



# Resource Planning Implementation in Push and Pull Factors Valley in Small Medium Enterprises

**Obulezi Ebenezer**

*College of Arts and Sciences, Mindanao State University – Buug, Buug, Zamboanga Sibugay, Philippines*

**Ramón Alapati\***

*College of Arts and Sciences, Mindanao State University – Buug, Buug, Zamboanga Sibugay, Philippines*

\*Corresponding author

**Satyam Jhat**

*College of Arts and Sciences, Mindanao State University – Buug, Buug, Zamboanga Sibugay, Philippines*

## Abstract

Enterprise Resource Planning (ERP) is an integrated system that by businesses to improve internal business processes to provide greater efficiency, automation, and cross-functional support across all business functions. Although widely adopted by multinational corporations, Small and Medium-Sized Enterprises (SMEs) adoption of the system isn't as popular due to complexity of implementing such systems, resources needed to go through the process which SMEs are limited of, and failure factors that can inhibit the successful implementation of ERP. Therefore, this research aims to evaluate the push factors and pull factors that either enable or inhibit the successful implementation of ERP in SMEs within Lang Valley. The research will be employing qualitative methods as it intends do have in-depth discussion with a diverse set of experts from different walks of life. The research will also aim to provide the research community and IT industry a better understanding on the factors that contribute to a successful implementation of ERP in SMEs, as well as provide ERP implementers a model that will guide them through real-world ERP implementation project in SMEs.

**Keywords:** Enterprise Resource Planning, Pull Factor, Push Factor, Enabler, Barrier

## 1. Introduction

Enterprise Resource Planning (ERP) is an integrated system that is implemented by businesses for various reason. Among the reasons are to improve internal business processes in various departments to provide greater efficiency, increased automation to its processes, and improved communication across the organization Widely adopted across many different markets and businesses, ERP systems are becoming an important part of organizational practices and business operations [2]. ERP bring a substantial among of values and benefits to businesses of all sizes. ERP allows employees in an organization to work efficiently as the system breaks down barriers between business units through the automation of business processes, improved customer service through single source for billing and relationship tracking, enhanced financial compliance through regulatory standards, and real-time data flow and view that helps in addressing operations issues effectively and efficiently This deliverables by ERP systems creates uniformity in an organization and allows the enterprise to generate optimal outputs whilst creating an efficient operation throughout the organization [3]. Small and Medium Enterprises (SME) has an important role in a country's economy as they contribute to the growth of a nation's economy and the generation of employment. According to the Department of Statistics 2016 economic census, it was revealed that there were 907,065 SMEs operating in Malaysia as of 2015, which makes up 98.5% of total establishments of 920,624 firms in Malaysia [4]. Additionally, Malaysian based SMEs contribute 38.9% of the economy GDP in 2019 which is a substantial increase from 2018 where upon SMEs contributed 38.3% that year [5]. SMEs located in the Klang Valley which consist of Selangor and Kuala Lumpur, accounts more than one-third of the total SMEs in the country.

Although ERP systems is widely known in the business world and its adoption rate is growing at a rapid pace since its inception, ERP implementation can be a costly endeavour with complex elements that typically large businesses are able to invest in [2]. With budget constraints and the high complexity of its implementation process, ERP is usually an afterthought for most SMEs. However, ERP vendors in recent years are starting to offer affordable options to SMEs that are easy-to-install, and pre-configured [6]. As SMEs rapid growth continues, ERP systems

ability to improve operation productivity and efficiency can further grow SMEs and increase their competitive edge in the market [7]. SMEs are also looking to adopt digital technology such as ERP systems to boost international competitiveness and digitalize most of their transactions and business procedures to ensure they are competitive and efficient [8]. Thus, a market for ERP systems is there. ERP implementation is gaining traction among SMEs but adoption issues do exist. Among the issues is the misfit and misalignment of vendor's pre-configured ERP system and SME's business strategy [6]. Even though pre-configured ERP systems solutions by vendors feature best industry practices and standards, SMEs established business processes is hard to forgo for some SMEs as it's the reason that makes them unique especially when the SME is in a niche market with high market capitalization [9]. However, this isn't the only constraints. Many push factors or barriers exist that can inhibit the success of an ERP implementation in SMEs. But with all the potential barriers, SMEs can find solace with the fact that there are a substantial amount of pull factors or enablers that can enhance the implementation process and enable them to overcome the complexity of implementing such a complex system. Thus, this research will look into both the push and pull factor to provide ERP implementers, project teams, and vendors a model that can facilitate a successful ERP implementation in SMEs within Klang Valley by giving them an understanding of the barriers and enablers of ERP implementation.

## 2. Related Work

Pull Factors ERP implementation has its benefits which is why many organizations particularly multinational companies have adopted it. It is also true that SMEs are also starting to adopt ERP as it gives them a competitive edge in a highly competitive marketplace. However, ERP implementation has risk factors that can affect the ERP implementation negatively. Hence, these are several commonly cited pull factors or enablers that enhance the ERP implementation process in SMEs. The first pull factor is change management. Employees are typically the ones impacted by new changes that effect the way they do their work which then creates resistance owards the system when not addressed accordingly [10]. Thus, effective change management helps in reducing resistance towards the new system while maximizing the benefits of ERP implementation by preparing employees for the changes [1]. Change management would do this by providing proper training of the ERP system for the users and getting them more involved in the design and the implementation process to help provide them a better understanding and clarity of the usefulness of the system while the project team can get their feedback which can further enhance the system and the implementation process [1]. The second pull factor is top management support. Leadership plays a vital role in the success of the ERP system, and such role is driven by the commitment and strong support by top management [12]. The effects of such endorsement by top management to the organization is better resource allocation for the project, designation of the project as a major priority for the organization, and senior management will play a proactive role to solve implementation issues through strong leadership [7]. As a result, employees' acceptance towards the new system will be greater due to strong support by top management but also allocation to training for the system further improves employee commitment to the system and the implementation process [10]. The third pull factor is effective project management. ERP implementation success is based on the process of project management whose focus is on initiating, planning, implementing, and controlling project activities to achieve project goals and milestones [3]. Additionally, project management develops the project implementation plan which defines the project activities, establish roles and responsibilities to each activity, and encourage organization support throughout the implementation process [14]. The fourth pull factor is effective communication. Effective communication throughout the organization before, during, and after the ERP implementation phase is vital to inform all stakeholders of the project progress, its timeline, and the implementation strategy.

Furthermore, communication throughout the business functions and departments gets the word out about the benefits of the system and the changes to business functions that will come into effect as part of the changes that come with the new system which will greatly inform the users while also enabling feedback from them [11]. The fifth pull factor is training and education. Training ERP users is crucial to the success of the entire ERP implementation project as training provides effective understanding of the new business processes and practices that will come with the new system [1]. Training and educating the users also ensure the system is being effectively used which creates a more productive and effective workplace.

ERP is widely adopted by large enterprises, SMEs are not as convinced to adopt ERP systems due to push factors or barriers that can impact the implementation process negatively [6]. Hence, these are several push factors that inhibit the successful implementation of ERP in SMEs. The first push factor is lack of commitment from top management. Top management provide leadership and allocate resources that are crucial to the success of the ERP implementation process [7]. Lack of that commitment will lead to lack of leadership which causes the vision of the project to collapse and resources would not be allocated sufficiently [6]. The second push factor is ineffective change management. The lack of a proper change management of the new processes and procedures leads to ERP implementation failure as employees suspect and behave against the implementation [7]. Training is a part of the issue as the change management process requires to provide training to ERP users as a way to improve acceptance for the system. However, inadequate training of ERP users leads to lack of confidence and anxiety among the users which then amps up the resistance against the implemented system [2]. The third push factor is poor ERP package. Choosing the wrong ERP package can cause implementation and customization issues that inevitably causes a failure to the entire project. Misfits in ERP implementation is also a major issue as business processes that aren't

aligned with the ERP package, will lead to business functions in the organization having operational issues [9]. The fourth and last push factor is employee resistance to change. Inadequate training, poor communication, lack of commitment and support from top management leads to resistance among employees towards the system, and poor adaptability leads to resistance by employees towards the new system. Without proper knowledge and guidance of the new system, employees develop doubts with the new system, leading to them resenting it and attempting to sabotage the implementation efforts.

### 3. Methodology

Research design provides a framework for the research which sets out to determine what type of research approach will be undertaken [16]. Thus, this research utilized qualitative methods. Qualitative research investigates the phenomenon at a largely in-depth and holistic fashion through collection of diverse and rich materials with the aim of providing a more in-depth insight and understanding of real-world problems. Furthermore, qualitative methods are used by researcher who wants to observe and interpret an environment with the goal of creating and developing a theory. Hence, qualitative methods will provide this research a more in-depth and diverse look into the factors that affect ERP implementation. This stems from the fact that the qualitative approach to research emphasizes the importance of the participant's view while stressing the setting and the context those participants expressed from which highlight their each personal view in regards to the issue. Thus, those interactions between the interviewer and interviewee will lead to a deeper understanding of the issue in front us which can enrich the content of this research and satisfy the objectives it aims to achieve. As part of the qualitative approach, this research utilized interviews as its main research method for this research. The purpose of conducting interviews is to extract the interviewee's experiences, perceptions, thoughts, and feelings that allows for a dynamic flow of ideas that can influence the research.

Interviews allows for the interviewer to listen and gain a better understanding of people's stories that provides a better context to issue that the research aims to study initially, 15 ERP experts were contacted to be interviewees but only 10 agreed to be a part of this research. Every single one of these interviewees has been involved in ERP implementation projects in SMEs within the Klang Valley area. A criterion was set where upon the interviewees had to have been directly involved with the implementation phase as part of the project team and played a critical role in its execution. The experts also had to have more than 5 years' experience in handling ERP projects especially in SMEs. Purposive sampling specifically judgemental sampling was the sampling technique utilized during the data collection process. Judgemental sampling is a sampling technique that relies on the judgement of the researcher when selecting the participant that are to be studied [23]. The judgement by the researcher as to who will participate will provide the best information for the objectives in the study to succeed [24]. There are several types of purposive sampling but this research will employ expert sampling that is used when the study needs to extract knowledge from individuals of a particular expertise that will be investigated to form the basis of this research

### 4. Discussion

Pull Factors/Enablers that have been identified by the researcher after extracting the data and themes from the semi-structured interviews conducted. The first pull factor or enabler is top management support. The involvement of top management determines the priority and allocation of resources of the entire ERP project [12]. This is a vital truth as without the proper support, top management won't give the go ahead and resources needed for the project. I7 had the opinion that, "Top management usually provide the necessary resources and budget so if you have strong support, you can guarantee those resources for the implementation". I8 also had the opinion that, "Top management set priorities, and they will give the deadline". Furthermore, it is required for people at the top to be involved in strategic decision making if there was to be any hiccups during the project. I1 has the opinion that, "Top management must have budget plan, strategies for recovery in case this thing fails, or in case this thing is not fully implemented within the timeline, and they should have a strategic out, also called risk management". Besides strategizing, the top management has to set out the vision of the company which was strongly pointed out by all the respondents. I9 states that, "The top management is the one who decides the vision", with I6 saying, "The top management need to have a clear vision why they need the ERP and they have to be persistent to make it happen". Additionally, strong support from top management can improve employee acceptance in which I8 stated, "When we talk about employee acceptance and fear of change, there will be a lot of push back from certain departments and all that. So, if they know top management is involved, things will be much easier". The second pull factor is communication between business units. Effective communication is needed to disclose progress to all stakeholders. I8 opined that, "Whether it's good news or bad news, people will like to hear because it's always good news that people say we are progressing". This is essential as, even if its good news or bad news, the entire staff can learn and progress ahead. I1 had the opinion that, "In each incremental stage of delivery, there will be learning lesson, and all these must be shared across the business units so that this can be used as a lesson for improvement for the next small incremental delivery". Additionally, communication with employees about the objectives, scope, activities, and changes that will happen should be prioritized. I9 had the opinion that, "Communication is a key factor as this allows each unit of departments to understand their roles and responsibilities, and what is their involvement in making the project successful from their scope of support". Effective communication can also reduce people's fear of change as some might have doubts about their new

roles and responsibilities. I8 again opined that, “You can cut a lot of negative things, or fear, or people being anxious about what’s happening, all through transparent communication”.

The fifth pull factor is change management. The goal of change management is to avert resistance and support acceptance by generating understanding with the employees, and making them desire the changes [10]. To generate the understanding, it is vital to communicate the importance of ERP to all stakeholders. I6 had the opinion that, “Communication between the ERP project team and all the stakeholder that are involved in that project is very important because when you don’t implement change management, it will affect all the parties”. Change management also help the stakeholders by defining the scope of the project. I6 emphasized that, “You define the parties that are involve in your change management program, and also the rules and responsibilities”. Furthermore, the process of change management requires time and patience in order the employee can slowly adapt to the changes that will come into effect when the system is implemented. I8 opined that, “You should not introduce things too fast to employees because the changes are going to affect them so they require time”. I8 also imply that, “Make sure that this change is going to change for the betterment of the people, not the organization”. This means that top management should only implement this system if it will seriously improve the effectiveness and efficiency of their workers.

## 5. Conclusion

This research paper carried out a study on identifying a list of pull factors that enhances the successful implementation of ERP implementation in SMEs and also a list of push factors that inhibits that success using semi-structured interview. A total of 10 highly qualified ERP experts were interviewed where upon they opined on those key factors that can make or break an ERP implementation project. The data collected were analyzed using thematic analysis which allowed the researcher to fully understand the reason as to why those factors enhances or inhibits the ERP implementation project in SMEs. As such, the enablers, barriers, and its key enhancements as well as inhibitors that were identified, formed the basis for the formulation of the ERP Implementation Success Model for SMEs within Clang Valley. The model will provide ERP implementers as well as academia’s an understanding of the enablers as well as barriers that affects an ERP implementation project. By taking into account the positive and negative factors, ERP implementers can take decisive action when conducting such complex projects to ensure the success of the project as a whole. In the future, we hope to expand the pool of experts to get further feedback on these key factors that were identified to provide further validation as well as relevancy to current ERP implementation projects in SMEs within the Clang Valley area. Furthermore, the ERP Implementation Success Model for SMEs within Clang Valley will be tested and evaluated in SME environment to assess its usefulness in ERP implementation projects.

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