Master’s Degree Project

Adoption of Innovation

A qualitative research about employees’ adoption of information technological tool

Authors:
Mbachu, Innocent Chijioke
cm222br@student.lnu.se

Quentin Bizien
qb222ab@student.lnu.se

Tutor:
Urban Ljungquist

Examiner:
Anders Pehrsson

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Abstract

**Purpose** - The purpose of this research was to investigate the adoption of ERP tool by employees within a product manufacturing organization.

**Design/methodology/approach** - In order to fully achieve the research task, the authors applied a qualitative case study that was descriptively designed. During data collection processes, primary and secondary data were utilized as information resources. The primary data obtained were multiple in-depth and semi-structured interviews performed with fifteen (15) employees over the course of an empirical investigation. While secondary data were, information obtained through various scientific articles, case organization’s webpage and other resourceful ones. Finally, convenient sampling method was used during identification and selection of respondents that were highly resourceful to the case study.

**Findings** - An identification from the empirical data obtained highlighted some likely impediments to technological innovation adoption. More often, constraints to innovation adoption are not always individual factors but rather frequently organizational ones which can hinder employees’ from promptly adopting new innovations in various working environments.

**Research limitations/implications** - Future research is proposed to measure the effect of employees’ adoption of technology innovation can have on an organization’s industrial performance. Furthermore, in order to encourage rapid adoption of innovation within an organization, recognitions and praises to employees whom are making good efforts is recommended. Personal recognitions from top managers to performing employees’ can persuade other employees to be more proactive in innovation utilization to obtain the same praise.

**Originality/Value** - This study defines innovation adoption from an individual employee’s perspective as: an employee having a proper knowledge of the technology given to be used, personal acceptance of the technology, managerial empowerments to the employee and most importantly is an employee having the adequate ability to fully utilize the technological tool provided in order to fulfil the specific task.

**Keywords** - Innovation, Adoption, Technology, IT Tool, Enterprise Resource Planning, Organization Factors and Individual Factors.

**Paper Type** - Master’s Thesis
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Mbachu, Chijioke Innocent and Bizien Quentin
School of Business and Economics,
Linnaeus University, Växjö.
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1. Introduction

1.1 Background

Innovation adoption has been investigated lengthily by prior studies (Frambach and Schillewaert, 2002; Hameed et al., 2012; Ahmad et al., 2014; Talukder, 2014; Sharma and Daniel, 2016). Adoption of innovation in organizations is a significant determining factor towards the organization’s success and capability to maintain competitive advantages such as product and service proficiency, lead time reduction, cost effectiveness, and relationship management in various global markets and industries (Roger, 2003; Rhee et al., 2010, Altamony et al., 2016; Makkonen et al., 2016). Higgins (1995, p.9) defined innovation to be “the development of something new that has significant value to an individual, a group, an organization, an industry or a society”. According to Tidd et al., (1997) and Von Hippel, (2005), an organization innovation is highlighted to be a technology transformation or process enhancement which enables the organization either to advance, to create new products, services and processes or to reduce cost for existing offers in other to better satisfy their customers and to create space for further developments.

Adoption of innovation is also in form of an idea, a product, a program or a technology that is new to the adopting group or individuals (Rogers and Shoemaker, 1971; Zaltman et al., 1973; Cooper and Zmud, 1990; Pérez-Luño et al., 2011). This current study refers to individuals and users in an organization with the term commonly known as “employees”. Rogers was well known for his early studies about innovation adoption (Talukder, 2014). He described innovation adoption as a state/phase where employees go from a basic awareness of the innovation to its actual proper utilization (Rogers, 2003). For a technological innovation such as an information technology (IT) tool, being successfully diffused within an organization, adoption by employees and employees’ willingness to fully utilize the innovation properly is indispensable (Saaksjarvi, 2003; Rogers, 2003; Talukder, 2011; Pérez-Luño et al., 2011; Talukder, 2014; Altamony et al., 2016). Often, innovation adoption is the phase where an organization wants to make sure that a technology is well absorbed into its core businesses (Davenport, 2000; Talukder et al., 2008).
Recent studies have shown that a reasonable adoption rate of IT tools, such as Enterprise Resource Planning (ERP), can enable an organization to be competitive in the global market (Davenport 1998; Buckhout et al., 1999; Davenport, 2000; Markus and Tanis 2000; Van Everdingen and Waarts, 2003). Olhager and Selldin (2003), highlighted that some organizations can develop IT tools internally. However, new technologies have made it much easier and faster for organizations to purchase existing ERP system. Habitually, it can be better safe to customise an ERP system from reliable vendors such as: - SAP, Cisco, Intel, Microsoft, Dell, IFS, Intentia, IBS (Olhager and Selldin, 2003). An ERP is defined as a technological tool or software innovation that facilitates seamless integration of information with better workflow and can standardize business processes across functional departments to assist employees within organizations/businesses accessing real-time updated information (Hong and Kim, 2002; Kumar et al., 2002; Mabert et al., 2003; Ehie and Madsen, 2005; Zhang et al., 2005; Xue et al., 2005; Law and Ngai, 2007; Liang et al., 2007; Leon, 2008; Ngai et al., 2008; Ge and Voss, 2009; Narimani et al., 2014; Kharuddin et al., 2015; Fadlalla and Amani, 2015; Al-Jabri and Roztocki, 2015; Almajali et al., 2016; Altamony et al., 2016; Costa et al., 2016; Lai et al., 2016). Today, ERP systems are vital technology innovation tools which enable multi-disciplinary attention in areas such as operations supervision, information systems, finance, marketing, organizational behaviour, human resources fields, supply chain and manufacturing utilities (Klaus et al., 2000; Hitt et al., 2002; Sarkis and Sundarraj, 2003; Lai et al., 2010; Ram et al., 2013; Coelho and Laporte, 2015; Sharma and Daniel, 2016; Jinno et al., 2017).

The significance of technological innovation has made scientific authors to make several calls for future studies about the need to carry out new researches concerning employees’ adoption of ERP system within organizations (Talukder, 2014). These calls will assist in getting more insights about how employees within an organization or collective organizations adopt ERP systems while considering various factors such as external and personal effects that influence the adoption of IT tool (Masa’deh et al., 2015; Almajali et al., 2016). Thus, this study deemed these calls as very vital towards enabling prospective readers to have new practical knowledge of how technological tool such as an ERP is adopted by employees within an organizational context, while considering the two (2) earlier mentioned factors. As a managerial implication, it was imperative to conduct this research in order to enlighten and to further an understanding on how business managers can better utilize the available resources at their disposals to avoid
innovation redundancy and employee’s unproductiveness towards innovation usage and adoption. To end, this study also aims in getting insights from the latent angle of employees. Thus, this in the future will empower business managers decrease technology wastage and ensure proper adoption learning scheme in their various organizations.

1.2 Problem discussion

IT tools such as ERP system (software) today are more multifaceted and essential to organizational operations and managerial decision-making processes (Venkatesh and Bala, 2008; Nwankpa and Roumani, 2014; Talukder, 2014; Rajan and Baral, 2015; Seethamraju, 2015; Jinno et al., 2017). Despite the improvements made in understanding the factors influencing employees’ information technology (IT) adoption and utilization (Venkatesh and Davis, 2000, Van Everdingen and Wierenga, 2002; Venkatesh et al., 2003). Recent studies and suggestions from business managers indicated that low adoption and usage of ERP systems by employees are at present, creates a principal barrier to effective innovation implementation in various organizations (Davis, 1989; Leon, 2008; Al-Fawaz et al., 2008; Ngai et al., 2008; Al-Shamlan and Al-Mudimigh, 2011; Venkatesh et al., 2000; Overby, 2002; Gross, 2005; Sherif et al., 2006; Costa et al., 2016). In the past, there were several cases where improper implementation of technological innovation by organizations (Hewlett-Packard’s in 2004, with financial loss of $160 million and Nike in 2000 with financial loss of $100 million in sales and a dip in stock value by 20%) led to low adoption and utilizations of the IT tools, the result was huge loses in millions of dollars (Koch, 2004a; Koch, 2004b). Today employees’ adoption of IT tools has become poorer and worrying to most organizations (Venkatesh and Bala, 2008). This worries have prompted organizations seeking the right strategy to ensure that their employees adopt and make proper utilization of the IT tools provided to them (Talukder, 2014).

Several researchers have argued that if organizations don’t provide the enabling tools and in addition, make strategic decisions in implementing IT innovation. The adoption process by employees can be hindered and as a consequence, creates problems which limits dissemination of innovation within such organization (Davenport 1998; Buckhout et al., 1999;
Markus and Tanis 2000; Roger, 2003). ERP system is defined as an IT tool that is innovative in nature by previous studies (Talukder, 2014). This is due to the fact ERP system offers a potential opening for an extensive improvement in the performance of an organization in terms of business integrations and communication in the global market. This prompted many organizations today to dedicate tremendous budgets in development or purchase of ERP systems (Venkatesh and Bala, 2008; Venkatesh et al., 2000; Antioco and Kleijnen, 2010). However, due to the recurrent employees’ unwillingness to accept and utilize a provided IT tool properly, an organization’s performance and advances are consequently hindered (Woodside, 1996; Talukder, 2014; Wunderlich et al., 2014). Low adoption and improper utilization of ERP tools have been attributed to “productivity paradox” i.e. an inconsistent association between IT investment and firm performance (Landauer, 1995; Sichel, 1997; Devaraj and Kohli, 2003; Venkatesh and Bala, 2008). Not all technological innovations in form of an ERP software introduced by organizations are successfully adopted by employees (Mick and Fournier, 1998; Parasuraman, 2000; Lam and Parasuraman, 2015). A large part of the introductions is unsuccessful as some employees do not positively answer to the underlying technologies (Venkatesh and Bala, 2008). Frambach and Schillewaert (2002), therefore stated that an organization’s innovation that needs to be incorporated in its work-related activity is of little importance if the innovation is not well utilized and adopted by employees.

Frambach et al., (1998), indicated that understanding the underlying factors that influences innovation adoption decision process by potential adopters (employees) is necessary. Bhattacherjee and Sanford (2006, p.805) emphasized that “understanding technological acceptance is important because the expected benefits of technology usage, such as gain in efficiency, effectiveness or productivity, cannot be realized if individual users (employees) do not accept these systems for task performance”. Nelson (1990, p.79) in his study stressed that “the adoption of new technology in workplace has become a transition experience common to many organizations. The success of an innovation adoption depends on the nature of the individuals within the organization and the technology itself”. Talukder, (2014), explained Nelson’s statement by highlighting that the availability of innovation hence does not spontaneously guarantee that every employee will effectively utilize the technology. Talukder (2014), expressed difficulties about employees’ unwillingness to change behaviours and attitudes does influence the ability of the employees’ adopting technological innovation in
their work places. Thus, this implies that without behavioural and attitudinal changes of employees embracing a technology, an organization’s effort in introducing its employees to a new technological innovation such as an ERP system might not attain the full potential to effectively utilize the technology (Talukder, 2014).

Several scientific authors have pointed out the difficulties related to employees’ adoption of technological innovation in the context of an ERP system (IT tool) being a serious issue today, majority of these studies (Roger, 2003; Talukder, 2014; Masa’deh et al., 2015; Almajali et al., 2016; Costa et al., 2016; Lai, et al., 2016) emphasized the importance of conducting new studies in other industrial sectors. Talukder (2014) conducted an empirical research about employees’ adoption of an ERP tool within an education sector, highlighted that organizational factors and individual factors do influence employees’ adopting technological innovation. Talukder (2014) study also emphasized the need to carry out further research in other industrial sectors investigating how employees adopt ERP tool as a new innovation within the organization. Further concerns were stressed about organizational and individual factors effect on employees’ attitudes and behaviours towards adopting a new ERP tool, thus they should be considered as essential in future studies (Roger, 2003; Talukder, 2014).

At this present moment, there is a gap in up to date study that have empirical looked into how organizational factors and individual factors influence employees adopting IT tool such as an ERP system as a new innovation within another industrial sector except in the education sector conducted by Talukder (2014) himself. Hence this gap, created a study vacuum which gave rise to the need of conducting a new academic research. It also formed a prospect to carry out empirical investigation in another industrial sector such as the product manufacturing industry. The authors of this master’s thesis deemed the study gap earlier mentioned as an opportunity to carry out an empirical investigation in the product manufacturing sector with a mindful thought to contribute with useful findings that should be relevant for industrial managers and future academic researchers.
1.3 Research Purpose

The purpose of this research is to investigate the adoption of ERP tool by employees in a product manufacturing organization.

1.4 Research Question

How do organizational factors and individual factors influence employees’ adoption of ERP tool as a new innovation within an organization?

1.5 Delimitations

This case study was based on a single technological innovation (ERP) that was earlier stated to be an IT tool and how factors such organizational and individual ones’ influence employees’ adopting the tool as a new innovation within a specific organizational context. To this end, there might be no guarantees that the results and recommendations are applicable or generalizable to other organizations seeking to improve adoption of a similar IT tool. Therefore, the outcome of this study should be considered in a carefully manner. However, this study offered various new insights which are practical and some similarities to past case studies that are valuable to both industrial practitioners and future academic scholars.

1.7 Outline of the study

In the table below, the authors briefly described the different chapters of the study in order for readers to quickly have an overview of what have been done in this academic research.

<p>| Introduction | The introduction chapter provides the background of innovation adoption of IT products in organisations. This chapter also talks about the problem analysed by the |</p>
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<tr>
<th>Section</th>
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<tr>
<td>Authors</td>
<td>authors which had led to the purpose and delimitation of this study.</td>
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<tr>
<td>Literatures</td>
<td>The literature review develops the different models available in order to analyse the innovation adoption within organisations.</td>
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<tr>
<td>Methodology</td>
<td>The methodology chapter corresponds to a framework of all the research and analysis techniques used by the authors throughout this master thesis.</td>
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<tr>
<td>Empirical Investigations</td>
<td>This chapter aim to explain the company analysed in this paper. Basic information was provided in order to make the readers familiar with the case studied by the authors.</td>
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<tr>
<td>Analyses</td>
<td>The fifth chapter represents the different analysis the authors were able to perform according the result of their different data investigation.</td>
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<tr>
<td>Discussion</td>
<td>The last chapter of this master thesis aim to draw some conclusion, takeaways and findings about the different analysis performed by the researchers.</td>
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<tr>
<td>Reference List</td>
<td>The reference list chapter gather in an alphabetical order all the articles, books and other references used by the authors throughout this master thesis.</td>
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<tr>
<td>Appendix</td>
<td>Finally, the appendix of this master thesis represents information and documents that are not incorporate in the core chapters but still need to be considered when reading this master thesis.</td>
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Table 1: This study’s outline
2.0 Literatures

2.1 Adoption Approach of IT Tools

Adoption of IT is defined as “use of computer hardware and computer software applications to support business operations, organizational management and decision-making processes” (Thong and Yap, 1995, p. 431). According to Hameed et al (2012 p. 359) “Actual IT innovation adoption in an organization can be initiated by either a response to a change in the environmental conditions in which it operates or at the point when innovation becomes a requirement for their routine organizational operations”. Several studies have been undertaken on IT adoption both at organizational and individual levels (Hameed et al., 2012). Organizational level researches have studied the process of adoption and diffusion of IT innovation (Pervan et al., 2005). Correspondingly, multiple researchers have looked into series of factors influencing IT adoption (Hameed et al., 2012). According to the literatures of Grandon and Pearson (2004) and Chan, and Ngai (2007), there are four main contexts when studying IT innovation adoption, and these include: - technological, organizational, environmental, and individual factors. Jeon et al. (2006), in a technological context; perceived benefits, cost, complexity and compatibility are key determinants. In organizational context; organization’s size, support from top management, existing resources, and IT expertise are very important to take into consideration. In environmental context; competitive pressure, demands from business partners/customers, backing from governmental authority, and environmental uncertainty have also been considered to be relevant (Chwelos et al., 2001; Quaddus, and Hofmeyer, 2007).

In this research, organizational context and individual factors are well above the focal concern towards examining individual employees’ IT innovation adoption. IT innovation process in organizations is said to be effective only at the point where the innovation is accepted and integrated very well into the organization and individual employees continue to utilize the innovation over a certain period of time (Gopalakrishnan and Damanpour, 1997). Fichman (2001) and Rai et al. (2009), highlighted the fact that most academic writers describe innovation adoption in-terms of assimilation and describe awareness, interest, evaluation,
commitment, limited deployment, partial deployment and overall deployment as an assimilation life-cycle. However, other literatures describe adoption of IT innovation extensively documented as a three-stage (3) process of initiation, adoption-decision and implementation (Pierce and Delbecq, 1977; Tomatzky and Fleischer, 1990; Rogers, 1995; Gallivan, 2001). These three phases are more often denoted to as pre-adoption, adoption-decision and post-adoption in both IT/IS (Information Technology/Information System) literature (Hameed et al., 2012). Roger (1995), emphasised that initiation state is also known as pre-adoption stage; takes in consideration of employees’ recognizing the worth of innovation by seeking information about its usefulness.

Figure 1: IT innovation adoption model by Hameed et al. (2012).

With the literature reviewed by Roger (1995) and Gallivan (2001) about the process of initiation, adoption-decision and implementation, Raza and Standing (2010) took into consideration from the conceptual model of individual IT adoption process and thus, emphasized that technological innovation literature should well considers two (2) major approaches to adoption behaviour of users. These approaches include the factor approach and process approach. The factor approach entails examining the pattern of innovation, while the process approach talks about how individuals such as employee’s make assessments in order to implement an IT innovation (Brem and Viardot, 2015). Suggestions from Talukder, (2014) and Brem and Viardot (2015), indicated that the process approach is well above the former. Thus, the latter approach is considered also as very relevant in this current research.
Fichman (2001), argued that once an employee has devoted his or her manpower towards learning about a technological innovation, the employee then decides to acquire know-how about the innovation tools. For this reason, Rai et al. (2009) emphasized that employees often implement innovation based on their acceptance of the technology. Damanpour (1991), underlined that the last adoption stage involves employees developing and creating new activities based on an innovation usefulness. At back end of an innovation adoption process, the individual employee evaluates the acceptance of the technology. These multifaceted circumstances, gave room to the significant of technological acceptance model (Davis, 1989). Today, technological acceptance model (TAM) is widely still used by many researchers in determining the perceived usefulness of a technological tools by individuals, groups or organizations.

2.2 Technological Acceptance Model (TAM)

In studying innovation acceptance methods, several researchers have indicated various models such as disruptive innovation model, lean innovation model, technology acceptance model and incremental innovation model as examples of relevant models that can be applied during innovation case studies (Dewar and Dutton, 1986; Davis, 1989; Byrne et al., 2007). However, in the context of studying technological acceptance by employees within an organization, technological acceptance model (TAM) developed by Davis (1989) have been extensively used by prior studies (Roger, 2003; Pagani, 2004; Schepers and Wetzels, 2007; Rai et al., 2009; Tong, 2010). Recent organizational case study by Talukder (2014), used combined constructs from IT adoption model and TAM, highly recommended the same constructs to upcoming case studies. In 1989, a well acclaimed author called Davis proposed the technology acceptance model (TAM) to enlighten the potential user’s behavioural intention to use a technological innovation (Davis, 1989). King and He (2006), TAM today has come to be one of the most extensively used models in IT research because of its understandability and simplicity in studying users’ attitude toward technological innovations. Davis (1989), explained that TAM has two determinants that can influence an individual adoption of technology. The determinants are called perceived usefulness (PU) and perceived ease of use (PEOU). This two determinants influence a person’s attitude towards using, and the behavioral intention to use, which in turn influences the actual system use (Davis, 1989).
TAM is important when explaining factors influencing IT tools usage (Igbaria et al., 1995; Legrisa et al., 2003, McFarland and Hamilton, 2006; Hameed et al., 2012; Talukder, 2014). PU seems to have significantly much stronger influence on technological acceptance compared to the PEOU when evaluating innovation adoption.

Perceived usefulness (PU) can be explained as “the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989 p. 320)”. In other words, employees are more likely to use technological tools if they believe that the tools will help to enhance their work performance and effectiveness. Perceived ease of use (PEOU) is defined according to (Tong, 2010) as the level a person believes utilizing a new technology does not require him or her putting much mental and physical efforts. However, some technology tools (such as: ERP, CRM and SCM) are hard to utilize, this is as a result of the professional knowledge and expertise that are required to utilize them properly (Ratten, 2015). Therefore, this means that some employees lacking the required technical knowledge and competence will have problems to effectively use the technology (Ratten, 2015).

![Technology acceptance model by Davis, (1989).](image)

Figure 2: Technology acceptance model by Davis, (1989).

TAM model accepts that the perceived usefulness (PU) and the perceived ease of use (PEOU) are central in influencing an individuals’ attitude and behavioural purpose towards utilization of technological innovation (Schepers and Wetzels, 2007). However, Pagani (2004) and Rai et al. (2009), highlighted that perceived usefulness of innovation is the main element in the utilization of technologies in order to access the level of belief individual think that a technology will assist him or her to complete a given task. Rai et al. (2009), therefore stated
that when understanding the context of innovation usage by persons, people often make assessments about the benefits of using an innovation based on the assumption about the technology usefulness. Users such as an employee are probably willing to accept technologies when they truly believe that there are benefits to utilize the innovation (Ratten, 2010). Fenech (1998), emphasized that when employees believe they have the ability to confirm the usefulness of a technology tool, they are very likely to adopt the innovation that the tool brings. Brem and Viardot (2015), added to this argument by highlighting that an employee perception towards the usefulness of a technological innovation are sometimes based on previous utilization of similar IT tools.

Due to the fact that several studies (Fenech, 1998; Legrisa et al., 2003, Pagani, 2004; Rai et al., 2009; Ratten, 2010; Hameed et al., 2012; Talukder, 2014; Brem and Viardot, 2015), have highlighted the significant value of studying PU of innovation over PEOU. It can be said that if an innovation is overall perceived as easy to be used by all employees in an organization, the hidden implication might result to an outcome which might be too late to be taken under control (Koch, 2004a; Koch, 2004b). Hence, this present study took into consideration mainly attitudes, beliefs and perceptions of employees towards the perceived usefulness (PU) of technology innovation tool that is provided by their organization in order to investigate innovation adoption and how a technological tool is adopted by employees.

### 2.3 Innovation Adoption Framework

This is a recent framework which is an extension of Davis (1989) technological acceptance model (TAM). TAM determinants influence employees’ attitudes and beliefs towards adopting a given technological innovation (Roger, 2003). PU and PEOU can also impact an employee’s behavioral intention to use, which in turn influences the actual technology proper utilization. Talukder (2014), innovation adoption case study emphasized greater importance to PU over PEOU of innovation. This recent study conducted by Talukder (2014), considered only PU by adding two (2) new subordinate variables. These variables are namely organization factors and individual factors. These factors do influence employees’ attitudes, behaviours and beliefs towards adopting technological innovation. Talukder (2014),
concluded his case study and underscored that organization factors and individual factors are very dynamic in shaping the way innovation are adopted within a work environment. Organizational factors in previous studies were called external factors within where an employee works (Roger, 2003). In Talukder (2014), these were basically referred to as organizational factors. These factors have an effect which influences employees’ attitude and utilization of innovation, employees’ consciousness about the functioning application of innovations and employees’ ability to carry out the given task (Frambach and Schillewaert, 2002). Individual factors are said to be the behavioural belief factors, they define personal employee’s cognitive interpretations of innovation and themselves specifically (Lewis et al., 2003; Talukder, 2014).

![Diagram showing factors influencing individuals’ attitude towards innovation adoption within an organizational context](image)

Figure 3: A model showing factors influencing individuals’ attitude towards innovation adoption within an organizational context, by Talukder, (2014).

### 2.3.1 Organization Factors

If an organization wants to increase the successfulness of the new technologies adoption inside its work force, it has to help its employees to adopt the new technologies by providing trainings and supports (Lu et al., 2005). People that need to adopt new technologies are, indeed, influenced by several factors such as organizational ones (Peansupap and Walker, 2005). According to Talukder (2014), organizational factors are training and managerial
supports that are given to employees in their working environment in order for them to be able to utilize an innovation at work.

2.3.1.1 Training

Training is defined as the learning (practical or theoretical) sessions an organization makes available for its employees (Al-Gahtani and King, 1999). Those sessions are used by the employees in order to understand the new technologies proposed by the organization (Al-Gahtani and King, 1999). According to Talukder (2014), the training sessions provided by organizations can help their employees to develop a self-assurance about their capacity to understand and adopt technological innovations. Therefore, trainings can help people to be more confident about the new innovations (Igbaria, 1993), which leads to the adoption and active usage of the technologies provided (Igbaria, et al., 1996; Igbaria, et al., 1997; Jasperson, et al., 2005; Talukder, 2014). Igbaria, (1993) and Yuan et al. (2005), thus stated that training sessions given by organizations do strongly have an impact on technologies utilizations and adoptions by the employees.

2.3.1.2 Managerial Support

Such as the training factor, the managerial support has a strong effect on the adoption of technologies by the employees within an organization (Davis, et al., 1989; Trevino and Webster, 1992). The managerial support is related to the assistance and assets employees receive from their managers (Igbaria, et al., 1996; Igbaria, et al., 1997). According to Talukder (2014), the managerial support will enhance the rewards perceived by employees from their managers by using the technologies which lead them to increase their willingness to integrate those technological tools in their daily working routines. The feedback is also an important aspect of the managerial support that can be used to make employees being more comfortable with technological innovations and thus, using them properly (Farr and Ford, 1990). Talukder (2014), also underlined that encouragement from the managers can indeed lead to individual employees’ innovation adoption.
2.3.2 Individual Factors

Individual factors such as perceived usefulness, personal innovativeness and prior experience with technologies (similar or new ones) are often essential in innovation adoption, and can influence employees’ impending adoption state (Lewis, et al., 2003). According to Talukder (2014), these factors are related to personal analysis and judgements of the future utilization of a provided innovation.

2.3.2.1 Perceived Usefulness

The perceived usefulness of a technology refers to the expediency of an employee to adopt an innovation according to the fact that it can help him or her to perform his/her daily working task efficiently (Talukder, 2014). Perceived usefulness is the most used determining variables from Davis (1989) study. McFarland and Hamilton (2006) and Venkatesh and Bala (2008) defined PU as the extent to which a person, an individual or an employee in an organization believes that using an IT/IS will improve his or her job performance and presentation. Kim et al. (2007), argued that the usefulness can be seen as the outcome of an employee expectations from the adoption of a technology. It is interesting to note that higher the perceived usefulness rate is to an employee, the more enthusiastic the employee proactive-ness becomes towards utilizing the technology (Davis, 1989; Lee, 2004).

2.3.2.2 Personal Innovativeness

Some employees are instinctively more enthusiastic toward technological innovations and can adopt them more easily than others (Yi, et al., 2006). The personal innovativeness represents the degree people are willing to incorporate new technologies in their daily life (Agarwal and Prasad, 1998; Lewis, et al., 2003; Thatcher, et al., 2003). Thus, it corresponds to individual feelings that is different from persons to persons (Talukder, 2014). The personal innovativeness of an employee has an effect on his or her technology innovation adoption process (Agarwal and Prasad, 1998). Rogers (2003), highlighted that employees considered as the most innovative will adopt more rapidly new technologies than others. Therefore, as more
employees from an organization having a reasonable level of personal innovativeness, increases higher chances of rapid adoption within such organization (Lee et al., 2006).

2.3.2.3 Prior Experience

This refers to the previous experiences of individual employee’s regarding new or similar technologies, such as the utilization of IT systems/software (Igbaria, et al., 1995; Igbaria, et al., 1996). If employees have experienced effective prior experience towards certain technologies, they will be more willing to adopt new ones in the future (Igbaria, et al., 1996). According to Farr and Ford (1990) prior experience, regardless the fact that they were successful or not, may lead people to adopt more easily new technologies. Farr and Ford (1990), stated that unsuccessful prior experience is also an incentive to increase new technologies adoption as employees will have the feeling that they gain experience and maturity from those experiences. It is interesting to note that the prior experience does not have to be in the same field that the current technology an employee is trying to adopt (Talukder, 2014). Prior experience has a positive effect on new technologies adoption, it also allows a decrease in apprehension and helps to increase the assurance people may have towards other innovations they come across in the future (Fuller et al., 2006).

2.4 Conceptual Framework

From the literatures reviewed, a conceptual framework was designed as guidance in fulfilling the purpose in which the research was originated. This research was primarily designed to investigate employees’ adoption of ERP tool by taking into account how organizational factors and individual factors influence adoption of IT as a new innovation within an organization.
The authors chose to use a newly developed combined scientific theoretical framework (Adoption approach of IT tools and Technological acceptance model) from the well documented academic research book written by Talukder (2014). Thus, this study rules out using literatures constructs from lean innovation, disruptive innovation and incremental innovation. This is because the current research’s main focus is primarily looking at innovation adoption from employees’ perspective and not the entire organization decision to innovate or the organization’s form of innovation. In view of the literatures reviewed earlier, organizational factors and individual factors influence employees’ innovation adoption (Talukder, 2014). Hence, this study regarded both to be relevant at present, and therefore framed these two (2) adoption influences into this research’s conceptual framework.

2.5 Summary of Literature Chapter

This research reviewed several literatures from users’ adoption approach related to IT tools (Hameed et al., 2012), which added to an understanding of technology acceptance. The authors also reviewed technological acceptance model (Davis, 1989). From TAM, we were made to assumed that employees should have tendency to accept a given technological innovation in their organization in order to well utilize the tools the innovation provides. TAM is influence by several factors such as PU and PEOU. PU was widely acknowledged by
several studies as being imperative to influence an individual accepting a given innovation and this might impact employees’ adoption state. Research conducted by Talukder (2014), made a comprehensive empirical study using PU from TAM constructs in order to study how ERP innovation was adopted within an organization by employees, detailed an innovation adoption framework which highlighted two (2) major factors namely: organizational factors (training & managerial support) and individual factors (perceived usefulness, personal innovativeness & prior experience) as important elements to be considered for future studies.

The present research aimed to get direct insights from employees’ perspective, decided to utilize the idea as illustrated in the conceptual framework. This was meant in assisting the current study to extensively investigate how employees adopt technological innovation in the context of an ERP tool within a product manufacturing industry. It was important to consider both organizational factors and individual factors that influence employees’ adopting innovation because several literatures that were reviewed in this chapter, expressed the imperativeness and effect they have in influencing IT innovation utilization which impacts innovation adoption taking effect.
3.0 Methodology

In this thesis, qualitative method of conducting scientific study was chosen to be the appropriate for the research. Other forms of research techniques were briefly highlighted. However, the authors chose the best suitable process and motivated the reasons for the chosen methodologies.

3.1 Research Approach

Concerning this research approach, two approaches were considered useful by the authors namely; the qualitative and quantitative approaches (Bryman and Bell, 2011). These two research approaches can be employed in order to gather and study data that allow researchers to get knowledge about specific situations or subjects (Sogunro, 2001; Sullivan, 2001). Qualitative studies are used to investigate issues, cases or questions in a thorough process that can be expressed through sentences and direct quotations from the information sources (Boris et al., 2005; Saunders et al., 2009). According to Kent (2007), qualitative research emphasis lies in getting more in-depth knowledge concerning social reality that puts more focus on words during gathering and analyzing of data that were gotten verbally during the process.

The qualitative research is very important as it is said to be descriptive in nature, this is because a well conducted qualitative research consist comprehensive information in respect to a study’s characteristics (Brahma, 2009). Bryman and Bell (2015), highlighted that are various ways of carrying out research involving qualitative approaches. Examples of these ways include: - focus group, participant observation, interview, conversation analysis and data mining approaches (Bryman and Bell, 2015). Quantitative study creates room for scientific researchers to accumulate and recapitulate data via charts, percentages, statistical analysis and surveys involving wide sample of population (Saunders et al., 2009).
3.1.1 Approach in this research

The current research which was to investigate how organizational factors and individual factors influence employees’ adoption of ERP tool as a new innovation within a product manufacturing organization, chose a qualitative approach to be essentially appropriate. The authors chose a qualitative approach because it is largely recommended by marketing researchers and academic scholars on the search for improved means of understanding multi-layered decision-making process principally from primary or secondary data sources (Hussey and Hussey, 1997; Kent, 2007; Bryman, 2008; Yin, 2009; Bryman and Bell, 2015). Qualitative approach employed in this research was highlighted via words during analyzing of the data obtained (Yin, 2009; Bryman and Bell, 2015). This assisted in thoughtfully understanding of data obtained in arrangement of words in good details (Kent, 2007). The data gotten were analyzed through the means of argumentation and expression from straightforward data obtained, this thus did not contain statistical or quantification procedures (Hussey and Hussey, 1997).

Finally, from suggestions by Bryman and Bell (2015), conclusions of this study were drawn based on attitudes, beliefs, opinions, and interpretation from the data collected. Therefore, it should be vital to emphasis that quantitative approaches were not used in this study. Hence, this ensures that the research’s authors ruled away any generalization of the study findings.

3.2 Research Design

The research design of studies and analysis can be described as the way to answer the research question (Saunders et al, 2009). Different studies used different methods to reach their purpose and the research design help to understand the path followed by the writers (Saunders et al, 2009; Bryman and bell, 2011). According to Robson, (2002) and Saunders et al. (2009), there are several types of research design suitable for conducting a qualitative research and these can be in form of descriptive, exploratory or explanatory.
An exploratory study is mostly used to learn more about a topic that is not deeply known yet (Saunders et al., 2009). Descriptive study is usually used to develop a first exploratory study and aims to analyse data to gain deeper knowledge about a problem or an issue (Robson, 2002). Whereas, an explanatory method represents the final step of research and is mostly used for subjects that are well-known or purpose that have been studied previously (Saunders et al., 2009).

3.2.1 Design in this research

This study was designed in a descriptive form because previous literatures defined the significant of descriptive research design and its focal-point of aiding researchers tunneling deep into evidences and facts about the topic of concern (Dhawan, 2010; Bryman and Bell, 2015). When conducting a descriptive research, researchers need to clearly describe simple but clear written facts from the data gathered in an empirical chapter (Bryman and Bell, 2015). According to Robson (2002), descriptive studies are usually used to develop a first exploratory study and aim to analyse and gain deeper knowledge about a problem or an issue. However, as the literature shows, the innovation adoption area has already been analysed by several researchers and some models are available in order to describe this adoption. Thus, the authors aim to develop and to increase the knowledge that already exist in that area by analysing the innovation adoption that involved employees of a specific organization. Furthermore, unlike the exploratory studies, the descriptive ones concerning topics with a clear purpose and objective (Saunders et al., 2009) which was the case of this study.

This study purpose which was to investigate adoption of technological innovation from employees’ viewpoint chose to be detailed in a descriptive form, considered previous utilization of descriptive design and selected to be employed in this research. The descriptive research design chosen was supportive in assembling and assessing opinions, features and behaviors about the case studied and helped upsurge the knowledge involved in innovation adoption from the viewpoint of employees’ in the specific case organization studied.
3.3 Data Sources

The data gathered by the authors can either be related to primary or secondary sources (Saunders et al., 2009). Secondary date represents knowledge searchers gain from articles and papers that already exist (Boris et al., 2005) while the primary one concerns new knowledge that are related to interviews or surveys performed by the authors on a sample related to the study (Bryman and Bell, 2011).

3.3.1 Data sources in this research

In this research, secondary and primary data sources are carefully considered appropriate, therefore were utilized as dependable data foundations/sources for this research. Secondary data sources were vital material from prior literatures from various scientific researchers, Linnaeus University data base and websites information that were applicable be used in this study. The primary data on the other hand were data gotten directly during the process of carrying out of the empirical investigation. These data were from verbal statements given by the study’s interviewees through answering of questions from the research questionnaire over the course of the practical cross examination sessions.

3.4. Research Strategy

A research strategy according to Yin (2009), indicates the pattern academic researchers can utilize in solving proposed research question(s). Research strategy also talks about the method study authors can use in order to gather information and data useful for study analysis (Yin, 2009). Bryman and Bell (2011), explained when the authors have decided the strategy that is the most suitable for a chosen research approach. There are several research strategies available for an empirical study to be conducted. These include: - historical, case study, archival analysis, survey and experimental strategies (Bryman and Bell, 2011).
3.4.1 This research’s strategy

A case study strategy was chosen to be appropriate in pursuing this research. The qualitative approach selected to be utilized in the process of conducting this study was highlighted by several scientific researchers as important in giving a case study appropriateness and future research trustworthiness (Yin, 2003; Phophalia, 2010; Bryman and Bell, 2011). McGrath (1982), stressed that a case study strategy capitalize on the practicality of the research’s context at the expense of generalization. According to Bryman and Bell (2015), case study can be either multiple case study or a single case study. The former requires studying phenomenon involving multiple organizations and the latter requires researchers to conduct research study within one organization (Yin, 2003; Bryman and Bell, 2015). Eisenhardt (1989), emphasized the significance of a case study and did underlined the need for an attentive focus centered in knowing the contemporary dynamics from one organizational setting.

Concerning this study, the authors decided to perform a single case study. This strategy allowed the research investigation to access deep knowledge of the innovation adoption from the organization’s employees’ perspective which needed to be carefully focus and well detailed (Bryman and Bell, 2015). A case study chosen represented the specific deep analysis of a real situation that occurred within the studied organization (Bryman and Bell, 2011). A case study was preferred as it permitted the research authors to have a clear understanding of multi-layered phenomena that could not be disconnected from the studied organization, this was done in reference to previous studies suggestions (Yin, 1981; Pihlanto, 1994). A single case study allowed this study’s authors to additionally research diverse sides of the chosen topic by investigative them in relation to each other (Yin, 1989). This facilitated the utilization of data triangulation that should give this study an all-inclusive knowledge and a clear understanding about studied participants (Ghauri, 2004; Yin, 1989). Furthermore, the authors were accepted to have considerable access to the specific organization represents also an argument for the choice of the single case study. The organization at the point in time, employs one of the author; allowed the researchers to have reasonable access to important employees that were relevant to the study to be interviewed. Finally, the sole case studied can lead to an over-all conclusion due to the structure employed by the authors. Therefore, this
could be transferred to other situations in the future, this statement was supported by a prior study too (Yin, 2009).

### 3.5 Data Collection Method

Different ways can be used by the authors in order to collect data during a qualitative study. According to Yin (2003) and Bryman and Bell (2011) these data collection methods can be in form of observation, focus groups, interviews or a combination of the above which is called a mix data collection method.

1) The observation technique represents the different observations the authors can made during the research. This technique is related to the environment and aim to analyse the different actions and attitudes people make (Ghauri and Grønhaug, 2005; Shukla, 2008).

2) The focus group method represents discussions with several individuals at the same time that aim to gather their different feelings and perceptions about a particular topic (Powell and Single, 1996; Threlfall, 1999; Thomas and Nelson, 2001; Stokes and Bergin, 2006; Saunders et al., 2009; Ghauri and Grønhaug, 2010; Malhotra, 2010; Wibeck, 2010).

3) Interviews represent discussion that authors can have with individuals in a head to head conversation (Judge et al., 2000). During those interviews, the writers ask several questions to the interviewees in order to understanding their point of views about a topic (Lambert et al., 2008). The interviews can be lead in a structured a semi-structured or an unstructured way (Saunders et al., 2009).

   a. Structured interviews are interview format where by questions are asked to the respondents in a direct format that can involve yes or no answers. The format restricts respondent by interviewees to some certain aspects and can sometimes restricts flexibility from a qualitative research perspective (Corbena, 2003; Saunders et al., 2009; Berg, 2009; King, 2004; Holloway and Wheeler, 2010).
b. Semi-structured interview involves predetermined questions that the interviewer needs to ask (Saunders et al., 2009). This interview structure does allow researchers to be more flexibly in proceedings and to make swift adjustments in a research questionnaire (Berg, 2009; Saunders et al., 2009; Gray, 2009; King, 2004).

c. An unstructured interview does not have prepared questions (Saunders et al., 2009). Therefore, different questions are asked to the participants according to their answers (Blackman, 2002; Saunders et al., 2009; Dipboye et al., 2012; Doody and Noonan, 2013).

3.5.1 This research’s data collection method

In this study, the researchers carefully considered all options of data collection method could be used. However, in order to extensively investigate the topic in focus from employees’ perspectives in the case organization, this research selected interview data collection method that were carefully done via a semi-structured format. In-depth semi-structured interviews were the most suitable structure of interview preferred for the study as several scientific authors emphasized the trustworthiness it gives an academic research (Yin, 2003; Bryman and Bell, 2011). The data collection method chosen enabled the present research data gathering procedures and permitted further important questions related to the focus of discussion to be considered. This created room for the interviews flexibility whereby some addition questions that were not prearranged were asked to the interviewees. Semi structured interviews in addition, permitted the current authors to touch other relevant new topics/areas that were not premeditated in the beginning of the interview (Gray, 2009). The authors were able to touch deeper into important topics with several respondents by asking further questions (Berg, 2009; Bryman and Bell, 2015). The main advantage of this data collection method was that it allowed the authors conduct various interview in a common order that might be slightly different from each other (Saunders et al., 2009).
3.6 Data Collection Instrument

In order to create flexibility in the flow of research questions, several authors underlined the significance of constructing a research operationalization through which sub-research questions can be drawn out by the researchers (Yin, 2009). This gives flexibility in which several follow-up questions could be directed to the multiple respondents depending on the answers they give separately (Bryman and Bell, 2015).

3.6.1 This research’s Operationalization

The operationalization designed for this research allowed the authors in translating important concepts into practical themes that were relevant during the process of conducting the empirical investigation. Ghauri and Grønhaug (2005) and Kent (2007), highlighted that operationalized constructs could serve as a study questionnaire. Therefore, the below operationalization was carefully drafted into this research questionnaire that was utilized over the course of the study’s semi-structured interview process. It should be noted that the following concepts were well defined and documented in the literature reviewed chapter of this paper.

<table>
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<tr>
<th>Literatures</th>
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<th>Key Questions &amp; Follow-up’s</th>
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<tr>
<td>(1.)</td>
<td>1a.) Training</td>
<td>- Learning Process - Practical Sessions - Teaching</td>
<td>- How were the training sessions you embarked prior to using the technology tool at your disposal? - Why was the process necessary for you as an individual employee within this organization?</td>
</tr>
<tr>
<td>Organization Factors</td>
<td>Training is defined as the learning (practical or theoretical) sessions an organization makes available for its employees (Al-Gahtani and King, 1999).</td>
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### 2b.) Managerial Support
The managerial support is related to the assistance and assets employees receive from their managers (Igbaria et al., 1996; Igbaria et al., 1997).

- Assistance
- Assets
- Managerial Feedbacks

- What types of management empowerment have you received towards using the technology tools?
- How have this helped your personal ability to utilize the tools?

### (2.) Individual Factors

#### 1a.) Perceived Usefulness
This refers to the expediency of an employee to adopt an innovation according to the fact that it can help him or her to perform their daily working task efficiently (Talukder, 2014).

- Individual Beliefs
- Self-Perceptions
- Attitude

- What is your personal opinion about the practicality of the IT tool in your disposal?
- How have this influenced your belief/attitude towards the tool’s helpfulness in fulfilling the given task?

#### 2b.) Personal Innovativeness
Defines the openness of an individual willingness to incorporate new technologies in his/her daily routines (Agarwal and Prasad, 1998; Lewis et al., 2003; Thatcher et al., 2003).

- Self Learning
- Can-do Abilities
- Open to New Ideas
- Self Motivated

- How is your ability towards technological products/services?
- How have this influenced your openness and attitude towards accepting new ideas?

#### 3c.) Prior Experience
This defines the previous (earlier) experience of

- Earlier Knowledge
- Past Utilization of

- In what ways have you come across or had prior know-how about this IT tools or similar ones?
people regarding technologies (Igbaria et al., 1995; Igbaria et al., 1996).

| Alike / Comparable technology. | - How did it influence your attitude towards the current IT tool? |

Table 2: This research’s operationalization

3.6.2 Interview Guide

An interview guide is a guide elaborated by the authors in order to perform the different interviews that increase the consistency of the analysis by making sure that all the interesting topics are covered during the interviews (Bryman and Bell, 2015). An interview guide can be articulated in questions as well as in main words (Yin, 2009).

In this research, the interview guide was designed from the research’s operationalization. The interview guide gave the authors prospects of having tolerable flexibility when the interviews were conducted. The interview guide ensured that all questions were satisfactorily taken into proper scrutiny, this was thoughtfully emphasized by Ritchie and Lewis, (2003).

3.6.3 Pre-testing

Pretesting of an interview guide according to Bryman and Bell (2007), can be conducted by involving persons academically qualified to having deep knowledge about the topic in focused to be researched. A research pre-test can also be defined as a process of preparing prior to an actual data collection procedure (Yin, 2009). This is done by refining and bug fixing of irregularities that existed in an initial study questionnaire through the consultation with satisfied academic professionals in the study field (Ghauri and Grønhaug, 2005).

From the above definitions, this research authors conducted a pre-test by consulting two (2) academic scholars/experts in the field of business and marketing research at the department of
business administration, Linnaeus University Växjö, Sweden. These included one lecturer in international marketing department and the other was an associate professor whom is an expert in business innovation research. The pretesting was conducted to assure this research’s questionnaire reliability to be able to give clear data that were valuable for empirical analyses. Therefore, this enabled the ability to create a practical study findings with reasonable conclusion that should be relevant for future studies.

3.7 Samples

Holme and Solvang (1997) stated that a sample corresponds to a group of individuals that serve as a representation of a given population. There are several aspects that motivate the sample selection (Bryman and Bell, 2011). Ghauri and Grönhaug (2010) write about two different ways to select people in order to shape a sample, the non-probability sample, where the sample is set up by the researcher, and the probability sample, where the sample is randomly set up among a population. A non-probability sampling procedure is utilized in selecting respondents during case studies. Inside this non-probability samples, three categories are gathered, these include: - the quota sampling, the snowball sampling and the convenience sampling (Bryman and Bell, 2011).

3.7.1. This research’s sampling methods

As the sample is built based on the availability of the employees, the convenience sample is the sampling strategy used by the authors. According to Malhotra (2010) and Bryman and Bell (2015) the accessibility and availability are the most important factors that build a convenience sample. In seeking for available employees from the organization, the authors contacted various employees within the organization manufacturing complex located in Växjö Sweden only. The process of reaching out to the organization’s employees was done via routine visits, emails and mobile phone calls. Forty (40) employees were specifically reached, out of the sixty (60) list of employees previously drafted. The employees contacted were individuals that were specifically identified as utilizers of the IT tool (ERP) for daily activities
within the organization’s complex in Växjö, Sweden. At the end, twenty-five persons indicated their interest to participate in the study and out these numbers, a total of fifteen (15) interviews were successfully completed. These 15 persons were recent employees whom were employed between 2013 - 2014 and have approximately 3.5 to 25 years of industrial experiences from present and previous manufacturing industries. It is worth to be noted that social individual characteristics such as gender and age were not considered as criteria when the respondents were selected. Rather, all interviewees were regarded as equal and highly relevant irrespective of the above mentioned.

The authors were allowed to interview all persons within the organization’s working premise and those that were interviewed, were spoken with during specific free times they indicated their availability in order not to be distracted from their daily working activities. Approximately between 30 - 45 minutes (between 4th May - 12th May, 2017), were spent on conducting the interviews.

3.8 Data Analyses Method

The data analysis corresponds to cut down and sort in patterns the data gathered during a qualitative study in shorter samples regrouping similar factors (Creswell, 2012). Furthermore, the time spending between the data collection and the analysis has to be as short as possible (Miles and Huberman, 1994; Coffey and Atkinson, 1996).

The data analysis used in this research have been previously used extensively by many scientific authors and is highly recommended to be a good method of data analyses suitable for a qualitative study by Miles and Huberman (1994). The process goes from the data reduction, to the drawing conclusion through the data display. It should be noted that this research interviewed various persons across the organization in different unit.
The authors therefore analysed the large data completed in three separate concurrent sequence of activity: data collection, data condensation, and data display in order to draw a final conclusion.

![Diagram](image)

Figure 5: This study’s data analyses method

### 3.9 Quality Criteria

The quality of an academic research can be accessed by the concepts of validity and reliability according to Yin (2009). This statement goes further to underline that the two (2) concepts are channeled in a study to strengthen the research’s credibility and trustworthiness. A research validity talks about the extent via which a study investigated what it was meant to examine, whereas reliability entails the steadiness and consistence of the research procedures and methodologies (Bryman and Bell, 2007). According to Silverman (2005), a qualitative study can be validated to be credible through its content, constructs and external criteria.

#### 3.9.1 Content Validity

A content validity during a qualitative study is called the face validity according to Bryman and Bell (2007). Yin (2009), highlighted that a way to do a content validity during qualitative studies is to allow experts within the field of study review questions in an interview guide.
prior to data collection. This process was also support by previous academic research written by Ghauri and Grønhaug, (2005).

Considering the above statements emphasis by previous academic scholars, the current authors adhered to this requirements by sending this research’s literature review and interview guide to experts in the field of business and innovation studies for a cross-examination. Valuable recommendation and feedbacks were given in which the authors considered all very important and thus, the necessary incorrectness and adjustments were made. The authors believe this procedure should help increase the quality of the interview questions which also strengthens this study content validity.

3.9.2 Construct validity

Bryman and Bell (2015), highlighted that construct validity in a qualitative research can be done by the use of several evidence that establishes the strengthen of the research study. Example of such evidences include the means of good study referencing style, interview recording and also possibility of providing original study transcripts when required (Ghauri and Grønhaug, 2005; Cobin and Strauss, 2007; Yin, 2009; Bryman and Bell, 2015).

In this study, an academic referencing style was utilized according to Harvard referencing system and was provided also in the reference list. This was done to enable readers having ability to easily access the full literature that was referenced to in this research. The interviews conducted were all audio taped and stored in a safe device. All the interviews were verbally transcribed and documented carefully. This supported the authors with the opportunity to go back and listen to the data obtained if required during empirical documentation and study analysis. These procedures were done in reference to recommendations by scientific writers (Yin, 2009; Bryman and Bell, 2015) and were thoughtfully guided in order to ensure construct validity of the study hold high. Hence, these procedures employed shields the current study in eluding any question of validity and reliability of the final outcome this research provided.
3.9.3 External Validity

External validity according to Yin (2009), is the formation of a scope to which a research findings could be generalized. In a qualitative research, the aim most times is not to attain a study generalizability, this is due to the non-statistical procedures or quantifications that are not involved in qualitative research (Merriam, 1995; Ritchie and Lewis, 2003).

The above definitions implied that this study’s aim was not meant to be generalized, thus lacks any figures, large numbers, multiple samplings or any statistical quantifications. Therefore, a generalization of this research cannot be made. The authors thus, stressed the need for a carefully deliberation should be considered in any attempt to generalized this case study. However, with the use of relevant scientific references, the research design as prearranged and well documentation of all procedures as carried out in this study, enables this present research ability to hold good and reasonable external validity.

3.9.4 Reliability

According to Yin (2009), a study test for reliability implies the ability of the same research being repeated by another academic researcher with similar procedures as the current one degree (possibility) of obtaining comparable results. From the recommendations made by Boris et al. (2005), underlined the need during a qualitative research to properly document all details used to conduct a study in the method chapter in order to increase the reliability of the research quality.

Hence, this research presented detailed accounts of methodologies with all processes as recommended by Boris et al. (2005). These were detailed in descriptive patterns and were fully documented in order to affirm a good reliability criteria to this study.
Additionally, a detailed method chapter showing other methods but clearly specifying the chosen methodologies utilized as were applicable to this current research was done to support the notion earlier stated about the ability of the same research being able to be repeated in the future.

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<th>RESEARCH METHODOLOGY</th>
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Table 3: Study’s methodology summary
4.0 Empirical Investigations

The contents of this chapter are described in narrative forms and categorized into five (5) thematic categories *(Chapter 3, section 3.6.1)*. The research empirical investigation was carried out in the context of an ERP information technology application software, utilize by employees *(within the organization)* at various departments in order to ensure operative management of the organization’s daily activities such as production planning, raw material purchase, inventories, order assignment, product manufacturing process, testing, repairs and facility maintenance, supply-chain and distribution to end customers. It is very important to be noted that this study involved only one innovation *(ERP system)* within a product manufacturing organizational context. Some detailed understanding of the qualitative data collected deemed very important to be established, were directly highlighted within quotations. However, due to personal confidentialities emphasized by some respondents, specific data such as names, age and gender were withheld from certain information that were directly attributed by the employees.

4.1 About the Case’s Organization

The case organization of which this research was conducted is a Swedish multinational corporation. The organization is a global leading manufacturer of lifting equipment and have different manufacturing plants and operating division in other parts of the world (Norway, UK and USA). The organization’s supply-chain, business subsidiaries and sub-contracting network are global and have a sizable market share in every continent (for more see: gunneboindustries.com).

In July 2013, the organization relocated two of its manufacturing plants (Rammäs and Gemla, in Sweden) to Växjö which is located in the southern region of Sweden. This was done to reduce operational and transportation cost and in additional, to facilitate easy access to export hubs to various parts of its global supply-chains and networks. The board director managed by
its then but now former managing director (Lennart Nilsson - VD., 2010 - 2015) took the decision of merging the organization’s two manufacturing plants located separately, into its today’s complex which is located in south Sweden. The company recruited new employees as most of its former employees (80% from Ramnäs and 20% from Gemla) refused the relocation and quitted their jobs because of personal reasons and further objections. Since 2013, about 80% of the organization’s workforce are basically new recruited employees in Växjö, Sweden. The initial challenges according to the organization earlier went through were relocation costs and production time lost during the entire transition process to southern Sweden. Added to these problems the organization faced was the improper utilization and adoption of the ERP system by the new recruits, where by most employees were not very familiar with the specific ERP tool the organization operates.

ERP tool utilize by the case organization is considered to be an innovation. As emphasized by the general supervisor in Växjö manufacturing complex, ERP tool (system) helps the organization in its efforts towards functioning efficiently, simplifies seamless integration of information with improved workflow, empowers a fine-tuning of business processes through functional departments within the organization and aids employees in different departmental units in having better access to updated data that are important for various manufacturing process. Today, this development has helped in the progression and survival of the organization’s manufacturing plant in Växjö, Sweden. More importantly, according to the current managing director of the organization’s complex in Växjö, technological tool such as ERP have enabled the organization aiming towards better effectiveness (internal and external communications, internal managerial processes and supply-chain management) in order to attain competitiveness in today’s global market.

In Växjö Sweden, the organization employs seventy (70) full-time highly skilled and semi-skilled personnel’s. The departments (sub-units) range from: - research and product development, logistics, product designers and constructors, testers, supply-chain managers, purchasing & invoicing, administrative workers, machinists and general maintenance service unit. More importantly to say the least, are floor employees whom are involved in the numerous daily manufacturing procedures such as: - raw materials handling, forging, cutting, coating and finished products (components) packagers/builders. About 75% of these new
recruits utilize the ERP system for everyday activities and were all considered relevant for this qualitative study.

4.2 Knowledge about the organization’s technology innovation

With the intention to innovate in order to be more efficient in manufacturing and supply of various lifting equipment and components globally, the case organization innovated by purchasing an ERP IT tool (software / system) from one of the world’s leading IT software provider called SAP. “SAP means Systems, Applications and Products in Data Processing, is a global software company originated from Germany” (sap.com). “SAP provides enterprise software to multinational corporations and organizations globally, helping them to manage their business processes and maintaining close customer relationships” (sap.com). “The ERP vendor SAP has its headquartered in the city of Walldorf, Baden-Württemberg, German and with over 130 regional offices globally” (sap.com). SAP’s manufacturing operations solutions utilized by the case studied organization is primarily targeted “to increase process visibility and performance” (sap.com). According to SAP’s own descriptions from its website, the ERP IT tool it offers improves clients’ “plan-to-produce process for manufacturing operations” (sap.com). It also helps it clients “execute batch-managed materials precisely with continuous, in-process control, gaining details on batch lifecycles and quantities with built-in reports, enabling product traceability” (sap.com). Furthermore, the ERP software “enables employees to better meet quality standards by using receipts and process instructions” (sap.com). Last but not the least, SAP’s IT tool “boosts organization’s decision-making processes with computerized transmission of production outcomes and real-time updates on performance” (sap.com).

4.3 Training

The interviewees were asked various questions related to how they thought that training can help employees learn and understand how to properly utilize the technological tool (SAP) available within the organization. All respondents agreed that training was very essential for
them in adopting the innovation which was behind the IT tool the organization provided. Various employees stated the imperativeness of training sessions they embarked on helped most of them to better understand knowledge about innovation tools the organization utilizes. Training was a motivating process that had important influence on most employees’ attitude and also being comfortable with the technological tool. For most employees, this is a new innovation that was entirely different from what they were exposed to previously. Some respondents made remarks that were notably very significant when considering the effects training could have on innovation adoption.

An employee in the supply-chain department highlighted that “Training helped me a lot to learn new features and the IT tool’s functionality: as the software was basically entirely new to me, although I made some personal research about the IT tool (SAP) as it importance to know that it was stated in the job announcement (in 2013) for the supply-chain management position prior to me handing in my job application. I went through YouTube videos to get some insights prior to my employment years back. However, on handling the real software, I got confused at the initial stage; but training sessions I had, have helped me a lot today in maximizing how to utilize the innovation effectively”.

One employee in the in-bound and out-bound material and logistic department stated that “There are too many ERP technological software today and for most part, the software vendors try to differentiate themselves from one another by adding too many complex features which make it sometimes very difficult to use these tools without any learning process or prior training lessons before one could be able to use them effectively”.

This study noted that training was identified by most respondents as a factor which added clarity to IT innovations and thus helped demystify the initial fears the employees had in utilizing the technological tool SAP. However, most employees testified that no amount of training provided by the organization were enough to fully adopt a new IT tool. It can be said that for most employees in the organization, working everyday with the software have helped most of them today being able to fully adopt the technological innovation which for most aspects, was practically new to the interviewees when they got employed in the organization.
4.4 Managerial Support

The respondents were asked various questions related to how does managerial support influence them in accepting a system which was basically new for most of the interviewees employed after the relocation to South Sweden (Växjö). Most employees acknowledged the effect and tremendous managerial support they received in the initial stages and there-after periods (post stages) have helped them in better understanding the technological tools. For most of the employees, the innovation tools ERP system (SAP) was unalike from what they have tried before in their previous jobs. However, some employees that have used other ERP tools admitted that their personal boss (närmaste chef) frequent visits to their working division to cross-check on employees that had various issues (e.g. language, user interface, password and sub-connection to other departments) in understanding how the tools should be utilized, helped them a lot to fully comprehend how to use various aspects of the system related to their field of work.

One employee in the product development unit specified “Managerial support I got in every division I have worked in this organization since 2013, have helped me a lot in having vast knowledge about SAP tools. This tool basically has the same login interface in all departments in within this organization, however the sub-programmes are very difficult to understand, and most often I call on my nearest managers or co-employees that I knew they are very good in certain related working features for more support”.

An employee in the production technique unit stated “Managerial support has made it easy for me embracing this new technology that was actually still complex for me even-after the training courses I have undergone in this organization. For me, if you do not have adequate managerial support, you can easily give up and this will after you in adopting the innovation that is aligned in assisting you do your daily activities”.

The empirical investigation brought to an understanding that support most employees received from top managers or nearest departmental leaders were vital. In the case investigated, it was understood that senior managers in every working department were
obliged to routinely assist employees in better understanding how to properly apply the ERP tool at their disposals. The ERP tool is a technological innovation that seems to be complex in such way that each employee is basically allowed to use the specific ERP functional tools related to his or her working department/unit. Some employees that were frequently rotated around in different departments (sub-division) due to shortage of staffs at a particular moment, obliged for more senior managerial help in the particular department, at often occasions in order not to make mistakes (e.g. inputting wrong figures or values) that could easily affect a production cycle.

4.5 Perceived Usefulness

The authors asked various questions in order to examine how the interviewees perceived the usefulness of the IT tools they were given to by the organizations to perform the task required of them. Follow up questions were additional asked about how individual employees investigated the usefulness of the tech-innovation before intended trial phase and eventual adoption. The interviewees respond were undivided in the sense that for any employee to be able to perform his or her assigned task using the technological tools provided by the organization, he or she should endeavour to have belief or favourable attitude about the usefulness of the product (software) was primarily introduced to facilitate their working activities.

One employee from the construction department stated “Upon utilizing new technologies, for my personal advantage not to complicate things or spend more time asking my bosses at work, I always make my personal research online about the usefulness of any technology I must work with in the future”.

Another employee in the construction department involved in product design and programming emphasized “I am relatively new in this organization and so do this ERP system called SAP is to me. By downloading a trial version from online. I basically do practice in my spare-times away from work, have really helped me to see the usefulness of this
SAP tools and the trickiness that are hidden in them: as not everything about this technological innovation tool someone must teach me”.

An employee in the organization’s automatic packaging and product reporting unit highlighted “I usually do browse the internet and most importantly the software vendor’s website for more information about the usefulness and benefit of technology or information system could provide to me. Sometime, it was also important to ask resourceful friends about IT/IS innovations as they are countless forms of these technological ERP tools available today and luckily may be one of these my friends might have had their hands on them”.

In terms of embarking on individual investigations about the perceived usefulness of innovation, some employees stated that they had to download free trial version of the technological tool in their personal computers in order to experiment with it privately. Other employees (newly recruited persons) seek more know-how from their friends whom they knew had experience about the innovation or asked for more knowledge from other co-employees which they knew had worked for a longer period using the tools within the organization. However, most respondents testified the useful information new users can find on the internet was a good source of getting quick knowledge about any given technological innovation when they faced with one. It can be stated that for most employee’s, adoption comes fast once they started seeing the usefulness of the tools manifesting in their work activities, thus facilitate faster adoption and assimilation rate.

4.6 Personal Innovativeness

The respondents were asked questions about how they felt about a person’s personal innovativeness being a factor that lead to innovation adoption or does influence individual employees’ exploring the ERP system called SAP which is a technological innovation within the organization. Most employees interviewed agreed that a person’s openness to new innovations in form of IT tools can facilitate and influence one’s adoption of similar software and future new technologies. Some interviewees highlighted that various people are naturally
gifted and are quicker than others in know-how about certain types of innovation technologies.

An elderly employee highlighted that “There are certain individuals’ in the organization whom I know are very innovative e.g. ‘Persons A & B’. They were very quicker to utilize SAP than most of us that were present with them from the first introduction session we had together concerning how to use the ERP system in the beginning of the manufacturing plants after the relocation to Växjö, Sweden in 2013”.

One employee in the production and machine technique department stated “For me, constant exploration of various free trial software that are related to my field of employment is very important for the future. I need to keep myself always updated and that is why I do my own personal educational research about IT software that are related to my present work and future carrier”.

In relating with employees that were advance in age about personal innovativeness can lead to quick adoption of technological innovation. Four (4) of the interviewees underlined that personal factors such as age plays a role in individual’s openness to innovation such as IT tools. One of the respondents gave a comment which is very important to be highlighted in this study:

An employee in the purchasing and invoicing unit highlighted “Some individuals’ that were born in the early 90’s, are lucky to have come in the era of new information technology vastly employed in various industries today and thus, are quicker to learn how to utilize various technological innovation faster unlike persons of my type that began using computers software lately in my carrier”.

This study can highlight a very noticeable view from majority of the interviewed employees during the empirical investigation, as it was underscored by all respondents that personal
innovativeness also can be dependent on how much interest a person devotes to any useful technological innovation irrespective of one’s previous working experience, personal background or even individual factors such as age or gender.

4.7 Prior Experience

Interviewees were asked about how did they felt about a prior experience with similar innovation or other technological tools can enable someone to adopt new IT tools such as the type provided by the organization. It was observed from various conversations carried out with multiple interviewees that an individual’s prior experience with technological tools can easily facilitate the adoption of new ones or similar types. This was general acknowledged by all persons interviewed during this study. One of the respondent whom had a traineeship programme from a German owned company located in Sweden attributed having a prior knowledge of SAP in a different industrial setting, was vital for her quickly learning the current software used in the present organization: as it was a very similar to what she had previously utilized.

An employee who works in multiple departments such as supply-chain and internal communication unit stated “SAP is a German originated software vendor that have gone globally. In the former company where I worked was owned by a German subsidiary based in Malmö Sweden, uses SAP which is a very similar to what I am using presently. Although the functionality similarity is not alike due to language difference and specific department task one must be exposed to, prior to full adoption”.

Another employee who had several years of experience from past employments highlighted “Well, my past experience and ability to use other IT systems such as the ones of IBM and Cisco gave me self believe in using similar technology: as all I needed was basically some general introductory lessons”.

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It was unanimously understood from the interviews conducted that a person’s prior know-how with technological tools from previous working experience, can enable a quicker adoption of new ones or alike. However, most respondents acknowledge the difference in familiarity could cost some employees more time for adopting new technology. Thus, more fundamentally if someone have had a past experience using other technological tools from different IT vendors, practical introductions are very essential in knowing how to fully utilize the new technology or innovation at various work places.
5.0 Analyses and Discussion

In this chapter, the authors displayed observations and the empirical findings from the case study according to the data collected, and related the data to the relevant literatures as previously reviewed. The chapter also discussed important issues that were described in the previous chapter by placing them in relation to one another. The chapter is broken down into two (2) separate categories consisting of key influencing factors identified that can influence an individual employee’s innovation adoption. These factors include organizational factors (training & managerial support) and individual factors (perceived usefulness, personal innovativeness & prior experience) which were elements highlighted in the study’s conceptual framework.

5.1 Organization Factors

The empirical findings in this case study, revealed that training was an essential organizational factor that facilitated employee’s means of technology acceptance and adoption within the studied organization. Training was expressed in prior studies (Roger, 2003; Yuab et al., 2005; Talukder, 2014; Altamony et al., 2016; Makkonen et al., 2016) as an enabler from organizational perspective that does empower employees’ innovation adoption. This present research agrees with these past studies, as the effect of prior trainings employees received were eminent from data obtained. Most of the employees in the organization adopted the innovation because the training sessions they were subjected to prior to utilization, enhanced their individuals’ belief (Igbaria et al., 1996). The possession of knowledgeable skills about the task ahead create confidence in many of the employees’ perception of “I can do factor” which enabled innovation adoption in the case organization. This supports the statement by Talukder (2014), which underlined the imperativeness of proper training should be accorded so that employees could perceive themselves equipped for the task ahead. The present research investigated and observed to be accurate about the training sessions provided by organizations helped majority of employees to develop self-assurances about their personal knowledge of the technological at hand and therefore, enabled employees to adopt the
technological innovation. This have been previously highlighted (Igbaria et al., 1997; Roger, 2003; Japerson et al., 2005; Talukder, 2014), the present study does affirm the overhead statement to be true as it was demonstrated in the empirical data collected.

Adequate managerial support was very essential for most of employees having a proper understanding about the usefulness of technological innovation. Talukder (2014), stated in his study that management support (provision) to employees’ is an important tool for ensuring that an innovation is adopted by those whom are meant to utilize it. The present research fully agrees with the above statement as this was a prevailing factor in the case studied. The case organization was successful in ensuring that most senior managers in every operating departments within the organization were well equipped with practical know-how about the usage of the IT tool known as SAP. Departmental managers served as a resource-pool whereby an employee could easily run to when seeking for help at every given time. Managerial support had a strong effect on the adoption of technologies by the employees within the case studied organization. Thus, the present research accepts and lays further emphasis to the above statement as highlighted in previous studies (Davis et al., 1989; Trevino and Webster, 1992; Talukder, 2014). New employees that were not well exposed to ERP systems from their previous jobs received in most circumstances, sufficient nearest manageral assistances. Support from departmental heads in the case organization encouraged various employees’ willingness to integrate and adopt technology that was in a way previously new to most interviewed persons in the case studied. This study affirms the statement emphasized by Talukder (2014), which highlighted the importance of sustenance from senior managers as essential for an individual innovation adoption to be made effectual. It was widely demonstrated in this case study that managerial support, had an influence on employees’ adopting the present innovation in the organization.

5.2 Individual Factors

The empirical findings from this case study, shows that certain individual factors are essential in order to assist an employee adopting technology innovation that might be similar or entirely new to him or her. Data collected during this study, shows that an employee’s
personal perceptions about innovation such as technological tools, can be important in enabling the employee understanding some other innovations. This was acknowledged in previous studies (Talukder, 2014) and this present research agrees with the above statement. The qualitative data obtained shows that most employees had favourable perceptions towards the IT tools ability to make their work efficient, thus were willing to lay more emphatic efforts in self-practices in order to adopt the innovation. According to previous studies by McFarland and Hamilton (2006) and Venkatesh and Bala (2008), PU is important to have at the front-end of an individual ability to maximumly adopt innovation. This study upholds this statement as it was demonstrated in the empirical data gathered. All employees believed in the PU of the IT tool being able to accomplish the task given to them, had favourable attitude and believe towards the usefulness of the system utilize in the case organization.

Going through data obtained from the empirical investigation, the authors recognized some employees who are good in handling other complex data related applications (e.g. SCM, CRM, Microsoft Office), were able to adopt easily the IT system (ERP) used within the organization. This study observed, while interviewing various respondents, that some employees demonstrated certain personal attributes towards innovation know-how than others. These employees explore various technological innovations for their own personal benefits and that might have helped them in having a quicker grasp about the tools used in the organization than others. Some literatures (Agarwal and Sambamurthy, 2003; Thatcher et al., 2003) called such attitudinal behaviour as self-innovativeness, Talukder (2014) study stated it to be personal innovativeness. This study does relate to Talukder’s assumption to be fairly substantial. However, this study cannot categorically state to what extent this behavioural intention as displayed by only few employees from the case study had effect on their contemporary or continues utilization of the technological within organization in its up-to-date format.

The empirical data gathered, do establish that various employees’ previous experiences with IT systems/tools was a helpful advantage towards adoption of innovation (Brem and Viardot, 2015). Data obtained revealed that the present technological innovation the case organization uses today was more understandable to some employees that had prior experiences of the innovation. Talukder (2014), stated that being comfortable or familiar with some certain types
of technology, could make it easier for an individual adopting a new idea or innovation that is alike. This current study does agree with this supposition, as it can be established from data gathered that few employees whom had prior experiences with similar or other types of ERP technological systems that are related to manufacturing industrial utilities, were able to give the current technology a quick go in adopting the innovation. Therefore, this present research supports the notion stated by Igbariam et al., (1996) and Fuller et al., (2006), which underscored that a person’s prior experience does have a positive effect on new technologies adoption, as this was also displayed in the data obtained from this study’s investigation.

More importantly to be established from the case investigated, is a validation to the notion defined by Rogers (2003), which emphasized that innovation adoption is a state or attainment where an employee goes from a basic awareness of the innovation to its actual proper utilization. This was observed to be factual in the data gathered from empirical investigation and thus, this case study substantiates Rogers’ notion.
6.0 Conclusion

In this chapter, the authors answered the research question in relation to the aim of the study and made conclusions based on the outcomes that were presented in previous chapters. This was followed by the study’s contributions to existing theories and managerial implications were suggested. Finally, the study wrapped up by indicating some limitations from the present study and recommended new opportunities for future research that should be conducted. The overall aim of the present research was to study the adoption of ERP tool by employees in a product manufacturing organization. In pursuing this purpose, a research question was drawn to investigate how organizational factors and individual factors influence employees’ adoption of ERP tool as a new innovation within an organization. This study reviewed several literatures which stated the importance of organizational and individual factors as two imperative elements to be taken into account as influencers which do act on how employees adopt technological tool, defined earlier as an innovation within the case organization (Chapter 4, section 4.1). A single case study was chosen with a qualitative methodological approach in order to carry out the investigation and data gathering. The data gathered validated various academic literatures reviewed earlier and also supported some statements that were highlighted in previous researches.

In a reference to the research question proposed: -

*How do organizational factors and individual factors influence employees’ adoption of ERP tool as a new innovation within an organization?*

The authors designed an empirical investigation which was carried out within a product manufacturing organization. The innovation was an IT tool in the context of an ERP software (*system*) called SAP. The IT tool is used by the organization’s employees for daily manufacturing process and activities (*Chapter 4, section 4.1*). All employees that were involved in this case study were newly recruited persons that were employed within 4 years of the organization’s manufacturing plant relocation and current existence in a new city called Växjö, Sweden. Technological innovation in the investigated context was studied on proposed
factors that influence adoption of innovation. From the empirical data gathered, revealed that organizational training, managerial support and an employee’s prior experience with technological tools had much larger influence on an employee’s innovation adoption state.

Relating to answering the question in regards to how organizational factors and individual factors influence employees’ adoption of ERP tool as a new innovation within an organization? Figure six (6) shows that training sessions were mandatory to all newly recruited employees within the case organization.

1.) Employees went through theoretical and practical learning process over a certain period. This helped the employees to understand and learn more about the various features involved in the innovation. Employees were encouraged to utilize the technological tools because the training they went through assisted them in having a proper knowledge about the innovation which led to proper utilization of the innovation. An adoption is a behavioural state which came thereafter the employees have well utilized the innovation and felt confident enough in continues usage of the technological tools properly in their daily work activities.
2.) Support from nearest managers within each department in the case organization played an important aspect in enabling the employees to utilize the innovation in the required technicality. Employees were given considerable attention by various managers in their units when needed. Support encouraged an important perception status and piloted employees showing their commitment towards the innovation. This also nurtured positive attitudes to use the innovation and thus, overtime enabled the employees (intended users) to fully adopt the innovation via a continual (daily) utilization.

3.) Prior experience some employees had regarding the technological tools (i.e. some property similarities), demonstrated to be very significant in innovation adoption. The innovation was a customized tool that was specifically designed for the case organization. However, some employees that have used tools that we designed by the same technology provider (SAP), were able to quickly grasp the logic behind the new tools that is being utilized. All new employees went through the same introductory and training sessions which was required to be to fully use the ERP system. However, some employees that were familiar with some previous knowledge about other ERP tools from competing ERP vendors were able to have quicker know-how than others which for them, was their first time of using such IT tool. From the data gathered, prior knowledge had a good effect on an employee’s innovation utilization. This had an influence on the individual’s innovation adoption process i.e. the time frame (how long) for an innovation acceptance, adoption and diffusion to occur.

From the organization case studied, the authors can therefore define innovation adoption from an individual employee’s perspective: - as an employee having a proper knowledge about the technology given to be used, personal acceptance of the technology to be used, managerial empowerment to the employees and most importantly is an individual employee having the adequate ability to fully utilize the technological tool provided in order to fulfil the specific task. Innovation adoption is a new state an employee attains as a result of frequent utilization of the IT tool. This brings about a positive (casual or negative, depending on the individuals)
behavioural, attitudinal and perception change of the specific individual employee having full self-assurance towards the IT tool at his or her disposal.

For an employee to fully adopt an innovation, managerial supports from the organization are very essential to facilitate the development. The present study, does acknowledge from data gathered that the likely impediments to innovation adoption are often not individual factors, but rather repeatedly are the organizational ones such as inadequate training sessions, lack of human proficiency (inadequate recruitment policy) and inadequate managerial support to assists new employees to better understand how to utilize the innovation in order for a proper adoption taking place.

a.) **Inadequate training sessions:** - This poses a challenge to innovation adoption as it was verified from this case study (irrespective of the employee’s previous backgrounds) that training session was a vital learning process for most employees. Thus, this established the importance of high-level training requirements to all employees, as an inadequacy of training or learning session will hinder their innovation adoption state and assimilation process.

b.) **Lack of human proficiency:** - This restricts innovation adoption due to the problem of not recruiting persons having the earlier required human resources or having technical knowledge and ability to quickly understand the technology in place. This creates a longer time period for certain employees’ attaining the resourceful adoption state and thus, affects technological acceptance which also limits an innovation adoption.

c.) **Inadequate managerial support:** - This is a limitation to innovation adoption as it was substantiated that a lack of managerial support often hinders employees with the preparedness to use an innovation having troubles in proper or speedy utilization. This create constraints to employees’ and thus, might discourage further willingness to utilize the technological innovation and can have a negative effect on the innovation adoption.
6.1 Theoretical Contributions

First of all, this study contributed to the previous research studies of innovation adoption, by highlighting the influence of organizational and individual factors on employees’ trial and eventual adoption of the technological innovation by using an in-depth qualitative research method. Unlike previous studies extensive usage of quantitative methodologies in order to attain generalization, this study’s authors conducted multiple face-to-face semi-structure interviews which were significant in getting rich information that should be relevant for future innovation adoption studies.

Secondly, this study contributed to the outcomes of Roger’s 2003 and Talukder’s 2014 innovation adoption literatures. Constructs from both theoretical frameworks were employed in the execution of the present research empirical investigation. Thus, the research wrapped up in agreeing with two (2) key factors in Talukder (2014) case study outcome. Organization factor and individual factor play an essential part on employees’ adopting new or similar technological innovation in their working environments. Additionally, this study also substantiates Rogers (2003) literature: innovation adoption was verified to be a state or attainment where employees go from a basic awareness of an innovation to its actual appropriate usage.

Thirdly, the findings from this research adds new knowledge to the existing literatures: by highlighting the importance of organizational and individual factors on employees’ adoption of technological innovations in a manufacturing organizational context. Thus, the outcome from this research shows the significance of elements such as training, managerial support, perceived usefulness, personal innovativeness and prior experience have on technological innovation successful adoption which can lead to a larger innovation diffusion (spread) within an organization.
6.2 Managerial Implications

As managerial implications, this study will like to lay a stronger emphasis on the importance for more adequate training sessions new employees should be exposed to in order to facilitate employees’ adopting any given innovation effectively. Regular managerial check-ups are advised to be conducted in verifying how employees utilize technological tools for a successful innovation adoption to take place within the organization. Furthermore, new recruited employees should be given adequate time as this was verified to be compulsory in order to ensure that employees can utilize the innovation in its required practicality.

Additionally, the present study lays emphasis on the need for management to give straightforward response to employees required needs about issues they routinely face while trying to utilize a new technology. Swiftly oriented responses and appropriate support from senior managers can encourage employees to utilize innovation: as this study underlines a critical barrier to effective utilization of innovation and their adoption, comes from lack of adequate managerial support an employee may require at a specific point in time.

Lastly, in order to encourage rapid adoption of innovation in an organization, recognition and praise to employees whom are making good effort are require. This was notice to be momentous in the case organization. Some interviewees acknowledged that the personally recognitions they received from top managers in their various departments, have persuaded other employees wanting the same praise worked towards making good efforts in utilizing the IT tools provided to them and to be more proactive.

6.3 Limitation and Future Research

The most noticeable limitation of this study was the inability to statistically test the outcome of the empirical investigation in terms of the impact the new recruited employees (from 2013 to present) adopting the technological innovation that is being used in the organization have on the organization’s current performance. Thus, this call for more future research to measure
the effect of employees’ adoption of technology innovation can have on an organization’s industrial performance and outlook in reference to their close competitors.

Another noticeable limitation this study has was in terms of the methodology format employed. As an alternative methodology, a quantitative research method can also be used in conducting this same study. The authors will encourage future academic studies to use the method of carrying out surveys, statistical illustrations and quantification in order to reach larger participants than considered in this study. By doing so, this might help the present study attaining generalization which can lead to more future studies reviews and citations.

From the empirical investigation conducted during this study, various respondents attributed the support of co-employees and social network additionally helped them in proper utilization and adoption of the technological innovation. However, due the scope of this research conceptual framework, the current authors could not fully enlist in much details to what extent co-employees and social network had on the employees’ innovation adoption. Hence, this calls for more studies to investigate the effect of co-employees (peer factor) and social network (group factor) have on employees’ innovation adoption in the same organization or a different organizational setting.

Lastly, as an encouragement and recommendation to future academia that might want to repeat this same research by using the same conceptual framework should therefore, highly consider conducting a qualitative or quantitative study by employing multiple case research approach. This will create more insights in the field of employees’ technology innovation adoption from a broader spectrum, considering a larger sample size of respondents should be involved.
7.0 Reference List


8.0 Appendix

8.1 Research’s Interview Guide

RESEARCH’S INTERVIEW GUIDE FOR SAP
INNOVATION ADOPTION IN GUNNEBO LIFTING, VÄXJÖ.

Employee’s Name:
Position:
Years of experience in the organization:

1. How was the training sessions you embarked prior to using the technology tool at your disposal?

2. Why was the process necessary for you as an individual employee within this organization?

3. What types of management empowerment have you received towards using the technology tools?

4. How have this helped your personal ability to utilize the tools?

5. What is your personal opinion about the practicality of the IT tool in your disposal?

6. How have this influenced your belief/attitude towards the tool’s helpfulness in fulfilling the given task?

7. How is your ability towards technological products/services?

8. How have this influenced your openness and attitude towards accepting new ideas?

9. What ways have you come across or had prior know-how about this IT tools or similar ones?

10. How did it influence your attitude toward the current IT tool?
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On the 1st of January 2010, Växjö University and the University of Kalmar merged to form Linnaeus University. This new University is the product of a will to improve the quality, enhance the appeal and advance the development potential of teaching and research, at the same time as it plays a prominent role in working closely together with local society. Linnaeus University offers an attractive knowledge environment represented by high quality and a competitive portfolio of skills.

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