

In this research, qualitative research techniques were applied. Qualitative research approaches help researchers understand people, social and cultural experiences. According to Myers (2013), qualitative study is a great option to conduct an in-depth investigation of one or more firms since it gives a record of what individuals have said to the researcher, assisting them in understanding motives or actions in light of their experiences. This method is extremely effective for experimental research when the subject matter is new and there is restricted published research on the issue. It is also an effective way for conducting research related to social, cultural and political research investigations of individuals and companies.

According to Cleary (2014), qualitative research is carried out to gather data usually from interviews and observations. It is mainly carried out in a realistic environment with an interpretive way. Qualitative research study is utilized to answer inquiries about natural phenomena for the objective of understanding and describing phenomena from the participants' standpoint. (Leedy et al. 1997.) In other words, qualitative study emphasis more on the social world compared to the natural world. The social world is connected with the humans and depends on the subjectivity of involvements. (Liamputtong 2000.)

Data, logic, and an unbiased perspective are all components of qualitative research. In contrast to divergent reasoning, which is the generation of several ideas on a study topic in an unplanned, unstructured manner, the focus of qualitative research is on exact, convergent thinking.

Here I have used organised research tools are used to acquire the data. Typical sample sizes were used to generate the results. Given its high reliability, the research study can typically be replicated or re-done. I have studied various components are all carefully designed. Additionally, I have used numbers and statistics making up the data frequently displayed in tables, charts, and other non-textual formats.

Moreover, I have completely explained the data gathered through treating it statistically treated and all important findings in regard to the study issue management people are looking at. I reported any unexpected occurrences that occurred while people of the company were gathering the data. Describe the differences between the planned and actual analyses. Describe how one has handled missing data and why they didn't affect the accuracy of the analysis.

Furthermore, Prior to starting, it's critical to decide whether the qualitative research project will be descriptive or experimental because this will have an impact on how one will gather, handle, and assess the data. The following rules govern descriptive studies:

To confirm that a trustworthy estimate of a generalised link between variables has been reached, the study may use a sample group of hundreds or thousands of people. The only objectives of the inquiry are relationships between variables; subjects are typically measured just once. An experimental design involves measuring individuals both before and after a certain treatment in order to establish causality between variables. The sample size may be deliberately selected to be tiny.

The main goal of this study is to identify and track significant factors affecting the adoption of ERP solutions in the large-scale Bangladeshi garment industry by using an interpretative methodology. As specified for the purposes of this study, the data collection process involved two rounds of analysis. A modified online expert was used in the initial stage, and an online expert panel was set up to discuss and reach consensus on the elements acknowledged in the suggested model for ERP adoption. This included the stages of ERP adoption and taking into account how important ERP components are to midsize enterprises using ERP. Project managers, ERP implementation experts, ERP scholars, ERP investigators and specialists with functional or mechanical information, as well as large-sized company professionals, were among the attendees.

Analyzing case studies was the next step in the data collection process. In order to get a wider perspective, a revised recommended ERP adoption model was evaluated at this stage with a variety of organizations of various sizes. Large-sized firms were contacted for the interviews.

5.2 Methods used to clean the data set

I got many duplicate entries while collecting the data from a variety of sources. These duplicates may have been caused by human error, such as a mistake made when entering data or completing a form. Furthermore, I was greatly complicated by irrelevant facts. Therefore, I had to carry out the data cleansing as it is vital to determine what is relevant and what is not. (Leedy et al.1997.)

5.3 Types of interviews utilized

There are three kinds of interview techniques usually considered for qualitative data analysis. (Williamson 2002.)

5.3.1 Structured interviews

Structured interviews are consistent and scheduled prior their start. All participants answer same questions in similar sequences or patterns. The interviewing person offers considerable flexibility to the

participants for expressing their views, opinions or assessments separate to the strict agenda followed by the investigator.

5.3.2 Unstructured interviews

In-depth conversations with interview subjects take place during spontaneous, non-standardized interviews. Every interview response may lead to a new question as the interviewer follows the conversational flow. This kind of interview is used to gather detailed data from important people for case studies in order to acquire fresh perspectives from interviewees. For interpretative research, this kind of interview is suitable.

5.3.3 Semi-structured interviews

Semi-structured interviews normally include fixed list of questions. However, here interviewer can follow the lead of participants or inquire them extra questions to look for more comprehensive answers. This kind of interview is nearer to the unstructured method as compared to the structured one.

Structured interviews were used to collect data for the purpose of this study. The questions were organized into a standard list. The interviewer has left the topic open for discussion and has allowed participants to offer specifics as they see essential or pertinent due to the sheer volume of material searched.

5.4 Types of Interview questions

The interview questions for this research study were created inside two categories or stages. It was carried out through emails to the employees of two companies. The details are given in table 1. Standard administrative or managerial questions in the first stage were used to get information about the business operations and to classify the research study companies as small, midsize or large.

The starting questions were related to the location, size, demographic, business kind, and the ERP applications employed, the time and amount expended on every implementation. Whether the implementation was within organized or outsourced, and the implementation methodology used.

TABLE 1: Data Collection Procedure

| Stages | Activities | Period | Companies | Methods |
|--------------|---|-------------------|--|---------|
| First Stage | Standard administrative or managerial questions | October last week | Ha-Meem group and Squares Fashions Limited | Emails |
| Second Stage | Questions about ERP adoption model content, various elements, phases of application, and the significance of every element during every stage | Mid November | Ha-Meem group and Squares Fashions Limited | Emails |

In the second grouping, interview questions were asked about the ERP adoption model content, various elements, phases of application, and the significance of every element during every stage. Interviewees were also enquired to comment on the order of actions in every phase of the implementation and related factors as formerly recognized from the research literature and the expert panel. The second interview phase was completed as semi-structured, with investigation done in the sequence relating to the model while permitting the interviewee to offer responses as they considered essential. In some cases, interview questions were summarized in a different way to fulfil the needs of different, knowledge, characteristics and background of the interviewees. (Manaster 1972.)

6 DATA ANALYSIS AND INTERPRETATION OF RESULTS

When a company expands, the survey questionnaire plays an important role since it allows us to know what people think of the business and what kind of products they expect. The following survey report results show that companies like Ha-Meem group and Squares Fashions Limited to make use of state of art technology to improve their operations.

The main purpose of carrying out this survey and analysis is to analyse the benefits of ERP system in the Bangladeshi textile industry. Moreover, it also gives suggestion to textile industry to improve its operations by improving ERP implementation. Here are some important questions and their answers of the survey report.

Q No.1: Which ERP is your company using? What is the name?

Question No 1 responses show that 25% of employees are using Solution dots software and 25% of employees are using SAP ERP in their respective organizations.

| Q No 1 | Frequency | % |
|---------------|-----------|----|
| Solution dots | 25 | 50 |
| SAP ERP | 25 | 50 |
| Don't know | 0 | 0 |

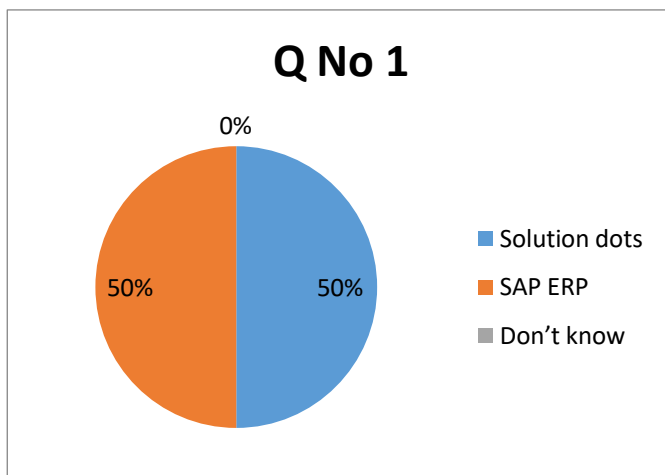


FIGURE 2. Types of ERP

Q No 6: Did your organization use outside consultant to assist with ERP implementation?

100% respondents think that organization use outside consultant to assist with ERP implementation. Question no 6 shows that both companies had to take the help of the outside experts to install the ERP software and that depict the complexities involved in the software. Through this we can conclude that department leader can stay abreast of issues of compliance, traceability issues by using external expertise.

TABLE 2. Outside consultant

| Q No 6 | Frequency | % |
|------------|-----------|-----|
| Yes | 50 | 100 |
| No | 0 | 0 |
| May be | 0 | 0 |
| Don't know | 0 | 0 |

Question No.7: Did you find it necessary to re-engineer the business processes?

Question No 7 shows that 100% employees think that it is necessary to re-engineer the business processes. The company management has to use business process reengineering (BPR) to reinvent a central business process to enhance yield, excellence and to decrease costs. (Haddara & Elragal 2015.) Through effective scheduling of production, the manufacturers will make sure that all incoming materials are utilized on time.

Table 3. Re-engineer the business processes

| Q No 7 | Frequency | % |
|------------|-----------|-----|
| Yes | 50 | 100 |
| No | 0 | 0 |
| May be | 0 | 0 |
| Don't know | 0 | 0 |

Question No.8: What is/was the motivation for ERP implementation in your organization?

Question No 8 responses show that 23% employees think that technical issue is most important 13% think that functional and 33% think that cost saving are important issues 31% also think that functional issues are most important.

| Q No 8 | Frequency | % |
|--|-----------|----|
| Technical | 12 | 24 |
| Business / Strategic | 7 | 14 |
| Functional | 16 | 32 |
| Cost saving and other financial reason | 17 | 34 |

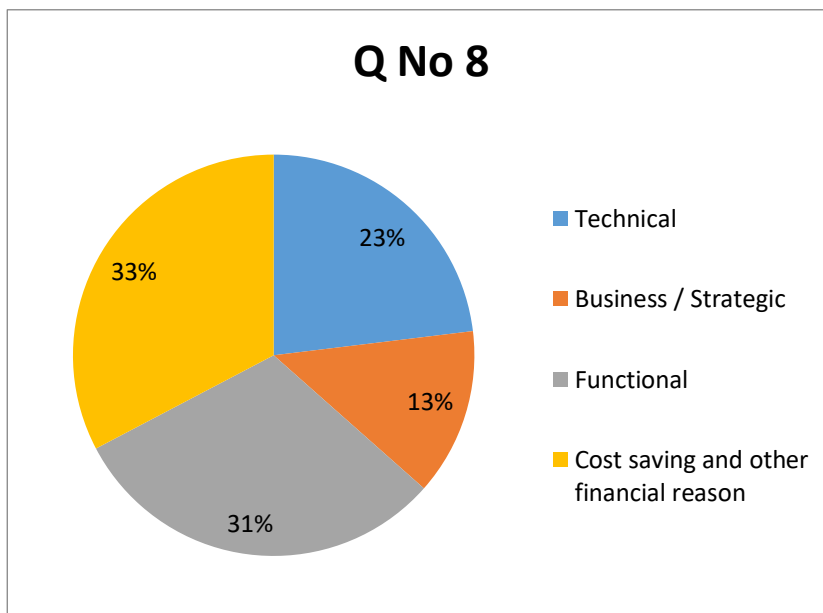


FIGURE 3. Motivation for ERP implementation

Q No 9: What were the benefits of the ERP system for the organizations?

Question No 9 responses show that 34% employees think that ERP is quite effective in increases overall productivity and better customer satisfaction. On the other hand, 26% convinced that ERP is reduces cycle time and inventory levels, 20% think it is good for return on investment and head count. Rest think that all of the above is valid.

| Q No 9 | Frequency | % |
|---|-----------|----|
| Increase overall productivity and better customer satisfaction | 17 | 34 |
| Reduced cycle time and Inventory levels | 13 | 26 |
| Reduced head count and Return on investment | 10 | 20 |
| All of the above | 10 | 20 |

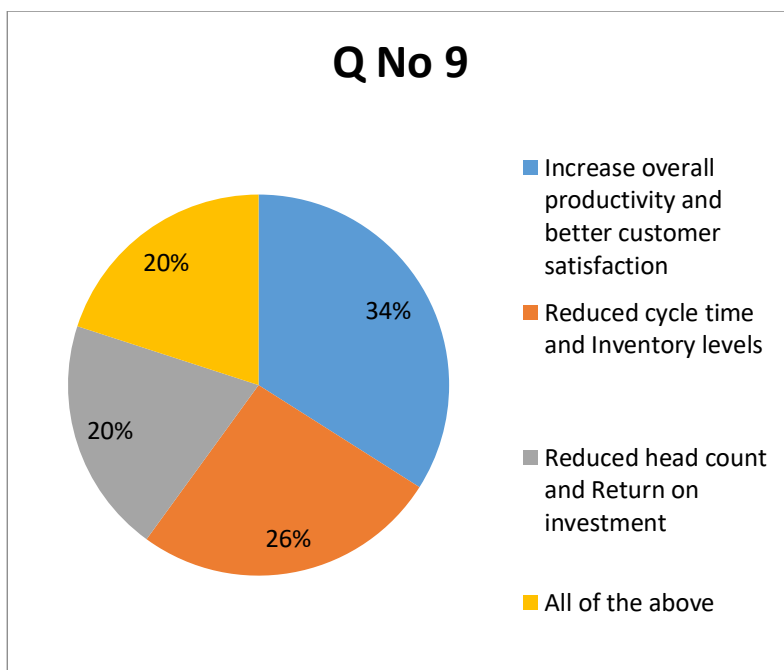


FIGURE 4. Benefits of the ERP system

Q No 10: What managerial problems, if any, were faced during or after the ERP implementation?

Question No 10 responses show that 30% employees think that project cost overrun/project delays are the major issue. Moreover, 32% think that conflicts with business strategy are an issue. On the other hand, rest think that internal conflicts and vendor are most important issues caused by their ERP software.

| Q No 10 | Frequency | % |
|---|-----------|----|
| Project cost overrun/Project delays | 15 | 30 |
| Conflicts with business strategy/Employee resistance to change | 11 | 22 |
| Conflicts with Consultants/Internal conflicts/Conflict with vendors | 10 | 20 |
| All of the above | 14 | 28 |

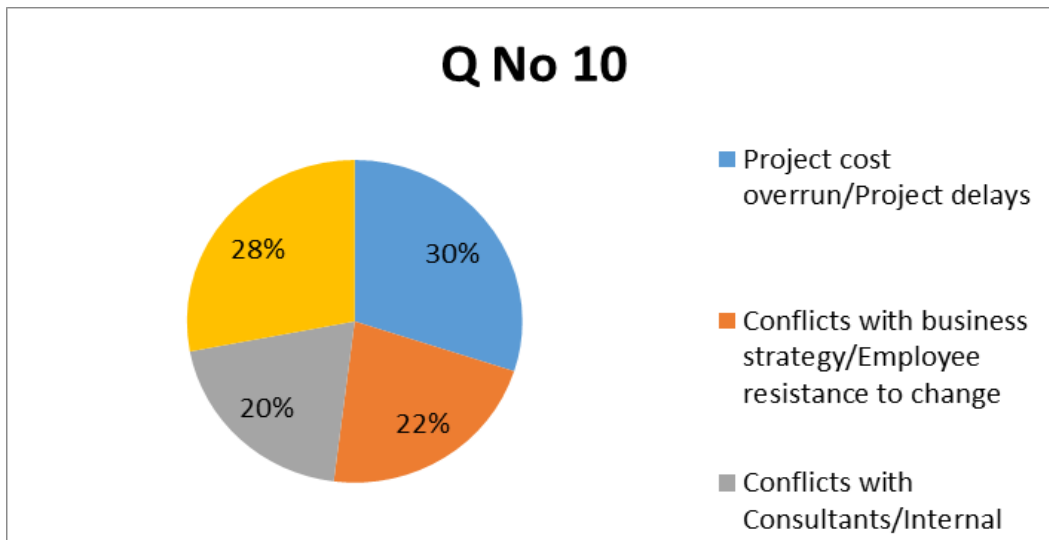


FIGURE 5. Managerial Problems

Q No 11: How much the ERP system fulfils your company's business strategy?

The answers show that more than 26% of employees of both companies are believe 81-100% business strategy is satisfied with working of the ERP systems. 20% think that 61% to 80% business strategy is satisfied. Rest believe that these platforms are not fulfilling the needs of the company business strategy. They think it is not even satisfying the 60% of requirements of the overall business strategy.

| Q No 11 | Frequency | % |
|------------|-----------|----|
| 81% - 100% | 13 | 26 |
| 61% - 80% | 10 | 20 |
| 41% - 60% | 13 | 26 |
| Below 40% | 14 | 28 |

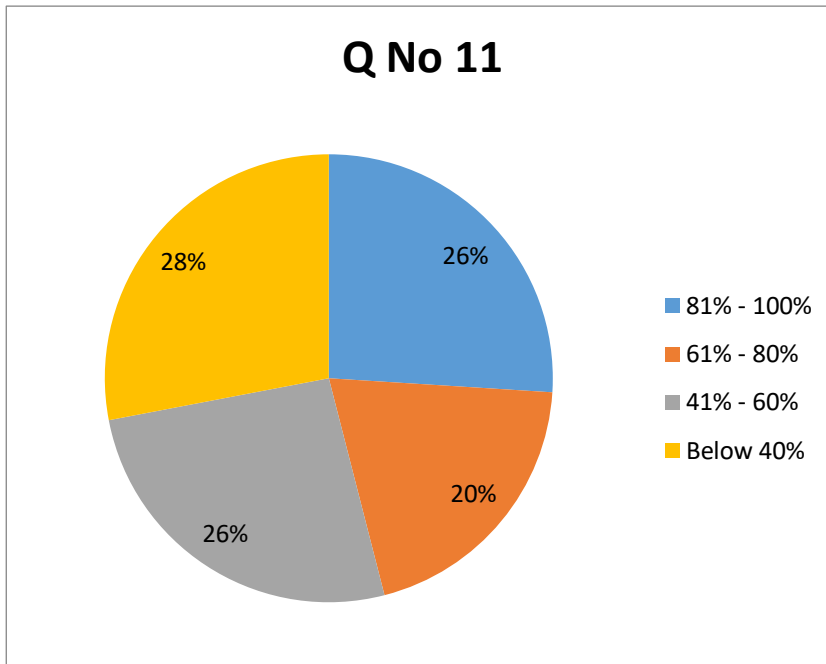


FIGURE 6. Fulfils company's business strategy

Q No 12: What technical problems, if any, were encountered during or after the ERP implementation? Question No 12 results show that more than 16% of respondents think that integration with existing systems/other applications is the main technical problem associated with ERP systems. On the other hand, about 24% think that security is the main technical issue associated with ERP systems. On the other hand, about 24% think that customization is the main technical issue associated with ERP systems. 14% think data migration is issue and 20% think integration with new business software is problem.

| Q No 12 | Frequency | % |
|--|-----------|----|
| Integration with existing systems/other applications | 9 | 18 |
| Integration with new business software | 10 | 20 |
| Data migration | 7 | 14 |
| Customization | 12 | 24 |
| Security | 12 | 24 |

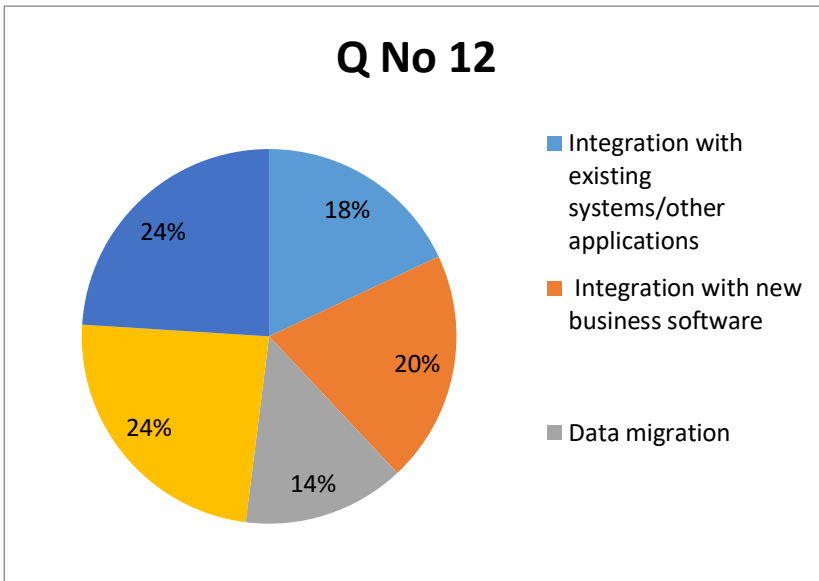


FIGURE 7. Technical Problems of ERP

Q No 13: How long was the implementation of the ERP system?

The responses show that 50% think that ERP implementation took 6 to 9 months and rest think it took 1 to 3 years' time.

| Q No 13 | Frequency | % |
|-------------------|-----------|----|
| 6 to 9 months | 25 | 50 |
| 1 year to 2 years | 3 | 6 |
| 2 year to 3 years | 22 | 44 |
| Over 3 years | 0 | 0 |

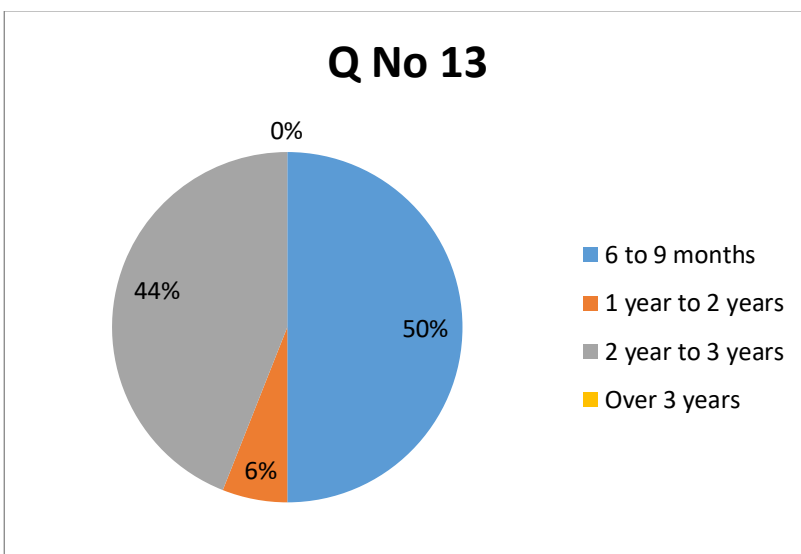


FIGURE 8. Implementation of the ERP system

Q No 14: What type(s) of training after ERP implementation in your organization is important?

Question No 14 results show that 32% of the respondents think that project team training is extremely important after the implementation of the ERP software in the company. Moreover, more than 3% think end user training is important 48% respondents believe that traditional training is must for everyone. (Kumar 2022.) And about 18% think web-based training is important.

| Q No 14 | Frequency | % |
|-----------------------|-----------|----|
| Project team training | 16 | 32 |
| End user training | 1 | 2 |
| Traditional training | 24 | 48 |
| Web-based training | 9 | 18 |

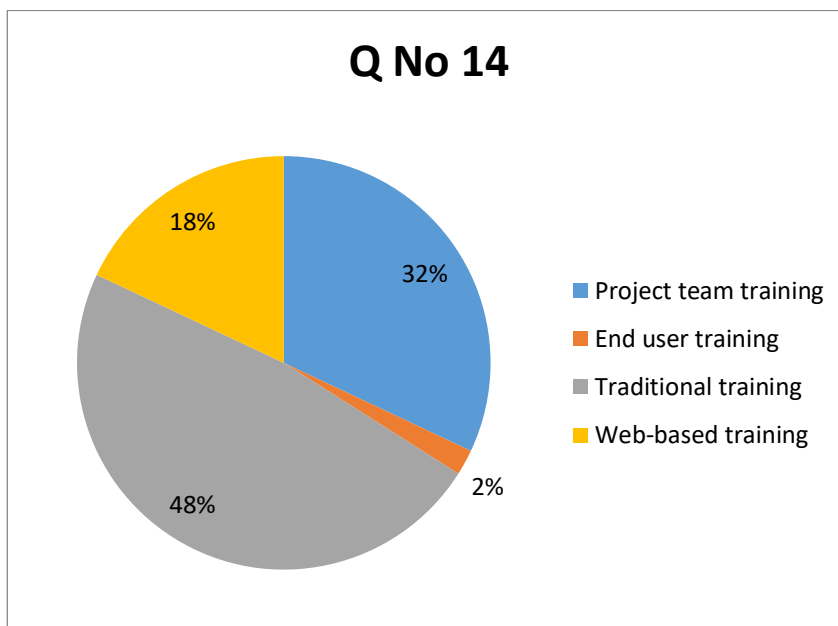


FIGURE 9. Types of training after ERP implementation

Q No 15: How frequently do you experience problems with your application interfaces?

Question No 15 results show that 30% of the respondents think that frequently they encounter issues with the ERP software. In addition to that, more than 20% respondents have observed that they have most of time faced issues while operating ERP software. About 28% respondents think they never face any problem from the software.

| Q No 15 | Frequency | % |
|-----------------------|-----------|----|
| Almost all the time | 15 | 30 |
| Frequently | 10 | 20 |
| Sometimes/A few times | 11 | 22 |
| Almost never | 14 | 28 |

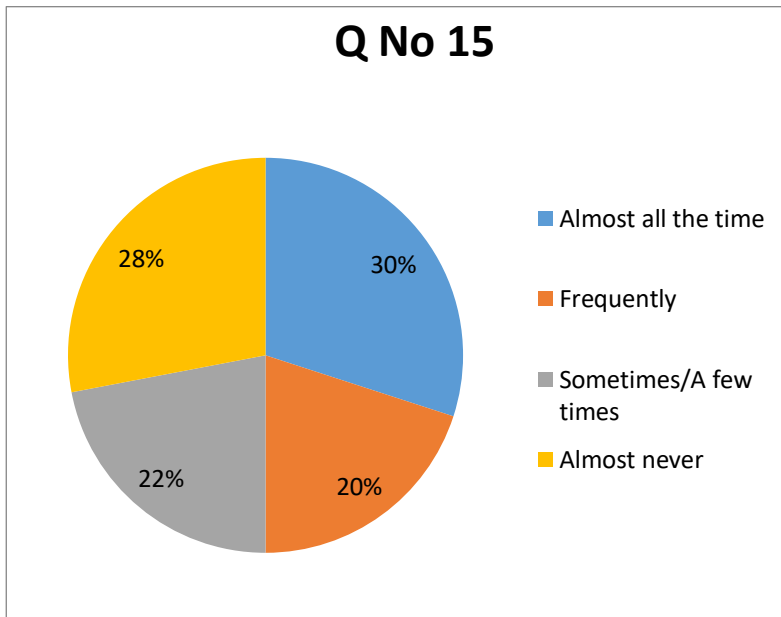


FIGURE 10. Problems with application interfaces

Q No 16: Do you think the working culture has changed completely after implementation of ERP in your organization?

Question No 16 results show that 50% of the respondents think that ERP software has completely changed the working culture and rest think it failed to change the organizational environment.

TABLE 4. ERP Implementation & working culture change

| Q No 16 | Frequency | % |
|------------|-----------|----|
| Yes | 25 | 50 |
| No | 25 | 50 |
| May be | 0 | 0 |
| Don't know | 0 | 0 |

Q No 17: What do you think about the workload in the organization after implementation of ERP in your organization?

Question No 17 results show that 50% of the respondents think that ERP software has increased the workload very much but due to participative environment employees are able to complete their tasks. The 20% of the respondents think that workload is less as compared to other companies and rest of respondents think that workload is evenly distributed. The 30% of the respondents think that work load is less as compared to other companies and rest of respondents think that workload is evenly distributed.

| Q No 17 | | Fre- quency | % |
|---|--|----------------|----|
| Work Load is very much and task is not finished on appropriate time | | 8 | 16 |
| Work Load is very much but due to participative environment employees are able to complete their task | | 17 | 34 |
| Work Load is evenly distributed and employees are able to complete their task on time | | 10 | 20 |
| Work Load is less as compared to other companies | | 15 | 30 |

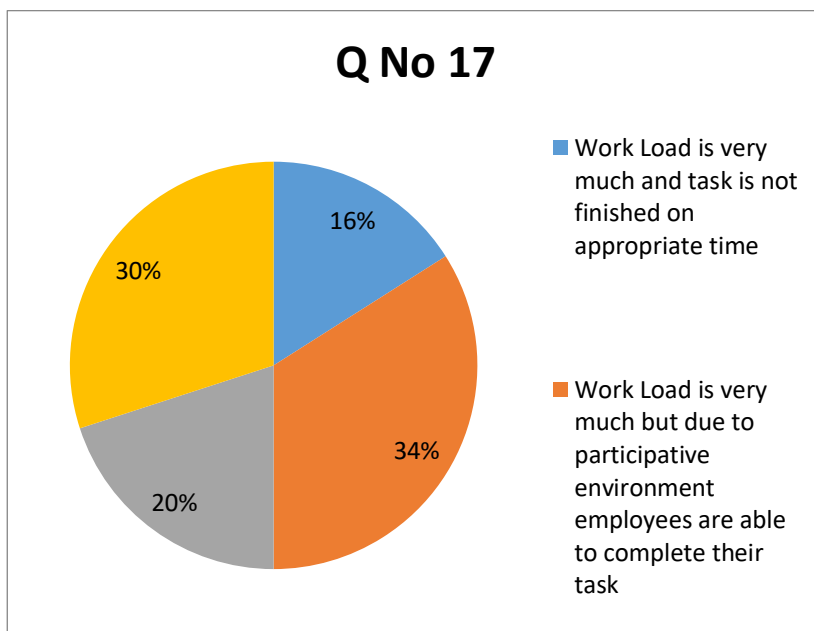


FIGURE 11. Workload management in ERP

Q No 18: Does due to Business Process Restructuring goals and task are clearly defined for increasing productivity?

Question No 18 results show that 58% of the respondents think that business process restructuring goals and task are clearly defined for increasing productivity and rest think this is not the case.

| Q No 18 | Frequency | % |
|------------|-----------|----|
| Yes | 29 | 58 |
| No | 21 | 42 |
| May be | 0 | 0 |
| Don't know | 0 | 0 |

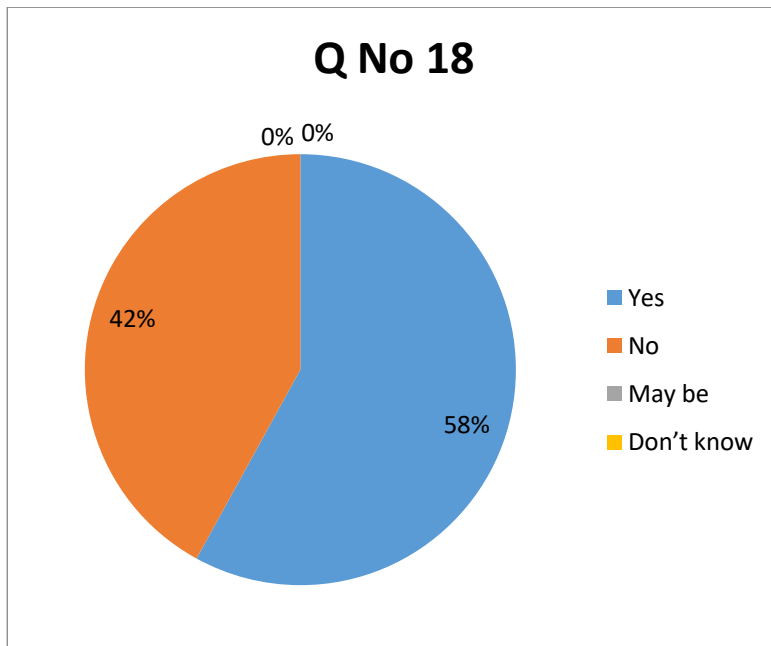


FIGURE 12. Business Process Restructuring goals

Q No 19: Does the management keeps track of the activities in the organization due to ERP implementation?

Question No 19 results show approx.52% respondents think that the management keeps track of the activities in the organization due to ERP implementation and 48% think this is not the case.

| Q No 19 | Frequency | % |
|------------|-----------|----|
| Yes | 26 | 52 |
| No | 24 | 48 |
| May be | 0 | 0 |
| Don't know | 0 | 0 |

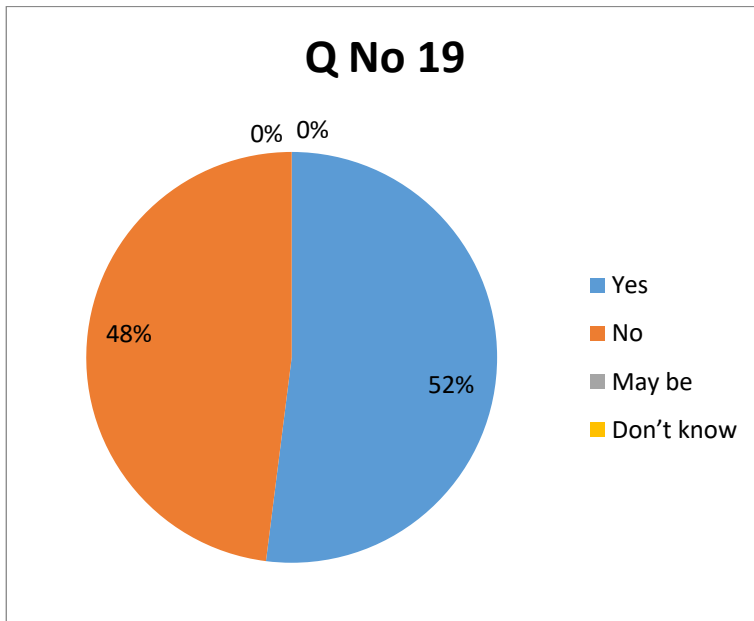


FIGURE 13. ERP Implementation & Activities Tracking

Q No 20: Does the problems are resolved in an efficient manner with the help of ERP Solution of the company?

Question No 20 results show approx.56% respondents say that problems are resolved in an efficient manner with the help of ERP Solution of the company and 44% don't think so. Rest of respondents don't know.

TABLE 5. ERP Solution

| Q No 20 | Frequency | % |
|------------|-----------|----|
| Yes | 28 | 56 |
| No | 22 | 44 |
| May be | 0 | 0 |
| Don't Know | 0 | 0 |

Q No 21: Are you satisfied with information sharing within the organization due to ERP Solution Implemented in the organization?

Question No 21 results show approx.38% respondents say that they are satisfied by the information sharing of the ERP software and 26% are not satisfied. 12% people are not sure, and rest don't know.

| Q No 21 | Frequency | % |
|------------|-----------|----|
| Yes | 19 | 38 |
| No | 13 | 26 |
| May be | 6 | 12 |
| Don't Know | 12 | 24 |

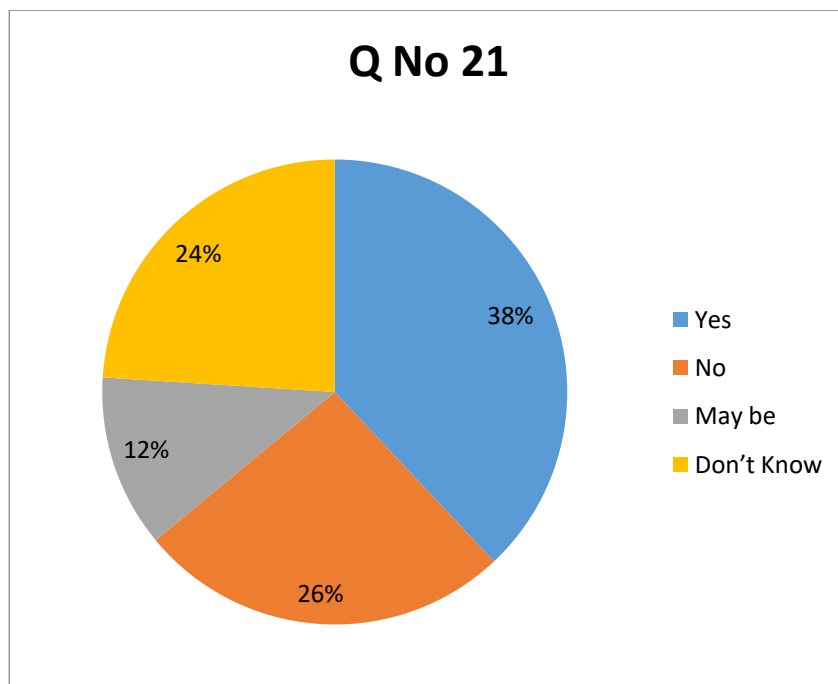


FIGURE 14. Information sharing in ERP

Q No 22: Rate your satisfaction with ERP and Business Process Restructuring in the organization?

The results of 22 no question depict that 20% of the respondents have rated that are highly satisfied and 26% are just satisfied with ERP and Business Process Restructuring in the organization. But rest are not satisfied with it.

| Q No 22 | Frequency | % |
|---------------------|-----------|----|
| Highly Satisfactory | 10 | 20 |
| Satisfactory | 13 | 26 |
| Average | 11 | 22 |
| Dissatisfactory | 16 | 32 |

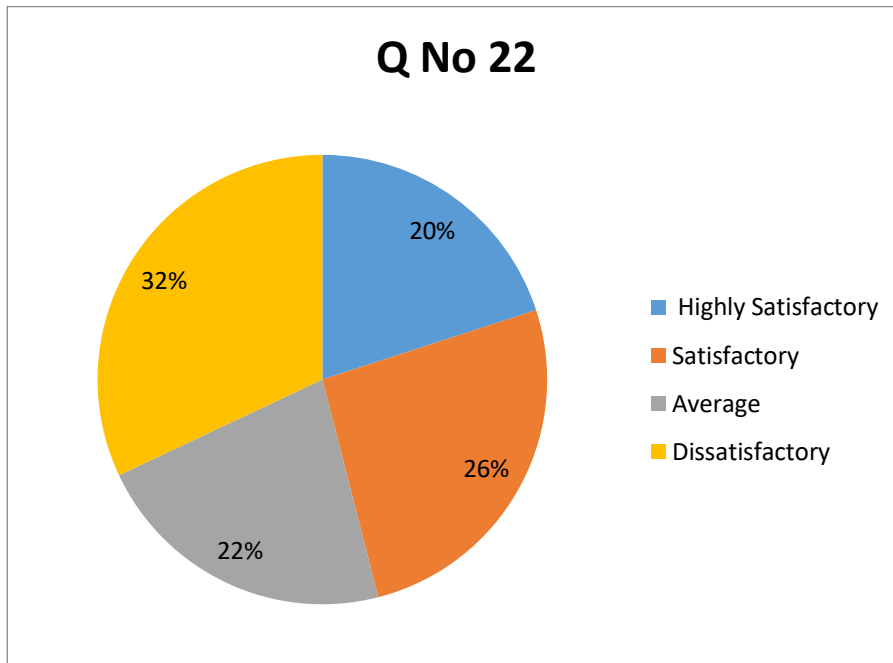


FIGURE 15. ERP and Business Process Restructuring

Q No 23: Did ERP implementation in the organization was within original budget?

The results of question No 23 show that ERP implementation in the organizations was within original budget and that is very good thing as it shows that companies have required expertise to implement the software.

TABLE 6. ERP implementation within budget or not

| Q No 23 | Frequency | % |
|------------------------------|-----------|-----|
| Under budget | 0 | 0 |
| On budget | 50 | 100 |
| Over budget by up to 50% | 0 | 0 |
| Over budget by more than 50% | 0 | 0 |
| Not applicable | 0 | 0 |

Q No 24: The ERP project was worth the money company spend on it?

The results of question no 24 show that the 20% respondents believe that ERP project was worth the money and approx. 34% don't agree with this statement. Rest of the people are not sure or don't know about the question.

| Q No 24 | Frequency | % |
|------------|-----------|----|
| Yes | 10 | 20 |
| No | 17 | 34 |
| May be | 8 | 16 |
| Don't know | 15 | 30 |

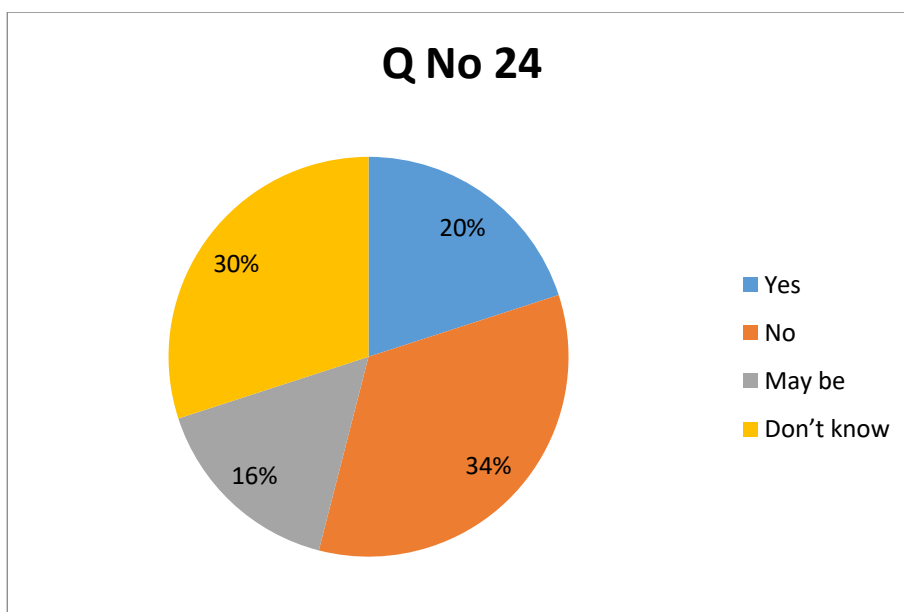


FIGURE 16. ERP project was worth the money or not

7 DISCUSSION OF RESULTS

I have carried out a detailed analysis of the responses collected from 50 samples of employees working in Ha-Meem group and Squares Fashions Limited. I suggest following improvements in the operational capacities of both textile companies to get better performance.

Usage of technology is must for the solution of problems such as lack of customization, security and integration with current systems. Since, technology makes it easier to automate daily tasks, securing the man hours and remove the possible human error virtually. It involves the completion of the process of automation provided by the manufacturing ERP including number of processes involving sales, purchase records, human resource, stock and others. The automation saves the time and permits the firms to access the on-time data plus exercise great control. Supply chain and distribution management overview different elements like warehousing, packaging suppliers, vendors, logistics and point of sale for various brands plus businesses of retail chain. An appropriate supply chain and distribution management process is important for the firm to grow.

It was mentioned by respondents that there were many and technical issues faced by them during operating ERP system. Therefore, due to this management usually end up using excessive raw material as compared to what they need plus they usually need to work through shortages. So, company must improve employee training to use manufacturing ERP software offering visibility of real time in work order as they come in. The users can utilize this data to manage the requirement of inventory and ensure that the exact resources are in place at exact time to fulfil those requirements. Such exact facts can assist in minimizing the outages which increase the satisfaction of customer. such predictions will also decrease the over stock as the employees are minutely aware of the materials to source, even if this means to depend on various suppliers to fulfil such requirements. Through proper usage of ERP system in manufacturing, the team will automate such logistical process plus free up the staff to address proactively other issues of supply chain.

The effective inventory management is important for manufacturing firm and ERP has really produced good results for both companies as mentioned by respondents. This involves tracking inventory, status of product, management of raw material, tracking of purchased goods plus overall control. Both companies can further improve the system by employing advanced ERP systems such as Net Suite etc.

The results show that employees are concerned about operational capabilities and vendor conflicting issues of ERP. Therefore, I suggest that companies should use ERP having regulation and compliance features to help in the management of regulation of human resource at each stage and security of information. The quality control is set of defined standards which make sure that manufactured product meets the quality goals of the firm. Quality is the important element for success. The product needs to be examined thoroughly plus tested as part of quality assurance. The software of ERP helps in monitoring and tracking of different processed of quality management with the help of alert mechanisms plus evaluating at every level.

The majority of respondents are not satisfied with Business Process Restructuring. Therefore, I recommend that management must carry out the business process restructuring before the implementation of ERP. As you choose to execute business process reengineering without the restrictions of software setup, it ensures that you keep these competitive advantages. If your business processes are not well defined and documented before deployment, then software engineers will have to make all of these thousands of configuration decisions without your input.

Complete training is must as using ERP software in manufacturing, we can also learn and implement latest technologies such as Cloud migration, artificial intelligence, two tier system, Internet of things. Cloud driven system of ERP remove the need to be present at the desk at workplace and this also implies to team too. The employees who are working overtime in the field or in office is quite imperative which can access the system from what the location they are in. This also provides controlled access to the employees as per their roles. This makes sure the safety of data while offering much required information to the employees in the field, assisting those conducting audits and close sales plus check of quality. The controlled access with different authentication assists in protecting the sensitive data plus avoids corporate espionage.

Large portion of respondents believe that ERP failed to change the working culture. Therefore, I recommend that they should re-implement the system by changing the environment. (Stewart et al. 2000.) Successful ERP installation is more likely to occur in an environment that encourages and recognises open lines of communication and collaboration. To ensure a smooth ERP rollout, it's important to keep everyone in the loop with regular updates and training sessions. Organizational structures that allow for greater degrees of freedom and the free flow of information and ideas—such as those with "fluid job descriptions, loose organisational charts, high communication, and few rules"—tend to foster innovation more successfully. (Shang & Seddon 2000.)

Information sharing is another problem highlighted by the respondents and that can be solved through hiring proper industry experts who will help in Textile ERP software optimization. It will enhance the performance of machine to make sure that the uptime is maximum, helping the administration to get on time data regarding products and the state. This also record plus track the information like the duration of the operations of machine, in case they are over or under-utilized plus facilitate the development of the repairing of assets. The software will also manage the dates when the checking up on maintenance are still needed to be checked plus send the reminders. All these will assist in utilizing the apparatuses optimally plus increase the life. (Mihalca, Intorsureanu, & UTA 2007.)

Large portion of employees have also complained about the ERP system integration in existing applications. I suggest that before beginning ERP integration, a business should consider all options, get ready, and pick the best course of action. You must consider integration maintenance depending on the type of ERP connectors your business chooses. If you determine you require a point-to-point integration, adding a few new components would likely suffice rather than changing the entire system. You must here determine the total cost of the system updates. When deciding on the best ERP integration strategy, all these considerations must be taken into account. The company management should understand that integration of ERP systems is a challenging procedure that needs careful planning and strategy. It takes between six months and two years to integrate client and server systems, as well as procedures, into a unified platform. Numerous variables, including the size of the business, the complexity of the current environment, the number of users, and the migration of data from older systems, affect the process' length and cost. Although modifications and changes are inevitable, it is crucial to design an ERP project before integration for a successful deployment.

Before choosing whether data has to be integrated into the new system, analyze the old data to eliminate any extraneous information. If at all feasible, seek up the sources of the material to make sure it is correct and complete. Since the efficacy of an ERP system directly depends on the data system, it is difficult to overestimate the importance of data research at this time. If the data is inaccurate or contains mistakes, the integration could not function. In order to speed the changeover to the new system, management must develop a data integration strategy that collects data and divides it into logical tables. You can make use of websites like draw.io and miro.com. They also have to choose the integration strategies that are ideal for your company's needs. You can reach a consultant right here. If your budget permits, keep in mind that paying more to hire professionals will result in a quicker and easier integration process. Choose the integration strategies that are ideal for your company's needs. You can

reach a consultant right here. If your budget permits, keep in mind that paying more to hire professionals will result in a quicker and easier integration process.

Finally, the chances of success will increase, and you'll be able to avoid typical mistakes if you work with a solution provider early in your ERP deployment. ERP solutions are purchased, deployed, and initially set up by solution providers. Hiring someone with experience and knowledge is the greatest approach to accomplish it. Because of this, businesses seek an experienced staff to handle ERP alignment with their operations.

7.1 Limitations of research

This research is conducted on gauging the importance of ERP software in manufacturing industry. The limitations of this study are only Bangladeshi industries were the focus of this study. The re-search employed an interpretative method and evaluated only the apparel industry. Project managers, academics that specialize in ERP, professionals in ERP implementation, ERP investigators, and specialists made up the research sample.

The focus of this study was more on descriptive than analytical material, and there was limited access to information because data from ERP systems cannot be supplied to the academic community directly owing to safety concerns.

7.2 Future directions

For upcoming research in the future, researchers may concentrate on the textile industries in Pakistan or India. If they are studying the Pakistani market, they may use descriptive research. Since the Pakistani apparel industry is underdeveloped, researchers can focus on determining the reasons why this is the case. Taking these difficulties into account, they can then recommend the deployment of ERP software.

Future study might focus on the merits of a certain ERP system for the textile sector and how to use it. Future academics can examine ERP deployment techniques because ERP is a recent technology in Bangladesh. Research may be undertaken in the future to identify the problems with ERP and potential solutions by extensively analyzing various ERP software products and how they are used in the future.

8 CONCLUSIONS

The apparel factory administration incorporates the production elements, then aligns and manages the resources plus integrates the resources in sufficient manner to meet the goals. In this report I have discussed the importance of ERP in Garments industry. I can observe from the responses of employees that operational quality of Garments businesses has also improved with the implementation of the system.

However, both above mentioned companies have to implement cost management strategies to be automotive and efficient. Textile businesses should implement relevant ERP system which will help in cost management. This system can increase the efficiency, low error rate, multiple value, and systematic strength. This system holds wide number of contents which are impacted by different external and internal factors. ERP management is affected by different external and internal factors. Firstly, ERP system holds large amount of data regarding resources usually through integration of relevant technical department of the production process to gain comprehensive information of sources plus manage and control them to achieve better results of ERP management. Along with this, ERP uses top-to bottom management approach permitting production management to manage the whole manufacturing chain. Through ERP system, the businesses will be able to do inventory management.

ERP will act as the centralized resource for data analysis, tracking the inventory and strategy replenishment. In supply chain, ERP helps in visibility plus the firm for tracking the performance of vendor, in addition to drawing data from external and internal sources for assisting with major efficient planning of supply chain plus management. The manufacturing ERP software helps in effective maintenance through centralizing scheduling, work order management and ticketing, whereas it will also enable the powerful tracking of data plus analytics to enhance the effectiveness of maintenance.

The ERP modules will also be able to store, track and analyse the equipment of performance from sensors plus reports, helping more proactive, informed plus targeted maintenance. The business resource planning software will be able to track the results of QA creating large store of data over the time which can play major role in early identification the needs of maintenance. Through ERP the requisition and purchasing will be organized easily and will be operating with visibility in different areas

of the operation. Along with this the manufacturing operations plus support which will also apply in the HR functions like performance reviews, tracking goals and more the company will observe an increase in the visibility for the processes. The ERP will act as centralized, accessible for every procedure in the system. Everyone will have access to the information from other processes in the department which will make it easier to foster the coordination, collaboration. If the visibility is increased across different functions plus processes comes the breakdown the barriers to communication. The procedure of silos which is invisible among various functions and groups which will result in redundant work, missed opportunities and inefficiencies for collaboration.

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What is your location?

| | |
|----|----|
| a. | b. |
| c. | d. |

What is the size of the company you are working in?

| | |
|----|----|
| a. | b. |
| c. | d. |

What is the nature of the business of the company you are working in?

| | |
|----|----|
| a. | b. |
| c. | d. |

Which ERP software is your company using?

| | |
|----|----|
| a. | b. |
| c. | d. |

Which department introduced this ERP system in the company?

| | |
|----|----|
| a. | b. |
| c. | d. |

Question No.1: Which ERP is your company using? What is the name?

1. Solution Dots
2. SAP ERP
3. Don't know

Question No.2: Please select your principal region of the business?

1. Bangladesh
2. Saudi Arabia
3. United Kingdom
4. Other Countries

Question No.3: Your industry or business sector belong to?

1. Textile
2. Construction
3. Manufacturing
4. Wholesale/retail
5. Other _____

Question No.4: Any ERP systems is implemented or in the phase of implementation in your organization?

1. Yes
2. No

Question No.5: Which department of the organization initiated the idea of adopting an ERP system?

1. IT Department
2. Senior Management
3. Finance Department
4. Third Party Consultancy/ERP Vendor

Question No.6: Did your organization use outside consultant to assist with ERP implementation?

1. Yes
2. No
3. May be
4. Don't know

Question No.7: When you find it necessary to re-engineer the business processes?

1. Prior to the implementation
2. As part of the implementation
3. After the implementation
4. No re-engineering done

Question No.8: What is/was the motivation for ERP implementation in your organization?

1. Technical
2. Business / Strategic
3. Functional
4. Cost saving and other financial reason

Question No.9: What were the benefits of the ERP system for the organizations?

1. Increase overall productivity and better customer satisfaction
2. Reduced cycle time and Inventory levels
3. Reduced head count and Return on investment
4. All of the above

Question No.10: What managerial problems, if any, were faced during or after the ERP implementation?

1. Project cost overrun/Project delays
2. Conflicts with business strategy/Employee resistance to change
3. Conflicts with Consultants/Internal conflicts/Conflict with vendors
4. All of the above

Question No.11: How much the ERP system fulfils your company's business strategy?

1. 81% - 100%
2. 61% - 80%
3. 41% - 60%
4. Below 40%

Question No.12: What technical problems, if any, were encountered during or after the ERP implementation?

1. Integration with existing systems/other applications
2. Integration with new business software
3. Data migration
4. Customization
5. Security

Question No.13: How long was the implementation of the ERP system?

1. 6 to 9 months
2. 1 year to 2 years
3. 2 year to 3 years
4. Over 3 years

Question No.14: What type(s) of training after ERP implementation in your organization is provided?

1. Project team training
2. End user training
3. Traditional training
4. Web-based training

Question No.15: How frequently do you experience problems with your application interfaces?

1. Almost all the time
2. Frequently
3. Sometimes/A few times
4. Almost never

Question No.16: Do you think the working culture has changed completely after implementation of ERP in your organization?

1. Yes
2. No

Question No.17: What do you think about the workload in the organization after implementation of ERP in your organization?

1. Work Load is very much and task is not finished on appropriate time
2. Work Load is very much but due to participative environment employees are able to complete their task
3. Work Load is evenly distributed and employees are able to complete their task on time
4. Work Load is less as compared to other companies

Question No.18: Does due to Business Process Restructuring goals and task are clearly defined for increasing productivity?

1. Yes
2. No

Question No.19: Does the management keeps track of the activities in the organization due to ERP implementation?

1. Yes
2. No

Question No.20: Does the problems are resolved in an efficient manner with the help of ERP Solution of the company?

1. Yes
2. No

Question No.21: Are you satisfied with information sharing within the organization due to ERP Solution Implemented in the organization?

1. To a great extent
2. To some extent
3. To a very little extent
4. Not at all
5. No comments

Question No.22: Rate your satisfaction with ERP and Business Process Restructuring in the organization?

1. Highly Satisfactory
2. Satisfactory
3. Average
4. Dissatisfactory
5. Highly Dissatisfactory

Question No.23: Did ERP implementation in the organization was within original budget?

1. Under budget
2. On budget
3. Over budget by up to 50%
4. Over budget by more than 50%
5. Not applicable

Question No.24: The ERP project was worth the money company spend on it?

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
5. Don't know