

# THE IMPACT OF THE MANAGEMENT FACTORS ON EFFECTIVENESS OF ACCOUNTING INFORMATION SYSTEM IN VIETNAMESE SMALL AND MEDIUM ENTERPRISES

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**Abstract:** Accounting information system (AIS) plays an important role in providing useful information to managers to make right decisions. Therefore, AIS is also considered as a lever to improve the business efficiency. The purpose of this study is assess the impact of management factors on the AIS effectiveness and the impact of AIS on accounting information quality (AIQ) in Vietnamese small and medium enterprises (SMEs). Results show that all three factors knowledge, participation and support of managers/ owners have an impact on AIS effectiveness. In addition, the results provide evidence that an AIS effectiveness will contribute to improve AIQ. From the results of this research, we proposed some solutions for improving AIS effectiveness towards enhance AIQ in Vietnamese SMEs.

## 1. INTRODUCTION

The wave of the fourth industrial revolution has had a profound effect on many sectors and industries, including accounting. Over time, the development of information technology has completely changed the accounting field, most clearly expressed in the method of processing and providing accounting data has greatly improved compared to the previous manual accounting process. However, the AIS in Vietnamese enterprises in general, especially in SMEs has still many limitations. Therefore, it is necessary to develop an effective AIS to provide accurate, complete and timely information for managers. From there, managers can make the right decisions, contribute to improve business efficiency and create competitive advantage for businesses.

According to the Statistical Yearbook 2017, SMEs play an important role in the Vietnamese economy, counting for over 96% of the total number of operating enterprises. But reality, AIS of SMEs in Vietnam still has many limitations such as weak level of the accountant, backward computer and software system, focusing only on financial accounting (Le, 2014; Truong,

2016). Thus, the AIS of SMEs in Vietnam has not fully promoted the role of providing useful information to managers in the decision-making process. Referring to this issue, Joshua Heniro - Chief executive of the Association of American Management Accounting, Southeast Asia region emphasize that the most important role belongs to the manager/leader. Because the manager/leader has an important place in getting ideas, planning and implementing AIS in the organization. Lack of their support also means that there is no financial resources, human resources and time to successfully implement AIS in the organization. In the classics of diffusion of new ideas in the organization, Rogers (1983) also argues that leaders have a significant influence on accepting innovation through support, direction, leadership and implementation. Therefore, in this article, we focus on the impact of management factors on AIS effectiveness in Vietnamese SMEs and the impact of AIS on AIQ in Vietnamese SMEs. From there, we propose some recommendations to improve the effectiveness of AIS towards AIQ improvement in SMEs in Vietnam.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Some studies around the world have been conducted and demonstrated that owners/managers are important factors influence AIS in the enterprises (Delone, 1988; Thong, 1999; Seyal *et al.*, 2000; Hussin *et al.*, 2002; Ismail and King, 2007). For example, Ismail and King (2007) argues that knowledge of owners/managers influences AIS in SMEs in Malaysia. Delone (1988) argues that the owner is the key for the implementation of information technology. Their knowledge of information technology is not necessary for large enterprises but for SMEs, the owner has a greater responsibility in developing AIS. Therefore, businesses that owner have familiarity with the information system (ie knowledge and experience), the implementation of information system will be more successful. In order to survive, SMEs need to continually update accounting information to make accurate and timely decisions. The application AIS will assist businesses in updating information more quickly and accurately. Thong (1999) shows that one of the most important factors influencing the application AIS is the knowledge of the information system of the managers. In Vietnam, the study of Truong (2016) concluded that knowledge of managers influences the effectiveness of AIS in SMEs in Ho Chi Minh City. Thus, the first hypothesis is:

*Hypothesis 1: Knowledge of owners/managers has positively influence the effectiveness of AIS in Vietnamese SMEs.*

The participation of owners/managers also plays an important role in the successful implementation of information systems in SMEs (Thong and Yap, 1995). Owners / managers participate in the deployment and implementation of AIS will encourage users to develop positive attitudes towards AIS use and thus facilitate the implementation (Thong *et al.*, 1996). In addition, with their dominant role, the participation of owners/managers can help the information system projects match the organization's goals and strategies (Jarvenpaa and Ives, 1991; Hussin *et al.*, 2002). In her study, Le (2014) concluded that the participation of managers in AIS implementation has a positive influence on the effectiveness of AIS in enterprises in Ho Chi Minh City. Thus, the second hypothesis is:

*Hypothesis 2: The participation of owners/managers has positively influence the effectiveness of AIS in Vietnamese SMEs.*

In the research of the factors affect on the management information system in the organization, Al-Mamary *et al.* (2014) pointed that the support of top managers influences the useful awareness and satisfaction of users about management information systems. Managerial support is their willingness to provide the necessary resources (finance, human resources and time) for the successful project implementation. The importance of managerial support for the effectiveness of AIS has been recognized in some of studies, such as Yap (1989), Thong *et al.* (1996), de Guinea *et al.* (2005), Ismail and King (2007) and some other studies. The number of studies conducted in Vietnam has also demonstrated the importance of owner / manager support, such as: Truong (2016) concluded that the support of managers influences the effectiveness of AIS in SMEs in Ho Chi Minh City. Nguyen (2016) asserted that lack of leadership support was one of the factors that hinder the successful implementation of the ABC approach in Vietnamese enterprises. Thus, the third hypothesis is:

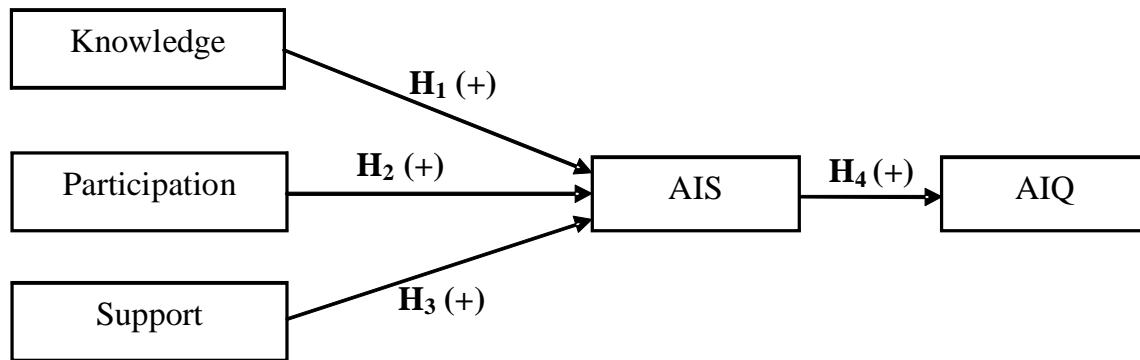
*Hypothesis 3: The support of the owners/ managers has positively influence on the effectiveness of AIS in Vietnamese SMEs.*

Wang *et al.* (1996) found that more than 60% of SMEs have problems about AIQ. A survey of 599 firms, Olson (2003) calculated losses due to inaccurate accounting information up to \$ 1.4 billion. Joseph *et al.* (2002) suggest that poor accounting information is a threat for the organization's competitiveness. Therefore, the issue of improving the AIQ is very necessary. Some researchers around the world have found a link between AIS and AIQ, such as: Sacer *et al.* (2006) or Sajady *et al.* (2008) say that effective AIS will enhance financial statement quality. The main findings of Ahmad Al-Hiyari *et al.* (2013) indicate that there is significant relationship between management commitments, data quality and AIS. The study recommends that training programmes should provide students with comprehensive knowledge about AIS implementation, the importance of data quality and management in order to support implementation AIS.

Susanto's (2015) study also concludes that the AIQ was provided by the companies in Bandung, Indonesia has not effective because AIS is not well-designed, difficult to access and not integrate. Mitchell *et al.* (2000) argued that accounting information could help SMEs manage

short-term problems in areas such as costing, expenditure and cash flow by providing information to support monitoring and control. Thus, the fourth hypothesis is:

*Hypothesis 4: Effectiveness of AIS has positively influence on AIQ in Vietnamese SMEs.*



**Figure 1: Management factors affecting to AIS towards to enhance AIQ in Vietnamese SMEs**

(Source: We have synthesized)

### 3. RESEARCH METHODS

#### 3.1. Variable measurement

Variable measurement in our study was inherited from the previous studies as Chenhall và Morris (1986), Jarvenpaa & Ives (1991), Thong (1999), Hussin *et al.* (2002), Ismail and King (2007), Ismail (2009), Braam and Beest (2013) và and results from our qualitative research. Specifically as follows:

The measurement of knowledge of the owner / manager was designed base on the instrument of Ismail and King (2007), consisting of seven observed variables: accounting knowledge, word processing skills, spreadsheets, database, accounting software, production management with computer support, internet search. Using a five-point scale (1 = complete no knowledge; 5 = extensive knowledge), respondents were asked to indicate their knowledge level about the above seven contents.

Our study adopted a similar instrument used by Hussin *et al.* (2002) to measure participation of owner/ manager in information system implementation. The instrument which was originally developed by Jarvenpaa & Ives (1991) was tested and validated by Hussin *et al.*

(2002) in the specific context of SMEs. Using a five-point scale (1 = absolute no participation; 5 = high participation), respondents were asked to indicate their level of participation in the following five areas: definition of needs (information requirements), selection of hardware and software, implementation of systems, systems maintenance and problem solving, and planning for future information technology deployment.

Based on the results of expert discussions, we have designed a scale for the support of owners/managers with three observed variables: finance, human resources and time. Respondents were asked to indicate the importance of the above items by the Likert five-point scale from 1 (complete no support) to 5 (complete support).

The measurement of effectiveness of AIS is based on the Chenhall and Morris' (1986) instrument, which includes Scope, Aggregation, Integration and Timeliness. Instrument of Chenhall & Morris (1986) is considered appropriate for use in SMEs and this instrument is the most popular and widely adopted by accounting researchers (for example, Mia, 1993; Abernethy and Guthrie, 1994; Gul and Chia, 1994; Chong and Chong,

1997). While it was originally developed for use in large organisations, it has been modified and tested in the specific context of SMEs by Gul (1991) and more recently by Ismail & King (2005; 2007).

The measurement of AIQ is based on the instrument of Braam and Beest (2013). This is the measurement designed by Braam and Beest (2013) that based on the quality attributes of the financial statement published by FASB & IASB 2010 including five contents: Relevance, Faithful Representation, Understandability, Comparability and Timeliness.

**3.2. Research process**

This research is conducted through two phases: preliminary research and formal research.

First, preliminary research is conducted through qualitative research and quantitative research. (1) Qualitative research was conducted by discussing with 6 experts about the management factors affect effectiveness of AIS in small and medium enterprises in Vietnam, the scale of these factors, the scale of efficiency of AIS and the scale of AIQ. Our desire is design a scale suitable for Vietnam’s conditions. Then, we built the research model and drafted the draft scale. (2) In the next step, the quantitative pilot study was conducted by a 30-sample survey to detect errors and check the scale. The results of this phase will help us to develop a full scale survey for formal research.

Next, the formal study was conducted by quantitative research. After a complete survey, we interviewed, telephoned or emailed the survey respondents (CFO, Chief Accountant, General Accountant and some accountants who knowledge of AIS and working in Vietnamese small and medium enterprises in Binh Dinh province, Da Nang city, Ho Chi Minh city and Ha Noi capital and so on). The result was 357 responses, of which 300 valid questionnaires were used for data entry. After encrypting and cleaning the data, we performed the analysis on SPSS 20 and AMOS 22 software as follows: Descriptive Statistics, Cronbach’s Alpha, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM).

**4. RESEARCH RESULTS**

**4.1. Cronbach’s Alpha**

Cronbach’s Alpha of SPSS 20 is used to test the reliability of the scale components. Results show that all scales meet the reliability requirement (Cronbach’s alpha > 0.6). The corrected item-total correlations of the scales are higher than the permissible range (> 0.3) so that all scales are included in the Exploratory Factor Analysis in the next step.

**Table 1**  
**Cronbach’s Alpha**

<i>Composition</i>	<i>N of Items</i>	<i>Cronbach’s Alpha</i>	<i>Corrected Item – Total Correlation min</i>
Knowledge	7	0.726	0.453
Participation	5	0.803	0.527
Support	3	0.841	0.483
AIS	4	0.785	0.459
AIQ	5	0.811	0.663

(Source: Excerpt from the results of SPSS 20)

**4.2. Exploratory Factor Analysis (EFA)**

Fortunately, the results of Exploratory Factor Analysis with Promax rotation on SPSS 20 extracted three independent factors from the first 15 observed variables. The Kaiser-Meyer-Olkin (KMO) is 0.813 (> 0.5) with the significance level of the Bartlett’s Testis 0.000 (< 0.05), indicating that the exploratory factor analysis of the independent components is appropriate. The cumulative variance of 68.788% indicates that the three factors explain 68.788% variation in data research, at the Eigenvalues of 1.137.

We do the same for two variables AIS and AIQ, the Kaiser-Meyer-Olkin of AIS and AIQ are 0.742 and 0.711, with the significance level of Bartlett’s Testis 0.000 (< 0.05), indicating that the exploratory factor analysis of the dependent components is appropriate. The cumulative variance of practice and success are 61.325% and 73.146% which should explain the variability of the data.

**4.3. Confirmatory Factor Analysis (CFA)**

The Confirmatory Factor Analysis results with the support of AMOS 22 showed that indicators of suitability

of the model were satisfactory, such as: Chi-square / df = 1.429 (< 2); GFI = 0.946 (> 0.9); TLI = 0.973 (> 0.9); CFI = 0.929 (> 0.9) and RMSEA = 0.056 (< 0.8). This proves that the model is fit with the research data. Next, we test convergent validity, reliability and discriminant validity.

About of convergent validity, the regression weights are statistically significant ( $p$ -value < 0.05) and all the Standardized Regression Weights are > 0.5. Therefore, we can conclude that observable variables are used to measure the factors of the model have convergent validity.

About reliability, the composite reliability and total average variance extracted are > 0.5. In addition, the Cronbach's Alpha of the factors are recalculated > 0.7. Therefore, it can be concluded that all scales in the model are reliable.

About discriminant validity, the correlation coefficient between the two components is 0.591 (< 0.9) and the  $p$ -value is 0.000 (< 0.05).

#### 4.4. Structural Equation Modeling (SEM)

The Structural Equation Modeling results with the support of AMOS 22 show Chi-square / df = 1.259 (< 2); GFI = 0.942 (> 0.9); TLI = 0.947 (> 0.9); CFI = 0.968 (> 0.9) and RMSEA = 0.047 (< 0.8). In addition, regression weights were statistically significant because of  $p$ -value < 0.05 (see Table 2). Therefore, it can be concluded that knowledge, participation and the support of the managers/owners actually affect AIS effectiveness; The effectiveness of AIS actually affect on quality of accounting information.

**Table 2**  
**Regression Weights**  
**(Group number 1 - Default model)**

		<i>Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>	<i>Label</i>
AIS	<— Knowledge	.245	.064	3.605	***	
AIS	<— Participation	.343	.079	4.276	***	
AIS	<— Support	.352	.069	3.671	***	
AIQ	<— AIS	1.081	.241	4.787	***	

Source: Excerpt from the results of AMOS 22

**Table 3**  
**Standardized Regression Weights**  
**(Group number 1 - Default model)**

		<i>Estimate</i>
AIS	<— Knowledge	.391
AIS	<— Participation	.474
AIS	<— Support	.580
AIQ	<— AIS	.427

Source: Excerpt from the results of AMOS 22

Looking at the results of standardized regression weights, it can be seen that all management factors (knowledge, participation and support of the managers/owners) impact positively on the effectiveness of AIS of SMEs in Vietnam. In particular, the support of managers/owners has the greatest impact with  $\beta = 0.58$ , followed by the participation of managers /owners ( $\beta = 0.474$ ) and finally is knowledge management/owners factors with  $\beta = 0.391$ . In addition, the results also show that on the effectiveness of AIS has a significant effect ( $\beta = 0.427$ ) on the quality of accounting information in Vietnamese SMEs.

#### 5. DISCUSSIONS AND CONCLUSIONS

The rapid development of information technology is putting Vietnamese businesses in general and Vietnamese SMEs in particular in the face of great challenges, in which the biggest challenge is an effective AIS that can provide accounting information useful, timely and accurately. The results our empirical research again confirm the important role of owners/managers in improving the effectiveness of AIS in SMEs in Vietnam. Because of the low volume of information, all information is reviewed by the owners/managers, so in Vietnamese SMEs the owners/managers are the ones who understand the goals and strategies of the firm more than anyone else, so they can help the AIS project in the right direction and in line with the objectives of the firm. In addition, in these enterprises, owners/managers often have the direct right to allocate resources and create favorable conditions for the successful development of AIS projects. On the other hand, an effectiveness of AIS significantly influences the AIQ - reflected in the quality of financial reporting provided to owners/managers as well as those who care.

As we all know, financial reporting, if not guaranteed to provide accurate information (not quality assurance) will affect the decisions of all interested parties, so it will cause distrust of outside actors, and this will reduce the credibility of the firm. All of this shows that improving effectiveness of AIS in order to improve the AIQ is always a matter of great concern for Vietnamese SMEs, especially in the industrial stage 4.0 is developing strongly.

What does Vietnamese SMEs need to pay attention in order to develop AIS as well as improve the efficiency of AIS?

Firstly, the owners/managers need to improve their accounting knowledge and regularly update information and knowledge about international accounting standards, Vietnamese accounting standards and State regulations in order to plan to develop AIS effectively. In addition, the owners/managers should also be aware of the role of information technology applications in accounting work as well as knowledge of information technology and regular application of information technology to support for their the management business.

Next, the owners/managers must direct and participate in the process of building and developing AIS for the business. The important role of owners/managers of SMEs is to determine the need for information in order to have a plan to develop an AIS that is consistent with the business development strategy. At the same time, participation in the selection of consultants, suppliers as well as solve problems arising in the using process is very necessary. In addition, owners/managers should pay attention to instruct staff periodically collect and report feedback on the use of the system to plan timely repairs and upgrades.

Lastly but not least, ensuring of financial and human resources for AIDS project is very necessary. However, for Vietnamese SMEs, adequate financial resources and suitable human resources for AIS development is always a difficult problem. However, SMEs still need to set up a dedicated subcommittee about AIS, in this subcommittee, owners/managers need to select qualified staffs about financial accounting, AIS and information technology. In addition, the owners/managers should have a plan that allocate funding for the AIS project appropriately.

In addition, owners/managers need to build a change culture, communicate to all employees so that they understand and learn new technologies.

Our study only focused on the impact of management factors on AID effectiveness and its impact on AIQ in Vietnamese SMEs. In the next study, we will expand the research subjects into the public sector.

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