

Business Strategy and Firm Performance: The Mediating Role of Accounting Information Systems

Dr. Wael Ghazi Bani Melhem^{1*}

Dr. Ala' Mohammad Rabi^{2*}

Assistant in Department of Accounting Faculty of Business,
Jerash University, PO code 26150, Jerash, Jordan

Ahmad Mohammad Zuqibeh³

Abstract

This study aims to examine the relationships between business strategy (cost leadership and innovative differentiation) and firm performance, the mediating role of the accounting information systems among Jordanian public listed companies. Previous studies had investigated the direct relationship of Business strategy and AIS to enhance the firm performance. Therefore, This study introduced an integrated model for service firms to achieve better performance through appropriate competitive business strategy and mediating variables such as AIS. To achieve the objectives of this study, data were collected from 192 service firms listed in Jordanian Stock Exchange. The partial least squares (PLS) statistical analysis tool had been used to analyze the constructs of this study. Result had revealed that businesses strategy significantly affect AIS. Whereas, AIS has a significant effect on financial performance. as well as, the result showed that AIS mediate the relationship between business strategy and financial performance.

Keywords:businessstrategy, firm performance, accounting information systems

1. Introduction

Today globalization of the economy is going to encourage competition worldwide (Bentley and Whitten, 2007:17; Ravichandran, T, 2018). Ability to compete require strategies that can harness all the power and opportunity, this can be done if the management is able to do the right decision based on the information (BodnarandHopwood, 2010:3; Pambreni, Y., Khatibi, A., Azam, S., &Tham, J, 2019).Therefore, strategies focus on the improvement of the competitive advantages of an organization in terms of the products it makes or the services it delivers to a specific market or industry sector (Croteau& Bergeron, 2001; Aghajari&AmatSenin, 2014). Croteau and Bergeron (2001) and Banker, Mashruwala and Tripathy (2014), state that business strategy incorporates steps taken by firms to fulfill their objectives.

Business strategy also includes the results of decisions made to channel the efforts of an organization in terms of environment, structure, and the processes that affect its performance (Banker, Mashruwala&Tripathy, 2014; Croteau& Bergeron, 2001; Chuang, S. P., & Huang, S. J, 2018). However, there are lack of studies that investigate the inter-link between business strategies with AISs (Bharadwaj et al., 2013); and firm performance (Ditkaew, 2013). Business strategies are ways to obtain the competitive edge by an organization in the market and involve methods that are employed by the organization to make effective decisions (Porter, 1985), which in turn enhance performance.

Porter (1980) has developed a construct related to the characteristics of strategic priorities so that firms can face the competition more effectively. He reasons that there are two ways for a firm to maintain a competitive edge: producing the lowest-cost products or offering the lowest-priced services (the low cost strategy), and tailoring its products to meet the specific needs of its customers in terms of quality, characteristics, and the related services (product differentiation strategy). Therefore, to be successful, a firm must choose one of these two strategies. The proper implementation of each of these strategies involves different resources and skills, organizational arrangements that are conducive, and effective control systems (Langfield-Smith, 1997).The three general strategies proposed by Porter (1980) are: cost leadership, differentiation, and focus. These are known as generic strategies and have been extensively referenced in strategic management studies (Marx, 2015; Rivard, Raymond, &Verreault, 2006).

Cost leadership takes advantage of economies of scale, scope, and other related economies. Companies employing this business strategy produce standard and identical products using state-of-the-art production technologies. The goal of product differentiation, on the other hand, is to highlight and exploit the uniqueness and quality of a company's product

for the buyers. A focused strategy for business necessitates that the organization serves a niche or extremely specific market.

As Porter (1980, p. 38) succinctly puts it, the focus strategy is based on the reasoning that a firm can benefit if it is “able to serve its narrow strategic target more effectively or efficiently than competitors who are competing more broadly.

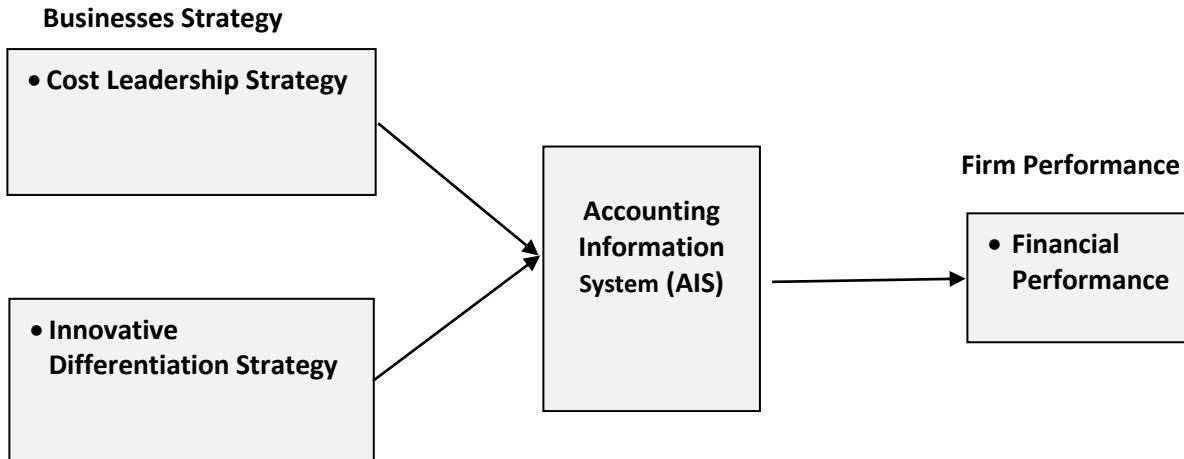
This research includes the analyzers as a strategic type. In investigating how business strategy and AIS scope are related to the analyzer strategic-type, it is revealed that the analyzers offer a choice of business strategy profile that corresponds more closely to their unit, and yields results that explain the analyzers’ information needs for decision-making, meaning that the analyzers’ information needs are different to those of defenders and prospectors. As far as the researcher knows, there is very little in the previous literature that investigates the relationship between business strategy and the AIS in the organization. It is crucial for the researcher to better understand analyzer information needs for decision-making, as an appropriate fit between strategic-type and AIS is a requirement to attain better business performance (Aghajari&AmatSenin, 2014; Banker, Mashruwala, &Tripathy, 2014; Chalatharawat&Ussahawanitchakit, 2009; Ditkaew, 2013; Marx, 2015; Wu, Gao, &Gu, 2015; Pearlson, Saunders, &Galletta, 2019).

However, Al-Eqab and Ismail (2011) determine a strong positive relationship between business strategy and AIS among Jordanian companies listed in Jordan’s Stock Exchange. An information system, especially an AIS, can assist an organization to remain competitive by enhancing efficiency through reducing costs, facilitating the execution of business strategies, and the identification of potential business process improvements that will yield the greatest returns (Onalapo&Odetayo, 2012; Sajady, Dastgir&Nejad, 2008; HashaniSiqani,&BerishaVokshi, 2019). The system can provide information not only about the value chain, but also that of the value system. Hence, an efficient AIS helps management to identify whether the value of a business process or activity is cost effective, and whether the process can be expanded, abandoned, or outsourced to minimize cost and maximize returns. Additionally, it may help management to make decisions for product launches or otherwise, to improve customer relationships and loyalty, and to improve processes for cost effectiveness (Sumritsakun, 2012; Williams & Seaman, 2002; Sajady, Dastgir, &Nejad, 2008; HashaniSiqani, &Berisha Vokshi,2019).

2. Theoretical framework:

The changing requirements of information, for modern managers, have stimulated a development of measures and methods which promote progress and inform the perspectives and opportunities for current and future performance. Rapid change in present business environment conditions requires agility, flexibility and innovation. Processes of adaptation and reaction to the business environment could be ensured by a fast decision-making process, timely information, and suitable data flow to enhance firm performance.

Traditionally, most studies on the strategic use of information systems have focused on the potential of implementing a firm’s business strategy to achieve performance (Hu, Q& Plant, R, 2001; Tanriverdi,2005; Barkat,&Beh,2018). Adding value to a firm by information system-reducing costs, or increasing revenues, may not be recognized as a means to provide competitive performance. The competitive performance is enhanced through the cost leadership, or innovative differentiation, achieved from AIS applications, and would be regarded as strategic necessities (Mata, F. J., Fuerst, W. L., & Barney, J. B 1995; Makhoulfi, Noorulsadiqin,&Fadhilah,2018). The following section provides the theoretical foundation of the research framework.



3.Contingency Theory

From the very beginning, the contingency theory has proposed that organizational effectiveness is the result of the association between organizational characteristics and contingency factors (Daoud&Triki, 2013; Haleem, Kevin, &Ahamed, 2019). A literature review determines that some previous research has investigated the organizational variables as contingent factors that may affect AISs (Daoud&Triki, 2013; Haleem, Kevin, &Ahamed, 2019).

The application of the contingency theory is very common in strategic management and accounting research. The theory itself was the result of the efforts of many authors and scholars (Burns & Stalker, 1961; Lawrence &Lorsch, 1967; Ricciardi, Zardini, &Rossignoli, 2018). The theory focuses on the primary tenet that an AIS is not suitable for all organizations in a same manner (Otley, 2016). Therefore, the contingency theory posits that the AIS employed in a particular firm should be designed to suit the situation and settings at a given time, so as to enhance the performance of the firm. Alternatively, it can be seen that the contingency theory expounds that the performance and efficiency of an organization is dependent on its ability to match the conditions of its immediate environment and influence its structure according to the requirements (Drazin& Van De Ven, 1985; Lawrence &Lorsch, 1967; Pennings, 1992; Sauser, Reilly &Shenhar, 2009; Ricciardi, Zardini,&Rossignoli, 2018).

The contingency theory also proposes that organizational performance can be improved by the interaction between organizational structure and context. In this context, a greater level of fit between the context and the structure results in better organizational performance (Al-Omiri& Drury, 2007). Some studies test the interaction between the contingency factors, the AIS, and the performance (Chong, 1996; Naranjo-Gil, 2004; Boulianne, 2007; Elshaiekh, Alghafri, Alsakeiti, & Aziza, 2018). Companies must allocate their resources in order to facilitate this interaction (Daoud&Triki, 2013).

Weill and Olson (1989) did some additional work on the application of contingency theory in MIS by critically analyzing 177 reputed journal articles. They were responsible for defining and developing the structure of the contingency theory for application in MIS Research (see Figure 3.1).

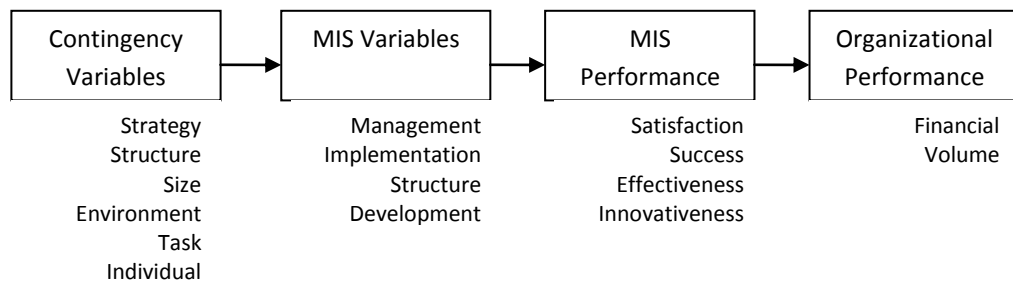


Figure 3.1 representation of contingency theory in MIS researchSource: Weill and Olson (1989, P. 63).

4. Literature review and hypothesis development

4.1 Business Strategy and AIS

In a contemporary environment of increased business competition and rapid technological development, companies are facing new challenges with regard to customer satisfaction and sustaining a share in the markets (see Jablan-Stefanović, & Novičević, 2012). In order to attain and maintain a competitive edge, firms usually employ some form of business strategy, such as cost leadership or innovative differentiation. However, no matter what strategy is implemented, companies must still expertly deal with important issues like cost, time, innovation, product or service quality, and higher value for money (Abernethy & Guthrie, 1994; Banker, R., Mashruwala, R., & Tripathy, A, 2014; Chong & Chong, 1997 and Simons, 1987; Suryanto, T., & Anggraini, E. 2020).

To realize these, firms are in great and constant need of internal and external information that needs to be obtained and disseminated in a timely manner in order to make smart decisions. For example, precise and updated information on factors that influence cost, customer relations, and market patterns are vital for a company to solidify and defend its position in the market. Also, information that is cohesive and grouped in an orderly manner is crucial for supporting business analysis, decisions, standardizations, and plans for future activities.

Forging and maintaining integrated relationships in all spheres, from the supply chain to the customers, are essential if a company wants to preserve its competitive edge. This requires that the company concerned adopt strategies that address both internal and external environments and situations. (Al-Eqab and Ismail's, 2011; Budiarto, D. S., Prabowo, Djajanto, Widodo, & Herawan, 2018) study 180 Jordanian companies and provide evidence of this fact by stating that there is a direct and positive association between the various dimensions of business strategy and the AIS. (Boulianne, 2007; Elshaiekh, Alghafri, Alsakeiti, & Aziza, 2018) finds there is a positive relationship between business strategy and the AIS among 88 Canadian business units.

In summary, the company has to depend on an adaptive and effective AIS that can facilitate the flow of comprehensive, compiled, cohesive, and timely information, in order to make its adopted strategy successful. Therefore:

H1: There is a positive relationship between cost leadership strategy and AIS.

H2: There is a positive relationship between innovative differentiation strategy and AIS.

4.2 AIS and Firm Performance

Information and data related to accounting play a crucial role in the decision-making process in any organization. Accounting information as an output of information systems has an impact on the administration in a firm, especially in planning, operating and control activities. Undeniably, proper planning, control, and execution of economic activities require precise, consistent, and crucial information. Accounting Information Systems (AISs) capture and process accounting data and provide valuable information for decision makers. However, in a rapidly changing environment, continual management of the AIS is necessary for organizations to optimize performance outcomes (Prasad & Green, 2015; Rasit, & Ibrahim, 2018). (Issam, 2011; Budiarto, Prabowo, Djajanto, Widodo, & Herawan, 2018) has thus stated that an AIS should deliver precise and reliable information on time to aid the decision makers of a company. The accounting system must be effective enough to deliver crucial information to decision makers so that they can analyze the business scenario, take proper actions to meet the objectives, and develop and follow through on new plans (Issam, 2011; Budiarto, Prabowo, Djajanto, Widodo, & Herawan, 2018).

Previous study (Kharuddin, 2012; Malhotra, & Temponi, 2010; Ngai, Law, & Wat, 2008; Hüner, Schiering, Otto, & Österle, 2011; Haleem, Nawaz, & Ayoobkhan, 2020) found that the AIS plays a very important role in gathering, processing and disseminating vital information, from planning and controlling activities, to boosting organization performance, therefore:

H3: There is a positive relationship between AIS and financial performance.

4.3 Mediating Effect of AIS on the Relationship between Business Strategy and Firm Performance

Romney (2012); Ahlawat, & Vincelette, (2019) posits that the AIS is essential for acquiring and regulating the flow of information, both internal and external to a company. It facilitates the users and company stakeholders to obtain updated and timely information with a broad domain, such as data from internal and external sources, financial information, and historical data or forecasts. Therefore, given all these advantages, an AIS has the ability to be a firm's primary system for information acquisition, management, and dissemination. An effective AIS is fully integrated with modern technology and can use data mining and complex types of algorithms to predict future possibilities and scenarios on the basis of probability calculations and by using past data and trends. Thus, in this way, an effective AIS

can provide the company with predictive analyses. This enables the company to implement the correct business strategy by taking effective and smart decisions, streamlining its business transactions, and reinforcing its strategic positions.

An AIS is also intimately and extensively influenced by the business strategy implemented by a company, i.e., cost leadership or innovative differentiation. With regard to implementing and maintaining these strategies, (Romney, 2012; Ahlwat, & Vincelette, 2019) demands consistency between the different types of data collected by a company. This, in turn, has influence on the AIS. Information and analysis produced from the AIS can then assist the company's decision makers to take effective decisions, which finally lead to enhanced company performance. Therefore:

H4: AIS mediates the relationship between cost leadership strategy and financial performance.

H5: AIS mediates the relationship between innovative differentiation strategy and financial performance.

5. Research Methodology

5.1 Data and sample

This study includes all service companies on the Amman Stock Exchange. The total population in this study comprises 192 service companies (Amman Stock Exchange, 2020). Listed services firms in the Amman Stock Exchange cover all service sectors, such as healthcare services, banking, educational services, hotel and tourism, transportation, technology and communication, media, utilities and energy, and commercial services (Amman Stock Exchange, 2020). The total number of listed companies is 236 in 2020, where 192 of the firms are listed as service firms. In other words, 81% ($192/236 \times 100\%$) are service firms. Hence, the sample only consists of service companies in Amman. Moreover, the main contributor to the GDP is the service sector in Jordan, as studied in the background study.

All in all, 192 sets of survey questions were sent to the service companies listed in the Amman Stock Exchange (ASE) for the attention of the respective Financial Chief Managers in 2020. Only 144 of the returned questionnaires were collected, thus providing a 75% response rate. Of the returned questionnaires, 31 were rejected from analysis, as they were not properly completed. Finally, 113 questionnaires were usable, and thus a valid response rate of 58.8% was obtained, which is accepted as an excellent response. According to Sekaran and Bougie (2013), a 30% rate of response is adequate for surveys. Table 1 presents the rate of response and the number of valid completed questionnaires for this research.

Table 1 Respondent's Background profile

Demographic	Categories	Frequency	%
Age	< 30	3	2.7
	31-40	19	16.8
	41-50	65	57.5
	51-60	21	18.6
	Missing	5	4.4
Gender	Male	92	81.4
	Female	16	14.2
	Missing	5	4.4
Working Years	<10	27	24
	11 to 20	65	57.5
	21 to 30	17	15.0
	31 to 40	-	-
	Missing	4	3.5
years in this position	<1	1	.9
	1 to 5	50	44.2
	6 to 10	46	40.7
	11 to 15	9	8.0
	16 to 20	1	.9
Education Level	Missing	6	5.3
	Below bachelor's degree	2	1.8

	Bachelor's degree	60	53.1
	Master's degree	49	43.4
	Missing	2	1.8
Ownership Status	Local	98	86.7
	Foreigner	8	7.1
	Missing	7	6.2
Age of firms	<10	24	21.2
	11-15	31	27.4
	>15	53	46.9
	Missing	5	4.4
Number of employees	1-200	39	34.5
	201-300	31	27.4
	301-400	17	15.0
	401-500	7	6.2
	>500	16	14.2
	Missing	3	2.7

5.2 Measures

The instruments used in the present study. All the questionnaire measurements were either adapted or adopted from various published literature, except for the company profile and demographic factors. The questionnaire consists of five sections. Each of the dimensions is measured with a 5-point Likert scale. According to Sakaran and Bougre (2010), a 5-point scale is just as good as any other scale, and an increase from five to seven or nine-point on a rating scale does not improve the reliability of the ratings.

5.3 Company Profile and Demographic Profiles

Several questions regarding organizational information are included in the questionnaire. Respondents are asked to tick the appropriate boxes or fill in the blanks, of the required organizational information. For the company profile, the respondents were asked to tick the boxes for the questions that applied to their organization. Respondents were asked to fill in the blanks for the year of establishment and number of employees. For the demographic data, the respondents were asked to tick the boxes for the questions, i.e., current position, gender, age, and level of education. Respondents were also asked to fill in the blanks with regard to their seniority and years of service.

Composite reliability is employed for the assessment of the consistency of the measuring items utilized in this research. Its suitability for PLS-SEM is greater in comparison with Cronbach's alpha, which emphasizes indicators depending on their reliability in model estimation (Hair et al., 2011). Composite reliability should be in excess of 0.7, according to Hair et al. (2011), which is the case in this study.

5.4 Convergent validity

Convergent validity implies the degree to which various items are employed in the study to evaluate if the same concepts agree with each other (Ramayah et al., 2011). In this research, the convergent validity of the measures employed can be studied using the value of the average variance extracted (AVE). Hair et al. (2010) propose that an AVE value of 0.5 and higher must be obtained to confirm that the latent variable clarifies in excess of 50% of its indicator's variance.

The composite reliability (CR) report in this study (Table 2) is above 0.7 (Nunnally, 1978). The result of the study finds the range to be between 0.860 and 0.952, as composite reliability, and is considered as significant. Therefore, this study fulfills all the criteria for convergent validity.

Table 2 Measurement model (Item loading, AVE and CR)

No	Constructs	Measurement Items	Loading	^a AVE	^b CR
BUSINESS STRATEGY					
1	Cost Leadership	CLS1	0.852	0.674	0.892
		CLS2	0.739		
		CLS3	0.831		
		CLS4	0.856		
2	Innovative Differentiation	IDS1	0.745	0.586	0.952
		IDS2	0.796		
		IDS3	0.693		
		IDS4	0.665		
		IDS5	0.774		
		IDS6	0.773		
		IDS7	0.856		
		IDS8	0.787		
		IDS9	0.896		
		IDS10	0.808		
		IDS11	0.813		
		IDS12	0.751		
		IDS13	0.74		
		IDS14	0.565		
ACCOUNTING INFORMATION SYSTEM					
1	Scope	AISS1	0.846	0.627	0.909
		AISS2	0.680		
		AISS3	0.773		
		AISS4	0.764		
		AISS5	0.812		
		AISS6	0.861		
2	Aggregation	AISA1	0.908	0.662	0.932
		AISA2	0.850		
		AISA3	0.796		
		AISA4	0.801		
		AISA5	0.776		
		AISA6	0.739		
		AISA7	0.816		
3	Integration	AISI1	0.882	0.841	0.941
		AISI2	0.921		
		AISI3	0.946		
4	Timeliness	AIST1	0.853	0.740	0.919
		AIST2	0.912		

Table 2 Continued.

No	Constructs	Measurement Items	Loading	^a AVE	^b CR
	Timeliness	AIST3	0.809		
		AIST4	0.864		
FIRM PERFORMANCE					
1	Financial performance	FP1	0.845	0.682	0.945
		FP2	0.868		
		FP3	0.779		
		FP4	0.796		
		FP5	0.848		
		FP6	0.796		

FP7	0.782
FP8	0.887

Noted: IQ 7 was deleted due to low loading.

^aAverage variance extracted (AVE)= (summation of the square of the factor loadings)/ {(summation of the square of the factor loadings) + (summation of the error variances)}

^bComposite reliability (CR)= (square of the summation of the factor loadings)/ {(square of the summation of the factor loadings) + (square of the summation of the error variances)}

5.5 Discriminant validity

Discriminant validity tests whether two or more clearly dissimilar concepts with no correlation to one another, are in fact unrelated (Sekaran&Bougie, 2010). Cross-loading and the Fornell-Larcker criterion are two approaches proposed for the determination of the constructs' discriminant validity.

As presented in Appendix E, the PLS-algorithm analysis was run and it is observed that all the indicators' loading values were in excess of the cutoff point of 0.5, in line with the suggestion by Hair et al., (2010). Additionally, as expected, all indicators are loaded into their underlying constructs, indicating an absence of cross-loading among the indicators.

It is possible to establish the discriminant validity of the reflective measurement models using the Fornell-Larcker criterion, whereby the squared root of AVE exceeds the inter-correlations of the construct with the other constructs in the model. Table 5.4 shows the squared root of AVE for every construct as distinctly greater than the inter-correlation for each construct, showing that there is sufficient discriminant validity for the proposed constructs proposed in this study.

Table 3 Discriminant Validity

	AISA	AISI	AISS	AIST	CLS	FP	IDS
AISA	0.814						
AISI	0.389	0.917					
AISS	0.382	0.434	0.792				
AIST	0.228	0.411	0.291	0.860			
CLS	0.341	0.298	0.244	0.340	0.821		
FP	0.273	0.246	0.408	0.321	0.181	0.826	
IDS	0.257	0.196	0.487	0.151	0.316	0.294	0.766

Note: Diagonals (in bold) represent the squared root of average variance extracted (AVE) while the other entries represent the correlation between the constructs. For discriminant validity, diagonal element should be larger than off-diagonal elements in the same row and column.

5.6 Reliability analysis

Composite reliability is employed for the assessment of the consistency of the measuring items utilized in this research. Its suitability for PLS-SEM is greater in comparison with Cronbach's alpha, which emphasizes indicators depending on their reliability in model estimation (Hair et al., 2011). Composite reliability should be in excess of 0.7, according to Hair et al. (2011), which is the case in this study. Table 4 shows that it exceeds the value, thus confirming the reliability of the measurements.

Table 4 Result of Reliability Test

Constructs	Measurement Items	Loading	Number of Items
Cost Leadership	CLS1, CLS2, CLS3, CLS4	0.739-0.856	4(4)
Innovative Differentiation	IDS1, IDS2, IDS3, IDS4, IDS5, IDS6, IDS7, IDS8, IDS9, IDS10, IDS11, IDS12, IDS13, IDS14	0.565-0.897	14(14)
Scope	AISS1, AISS2, AISS3, AISS4, AISS5, AISS6	0.680-0.861	6(6)
Aggregation	AISA1, AISA2, AISA3, AISA4, AISA5	0.739-0.908	7(7)

	AISA6, AISA7		
Integration	AISI1, AISI2, AISI3	0.882-0.946	3(3)
Timeliness	AIST1, AIST2, AIST3, AIST4	0.809-0.912	4(4)
Financial Performance	FP1, FP2, FP3, FP4, FP5, FP6, FP7, FP8	0.779-0.887	8(8)

5.7 Testing Second Order Constructs

The assessment for second order constructs is in line with the repeated indicators approach, as proposed by Hair et al. (2013), which stipulates that the first order constructs (i.e., scope, aggregation, integration and timeliness) are modeled to the second order constructs (i.e., AIS). Next, there is the repetition of the indications of scope, aggregation, integration, and timeliness for AIS. This is a reflective-reflective type of hierarchical component model. The validity and reliability of the AIS is checked. It is the similar criteria for other reflective measures (i.e., loading, AVE and CR). For this variable, all indicators have loading values higher than the stipulated cut-off value of 0.5, similar to all indicators with AVE measures of more than the recommended cut-off value of 0.5, and all indicators with CR measures of more than the recommended cut-off value of 0.7. Thus, all the indicators satisfy the criteria recommended in the literature (Hair et al., 2010) (See Table 5).

Table 5 AIS second order Reflective Construct

AIS (CR=0.805, AVE=0.510)			
AISA	AISI	AISS	AIST
$R^2 = 0.596$	$R^2 = 0.509$	$R^2 = 0.587$	$R^2 = 0.349$
$\beta = 0.772$	$\beta = 0.714$	$\beta = 0.767$	$\beta = 0.591$
$p = <0.01$	$p = <0.01$	$p = <0.01$	$p = 0.01$

6. Assessment of Structural Model

The structural model is a representation of how the latent variable and its hypothesis are related in the research model (Duarte & Raposo, 2010). After calculating the path estimates in the structural model, a bootstrap analysis is conducted to evaluate how statistically significant the path coefficients are. Bootstrapping is a non-parametric technique for statistical inference without distributional assumptions (Sharma & Kim, 2012). It involves using 500 re-samples to test the how significant the regression coefficients are. Chin (1998) recommends 500 re-samples when using this procedure to estimate a parameter.

Table 6 show the outcomes of the direct effect hypotheses in this research. The R2 value of the AIS is 0.262, indicating that 26.2% of the variance in an AIS can be explained by the cost leadership strategy and innovative differentiation strategy. When further examined, the significance of the R2 is shown, according to the guideline in the R2 assessment by Cohen (1988), who hypothesized that 0.02 - 0.12 is weak, 0.13 - 0.25 is moderate, and 0.26 and above is substantial. Also, the cost leadership strategy has a positive relation with the AIS ($\beta = 0.326$, $p < 0.01$), similar to the innovative differentiation strategy ($\beta = 0.303$, $p < 0.01$). Thus, H1 and H2 of this study are supported.

With regard to the relationship between an AIS and financial performance, the R2 value is 0.284. This shows that the variance clarified by an AIS is 28.4%. The R2 value is deemed substantial, based on the guidelines by Cohen (1988).

Next is the determination of the extent to which an AIS poses significant effects on financial performance, by studying the t-stats for all the path coefficients that link these latent variables. In Table 6, a significant relationship is discovered between an AIS and financial performance ($\beta = 0.282$, $p < 0.01$). Thus, H3 is supported.

Table 6 Path Coefficients and Hypotheses Testing for Direct Effect

Hypotheses	Direct Path	Std. Beta	Std. Error	t. Value	Decision
H1	Cost Leadership Strategy > Accounting Information System	0.326	0.088	3.428**	Supported
H2	Innovative Differentiation Strategy > Accounting Information System	0.303	0.078	3.924**	Supported
H3	Accounting Information System > Financial Performance	0.282	0.090	3.190**	Supported

**P < 0.01 (t=2.33) *p < 0.05 (t=1.645)

7. Testing the Mediating Effect

Hypotheses H4-H5 concentrate on testing the mediation impact of AIS on the relationship between the cost leadership strategy and financial performance. Toward this end, Hayes (2009), Iacobucci et al. (2007) and McKinnon et al. (2004) assess the effect of mediating the Structural Equation Model (SEM) by applying the bootstrap test to this study, as it is capable of a much stronger method in comparison with the approach of Baron and Kenny (1986), as the SEM can provide instant approximations of everything, simultaneously (Zhao et al., 2010).

The two-step process recommended by Hayes (2009), Iacobucci et al. (2007) and McKinnon et al. (2004) involves:

1. Fit one model through the SEM for estimation of the effect of X to M, and M to Y, to mediate. Mediating is determined when the two coefficients are of significance. Should one of the coefficients be insignificant, no mediation is achieved and mediation analysis ceases.
2. Calculate the t-test via non-parametric method of bootstrapping to test the impact of mediation (bootstrap-t).

On the basis of the initial examination, it is discovered that both of the two hypotheses proposed, (H4, and H5) meet the required conditions for the establishment of a mediation relationship, as confirmed by their indirect significant impacts as indicated in Table 7.

To conform to the non-parametric PLS path modeling method, a non-parametric bootstrapping method is used to find out if the impact of the mediation is significant, as proposed by Henseler et al. (2009), on hypotheses H4 and H5. The impact of the mediation is calculated employing the following formula:

$$t = \text{indicated effect} / \text{Std Deviation}$$

The outcomes of mediation impact are also presented in Table 7. The t-values are observed to be in excess of the critical value of 1.96 at the 95% significance level.

The result shows that an AIS as a mediator of the relationships between cost the leadership strategy, on financial performance (t-value = 2.495), and the innovative differentiation strategy, on financial performance (t-value = 2.142), are significant. Thus, the hypotheses H4 and H5 are supported.

Table 7 Summary of Mediation Results

hypotheses	Indirect Path	Indirect Effect	SE	t-value	LL	UL
H4	Cost Leadership Strategy > AIS > Financial Performance	0.092	0.037	2.495*	0.020	0.164
H5	Innovative Differentiation Strategy > AIS > Financial Performance	0.085	0.040	2.142*	0.007	0.164

** $P < 0.01$ ($t = 2.57$), * $p < 0.05$ ($t = 1.96$)

Predictive Relevance (Q^2)

The Stone-Geisser's Q^2 is the primary tool used to evaluate the predictive relevance in order to measure the capability of the research model for prediction (Henseler et al. 2009). This is done on the basis of a blindfolding procedure. The Q^2 measures the predictive validity of a model via PLS. The Q^2 generally approximated by employing an omission distance of 5-10 in PLS (Akeret et al. 2011). In this study, the omission distance was considered 7 to assess the predictive relevance. Q^2 values in excess of zero show that the external constructs have predictive relevance for the internal construct (Hair et al. 2011). Table 8 shows the predictive relevance for the all the endogenous constructs, and finds satisfactory for both the CV redundancy and CV communality. The findings indicate that all external constructs in this study are predictively relevant.

Table 8 Blindfolding Result: CV-Communality and CV-Redundancy

Block	CV-COMMUNALITY	CV-REDUNDANCY
AIS	0.357	0.092
FP	0.680	0.187

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