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Roles of Leaders and Employees' Factors in ERP Implementation Strategy: A Case Study in Dongnai Industrial Zone - Vietnam

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Abstract

ERP (Enterprise Resource Planning) reaches integrated system that presents business process of all activities in enterprises. It demonstrates the effectiveness in centralized and consistency of data of all functions of company from finance, accounting, human resource, projects, inventory, services, maintenance, transportation, distribution, and production. ERP system performs real-time information with accessing and retrieving database. There is highly considering for medium and large-scale organizations. Business operation in enterprises must work across borders, languages, cultures, and integrate in business. ERP system demonstrates globalization system that go through global language, cultures, functions that depend on global architecture and integrate all people who can be worked together in one integrated system. With highly efficient and effective of ERP system is in the struggle market in over the world in general, and Viet Nam in particular. The study investigated, analyzed and compared ERP models with human factors including ERP suppliers, leaders, and employees in enterprises which are using or implementing ERP system and clarify how influence on ERP successful implementation strategy and business operations' satisfaction. There are many reasons for being failed ERP implementation, and the human factor that realized high contributions to be successful ERP implementation in previous research in Viet Nam. With structural equation modelling, measurement models, and descriptive statistics are assessed to present the significant, high level of explanation of human resources that influence ERP implementing strategy and Business operations' satisfaction through statistics tools such as SPSS 20.0, excel and SmartPLS3.0. The objective of study presents the research model that human factors are critical contributed to successful ERP implementing strategy and Business operations' satisfaction in Dong Nai province, Vietnam. The human factors have specific characteristics such as employee positions, people's attributes, behaviors, education, skills on the success of ERP implementing strategy in Dong Nai enterprise.

Keywords: Enterprise Resource Planning (ERP), ERP Strategy, ERP Success Factor, ERP Failure, ERP Advantages and Disadvantage

Introduction

ERP solutions implemented in Vietnam at the beginning of 2000s, which improved their business operation more productivities (Tien, 2020). The management experts said that ERP is the important and essential tool in the high competition market. By contract, ERP solutions are significantly difficult and complex workflow and cost so much money as the results it is still out of reaching of many Vietnamese enterprises. According to (Dung et al., 2025) there is highly increasing in the business to customer (B2C) of Vietnam's e-commerce revenue over the years. The increasing rate is 30% in 2018, and 25% in 2023. The revenue is from 8.06 billion in 2018 and reaching to 20.5 in 2023 (*Báo Cáo về Thị Trường TMĐT Việt Nam Quý II/2024*, n.d.). The e-commerce market is critical increasing and ERP system is mainly potential market in Vietnam. Thus, this study evaluates the current using ERP system in Dong Nai, Viet Nam, and perform data analysis with human factor such as leaders, employees, suppliers, and proposed model which impacts to implement ERP system strategy in Dong Nai through: analyze, statistic, evaluate with SPSS and SmartPLS tools.

Literature Review

According to (Akhzan et al., 2021) there are five important factors involved in ERP implementation project which are top management support, competence, behaviors, team composition, communication. The results presented that top management support, competence, behaviors, team composition, and communication had 51% impacted on the success of ERP implementation and 49% remaining of other variables that were not conducted by the study. Team composition had critical and significant variable that influence on ERP success implementation.

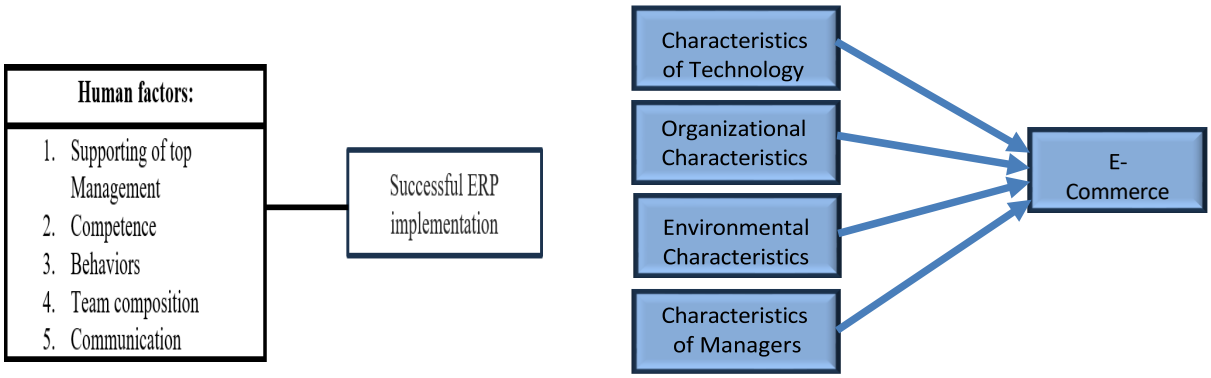


Figure 2-1: human factor on ERP implementation
Source: (Akhzan et al., 2021)

Figure 2-2: Technology, Organizational, Environment framework E-Commerce by SME in Vietnam
(Van Huy et al., 2012)

Research of (Van Huy et al., 2012) examines Technology-Organization-Environment framework and verify model of e-commerce with internal and external factors that significant involved to successful e- commercial ERP implementation. There are four e-

commerce adoption contexts in the study such as: Technology (innovation), Organization, environment, manager (internal). Models have shown that the product characteristics, enterprise scale are factors that impacts to application of e-commerce enterprises. Besides, habit and awareness of consumers of electronic payment are major obstacles while Vietnam society has long-standing habits of payment by cash. Supporting policies of the government affect production performance and business of the enterprise. The government plays a role to create a legal environment and favorable policies, the purpose of attracting advanced technologies and encourage application business e-commerce, providing public services to support e-commerce operations enterprise.

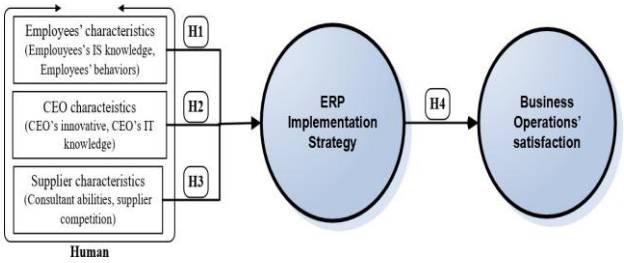
Methodology

This study uses qualitative and quantitative methods to analyze the research objectives. The research selected interviews to obtain in-depth information and employed participant observation to collect high- quality data. Researcher directly interviewed group of people, conduct questionnaire and receive answers from companies in Dong Nai, Vietnam. The semi-structured questionnaire is using by researcher to verify and improve the questionnaire during the interview. Otherwise, the quantitative is classify features, count them, and do statistical model. The advance statistical software such as SPSS, SmartPLS that will be used in performing quantitative analysis to evaluate the scale, test hypotheses, analysis relationship in target concepts (Tien et al., 2021). The survey method sends online questionnaire via link, email, Zalo, Facebook. They survey was conducted in Nov 2024, Dec 2024, Jan 2025. According to (Garg et al., 2024), the minimum sample size must be 50, preferably 100, with a recommended observation-to-variable ratio of 5:1, while (Memon et al., 2020) using sample size formula, states that the sample must meet $n \geq 50+8p$ (n: minimum size, p: number of independent variables in model). Dong Nai province, located with the advantages of road networks, seaports, railway lines, and proximity to Ho Chi Minh City's Tan Son Nhat International Airport, and increasing foreign investors and business in recently year, the province has 32 zones with critical investment from foreign. Actually, the ERP implementation of Dong Nai province has been inadequate and not received sufficient to maintain. The lack of experience consultant, manager and top manager are not fully aware about the important of ERP system. management employees do not attend to end of project. Infrastructure does not have strategy in ERP system implementing, the additional cost is high. The acceptance of employee with ERP system is not good. IT expertise does not have deep knowledge about the ERP system. The study conducts

enterprise in Dong Nai industrial zone with allowable error is 5%. The survey areas are Dong Nai industrial zone (including departments, division of all enterprise) with suitable for research's requirements. The research is classified by business type as follows: State owned enterprises, private enterprises; Cooperative enterprises; Joint stock companies; Limited companies; Joint ventures; Enterprises with 100% foreign capital; Government controlled corporations. Otherwise, the study is focusing on industrial zone as follows: Bien Hoa industrial zone I; Bien Hoa industrial zone II; AMATA industrial zone and the others: Thanh Phu, Ho Nai; Song May; Bau Xeo; Nhon Trach I; Nhon Trach II; Nhon Trach III; Tam Phuoc; An Phuoc; Ong Keo; Long Khanh; Xuan Loc; Tan Phu; Dinh Quan (Dezan Shira & Associates;Koushan Das, 2018).

Research Model Development

This study analyzes the above-mentioned factors that have impact on ERP implementing strategy. Based on this analysis, new measuring scale and factors are added in the research model to investigate the possible influence as well as level of influence created by these scale and factors to ERP strategies of enterprises in Dong Nai province. The recommended research model and hypothesis are: CEO's characteristics, employee's characteristics, supplier's characteristics. the scope of the research, these following variables are identified as: independent, dependent. Independent variables are groups of factors that related to human resource. Dependent variables are ERP implementation strategic. Independent variables impose direct that impact on Business operations' satisfaction and ERP implementation strategy. In addition, independent variables of ERP implementing strategies have interactivity and direct effect on enterprise activities such as designing, manufacturing, marketing, finance, human resource management. Furthermore, there exist other factors named mediating variables and moderating variables which affect every component in ERP and enterprise operation. CEO characteristics, Employees characteristics and Supplier characteristics factors with CEO makes decision investment, key personnel in implementing process, consultant of business development strategy of ERP solutions, final evaluation results, as well as be ability to upgrading in further ERP system(Ungureanu et al., 2022).



Research Question and Hypothesis Development

In order to analyze and support the objectives and content of this research, the following research questions and hypotheses are formulated:

Question 1: Do employees' characteristics (EE) affect ERP implementing strategy of enterprises? Hypothesis H1: There is critical relevant relationship between employees' characteristics and ERP implementing strategy of enterprises.

This factor comprises: (1) Employees' ERP knowledge and compliance to ERP procedures; (2) Employees' command and capability of effectively exploiting ERP systems; (3) Employees' language and IT proficiency; (4) Employees' understanding of enterprise operation.

Question 2: Do CEO characteristics (LDR) affect to ERP implementing strategy of enterprises? Hypothesis H2: There is positively relationship between CEO characteristics and ERP implementing strategy of enterprises.

This factor comprises: (1) CEO' education; (2) CEO' ERP knowledge; (3) CEO' constant eagerness to renovation and improvement; (4) CEO' support to ERP implementation; (5) Capability of approving and making decisions on solution management procedures proposed by implementation consultants and end- users.

Question 3: Do consultants' and suppliers' characteristics (SPLY) affect to ERP implementing strategy of enterprises?

Hypothesis H3: There exists a linear relationship between consultants and suppliers' characteristics and ERP implementing strategy of enterprise.
These measuring include: (1) Knowledge of business administration; (2) Understanding of enterprise operation fields; (3) Knowledge of internal control; (4) Proper and relevant methods of system analysis;
(5) Supplier's experience of ERP solutions; (6) Quality, support, and maintenance for ERP products. *Question 4: Do ERP implementing strategy (IMPL) affect to business operations' satisfaction? Hypothesis H4: There exists a linear relationship between ERP implanting strategy and business operations' satisfaction.*
These measuring variables include: how satisfied degree of users in business for using ERP system such as Not all of satisfied, slightly satisfied, satisfied, very satisfied, extremely satisfied.

Results
The study uses Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS to examine relationship between observed indicators and underlying latent variable. It shows the validity and reliability of how rate of the indicators combine with the intended construct for each factor such as leadership characteristics (LDR), Employee characteristics (EE), suppliers characteristics (SPLY) , ERP implementation in enterprises (IMPL), and Business operations' satisfactions (BO) (Lambert & Newman, 2023). The research model was used the SmartPLS version 3.0 that software conducts for the modeling of SEM. The research follow the evaluation of (Lambert & Newman, 2023) in the partial least square (PLS) estimation. The four hypotheses were checked magnitude and evaluation structural paths in PLS analysis and percentage of variance in constructs. The research model was validated using the quality of the transformation of the factors; scale reliability, convergent and discriminant validity, and collinearity analysis in measurement model. In addition, collinearity of independent factors (inner VIF); the effects relationships in model (path coefficients); determining coefficient through R square (R square); impacts coefficient f square (f square) are analyzed in the Structural equation modeling (SEM) (Harmeni, 2022). Measurement Model Assessments**:** All of these factors with Cronbach's Alpha are over 0.7. that is optimal level of reliability of research model (Hair & Alamer, 2022). In the results presented that variables in the research model meet discrimination when there is no coefficient of any pair of variables is greater than 2 square root values of AVE of that pair of factors (Harmeni, 2022) . With cross-loading criterion results, the research model have discriminant validity (Sujati et al., 2020).

Structural Equation Modeling (SEM) Assessments: IMPL and Business operations' satisfaction show that IMPL do not have collinearity and the values are in ranging 1.000 to 1.131. Hence, there is no variables that removed because of multicollinearity (Hair & Alamer, 2022), and research model is reliable and no multicollinearity (Kim, 2019).The path coefficients of SmartPLS with bootstrapping method in 5,000 sub-samples is calculated the t-test, p-value for checking relationship of variables in research model, and relation coefficients are positive. There is a critical effectiveness between Business operations' satisfaction and IMPL in the research model (Tien et al., 2021).The adjusted R-squared of Business operations' satisfaction is 0.596, independent variables show 59.6% of the variation in Business operations' satisfaction. The adjusted R-squared of

IMPL is 0.472, so the independent variable LDR, EE, SPLY present 47.2% of the variation in the variable IMPL. The high level of presentation is in research model.

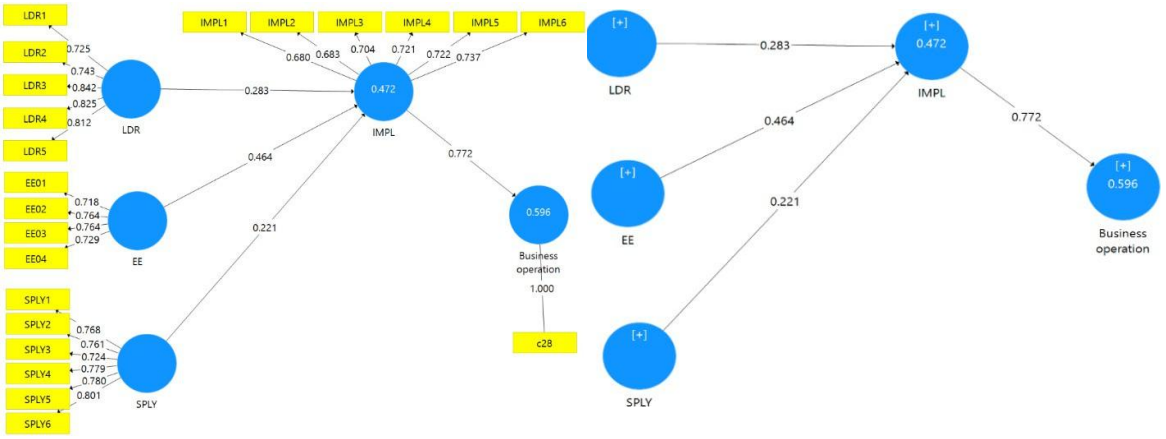


Figure 4-1: Measurement model assessments Figure 4-2: Structural Equation Modeling (SEM)

Discussion

The research analyzes human factors impact to the ERP implementing strategy with current status of operation and ERP application characteristics in Dong Nai industrial zone, Viet Nam. The results demonstrated that employee have critical impact to ERP implementing strategy with working experiences in key positions, skills to work in ERP implementing ERP solutions. Leader factor contributes significantly to successful ERP implementing with their knowledge of technologies, administration. In addition, supplier with their knowledge and understanding of production and business activities of implemented enterprise, experiences in consulting, providing and warranty contracts and project signed that important factor attend to successful ERP implementing strategy. At the results of , the employees characteristics is significant factor in the ERP implementing strategy (Beta=0.464), all processes, procedures, and enterprise activities from input to output of products and services have defined by human managements. Hence, to be ready in resources or the ability of employees to adopt technology will support enterprise to meet the compatibility, complexity, and usefulness of ERP system. Leader factor with beta=0.283 is critical impacted on ERP implementing strategy with high education and knowledge of ERP system that highly contribute to be successful of implementing ERP system with their right and quick decisions. In addition, with the pressure, work with high intensity from leaders support and promote ERP implementing that do on time and right direction. ERP solution market in Viet Nam is not professional with planning, experience consultants, ERP implementing team. Hence, there is a lot of obstacles for finding right ERP implementation suppliers such as lack of experience in ERP solution providers, not willing to change business procedures of customers. The results of study present that ERP implementation suppliers are important factors to contribute the ERP implementing strategy with beta = 0.221. ERP implantation provider should be evaluated by suitable goals and characteristics of enterprises. Warranty, training users, organization checking and testing, converting from legacy system need to consider in selection of supplier phase, and also full package or modules that should be paid attention in ERP system. In addition, the ERP implementation strategy is significant impact to

Business operations' satisfaction of enterprise after using ERP system in Dong Nai with beta=0.772. for being successful ERP implementation system that should be right strategy at the beginning. This study provides and confirms challenges in ERP system implementation of enterprises in Dong Nai Industrial Zones, Viet Nam. Next, this study will focus on the critical challenges and key factors that has to do with identifying gaps between the ERP genetic functionality and the specific organizational requirement and then make decision how these gaps will be controlled. The limitation of the study is focusing in Dong Nai province, Vietnam with have limited sample and areas with people in cultures, behaviors, educations. Currently, there are only three main possible group in the research such as employees, leaders, suppliers. The further research should be done in more groups that relevant to success ERP implementing system and also with governments policy, infrastructure in Dong Nai, Viet Nam because there are different infrastructure investment group in different areas. And last but not least, the future work can be done in larger regions, location and areas in Viet Nam that could be gathered more data collection and more views in impacting factors to ERP implementation strategy.

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