The Impact of Strategic IT-Business Alignment: Evidence from Saudi Private Small and Midsize Enterprises

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Abstract

Strategic IT-business alignment is getting an increased attention from both researchers and practitioners because of its potential positive impact on firm's performance. The Strategic Alignment Model (SAM) developed by Henderson and Venkatraman (1993) is a holistic framework that combines different alignment perspectives to provide a unified view on IT-business alignment. While SAM has been widely applied by theoreticians and practitioners in the Western IT research, its applicability in the Middle East is not clear with very few studies available. Aiming to fill this gap in knowledge, this study tested the impact of six alignment types described within SAM on financial performance of small and midsize enterprises (SME) in Saudi Arabia. Based on a sample of 454 IT directors and managers, the results of the study confirmed a positive impact of all types of alignment except for IT alignment, although the latter still showed an indirect positive impact through other forms of alignment. Implications for theory and practice are discussed and directions for further research are proposed.

Keywords*:* IT-business alignment, strategic alignment model, Saudi Arabia, small and midsize enterprises

1. Introduction

Strategic IT-business alignment has been recognized as one of the major management issues for several decades now (Gerow et al., 2015; Luftman & Ben-Zvi, 2011; Orozco et al., 2015). Researchers identified many positive effects of such alignment including increased operational efficiencies, innovativeness, additional competitive advantage, and ultimately, improved performance (Almajali & Dahalin, 2011; Chan, Sabherwal, &Thatcher, 2006; Henderson & Venkatraman, 1993; Kalkan et al., 2011; Raymond & Bergeron, 2008; Wagner, 2014). At the same time, failure to achieve alignment may result in adverse outcomes such as resource waste, poorer financial performance and organizational outcomes (Alaceva & Rusu, 2015; Chen et al, 2010; Ravishankar et al, 2011).

On the other hand, practitioners have warned about core rigidities that may arise in organizations where too much effort and resources are dedicated specifically to achieving alignment. For example, Chen et al. (2010) wrote about a "rigidity trap" where too formal, resource consuming, and costly alignment process diminishes firm's responsiveness. Similarly, Benbya and McKelvey (2006) wrote that very tight integration between IT and business strategies result in reduced strategic flexibility and inability to react effectively to environmental changes. Shpilberg et al. (2007) found that some companies fall into an "alignment trap" where seemingly high levels of IT-business alignment did not lead to organizational effectiveness and enhanced performance. Similar results were demonstrated in a study by Tallon (2003).

The inconsistent study results related to IT-business alignment may have arisen from different alignment theories, definitions, models, and measures (Chen et al., 2010; Gerow et al., 2015). Indeed, researchers and practitioners have focused on various forms of alignment including among others the links between IT and business strategies, the fit between IT and organizational processes and infrastructures, the alignment of decision making information and IT architecture practice, and alignment of business needs with information systems and applications (Cragg et al, 2007; Tan & Gallupe, 2006). Still, despite seeming failure of researchers and practitioners to converge on the same idea about IT-business alignment, some models have been more frequently used due to their robustness, validity, and strong psychometric measures. The Strategic Alignment Model (SAM) developed by Henderson and Venkatraman (1993) has been considered as a basis for much of strategic IT-business research (Avison et al., 2004; Coltman et al., 2015; Luftman, Lyytinen, & Ben Zvi, 2015). Little, however, is known about SAM's applicability for the Middle East organizations (for a rare example of research, see Alyahya and Suhaimi (2015)). This study pursued two objectives.

First, it sought to test the SAM theory propositions of the positive impact of different types of IT-business alignment on organizational performance within a context of Saudi firms with the goal to expand the model's validity. Second, based on empirical evidence, it sought to create a preliminary IT-business alignment model for Saudi small and midsize organizations, which could be used as a starting point in developing IT initiatives. The rest of the paper is structured as following. The literature review section focuses on the SAM framework and justifies its application in the context of Saudi SMEs. The methods section describes the study design, the proposed relationships between the operationalized variables, and the approaches to data collection and analysis. The final section discusses the study results, offers conclusions and practical implications, and directions for future research.

2. Literature Review

2.1. IT-Business Alignment

IT-business alignment research emerged in the last two decades on the twentieth century being initiated primarily by the efforts of Scott-Morton's team (Coltman et al., 2015). After analyzing IT use in the most technologically advanced firms in the 1980s, they developed the MIT90s framework that linked organizational transformation and management processes to IT structures and strategies (Scott-Morton, 1991). The novel idea expressed in this work was that organizational IT was not reactive to business strategy, but it was a strategic resource in itself, which could enhance organizational capabilities and management practices. This idea was soundly confirmed by a series of studies in the 1990s which found that IT-business alignment indeed created value for organizations (Brynjolfsson & Hitt, 1995; Chan et al., 1997; Reich & Benbasat, 1996).

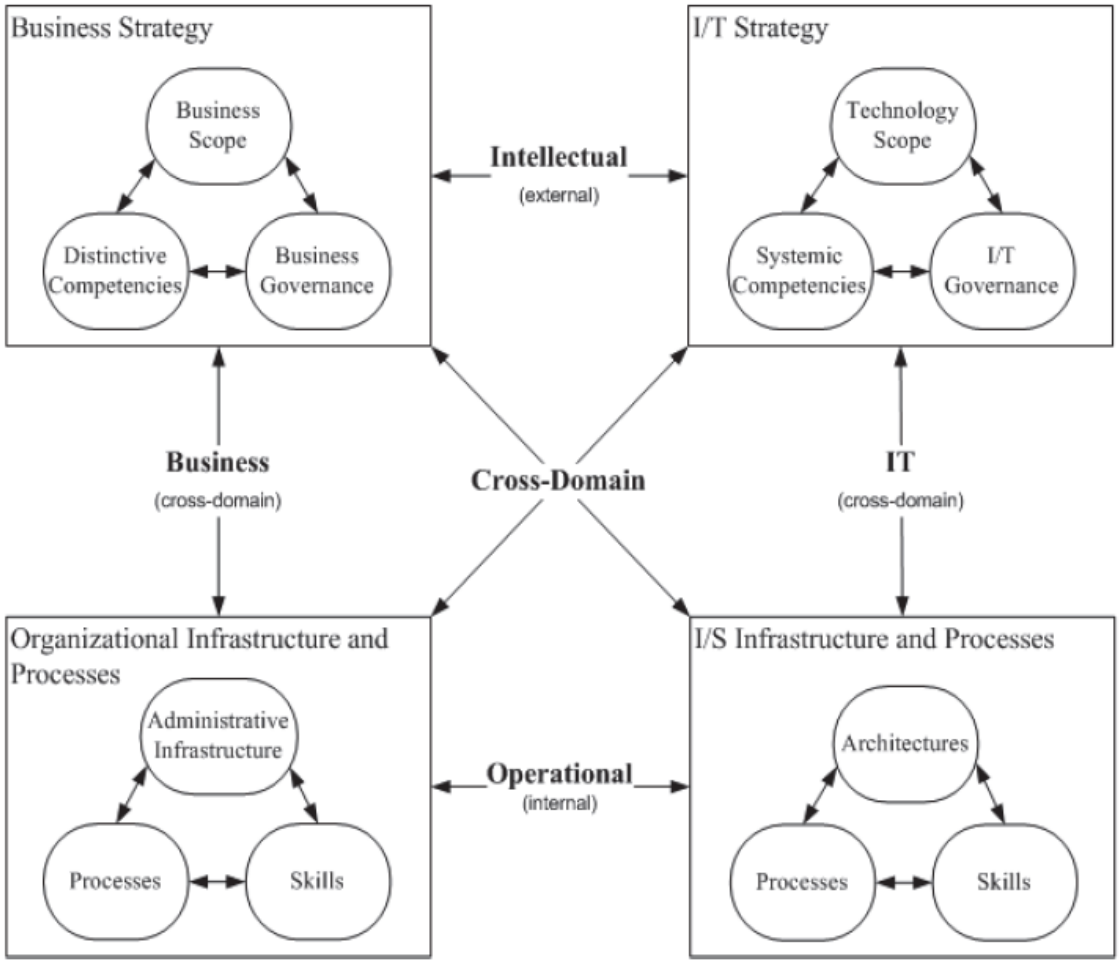
A vast array of studies on alignment appeared since, although their focus, definition, and alignment construct development became greatly dispersed. For example, Luftman (2000) defined IT-business alignment as "applying information technology (IT) in an appropriate and timely way, in harmony with business strategies, goals and needs" (p. 3). Reich and Benbasat (2000) viewed it as "linkages between business and IT at the strategic or planning level, which is the degree to which the IT mission, objectives, and plans support, and are supported by, the business mission, objectives, and plan" (p. 82). Other researchers defined IT-business alignment in terms of fusion, bridge, integration, and fit (Chan, 2002; Ciborra, 1997; Smaczny, 2001; Weill & Broadbent, 1998). There have been also differences at the level of alignment analyses including strategy (i.e., Cragg, King, &Hussin, 2002; Silva, Figueroa, & Gonzalez-Reinhart, 2007), operations (Beimborn, Scholsser, &Weitzel, 2009); infrastructure (Chan, 2002; Gordon & Gordon, 2000), and specific projects (Jenkin & Chan, 2010).

Different approaches and results of the studies that focused on IT-business alignment suggest that there may be more than one type of alignment. This realization may have important practical implications because IT managers would need to look for various points of interaction between the information systems and organizational strategies and plan out IT strategies and investments to maintain these points and enhance them for stronger organizational outcomes. This, in turn, prompts investigations of IT-business alignment from a holistic perspective. Perhaps the most comprehensive and widely applied holistic IT-business alignment framework is the strategic alignment model (SAM) developed by Henderson and Venkatraman (1993).

2.2. SAM

SAM is a holistic framework that envisions organizations and their IT as having internal (infrastructure and operations) and external (strategy) components. Internal domain encompasses alignment between business and IT infrastructures, while external domain encompasses alignment between business and IT strategies. Henderson and Venkatraman (1993) also defined the cross-domain link which encompasses the relationships between IT strategy and business infrastructure and vice versa. This creates six types of IT-business alignment. *Intellectual alignment* refers to the link between business and IT strategies (external link) and denotes the degree to which the mission, objectives, and plans contained in the business strategy are shared and supported by the IS strategy" (Chan et al. 2006, p. 27).*Operational alignment* refers to the link between organizational and IT infrastructures and operations and denotes integration between organizational policies, procedures, and systems with IT architectures and processes (Henderson & Venkatraman, 1999). Finally, *cross-domain* alignment focuses on "the degree of fit and integration among business strategy, IT strategy, business infrastructure, and IT infrastructure"(Chan and Reich 2007, p. 300). It recognizes "multivariate relationships" between all four components of business and IT dimensions (Henderson & Venkatraman, 1999, p. 477).

Figure 1. Strategic Alignment Model (Henderson &Venkatraman, 1999, p. 476).



SAM was named the "jewel in the crown" from the theoretical developments of IT-business alignment in the 1990s (MacDonald & Yapp. 1992, p. 256). The major theoretical contribution of SAM is that it was the first one to look at the IT-business alignment as a continuous, dynamic process involving different variables (Gerow et al., 2015). Such view was acknowledged as corresponding to the modern view of organizational strategy within extremely competitive and constantly changing environment (Baker et al., 2011; Guillemette & Pare, 2012; McLaren et al., 2011). Two theoretical perspectives reflect this. The Dynamic Capabilities Framework (DCF) proposes that in order to successfully address constant environmental changes businesses need to "integrate, build, and reconfigure internal and external competencies" (Teece et al., 1997, p. 512). DCF views alignment as a means to maintain strategic flexibility and respond to such changes (Baker et al., 2011; Schwartz et al., 2010). Similarly, the Coevolutionary Perspective views IT and business as being in a continuous dynamic state of adjustment to each other (Zhang et al., 2011). Coevolution is seen as a "joint outcome" of the work of managerial decisions and various elements of organization, including IT (Lewin & Volberda, 1999, p. 526). As such, managers need to address strategic misfit between IT and business by looking into their components and strategies and adjusting them accordingly (Kearns & Lederer, 2003; Tiwana & Konsynski, 2010).

SAM fits well with both DCF and the Coevolutionary Perspective because it emphasizes the continuous adjustment through the decisions about IT and business strategies and infrastructures and because it assumes that these decisions change over time and any changes in either IT or business dimensions influence the outcomes for each other. Studies showed that SAM constructs manage to accurately predict alignment and that SAM is empirically testable (Avison et al., 2004; Cooper et al., 2000; Gerow et al., 2015). In a meta-analysis of studies applying SAM framework, Gerow et al. (2015) found that all alignment constructs predict better performance although to different degrees. This suggests that SAM has both theoretical and practical viability in measuring IT-business alignment and measuring its effect on organizational performance.

2.3. Study Context

Saudi Arabia business environment is currently undergoing rapid progress in IT typical for all countries of the Gulf region. According to recent analytical estimates, by 2019 the Middle East and Africa will become the global leaders in the cloud traffic growth rate (*Cisco Global Cloud Index*, 2016). In the past decade, the Middle East region experienced a 150 times increase in cross data flow (*Digital Middle East*, 2016). The rate of IT adoption in Saudi small and medium enterprises (SME) have been rapidly increasing, and while only about 15% are estimated to have online presence, consumer trends in the country are pushing more businesses to integrate IT in their operations (*Digital Middle East*, 2016).

The importance of successful adoption and utilization of IT in Saudi SME at present is reflected in the growing importance of these businesses for the country's economy. Currently, SMEs account for over 90% of total enterprises in the country, provide employment for over 60% of the active workforce, and contribute to nearly a quarter of the country's GDP (*Small Medium Enterprises in Saudi Arabia Report*, 2016). The Saudi Arabian General Investment Authority (SAGIA) specifically acknowledges the role of SMEs in the creation of a more diverse and flexible economy, transitioning to a knowledge-based economy, and promoting innovations (*Small and Medium Enterprises*, 2013). These goals are directly related to the adoption and integration of IT in Saudi SMEs. The growing role of digital economies and the competitive pressures urge Saudi SMEs to adopt new technologies to manage and organize their businesses and achieve competitive advantage (Zafar et al., 2015). However, SMEs in Saudi Arabia and in general facing an increased risk of unsuccessful IT implementation including the lack of IT adoption direction, misconception about the process of adoption, and the lack of IT awareness and resources (Arendt, 2008; Nakhleh, 2017; Nguyen, 2009). The question of IT-business alignment then is important for SMEs in general and Saudi SMEs in particular. Given the lack of research in this area, this study aims to fulfill the gap in knowledge regarding the impact of IT-business alignment in Saudi SMEs.

2.4. Conceptual Framework and Hypotheses

The conceptual framework for the study is derived from the SAM (Henderson & Venkatraman, 1999, p. 476). In line with the existing literature (i.e., Avison et al., 2004; Cooper et al., 2000; Gerow et al., 2014; Yayla & Hu, 2012), this study proposes that external, internal, and cross-alignment defined within the SAM will have positive influence on the Saudi SMEs' financial performance (Figure 2). Specifically, the study proposes that:

H1: business alignment between business strategy and infrastructure will be positively related to financial performance;

H2: intellectual alignment between business infrastructure and IT strategy will be positively related to financial performance;

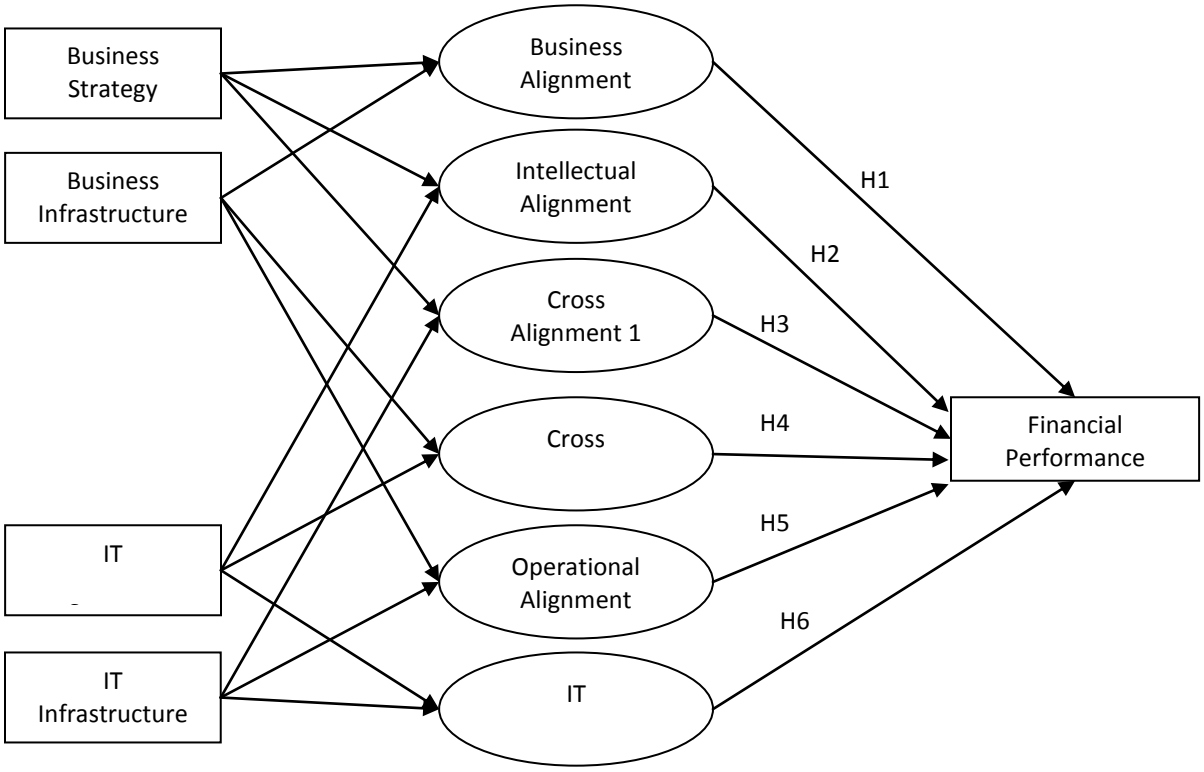
H3: cross alignment between business strategy and IT infrastructure will be positively related to financial performance;

H4: cross alignment between IT strategy and business infrastructure will be positively related to financial performance;

H5: operational alignment between business and IT infrastructure and processes will be positively related to financial performance;

H6: IT alignment between IT strategy and infrastructure will be positively related to financial performance.

Figure 2. Conceptual Framework



Because cross-alignment has a holistic nature), it is likely to expect, however, that some additional combinations of strategies and infrastructures could exert influence on financial performance. Such influences are also likely to be indirect. For example, Henderson & Venkatraman (1999) proposed four additional indirect cross-domain alignment models: strategy execution, technology transformation, competitive potential, and service level. Strategy execution refers to indirect influence of business alignment on financial performance through operational alignment; technology transformation refers to indirect influence of intellectual alignment on financial performance through IT alignment; competitive potential refers to indirect influence of intellectual alignment on financial performance through business alignment; and service level refers to indirect influence of IT alignment on financial performance through operational alignment. These indirect influences were later empirically confirmed by Gerow et al. (2015). In line with those findings, this study explored possible indirect influences of alignment factors as well.

3. Method

The study was based on a randomized survey of individuals who play key roles in IT decisions in their companies. The target population comprised of Saudi small and medium enterprises meeting the definition criteria of 200 or fewer employees and having annual sales of less than $13.3 million (*Small Medium Enterprises in Saudi Arabia Report*, 2016). With the total number of 1.97 million SME in Saudi Arabia, a sample size of 384 was required to represent the population with a confidence interval of 95% and a margin of error of 5% (see Dattalo, 2008 for sample size tables). Saudi Arabia Business Directory was used to distribute email invitations to participate in the survey with an included online survey link. A random number generator program was used to determine 2000 businesses to which survey invitation emails were sent.

As a basis, the study used the alignment questionnaire developed by Gerow et al. (2014) which measures the perceived alignment levels based on Likert-type scales. The measures of alignment and financial performance in this questionnaire were successfully validated and found to possess high levels of reliability. The back translation technique (Brislin, 1970) was used to translate the questionnaire into Arabic with the help of two Arabic-English translators. A pilot test involving 10 IT professionals was conducted during which the original IA7 item ("we identify the fit between our IT-related strategic opportunities and our business' strategic direction") was found poorly comprehensible by the respondents. It was eliminated from the final version of the questionnaire.

The final questionnaire version consisted of the following sections: screening, basic information, business alignment, intellectual alignment, cross alignment A (business infrastructure and IT strategy), cross alignment B (business strategy and IT infrastructure), operational alignment, IT alignment, and financial performance. The screening section was used to preserve the responses of the target sample. The basic information section queried about the state of IT development and use. The alignment and the performent sections were based on Gerow et al's. (2014) Likert-scale measurements. A copy of the questionnaire is provided in Appendix A.

4. Results

4.1. Preliminary Analysis

The total number of respondents was 543. Based on the screening questions, 31 questionnaires were discarded for not meeting the criteria of being an SME and/or not using IT in their work. Another 58 questionnaires were discarded for being incomplete. Therefore, the final number of respondents was 454 giving a total response rate of 22.7%. Table 1 provides descriptive statistics of the sample. The sample was dominated by representatives of small enterprises engaged in services. The majority of respondents held a Bachelor or a Master degree and a title of IT manager or IT director. While the sample was heavily represented by male respondents, it is a common situation in Saudi Arabia where males continue to hold the majority of managerial positions.

Table 1. Descriptive Statistics of the Sample

Characteristic		**Frequency**	**Percentage**
Company	Small	315	69.4%
	Medium	139	30.6%
Industry	Service	387	85.2%
	Manufacturing	67	14.8%
Job Title	CIO	48	10.6%
	IT Director	115	25.3%
	IT Manager	248	54.6%
	Other	43	9.5%
Education	High School	17	3.7%
	Bachelor	297	65.4%
	Master	129	28.4%
	Doctorate	11	2.4%
Gender	Male	438	96.5%
	Female	16	3.5%
	Average Years		
Age	37.4		
Service	5.3		

Note: values less than .450 are suppressed.

An EFA analysis was performed on the independent and dependent constructs to measure their unidimensionality. The determinant of the R-matrix was 0.0000167 which is higher than the minimum recommended level of 0.00001 (Field, 2009). The Bartlett sphericity test showed a statistically significant value ($p < .001$), and the Kaiser-Meyer-Olkin value was 0.817. Therefore, factor analysis fit the data. Table 2 shows the results of factor loadings that matched the hypothesized constructs for the study.

Table 2. Rotated Component Matrix							
	Component						
	1	2	3	4	5	6	7
BA1						.904	
BA2						.494	
BA3						.578	
BA4						.458	
BA5						.580	
BA6						.904	
IA1			.541				
IA2			.748				
IA3			.754				
IA4			.774				
IA5			.697				
IA6			.543				
IA8			.652				
CA11	.855						
CA12	.871						
CA13	.815						
CA14	.804						
CA15	.855						
CA16	.871						
CA21							.683
CA22							.622
CA23							.459
CA24							.558
CA25							.748
CA26							.710
OA1		.739					
OA2		.904					
OA3		.841					
OA4		.757					
OA5		.739					
OA6		.904					
ITA1					.817		
ITA2					.849		
ITA3					.582		
ITA4					.471		
ITA5					.817		
ITA6					.849		
FP1				.729			
FP2				.892			
FP3				.791			
FP4				.729			
FP5				.892			

The normality of the study constructs and their reliability were assessed by measuring their skewness, kurtosis, and the Cronbach's alpha. Generally, accepted values for data normality are ±2 for skewness and ±7 for kurtosis (Curran et al., 1996; Fabrigar et al., 1999). Acceptable levels for the Cronbach's alpha measures are above 0.7 (Cronbach & Shavelson, 2004). Table 3 demonstrates the results for each study construct indicating no issues with the constructs non-normality or reliability.

Table 3. Construct Reliability and Normality

Construct	Cronbach's alpha	Mean	St. Deviation	Skewness*	Kurtosis**
Business Alignment (BA)	0.813	38.08	3.60	-0.86	0.46
Intellectual Alignment (IA)	0.825	38.28	3.52	-0.97	0.45
Operational Alignment (OA)	0.925	27.89	8.92	-0.30	-0.81
Cross-Alignment A (CAa)	0.731	29.93	4.87	-0.75	0.67
Cross-Alignment B (CAb)	0.936	23.15	10.08	0.24	-0.95
IT Alignment (ITA)	0.782	34.67	3.62	-0.19	0.08
Financial Performance (FP)	0.927	26.11	6.88	-1.14	1.06

*St. error 0.115

**St. error 0.229

The averaged variance extracted (AVE) method was used to measure the constructs' discriminant and convergent validity. For convergent validity, the acceptable construct AVEs are above 0.5 level (Hair et al., 2010). For discriminant validity, square roots of all study construct's AVEs should exceed cross-construct correlations (Chin & Frye, 1996). Table 4 shows the results of the analyses indicating that there were no issues in relation to either convergent or discriminant validity of the study constructs.

Table 4 Convergent and Discriminant Validity Test

	BA	IA	CAa	CAb	OA	ITA	FP
Business Alignment (BA)	0.653 (0.808)						
Intellectual Alignment (IA)	0.443	0.673 (0.820)					
Cross-Alignment A (CAa)	0.091	0.019	0.630 (0.794)				
Cross-Alignment B (CAb)	0.272	0.304	0.137	0.845 (0.919)			
Operational Alignment (OA)	0.011	0.021	0.349	0.200	0.814 (0.902)		
IT Alignment (ITA)	0.277	0.214	0.004	0.401	0.088	0.731 (0.855)	
Financial Performance (FP)	0.204	0.223	0.316	0.308	0.398	0.095	0.807 (0.898)

*In brackets, square root of AVEs are shown

Finally, the data were checked against common method bias. The measurement tool was Harman's single-factor test whereby the study constructs were loaded into an EFA with a 50% cut off point (Aulakh and Gencturk, 2000; Podsak off et al., 2012). The highest factor was 19.66% thereby showing that common method bias was not an issue in the study.

4.2. Hypotheses Testing: Direct Effects

The direct effects of the SAM constructs on financial performance were assessed with robust regression analysis (Andersen, 2008). The results are reported in Table 5. The predictive model was statistically significant ($p < 0.001$) and explained 28.1% variability in the financial performance variable. All factors demonstrated significant positive relationships with financial performance at the 0.05 level except for the IT alignment. Therefore, the results supported all study hypotheses except for Hypothesis 6. Further, the strongest effect on financial performance was observed for operational alignment ($\beta = 0.311$; $t = 7.119$; $p < 0.01$) while the weakest effect was observed for business alignment ($\beta = 0.094$; $t = 2.031$; $p = 0.043$).

Table 5. Regression Results

Coefficients[a, b]

Model		Standardized Beta	t	Sig.
1	(Constant)		3.310	.001
	BAIndex	.094	2.031	.043
	IAIndex	.151	3.283	.001
	CA1Index	.179	4.121	.000
	CA2Index	.175	3.759	.000
	OAIndex	.311	7.119	.000
	ITAIndex	.061	1.367	.172

a. Dependent Variable: FPIndex

b. The model is significant with R square = 0.281, $p < 0.001$

4.3. Hypotheses Testing: Indirect Effects

The indirect effects of the SAM constructs on financial performance were assessed with the Sobel test for mediation following the procedures described by MacKinnon, Warsi, and Dwyer (1995) based on formula 1.

$$z = \frac{a*b}{\sqrt{b^2*S_a^2+a^2*S_b^2}} \quad (1)$$

The results of the analyses are demonstrated in Table 6. Notably, IT alignment, which did not show direct effects on financial performance, demonstrated statistically significant indirect effects through business alignment ($z = 3.347$, $p < 0.01$) and intellectual alignment ($z = 3.224$, $p < 0.01$). Business alignment demonstrated indirect effect on financial performance through intellectual alignment ($z = 3.100$, $p < 0.01$) and intellectual alignment demonstrated indirect effects on financial performance through business alignment ($z = 2.513$, $p = 0.01$). Cross-alignment B, which reflects alignment between business processes and IT strategies demonstrated strong mediating effects for all types of alignment, while alignment between IT processes and business strategies (cross-alignment A) showed mediating effects for operational alignment ($z = 3.885$, $p < 0.01$).

Table 6 Mediation Analysis

Indirect Effects	a	Sa	b	Sb	Sobel	Sig.
IA through business alignment	0.452	0.043	0.251	0.097	2.513	0.01
ITA trough business alignment	0.275	0.045	0.368	0.092	3.347	<0.01
BA through intellectual alignment	0.434	0.041	0.321	0.099	3.100	<0.01
ITA through intellectual alignment	0.208	0.045	0.414	0.092	3.224	<0.01
OA through cross-alignment A	0.309	0.039	0.156	0.035	3.885	<0.01
BA through cross-alignment B	0.369	0.061	0.385	0.065	4.232	<0.01
IA through cross-alignment B	0.42	0.062	0.374	0.066	4.346	<0.01
ITA through cross-alignment B	0.539	0.058	0.455	0.069	53.779	<0.01
OA through cross-alignment B	0.096	0.022	0.336	0.060	3.442	<0.01

5. Discussion and Conclusions

The findings of this study offer several important implications for both theory and practice. The positive relationships found between different forms of alignment and firm's financial performance suggest that achieving alignment between IT and business is, indeed, important for success, at least in the context of the SMEs in Saudi Arabia. They also support findings of the existing studies that confirmed the role of strategic IT-business alignment in firm's financial performance (e.g., Chan et al., 2010; Gerow et al., 2014; Raymond & Bergeron, 2008; Wagner, 2014).

The strongest effect on financial performance was exerted by operational alignment suggesting that achieving the link between organizational and IT infrastructures was of the most importance for the companies in the sample. In fact, it suggests that aligning infrastructures and processes was more important than aligning IT and business strategies. This can be explained by the SMEs focus on efficiencies and customers. Gerow et al. (2015) proposed that operational alignment helps companies increase productivity levels and enhance customer benefits by offering lower prices. This becomes possible through integration between organizational policies, procedures, and systems with IT architectures and processes (Henderson & Venkatraman, 1999). Another explanation could be that SMEs overall focus less on strategic decisions instead giving priority to fast tactical actions on the market. This could help them remain more competitive.

Interestingly, the outcomes of the study did not show a significant relationship between IT alignment and financial performance. This suggests that for the companies in the sample achieving alignment between IT strategies and infrastructures was less important. This may be explained by the SMEs tendency to treat IT as a supplement to their business and operations, not as a distinct asset that must be focused upon and constantly managed. Achieving IT alignment might be more crucial in technology firms and in larger firms that have own IT departments. The study sample was dominated by small enterprises that likely did not consider investments and in and focuses on IT alignment as a distinct aspect of their operations. It is worth noting that IT alignment did show indirect impact on financial performance through intellectual, business, and cross-alignment, which again suggested its supportive role for improving SME performance.

Sobel mediation results also suggest that besides IT alignment, other forms of alignment had indirect in addition to direct effects on financial performance. Specifically, intellectual alignment had an indirect effect on financial performance through business alignment and alignment between IT strategies and business processes (cross-alignment B); business alignment had an indirect effect through intellectual alignment and cross-alignment B; and operational alignment had an indirect effect through both types of cross-alignment. Presence of indirect effects of alignment types further supported the notion that different forms of alignment may be connected and works simultaneously on providing competitive advantage. This also gives support to the idea that there is no such thing as alignment paradox. Therefore, further investigations of IT-business alignment mechanisms and outcomes are well founded in the context of Saudi SMEs.

Both theoretical and practical implications can be derived from the study findings. The major practical implication is that SMEs in Saudi Arabia should strive for IT-business alignment to achieve positive financial returns. Firms may not necessarily pursue a full integration between IT infrastructures and strategies; rather, aligning IT infrastructures and processes with business strategies and processes is important. This is a valuable finding especially for smaller enterprises which may be financially constrained to create fully functional IT departments. The findings of the study suggest that using IT as a supplemental tool for business strategy already promises positive results. At the same time, simply investing in technology is not enough: there has to be a clear plan of IT-business integration. It is, therefore, practical to have a person among the personnel who can monitor IT implementation and guide its integration with the organization's business goals and strategies. Because the strongest effect on financial performance was observed through operational alignment, IT may be considered as a cost reduction tool, although presence of other alignment effects suggest that at later stages of implementation, it can offer additional positive effects on financial performance as a strategic tool.

This study also offered some important research contributions. While expanding IT-business alignment research to the context of Saudi SMEs, this study, to the knowledge of author, is one of the first to measure cross-alignment effects on SMEs in the Middle East in general. However, the SAM model showed an excellent fit with the given context as well as the alignment questionnaire developed by Gerow et al. (2015). This lays a good foundation for further research of IT-business alignment in the Middle East and Saudi Arabia in particular. Further areas of research are abound. For example, researchers may explore which external and internal factors may play role in firms' ability to effectively align IT and business. Some researchers specifically mentioned environmental uncertainty as a determining factor in ability to align (e.g., Chang et al., 2008; Huang, 2009) while others proposed that it may be contingent upon organizational strategy (e.g., Lee et al., 2008; Yayla, 2008) and socio-communicational aspects (e.g., Celuch et al., 2007; Taipala, 2008). Investigating these could provide important insight into how alignment can be practically achieved. Another interesting area of research would be investigations of differences (if any) in alignment types and their impacts for firms of different size and industry affiliations.

This study, for example, suggested that the absence of the direct relationship between IT alignment and financial performance could be related to few IT companies in the sample; however, this question was out of scope of the study. Overall, comparing alignment types and strengths for firms of different size, industry, and sectors should offer further practical insights for IT-business alignment. Finally, it could be worthwhile to investigate other than financial performance effects of the IT-business alignment. Some possible areas would be the alignment impact on customer attraction and retention strategies, staff productivity, and competitiveness.

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Appendix A: Questionnaire

General Information

1. What is the number of employees in your company?

Less than 50	□
Between 50 and 100	□
Over 100	□

2. What is approximate annual revenue of your company?

Less than $1.3 million	□
Over $1.3 million	□

3. In which industry does your company operate?

Service	□
Manufacturing	□

4. What is your job title?

CIO	□
IT Director	□
IT Manager	□
Other (please specify)	_

5. What is the highest level of education you attained?

High school diploma	□
Bachelor degree	□
Master degree	□
Doctorate degree	□

6. What is your gender?

Male	□
Female	□

7. **What is your age? ____**

8. **How long have you been with the company (in years)?____**

Business Alignment

Please, evaluate on a 7-point scale from Entirely Unfulfilled to Entirely Fulfilled the following statements in relation to your company

1. Our business processes support our business strategies (BA1)
2. We adapt our business strategies to our internal business processes (BA2)
3. Our business strategies and internal business processes match each other (BA3)
4. We identify the fit between our business-related strategic opportunities and our business infrastructure (BA4)
5. Our business infrastructure and business strategies correspond to each other (BA5)
6. Our business infrastructure aligns with our business strategies (BA6)

Intellectual Alignment

Please, evaluate on a 7-point scale from Entirely Unfulfilled to Entirely Fulfilled the following statements in relation to your company

7. Our IT strategies support our business strategies (IA1)
8. Our IT strategies and business strategy match each other (IA2)
9. We adapt our IT strategy to business strategic change (IA3)
10. Our IT strategies align with our business' strategic plan (IA4)
11. We assess the strategic important of emerging technologies (IA5)
12. We adapt our IT goals and objectives to our business goals and objectives (IA6)
13. Our IT strategies and business strategies correspond to each other (IA7)

Organizational Alignment

Please, evaluate on a 7-point scale from Entirely Unfulfilled to Entirely Fulfilled the following statements in relation to your company

14. Our IT processes support our business processes (OA1)
15. We adapt our IT processes to our business processes (OA2)
16. Our IT processes and business processes match each other (OA3)
17. We identify the fit between our IT infrastructure and our business infrastructure (OA4)
18. Our IT infrastructure and business infrastructure correspond to each other (OA5)
19. Our IT infrastructure aligns with our business infrastructure (OA6)

Cross Alignment A

Please, evaluate on a 7-point scale from Entirely Unfulfilled to Entirely Fulfilled the following statements in relation to your company

20. Our IT processes support our business strategies (CAa1)
21. We adapt our internal IT processes to our business strategies (CAa2)
22. Our business strategies and internal IT processes match each other (CAa3)
23. We identify the fit between our business-related strategic opportunities and our IT infrastructure (CAa4)
24. Our IT infrastructure and business strategies correspond to each other (CAa5)
25. Our IT infrastructure aligns with our business strategies (CAa6)

Cross Alignment B

Please, evaluate on a 7-point scale from Entirely Unfulfilled to Entirely Fulfilled the following statements in relation to your company

26. Our IT strategies support our business processes (CAb1)
27. We adapt our IT strategies to our internal business processes (CAb2)
28. Our externally-focused IT strategies and internal business processes match each other (CAb3)
29. We identify the fit between our IT-related strategic opportunities and our business infrastructure (CAb4)
30. Our business infrastructure and IT strategies correspond to each other (CAb5)
31. Our business infrastructure aligns with our externally-focused IT strategies (CAb6)

IT Alignment

Please, evaluate on a 7-point scale from Entirely Unfulfilled to Entirely Fulfilled the following statements in relation to your company

32. Our IT processes support our IT strategies (ITA1)
33. We adapt our IT strategies to our internal IT processes (ITA2)
34. Our IT strategies and internal IT processes match each other (ITA3)
35. We identify the fit between our IT-related strategic opportunities and our IT infrastructure (ITA4)
36. Our IT infrastructure and IT strategies correspond to each other (ITA5)
37. Our IT infrastructure aligns with our IT strategies (ITA6)

Financial Performance

Please, evaluate on a 7-point scale from Very Low to Very High the following statements in relation to your company

38. The return on corporate investment position relative to our competitors has been (PERF1)
39. The market share gains relative to our competitors has been (PERF2)
40. The sales growth position relative to our competitors has been (PERF3)
41. The net profit position relative to our competitors has been (PERF4)
42. The financial liquidity position relative to our competitors has been (PERF5)