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# The Role of Alignment Between IS Strategy and Social Capital on the IS Capability and Business Performance Relationship: A Cross-Sectional Survey

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**ABSTRACT** This study explored the relationship between the information system (IS) capability with the alignment of IS strategy and social capital and the relationship between the alignment of IS strategy and social capital with business performance. Moreover, this study also aimed to investigate the mediating role of the alignment of IS strategy and social capital in the relationship between IS capability and business performance. A cross-sectional field study (i.e. questionnaire survey) was conducted on 179 national scale bank branches across Indonesia. Partial least square (PLS) is utilized to test all of the research hypotheses. The result of the study showed that there are significant relationships between IS capability with the alignment of IS strategy and social capital and significant relationships between the alignment of IS strategy and social capital with business performance. Besides, this study also proved that the alignment of IS strategy with social capital has a significant role in mediating the relationship between IS Capability and Business Performance. This study contributes to the theory development by analyzing the research gap from the previous researchers considering social capital as the strategic factor in the relationship between IS capability and business performance. The findings of this study can provide a reference for companies (i.e. board of directors) in determining investment and information system use policy.

**INDEX TERMS** Alignment, information system capability, information system strategy, social capital.

## I. INTRODUCTION

There is a definite trend of technology-based information system adoption to support banks' daily operations within the banking industry in Indonesia [1]. Moreover, a survey showed that the trend of information system (IS) investment keeps on improving in these past ten years [2]. The information system adoption shows a significant effect on business performance [3]–[6]. However, a survey conducted by PricewaterhouseCoopers (PwC) on the Indonesian banking industry in 2017 indicated that bank managers in Indonesia have not been able to define and explain how IS strategy can influence business performance [7].

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IS capability refers to an organization's ability to manage IS resources [8] while, business performance refers to relative aggregate performance compare to the competitors [9], [10], or business success rate in achieving the organization goal [11], [12]. Several studies explored the direct relationship between IS capability and business performance without considering the contextual factors (such as strategy, and social capital) into the analysis [13]–[16]. A strategy is an eminent organization element due to its role to determine the direction of the organization and its ability to affect business performance [17]–[19]. Social capital refers to the amount of actual and potential knowledge within the network in an organization [20]. Exploration of social capital remains limited to the direct role of social capital in influencing performance [21], [22]. Studies conducted on the banking

industry in Indonesia found that social capital significantly influences the performance of the micro-financial institution in Indonesia [23].

Studies on Social Capital (SC) relations and information systems in the company are limited to the influence of a sophisticated information system on social capital structure and implementation in a community or company [24]–[26]. Besides, current studies are limited to the exploration of information systems spreading in social capital as the center of virtual community knowledge sharing [27]–[29]. Analysis of the relationship between IS capability and contingency factor (i.e., IS strategy and social capital) and performance were conducted separately in the previous studies [19], [22], [26], [30], [31]. Yeh *et al.* [19] investigated the relationship between IS capability and IS strategy. Thapa *et al.* [26] and Černe and Etinger [30] described the relationship between IS capability and social capital. Wagner *et al.* [31] and Asiaei and Jusoh [22] investigated the relationship between social capital and performance. On the other hand, Schlosser *et al.* [32] described the alignment between IS strategy and social capital as a mediating variable in the relationship between two endogenous variables. From the discussion; it can be concluded that there is a gap and chance to conduct further analysis on the relationship between IS capability and contingency factor alignment (i.e., IS strategy and social capital) and performance.

Alignment (fit) refers to interaction or integration between two concepts or constructs [33]. Studies on alignment/fit between social capital and contextual variable concerning performance are limited to social capital as an antecedent variable affecting IS alignment in the organization [31], [34], [35]. For instance, Karahanna and Preston [34] treated social capital as an antecedent variable between business strategy and IS strategy; additionally, Wagner *et al.* [31] treated social capital as an antecedent variable for IT business understanding. Furthermore, Schlosser *et al.* [32] explored alignment between social capital and tangible aspect of information system (such as IT) by treating social capital and IT alignment as the mediating variable between IT governance mechanism and business unite performance. From the discussion above it can be seen that there is a gap to conduct further research on alignment between social capital and intangible element of information systems (such as IS strategy) performing as mediating variable in the relationship between two variables (such as IS capability and business performance).

This study contributes to theory development by analyzing the previous researches gap that is considering social capital as the strategic factor in the relationship between IS capability and business performance. In the following section of this article, the literature review and hypothesis development are described. Then, the methodology used to earn the data is introduced. Lastly, findings, discussion, and research contribution will be discussed in the later section, and the last section will provide the conclusion of this research.

## II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### A. THE ALIGNMENT OF IS STRATEGY AND SOCIAL CAPITAL

The interaction (alignment) between social capital (SC) and information system (IS) is a reciprocal relationship. IS can be responsible for social capital development, social capital reinvention, and social capital maintenance at once. Meanwhile, social capital will influence IS usage and development [36].

IS strategy refers to how the organization or business consider IS to improve business performance and earn competitive advantage [37], [38]. Aslam *et al.* [27], and Kim *et al.* [35] explained that IS utilization in the business can improve knowledge transfer effectiveness in the organization and later will also improve business performance. Yao *et al.* [39] mentioned that social capital assist team learning activity in the organization; in other words, social capital supports communication in the organization and connect the organization's members. Furthermore, it can be concluded that social capital can affect the integration of business strategy and IS strategy [34].

Information system (IS) strategy can be considered as a shared view of the information system role in the organization [37]. Information system strategy is a social process [40]. The social process includes human interaction, in which human plays a vital role in it. Toivonen *et al.* [41] added that when an information system is implemented, social capital will support the development of relationships among the organization components. Each social capital dimension has its own characteristic; as a result, IS strategy will accurately respond to each dimension to produce innovation that create performance and, at last, to gain competitive advantage. Chou *et al.* [42] highlighted that each dimension reflecting social capital (structural, relational, and cognitive) has its critical issues. IS strategy application in each dimension varies from one to another. For instance, in the structural dimension, IS strategy is focusing on strengthening social network structure in an organization; meanwhile, the relational dimension focuses on strengthening the bond among individuals. Lastly, the cognitive dimension will support the code sharing and narration process between individuals in the organization. Table 1 describes IS strategy and social capital interactions.

### B. THE RELATIONSHIP BETWEEN IS CAPABILITY WITH IS STRATEGY–SOCIAL CAPITAL ALIGNMENT

Černe and Etinger [30], Huysman and Wulf [43], and Thapa *et al.* [26] proved the relationship between IS capability and social capital. Meanwhile, Yeh *et al.* [19] proved the relationship between IS capability and IS strategy. Generally, the relationship between IS capability with social capital and IS capability with IS strategy can be determined. IS strategy can be defined as a shared view of the information system's role in the organization [37]. Moreover, IS strategy is a social process [40]. In this context, the information system adopted by the organization will facilitate interaction between

**TABLE 1. IS strategy and social capital interaction.**

Social Capital	Critical issues	IS Strategy application
Structural	Network ties, Network configuration, Appropriate organization	The information system is utilized to strengthen network ties and network configuration in the organization to trigger innovation creation and improve performance.
Relational	Trust, Norms, Obligation, Identification	The information system is utilized to facilitate collective consensus, norm, and trust in the organization's social system to trigger innovation creation.
Cognitive	Shared codes and language, Shared narratives	The information system is utilized to trigger codes and language sharing, and narrative sharing to create innovation.

Source: Chen *et al.* [37]; Leidner *et al.* [17]; Leidner *et al.* [18]; Toivonen *et al.* [41]; Chou *et al.* [42]

IS strategy and social capital. IS capability support on IS strategy and social capital interaction can be in the form of action to strengthen the relationship between the networks or by facilitating the occurrence of view sharing among the organization members [37], [41], [42].

When an organization adopts an information system, it will be able to facilitate communication between individuals in the organization through a virtual community in the organization [24]. The communication will trigger fit/alignment among factors in the organization (e.g. IS Strategy and social capital). Alignment between IS strategy and social capital can be established through collaboration and interaction among the individuals in the organization. IS capability can support the interaction and collaboration both in the internal and external organization [44]. IS strategy can be considered as a shared view between individuals in the organization [37]. The view can be shared through a social network (social capital) by utilizing an information technology-based information system in the organization [43]. The view sharing process performed through social capital can be a part of the information system resources management. Thus, it can be concluded that the alignment between IS strategy and social capital can be influenced by the organization's ability to manage information system resources. The ability to manage information system resources is known as IS capability [8]. In other words, IS capability is predicted to contribute to IS strategy and social capital alignment. Based on the discussion this study proposes the following hypotheses:

*H1: IS capability is related to IS strategy — social capital alignment*

### C. THE RELATIONSHIP BETWEEN IS STRATEGY–SOCIAL CAPITAL ALIGNMENT WITH BUSINESS PERFORMANCE

Leidner *et al.* [18] and Leidner *et al.* [17] found that there is a relationship between IS strategy and performance. Additionally, Hashim *et al.* [21] and Lee *et al.* [45] confirmed the relationship between social capital and performance. The research findings showed an individual and separated

relationship among IS strategy, social capital, and business performance. However, to achieve optimum performance, alignment/fit among the contingency factors (i.e. IS strategy and social capital) is needed [46].

Alignment between IS strategy and social capital represents how IS strategy can fit the social capital in the organization. Alignment can be established through collaboration and interaction among individuals. Interaction between individuals will trigger the ability to collaborate, discuss, and support from one to another in solving problems [47], [48]. As a result, the organization's daily operation will run smoothly [32] thus, improve business performance. Wagner *et al.* [31] found evidence of the relationship between the alignment of IS strategy and social capital with business performance. Moreover, Schlosser *et al.* [32] conducted an investigation on the relationship between IS strategy and social capital alignment with business performance in the banking industry and found that IS strategy – social alignment is related to business performance. Based on the discussion, this study proposes the following hypotheses:

*H2: IS strategy – social capital alignment is related to business performance*

### D. THE MEDIATING EFFECT OF IS STRATEGY–SOCIAL CAPITAL ALIGNMENT

Several studies have conducted researches on IS capability and social capital as well as social capital and performance. For example, Huysman and Wulf [43] analyzed the role of IS in the establishment of social networks and acceptance of social capital. Huysman and Wulf [43] provided an introduction to the role of IS in knowledge sharing, which later can establish social capital. Huysman and Wulf [43] presented an analysis of the perspective of social-technical in the social capital concept. Huysman and Wulf [43] showed that there is a relationship between IS capability in the organization and social capital within the organization.

The relationship between IS capability and performance can be seen from the result of the separate test conducted on the relationship between IS capability and social capital and the relationship between social capital and performance. Huysman and Wulf [43] and Thapa *et al.* [26] found an association between IS capability and social capital in an organization. Furthermore, Kim *et al.* [35] found that there is a relationship between social capital and performance. Hashim *et al.* [21], and Asiaei and Jusoh [22] found that social capital positively affects performance, emphasizing the relationship between social capital and performance. Wagner *et al.* [31] proved that alignment between IS strategy and social capital contributes to company performance. Based on the previous researches, it is predicted that social capital plays a role as a mediator between IS capital and performance.

Alignment between IS strategy and social capital describes how IS strategy can fit/align into social capital in an organization. Social capital can affect the alignment between IS and strategy in an organization [34]. The favorable social structure will improve effective dialogue between the information

system and other organization elements at the operational level. As a result, the organization can attain higher business value [49]. Baum *et al.* [47], and Tiwana *et al.* [48] added that when an organization has a strong social relationship between information system and other organization elements, the individuals in the organization will be willing to collaborate in solving problems, discuss problems and support each other. As a result, daily operation will be easier to run [32]. Moreover, strategic alignment among elements in the organization (such as alignment between IS strategy and social capital) is the mediating factor in creating IS values [50] thus, enabling companies to maximize IS investment to improve profitability [51].

Several researchers have investigated the role of alignment/fit between social capital with other factors in the organization as a mediating variable. Schlosser *et al.* [32] proved the role of alignment between social capital with the existing business and IS in the organization in mediating the relationship between IS governance mechanism and business performance. Furthermore, Karahanna and Preston [34] found that alignment between IS strategy and business strategy (IS strategic alignment) can mediate the relationship between social capital and business performance.

Based on the discussion and literature review above, it can be seen that the relationship between IS capability and business performance can be mediated by contingency variables or contextual factors such as IS strategy and social capital. Benitez-Amado and Walczuch [52] explored the role of strategy as a mediating variable in the relationship between IS capability and firm performance. Benitez-Amado and Walczuch [52] revealed that strategy acts as the mediator (intervening variable) in the relationship between IS capability and firm performance. Moreover, the alignment/fit between IS strategy and social capital is proven to influence performance [31]. Additionally, previous researchers have verified the role of alignment between social capital and other factors in the organization to act as a mediating variable [32], [34]. Based on the previous studies results, this study proposes these following hypotheses:

*H3: IS Strategy – Social Capital alignment mediates the relationship between IS Capability and Business performance*

Resources-based view (RBV) theory and contingency theory have different perspectives on viewing the relationship between IS capability and performance. Supporters of RBV theory believe that organization resources (i.e. IS Capability) will directly optimize business performance [14]–[16], [53]–[55]. Meanwhile, supporters of contingency theory believe that there is no specific method or formula to manage an organization. Contingency theory supporters found that everything in the organization would be affected by a contextual or environmental factor [19], [52], [56]. Based on the different perspectives of RBV theory and contingency theory as well as the literature review, this study is focusing on the role of contingency factor (IS strategy – social capital alignment) in the relationship



FIGURE 1. Theoretical framework.

between organization resources (IS capability) and resources outcome (business performance). Figure 1 displays the theoretical framework of this study.

### III. RESEARCH METHODOLOGY

The overall approach taken to empirically test the relationships implied by the research model and the research hypotheses was a field study using survey methodology for data collection. The data are collected from banks in Indonesia with the targeted subject is the bank branch managers (i.e., business unit CEO). In general, banks in Indonesia have massively invested in the information system, making it suitable for this research sample

In this study, the minimum amount of sample required to conduct the study is determined by combining two approaches. The first one is by multiplying the total of most complex variables (the variable which has the most question items) by 10 [57], and the second one is by using a priori power analysis [58], [59]. The minimum sample based on the calculation using two approaches is 140. Given the nature of the sample, this study chooses national banks operating in Indonesia and having branches operating in all provinces in Indonesia. The list of banks, along with the address and phone numbers, are retrieved from the Indonesian banking directory, which is published by the Indonesian financial service authority in 2018 [60]. There are 16.331 national scale banks branches spread throughout Indonesia. Among those numbers, this study successfully contacts and confirms to 1.838 randomly selected bank branch managers (business unit CEO). The questionnaire is distributed directly to the respondents with the help of 7 enumerators. The enumerators are responsible for contacting the targeted respondents (bank branch manager /business unit CEO), handing in the questionnaire, and retrieving the completed questionnaire. Additionally, the enumerator also responsible for ensuring that the survey is completed personally by the targeted respondents (business unit CEO / bank branch manager). Among the 1.838 contacted potential respondents, 433 expressed their willingness to participate in this study by completing the questionnaire. 73 respondents completed the questionnaire online (by using the Google form link provided in the cover letter), while 171 completed the questionnaire on the hard copy form sent to them. In total, there are 244 complete questionnaires returned (there is no missing value within the data). Following the recap and coding process, data screening is conducted by eliminating the outliers to ensure the data is free from error. Based on the analysis result, there are 45 outliers in the dataset having a standardized residual more than 3.3 or less than  $-3.3$  [61]. At last, there are 179 respondents, or 10% of the potential respondents used for the data analysis.

**A. VARIABLES DEFINITIONS AND MEASUREMENTS**

This study is using two main variables (IS capability and business performance) and one technical variable (IS strategy – social capital alignment) to answer all of the research questions and test the hypotheses. The variables include information system (IS) capability, business performance, IS strategy, and social capital. IS capability refers to a company’s capability to deploy IS based resources and combines it with other resources and capability [62]. Sambamurthy and Zmud [8] defined IS Capability as the company’s ability to manage information technology resources to support and enhance business strategy and working process. Based on the studies and discussion, this study defines IS capability as an organization’s ability (people, organization, and technology) in managing information systems to support the business process. Business performance can be defined as a business’s aggregate performance relative to its competition [9], [10]. Business performance can also refer to a business’s success rate in achieving its designated goal [11], [12]. This study defines business performance as the unit’s business success in meeting the predetermined target and performance criteria. Another variable used in this research is IS strategy. Sabherwal and Chan [63] defined IS strategy as the business application of Information Technology. Chen et al. [37] described IS strategy as “the degree to which an organization has shared its perspective to seek innovation through an Information system.” This study defined IS strategy as the use or application of information systems supporting perspective sharing among information system components to facilitate innovation. The next variable used in this research is social capital. Nahapiet and Ghoshal [64] defined social capital as “the sum of resources embedded within, available through, and derived from the network relationship possessed by an individual or social unit.” Social capital can also be defined as a sum of potential and actual knowledge within the network of colleagues and recognize among employees in the organization [20]. This study defined social capital as interaction among resources, social environment, and individuals in the organization through structural, relational, and cognitive social capital.

The questionnaire is using a 1 – 7 Likert in which the scale includes a shallow point to a very high point representing the scale of an intense disagreement to an intense agreement. The use of a seven-point scale will not cause a significant difference in the reliability when it is compared to a six, five, or three-point scale [65]. Additionally, 7 points Likert scale can provide a broad range questionnaire, which avoids unnecessarily skewed responses and assures rigorous analysis [66]. Interaction between variables (alignment) is measured by using the product indicator approach. Busemeyer and Jones [67] and Kenny and Judd [68] introduced the product indicator approach then, Marsh et al. [69] developed it. The product indicator approach is strongly recommended to be used in prediction within a small amount of observation and a high number of indicators [70], which is similar to this research condition. The product indicator approach is also

**TABLE 2. Variables definition and measurement.**

Variable	Definition	Measure	Source
IS Capability	Organization’s ability (people, organization, and technology) in managing information systems to support business processes.	11 item-scale (seven-point Likert scale)	Fink [72] Fink and Neumann [73] Kim, Shin, Kim, and Lee [74]
Business Performance	Business unit’s success to achieve the predetermined target and performance criteria.	14 item-scale (seven-point Likert scale)	Wu, Tzeng, and Chen [75] Wu [76] Powell and Dent-Micallef [77]
IS Strategy	The use or application of information systems to support perspective sharing among information components to support innovation.	4 item-scale (seven-point Likert scale)	Chan, Huff, and Copeland [78]
Social Capital	Interaction among resources, social environment, and individuals in the organization through structural, relational, and cognitive capital	13 item-scale (seven-point Likert scale)	Chang and Chuang [79] Chiu, Hsu, and Wang [80]
IS Strategy – Social Capital alignment	Interaction (fit) between IS strategy and social capital	Product indicator approach	Drazin and Van de Ven [81] Venkatraman [82] Chin et. al. [71]

used by Chin et al. [71] to measure the interaction effect. The product indicator approach is calculated by multiplying the value of each indicator with the value of another indicator. The result of the multiplying is the indicator of the interaction variable (alignment). Table 2 shows brief definitions and measurements of all variables used.

**B. QUESTIONER DEVELOPMENT**

This study used the Indonesian language version questionnaire adopted and adapted from the previous study. The adoption and adaptation process is conducted based on three steps proposed by Tsang et al. [83] primarily constructed to adopt an existing questionnaire using a different language from the language of the current research targeted respondent. The first step is to conduct content validity on the questionnaire adapted from the literature review process. The content validity is performed by involving three experts and one CEO business unit (bank branch manager). In testing the content validity, questionnaire items are selected, and some are omitted to meet the research issue as well as the targeted respondents. In this phase, it is essential to ensure that the question items used in the questionnaire are valid and suitable to be used in the context and within the targeted respondents. The second step is translating from English to Bahasa Indonesia (respondent’s native language). The six language expertise worked separately. Two of them conducted forward translation (English to Indonesia). The other two performed backward translations (Indonesia to English). The remaining two acted as proofreaders to ensure that both questionnaires written in English and Bahasa Indonesia are free from errors

TABLE 3. Pilot test result.

Variable	Number of Items	Cronbach's Alpha
Information System Capability	11	0.935
Business Performance	14	0.836
Information System Strategy	4	0.873
Social Capital	13	0.923

and able to deliver the real meaning. Finally, the last step is conducting the pilot study to respondents who are part of the population to ensure the consistency of the question items used in this research. The result of the pilot study showed that all of the questionnaire item results are consistent with the value of Cronbach alpha, which is higher from the cutoff point (0.7) (see table 3). This study's questionnaire is attached in the appendix.

C. SCALE VALIDATION

Scale validation is conducted by using an exploratory factor analysis technique with the principal component analysis (PCA) approach. PCA analysis is conducted to identify whether the suggested factor structure is consistent with the actual data. PCA is applied by using the varimax rotation method with Kaiser Normalization. PCA analysis is conducted to identify whether the suggested factor structure is consistent with the actual data. In PCA, Bartlett's test and Kaiser-Meyer-Olkin (KMO) is conducted to determine the sample sufficiency. The value of Bartlett's test must be significant ( $p < 0.05$ ), and the value of KMO must be greater than 0.6 [84]. Validity can be categorized based on the loading value cut-off of each of the tested indicators. The loading factor indicated a strong relationship between the item and construct latent. As a result, the loading factor can be utilized to ascertain the scale convergent validity and discriminant validity [85]. Nunnally and Bernstein [86] stated that loading items higher than 0.5 could be included in further analysis. The estimation result showed that all tested variables' (i.e., IS Capability, business performance, IS strategy, and social capital) KMO value is 0.6 with Bartlett's sig.  $p < 0.05$ . It shows that this study has a sufficient sample to be tested. The loading indicator value is bigger than 0.5 except the loading indicator of business performance numbers 8, 9, 10, 12, and indicator of social capital number 12. The result of the PCA test can be seen in the appendix.

D. DATA ANALYSIS

This study uses component-based SEM managed by using partial least square (PLS) to assess the measurement model and the structural model. PLS is used to test theoretical assumptions on empirical data (i.e., confirmatory factor analysis) to answer the research question. The research question is tested simultaneously through a measurement model and a structural model. Thus, the relationship between the latent variables (i.e., IS capability, IS strategy – social capital alignment, and business performance) can be predicted [87], [88]. By utilizing the raw data as input, Smart PLS 3.28 version

TABLE 4. Construct reliability and validity.

Construct	$\alpha$	$\rho_\alpha$	$\rho_c$	AVE	BP	ISC	ISS	SC
Business Performance	0.874	0.879	0.901	0.534	<b>0.731</b>			
IS Capability	0.943	0.945	0.951	0.640	0.664	<b>0.800</b>		
IS Strategy	0.907	0.907	0.935	0.781	0.659	0.749	<b>0.884</b>	
Social Capital	0.925	0.933	0.937	0.577	0.603	0.675	0.697	<b>0.760</b>

is used to conduct the analysis as well as to model all items scale as the reflective indicator for the suitable latent variable. The measurement model is a part of SEM related to the relationship between the latent construct and its manifest variable [89]. Generally, the structural model shows how another latent endogenous construct can predict a certain specific latent endogenous construct. PLS model begins with an evaluation of measurement model adequacy and followed with an assessment on the structural model. The sequence aims to ensure measurement's validity and reliability before performing a test to gain a conclusion.

IV. FINDING

A. MEASUREMENT MODEL

By utilizing smart PLS 3.2.8 software, a measurement model is established to conduct validity and reliability test. The model is developed by creating a model to identify the interaction among the variables within the model. Convergent validity is earned when the minimum value is equal to 0.6 [87], and the AVE value is greater than 0.5. Question items having loading value in the range of 0.4 to 0.7 can remain in the model if its omission does not cause AVE value and composite reliability to rise over the threshold [90], [91]. The analysis result showed that there are two more question items (business performance 2 and 13) that do not meet the threshold and must be omitted from the analysis. The value of AVE for each construct is greater than 0.5 (see table 4). At last, it can be concluded that the instrument has fulfilled the convergent validity criteria. The following validity test is the discriminant validity test. Discriminant validity is earned when the value of the outer loading of an indicator is larger than the loading value of other constructs (cross-loading) [90], [91], or its AVE root from each of the construct is greater than the correlation value of any construct [92]. The analysis result shows that the loading value of an indicator is greater than all of the cross-loading (see table 5), the value of AVE root is higher than the correlation value of any construct (see table 4)

Internal consistency reliability can be analyzed through the value of composite reliability ( $\rho_c$ ); if the value of composite reliability is greater than 0.7, it can be concluded that the instrument is reliable [90], [91]. Cronbach's alpha and rho alpha can also determine the instrument reliability if the value of Cronbach's alpha (Cronbach's  $\alpha$ ) and rho alpha ( $\rho_\alpha$ ) is greater than 0.7, the instrument is considered to be reliable [90], [91], [93]. The analysis result shows that all constructs have composite reliability value, Cronbach's  $\alpha$ , and  $\rho_\alpha$  that is greater than 0.7 (see table 4).

TABLE 5. Cross loading.

Items	Business Performance	IS Capability	IS Strategy	Social Capital
BP1	<b>0.648</b>	0.437	0.376	0.355
BP3	<b>0.684</b>	0.422	0.375	0.362
BP4	<b>0.793</b>	0.462	0.489	0.405
BP5	<b>0.808</b>	0.508	0.501	0.456
BP6	<b>0.772</b>	0.475	0.507	0.480
BP7	<b>0.749</b>	0.450	0.484	0.403
BP11	<b>0.652</b>	0.521	0.519	0.436
BP14	<b>0.721</b>	0.569	0.545	0.571
ISC1	0.422	<b>0.768</b>	0.555	0.575
ISC2	0.482	<b>0.813</b>	0.601	0.506
ISC3	0.478	<b>0.769</b>	0.485	0.468
ISC4	0.547	<b>0.862</b>	0.642	0.572
ISC5	0.564	<b>0.798</b>	0.609	0.543
ISC6	0.585	<b>0.812</b>	0.621	0.550
ISC7	0.610	<b>0.793</b>	0.619	0.574
ISC8	0.571	<b>0.828</b>	0.653	0.569
ISC9	0.450	<b>0.763</b>	0.538	0.479
ISC10	0.512	<b>0.810</b>	0.625	0.569
ISC11	0.600	<b>0.776</b>	0.614	0.511
ISS1	0.585	0.700	<b>0.889</b>	0.676
ISS2	0.569	0.661	<b>0.896</b>	0.615
ISS3	0.592	0.661	<b>0.880</b>	0.623
ISS4	0.584	0.624	<b>0.870</b>	0.547
SC1	0.397	0.526	0.509	<b>0.763</b>
SC4	0.449	0.519	0.493	<b>0.723</b>
SC5	0.538	0.567	0.585	<b>0.794</b>
SC6	0.465	0.481	0.496	<b>0.764</b>
SC7	0.518	0.642	0.653	<b>0.830</b>
SC8	0.520	0.602	0.660	<b>0.840</b>
SC9	0.348	0.371	0.352	<b>0.603</b>
SC10	0.499	0.564	0.612	<b>0.855</b>
SC11	0.391	0.443	0.468	<b>0.691</b>
SC12	0.441	0.435	0.471	<b>0.690</b>
SC13	0.428	0.402	0.433	<b>0.763</b>

TABLE 6. Direct effect analysis results.

Path	$\beta$	Mean	St.Dev.	t stat	P Values
ISC $\rightarrow$ ISS* SC	0.773	0.774	0.034	22.617	0.000
ISS * SC $\rightarrow$ BP	0.689	0.692	0.042	16.208	0.000

B. STRUCTURAL MODEL

1) DIRECT EFFECT

Direct effect test is conducted by testing the direct relationship between IS capability with IS strategy – social capital alignment (H1), and the relationship between IS strategy – social capital alignment with business performance (H2). The model is tested by using bootstrap approach by using 5000 resampling procedure. Figure 2 provides the model along with the test result.

The test result showed a significant relationship between IS capability with IS strategy – social capital alignment ( $\beta = 0.773$ ,  $p < 0.01$ ), and a significant relationship between IS strategy – social capital alignment and business performance ( $\beta = 0.689$ ,  $p < 0.01$ ). IS capability can explain 59.7% of the IS strategy – social capital alignment variance ( $R^2 = 0.597$ ) while IS strategy – social capital alignment can explain 47.4% of the business performance variance ( $R^2 = 0.474$ ). Based on the analysis result, it can be concluded that H1 and H2 are supported. Table 6 presents a summary of the analysis result.

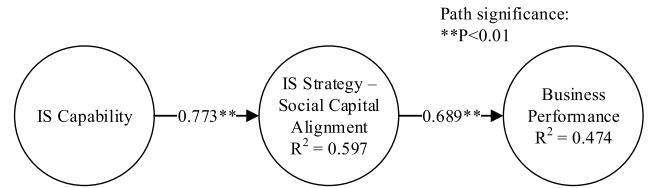


FIGURE 2. Direct effect path modeling.

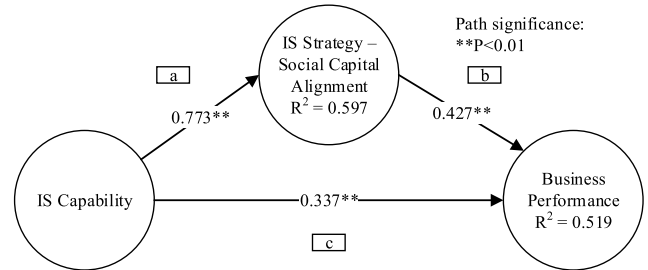


FIGURE 3. Indirect effect path modeling.

2) INDIRECT EFFECT

Estimations of the indirect effect in this study are conducted by adopting a single mediation model simulated by Preacher and Hayes [94]. The single mediation model is suitable to test the role of mediating variable simultaneously in models including one mediating variable [90], [94]. This study examined one mediating variable in the model, namely IS strategy – social capital alignment, which mediates the relationship between IS capability and business performance (H3). An analysis of the mediation effect is conducted by using mediation analysis by testing the indirect effect significance. The test is performed by using a bootstrap test with 5000 resampling procedure. Figure 3 presents the assessment model

The mediating variable has a mediating effect if the indirect effect is significant [95]. In determining the type of mediation on the analyzed mediating variable, Zhao et al. [95] proposed five models of decision making:

- Complimentary Mediation (Partial): Indirect effect ( $a \times b$ ) is significant, Direct effect (c) is significant and  $a \times b \times c$  is positive
- Competitive Mediation (Partial): Indirect effect ( $a \times b$ ) is significant, Direct effect (c) is significant and  $a \times b \times c$  is negative
- Indirect-only Mediation (Full Mediation): Indirect effect ( $a \times b$ ) is significant, and Direct effect (c) is not significant
- Direct-only (Non-Mediation): Indirect effect ( $a \times b$ ) is not significant, and Direct effect (c) is significant
- No-effect (Non-Mediation): Indirect effect ( $a \times b$ ) is insignificant, and Direct effect (c) is insignificant

The result of indirect path estimation on IS strategy – social capital alignment, as mediating variable in the relationship between IS capability and business performance (ISC  $\rightarrow$  ISS\*SC  $\rightarrow$  BP), showed a significant result ( $\beta = 0.330$ ,  $p < 0.01$ ). The direct effect path estimation of the relationship

**TABLE 7.** Indirect effect analysis results.

Path	$\beta$	Mean	St.Dev.	t stat	P Values	Type of Mediation
ISC $\rightarrow$ ISS * SC	0.773	0.774	0.034	22.410	0.000	Partial (Complementary)
ISC $\rightarrow$ BP	0.337	0.338	0.098	3.436	0.001	
ISS * SC $\rightarrow$ BP	0.427	0.430	0.100	4.290	0.000	
ISC $\rightarrow$ ISS * SC $\rightarrow$ BP	0.330	0.334	0.081	4.070	0.000	

between IS capability and business performance (ISC  $\rightarrow$  BP) showed a significant result ( $\beta = 0.337$ ,  $p < 0.01$ ). Additionally, both the direction of the mediated effect relationship ( $a \times b$ ) and direct effect ( $c$ ) have a similar direction (all of them have a positive relationship). Besides, the result of mediated effect multiplication ( $a \times b$ ) with direct effect ( $c$ ) also resulted a positive value ( $0.773 \times 0.427 \times 0.337 = 0.111$ ). Thus, it can be concluded that IS strategy – social capital partially and complementary mediates the relationship between IS capability and business performance (see table 7). Thus, it can be concluded that H3 is supported

## V. DISCUSSION

The result of the estimation model on the relationship between IS capability and IS strategy – social capital alignment showed a significant result (H1 is supported). The finding reassures that IS capability has a significant role in the occurrence of alignment/fit between IS strategy and social capital in the organization. A more detailed analysis is conducted to know which IS capability dimension (IS people capability, IS organization capability, and IS technology capability) related to IS strategy – social capital alignment. The analysis result showed that all IS capability dimensions (IS people capability, IS organization capability, and IS technology capability) have a significant relationship with IS strategy – social capital alignment. Based on the analysis result, it can be concluded that each dimension of IS capability is related to the occurrence of IS strategy and social capital alignment in the organization.

This study enriches the previous studies' findings such as Sanders [44] and Deepak *et al.* [24]. Sanders [44] described how IS capability supports the collaboration and interaction among the organization's elements. This study broadens Sanders [44]'s findings by providing evidence on the relationship between IS capability and the outcome from organization elements' collaboration (IS strategy – social capital alignment). Additionally, Deepak *et al.* [24] found evidence on the information system's ability to facilitate communication. This study expands the study conducted by Deepak *et al.* [24] by providing evidence on the relationship between the use of information systems (IS capability) and alignment between IS strategy and social capital. Alignment between IS strategy and social capital occurred as an effect of the information system's ability to provide enough facility.

The following study objective is to investigate the relationship between IS strategy –social alignment and business performance. The result of the analysis showed a significant relationship between IS strategy – social capital alignment,

and business performance (H2 is supported). This finding proves that the fit between IS strategy and social capital has a contribution to the business unit's performance. In this study context, the performance of the bank branch will significantly relate to its ability to determine the suitable (fit) information strategy with the existing social capital within the organization. Moreover, this study complements the evidence of IS strategy – social capital alignment and business performance relationship, which earlier found by Wagner *et al.* [31] and Schlosser *et al.* [32].

This study discusses the role of IS strategy – social capital alignment as a mediating variable in the relationship between IS capability and business performance. The data analysis result will provide evidence on IS strategy – social capital alignment partial and complementary role in mediating the relationship between IS capability and business performance (H3 is supported). These findings indicate that the existence of IS strategy – social capital alignment does not fully act as a mediating variable in IS strategy and business performance relationship. However, the existence of IS strategy – social capital alignment can complement/strengthen IS capability and business performance relationship.

This study verifies and widens the previous studies findings such as...Karahanna and Preston [34] and Schlosser *et al.* [32]. Karahanna and Preston [34] focused on the role of alignment between two types of strategy (business strategy and IS strategy) as a mediating variable. This study provides an extension to Karahanna and Preston [34] by considering the contingency factor (i.e., social capital) as a factor in the organization that can align/fit IS strategy and act as a mediating variable. Moreover, this study specifically expands the study conducted by Schlosser *et al.* [32] in the banking industry Schlosser *et al.* [32] highlighted the role of social capital alignment with information system tangible element (i.e., Information technology) as the mediating variable. This study has successfully extended the study conducted by Schlosser *et al.* [32] by verifying the role of alignment between social capital and intangible element of information system (IS strategy) as the mediating variable in IS capability and business performance relationship.

## VI. IMPLICATION

Theoretically, this study contributes to the theory development by analyzing social capital on the strategic level. This study investigates the mediating role of alignment (fit) between IS strategy and social capital on IS capability and business performance relationship. In the context of the information system, the previous studies focused on considering social capital as a supporting factor of knowledge sharing in a virtual community [27]–[29] or investigating the role of IS and IT in forming social capital [24]–[26]. In its development, Karahanna and Preston [34] investigated the role of Social Capital on IS alignment, and Schlosser *et al.* [32] investigated the role of alignment between social capital and IS in affecting business performance. From the theoretical perspective, this study developed the previous studies by providing



empirical evidence on the role of alignment (fit) between social capital and IS strategy on IS capability and business performance relationship. This study found that social capital is a significant factor that has to be considered and has to fit with strategy (IS Strategy). In other words, this study provides empirical evidence that social capital is an integrated factor and inseparable from strategy and information systems in the business organization.

This study found that alignment between the organization’s contextual factors (i.e., IS strategy - social capital alignment) can be the mediator in the organization’s resources (IS Capability) and performance improvement relationship. A business organization management (i.e., CEO) has to be able to take into account the organization’s social capital when it intends to improve or add its resources. For instance, when a business organization plan to adopt or develop an information system to improve business performance, it has to consider the applied IS strategy and social capital in the organization. This study proves that contingent factors can strengthen or weaken the relationship between a business organization’s resources (i.e., IS Capability) and business performance.

**VII. LIMITATION AND FUTURE RESEARCH**

Several cautions are necessary for interpreting the findings of this study. First, this study utilized a questionnaire survey to collect the data using the opinion of the bank branch manager as the key informant. Although the instrument has been tested and developed through systematic and rigorous procedures, potential bias does exist when using key informants in obtaining the data. The use of key informants raises the possibility of subjectivity in providing the opinion. A business unit manager (i.e., bank branch manager) tend to overvalue his business unit to avoid poor judgment on their performance. Future research should consider a more varied measurement such as combining key informant’s opinions and financial statements to measure business performance. Secondly, the sample size is relatively small compared to the actual population, despite numerous efforts made to increase the response rate. Future research can increase the amount of sample by extending the data collection period and include more enumerators to assist the data collection process. Finally, the study focused on one single industry, which is the banking sector. Hence, the findings may not be generalizable beyond this industry setting. Future research can combine various sample sources by adding other sectors of industry, such as manufacturing and information technology sector. By adding other types of industry in the sample, the generalization of the research finding can be improved.

**VIII. CONCLUSION**

This study has three main objectives, namely, 1). Investigating the relationship between information system capability with information system strategy – control alignment, 2). information strategy - control alignment with business performance 3). Investigating the mediating role of IS Strategy – Social Capital alignment in the relationship between IS capability and business performance. Based on

the data collected by using a questionnaire survey conducted across Indonesia, all of the hypotheses are supported.

This study has been able to explain the importance of alignment (fit) among the contingency factors (i.e., IS strategy, and social capital) in an organization’s resources (i.e., IS capability) and business performance relationship. Alignment between IS strategy and social capital can significantly mediate IS capability and business performance relationship. Thus indicates that alignment (fit) between contingent factors (i.e., IS strategy and social capital) in the organization has an important role in the organization. When there is an alignment (fit) between IS strategy and social capital, business unit performance can be improved; meanwhile, when misalignment happens among contingent factors, optimum business performance will be hindered.

**APPENDIX**  
**PCA ANALYSIS RESULTS**

Business Performance		Social Capital		IS Capability		IS Strategy	
KMO: 0.820		KMO: 0.903		KMO: 0.934		KMO: 0.853	
Barlett's Sig: 0.000		Barlett's Sig: 0.000		Barlett's Sig: 0.000		Barlett's Sig: 0.000	
Item	Loading	Item	Loading	Item	Loading	Item	Loading
BP1	0.674	SC1	0.771	ISC1	0.769	ISS1	0.886
BP2	0.524	SC2	0.200	ISC2	0.816	ISS2	0.898
BP3	0.702	SC3	0.512	ISC3	0.776	ISS3	0.879
BP4	0.810	SC4	0.719	ISC4	0.863	ISS4	0.872
BP5	0.786	SC5	0.783	ISC5	0.795		
BP6	0.728	SC6	0.761	ISC6	0.812		
BP7	0.714	SC7	0.823	ISC7	0.789		
BP8	0.489	SC8	0.831	ISC8	0.825		
BP9	-0.105	SC9	0.618	ISC9	0.765		
BP10	0.315	SC10	0.854	ISC10	0.809		
BP11	0.661	SC11	0.690	ISC11	0.774		
BP12	0.204	SC12	0.682				
BP13	0.320	SC13	0.760				
BP14	0.648						

Extraction Method: Principal Component Analysis.

**QUESTIONNAIRE**

**Business Performance**

1. Business unit/branch Revenue earned from fund management
2. Business unit/branch Credit revenue
3. Business unit/branch profit margin
4. Business unit/branch aggregate financial performance
5. Customer satisfaction on products and services provided by business unit/branch
6. Consumer’s perception on the product and services quality offered by business unit/branch
7. Our business unit/branch image from the customers
8. The improvement in the amount of consumer in our business unit/branch
9. The number of complaints from the consumer
10. The average time needed to complete a transaction or a problem (Service Level Agreement achievement)
11. The level of automation of working documents (transaction documents, legal documents, transactions, etc.) through a documentation system or software, etc.
12. The number of suggestions on products and services from the consumers
13. Employee turn over
14. Employee’s satisfaction with hardware and software provided by the company

### Information System Capability

1.	The IS department personnel has a capability to operate various computer program in a well-structured manner
2.	The IS department personnel has an ability in network management and to maintain the information system
3.	The IS department personnel are self-directed and proactive
4.	The IS department personnel can interpret business problems and develop the needed technological solutions.
5.	The IT department often conducts adjustments on information systems planning to adapt to the current situation better.
6.	IT department considers and estimates the impact of information system investment decision on the employees; quality and productivity
7.	In making investment decisions, the IT department considers and projects the magnitude of information system impact in assisting end-users in making a decision.
8.	The IS department/division provides a wide range of Risk and security management services (security policy, back up data planning, firewall, anti-virus installation, data recovery, etc.)
9.	The IS department/division provides a wide range of Communication services (help desk, internet services)
10.	The IS department/division provides a wide range of Information system services for a wide range of management levels
11.	The IS department/division provides a wide range of Information system education services (training on information system usage, educating management to gain value-added from implementing information system)

### Social capital

1.	Employees in the business unit/branch maintain close social relationships with some other employees in the company
2.	Employees in the business unit/branch spend a lot of time interacting with some other employees in the company
3.	Employees in the business unit/branch has frequent communication with some other employees in company
4.	Our employees know some other employees in the business unit on a personal level
5.	Employees in the business unit/branch will not take advantage of others even when the opportunity arises.
6.	Employees in the business unit/branch behave in a consistent manner.
7.	Employees in the business unit/branch know that the employee in the company will help each other if needed
8.	Employees in the business unit/branch feel a sense of belonging towards the company.
9.	Employees in the business unit/branch have the feeling of togetherness or closeness in the company
10.	Employees in the business unit/branch use common terms or jargons.
11.	Employees in the business unit/branch use understandable communication patterns during the discussion.
12.	Employees in the business unit/branch use understandable narrative forms e.g. text messages, emails, etc.
13.	Employees in the business unit/branch share the vision of helping others solve their professional problems.
14.	Employees in the business unit/branch share the same value that helping others is pleasant

### IS Strategy

1.	The information systems used in the business unit/branch help us generate innovative solutions for business problems
2.	The information systems used in the business unit/branch employ innovative, leading-edge technologies
3.	The information systems used in the business unit/branch allows manager to flexibly create a report based on the needs
4.	The information systems used in the business unit/branch is able to introduce new ways in running the business

### REFERENCES

- [1] B. Hadibrata, "The adoption of digital technology and labor demand in the Indonesian banking sector," in *OJK Working Papers*. Jakarta, Indonesia: Otoritas Jasa Keuangan (OJK), 2018, pp. 1–13.
- [2] L. Kappelman, "The 2016 SIM IT issues and trends study," *MIS Quart. Executive*, vol. 16, no. 1, pp. 47–80, 2017.
- [3] C. Dibrell, P. S. Davis, and J. Craig, "Fueling innovation through information technology in SMEs," *J. Small Bus. Manage.*, vol. 46, no. 2, pp. 203–218, Apr. 2008.
- [4] K. Saira, M. A. Zariyawati, and M. N. Annuar, "Information system and Firms' performance: The case of Malaysian small medium enterprises," *Int. Bus. Res.*, vol. 3, no. 4, pp. 28–35, Sep. 2010.
- [5] S. Devaraj and R. Kohli, "Performance impacts of information technology: Is actual usage the missing link?" *Manage. Sci.*, vol. 49, no. 3, pp. 273–289, Mar. 2003.
- [6] R. D. Banker, H. Chang, and Y.-C. Kao, "Impact of information technology on public accounting firm productivity," *J. Inf. Syst.*, vol. 16, no. 2, pp. 209–222, Sep. 2002.
- [7] *Indonesia Banking Survey*, PwC, Jakarta, Indonesia, 2017.
- [8] V. Sambamurthy and R. W. Zmud, "At the heart of success: organization-wide management competencies," in *Steps to the Future: Fresh Thinking on the Management of IT-Based Organizational Transformation*. P. Sauer and W. Yetton, Eds. San Francisco, CA, USA: Jossey-Bass, 1997.
- [9] A. Rai, R. Patnayakuni, and N. Seth, "Firm performance impacts of digitally enabled supply chain integration capabilities," *MIS Quart.*, vol. 30, no. 2, pp. 225–246, 2006.
- [10] S. P.-J. Wu, N. Sun Yat-Sen University, D. W. Straub, T.-P. Liang, T. University, K. University Business School, and N. Chengchi University, "How information technology governance mechanisms and strategic alignment influence organizational performance: Insights from a matched survey of business and IT managers," *MIS Quart.*, vol. 39, no. 2, pp. 497–518, Feb. 2015.
- [11] L. Mia and B. Clarke, "Market competition, management accounting systems and business unit performance," *Manage. Accounting Res.*, vol. 10, no. 2, pp. 137–158, Jun. 1999.
- [12] R. M. Steers, "Antecedents and outcomes of organizational commitment," *Administ. Sci. Quart.*, vol. 22, no. 1, pp. 46–56, 1977.
- [13] C. Ong and P. Chen, "Information technology capability-enabled performance, future performance, and value," *Ind. Manage. Data Syst.*, vol. 113, no. 5, pp. 669–682, May 2013.
- [14] S. Oh, H. Baek, and S. Lee, "Revisiting the relationship between information technology capability and firm performance: Focusing on the impact of the adoption of enterprise resource planning systems," *J. Inf. Syst.*, vol. 25, no. 1, pp. 49–73, Mar. 2016.
- [15] K. J. Ringim, M. R. Razalli, and N. Hasnan, "The relationship between information technology capability and organizational performance of Nigerian banks," *Int. J. Bus. Res. Develop.*, vol. 4, no. 2, pp. 1–10, Jul. 2015.
- [16] H. Jiao, I. C. Chang, and Y. Lu, "The relationship on information technology capability and performance: An empirical research in the context of China's Yangtze River delta region," in *Proc. IEEE Int. Conf. Ind. Eng. Eng. Manage.*, Dec. 2008, pp. 872–876.
- [17] D. E. Leidner, J. Lo, and E. Gonzalez, "An Empirical Investigation of IS Strategy and its Contribution to Firm Performance," in *Proc. ICIS*, 2010, p. 2.
- [18] D. E. Leidner, J. Lo, and D. Preston, "An empirical investigation of the relationship of IS strategy with firm performance," *J. Strategic Inf. Syst.*, vol. 20, no. 4, pp. 419–437, Dec. 2011.
- [19] C. Yeh, G. Lee, and J. Pai, "How information system capability affects e-business information technology strategy implementation," *Bus. Process Manage. J.*, vol. 18, no. 2, pp. 197–218, Apr. 2012.
- [20] M. Subramaniam and M. A. Youndt, "The influence of intellectual capital on the types of innovative capabilities," *Acad. Manage. J.*, vol. 48, no. 3, pp. 450–463, Jun. 2005.
- [21] M. J. Hashim, I. Osman, and S. M. Alhabshi, "Effect of intellectual capital on organizational performance," *Procedia-Social Behav. Sci.*, vol. 211, pp. 207–214, Nov. 2015.
- [22] K. Asiaei and R. Jusoh, "Using a robust performance measurement system to illuminate intellectual capital," *Int. J. Accounting Inf. Syst.*, vol. 26, pp. 1–19, Aug. 2017.
- [23] N. Andriani, "Model hubungan karakteristik pemimpin dan modal sosial dalam mempengaruhi kinerja lembaga keuangan mikro syariah (LKMS)," *Jurnal Studi Manajemen dan Bisnis*, vol. 1, no. 1, pp. 85–97, 2014.

- [24] A. C. Deepak, B. L. Wisner, and A. D. Benton, "Intersections between technology, engaged learning, and social capital in social work education," *Social Work Educ.*, vol. 35, no. 3, pp. 310–322, 2016.
- [25] J. Peng, J. Quan, G. Zhang, and A. J. Dubinsky, "Knowledge sharing, social relationships, and contextual performance," *J. Organizational End User Comput.*, vol. 27, no. 2, pp. 58–73, Apr. 2015.
- [26] D. Thapa, M. K. Sein, and Ø. Sæbø, "Building collective capabilities through ICT in a mountain region of nepal: Where social capital leads to collective action," *Inf. Technol. for Develop.*, vol. 18, no. 1, pp. 5–22, Jan. 2012.
- [27] H. Aslam, K. Shahzad, A. R. Syed, and A. Ramish, "Social capital and knowledge sharing as determinants of academic performance," *J. Behav. Appl. Manage.*, vol. 15, no. 1, pp. 25–41, 2013.
- [28] Y. Li, F. Ye, and C. Sheu, "Social capital, information sharing and performance," *Int. J. Oper. Prod. Manage.*, vol. 34, no. 11, pp. 1440–1462, Sep. 2014.
- [29] Z. Ahmed, "Explaining the unpredictability: A social capital perspective on ICT intervention," *Int. J. Inf. Manage.*, vol. 38, no. 1, pp. 175–186, Feb. 2018.
- [30] K. Černe and D. Etinger, "IT as a part of intellectual capital and its impact on the performance of business entities," *Croatian Oper. Res. Rev.*, vol. 7, pp. 389–408, Dec. 2016.
- [31] H.-T. Wagner, D. Beimbom, and T. Weitzel, "How social capital among information technology and business units drives operational alignment and IT business value," *J. Manage. Inf. Syst.*, vol. 31, no. 1, pp. 241–272, Jul. 2014.
- [32] F. Schlosser, D. Beimbom, and T. Weitzel, "Achieving social alignment between business and IT—an empirical evaluation of the efficacy of IT governance mechanisms," *J. Inf. Technol.*, vol. 30, no. 2, pp. 119–135, 2015.
- [33] J. C. Henderson and N. Venkatraman, "Strategic alignment: Leveraging information technology for transforming organizations," *IBM Syst. J.*, vol. 32, no. 1, pp. 4–16, 1993.
- [34] E. Karahanna and D. S. Preston, "The effect of social capital of the relationship between the CIO and top management team on firm performance," *J. Manage. Inf. Syst.*, vol. 30, no. 1, pp. 15–56, Jul. 2013.
- [35] T. T. Kim, G. Lee, S. Paek, and S. Lee, "Social capital, knowledge sharing and organizational performance," *Int. J. Contemp. Hospitality Manage.*, vol. 25, no. 5, pp. 683–704, 2013.
- [36] S. Yang, H. Lee, and S. Kurnia, "Social capital in information and communications technology research: Past, present, and future," *Commun. Assoc. Inf. Syst.*, vol. 25, pp. 183–220, 2009.
- [37] D. Q. Chen, M. Mocker, D. S. Preston, and A. Teubner, "Information systems strategy: Reconceptualization, measurement, and implications," *MIS Quart.*, vol. 34, no. 2, pp. 233–259, 2010.
- [38] M. Mocker, "Defining the Content of Information Strategy: Linking Theory and Practice," in *Wirtschaftswissenschaftliche*. Münster, Germany: Univ. Münster, 2007, p. 284.
- [39] C.-Y. Yao, C.-C. Tsai, and Y.-C. Fang, "Understanding social capital, team learning, members' e-loyalty and knowledge sharing in virtual communities," *Total Qual. Manage. Bus. Excellence*, vol. 26, nos. 5–6, pp. 619–631, Jun. 2015.
- [40] J. Peppard, R. D. Galliers, and A. Thorogood, "Information systems strategy as practice: Micro strategy and strategizing for IS," *J. Strategic Inf. Syst.*, vol. 23, no. 1, pp. 1–10, Mar. 2014.
- [41] M. Toivonen and A. E. Smedlund Järvenpää, "The impacts of information technology on the stock and flow of a Firm's intellectual capital," in *Strategies for Information Technology and Intellectual Capital: Challenges and Opportunities*, L. A. Joia, Ed. Washington, DC, USA: Information Science Reference, 2007, pp. 111–125.
- [42] T.-C. Chou, J.-R. Chen, and S. L. Pan, "The impacts of social capital on information technology outsourcing decisions: A case study of a Taiwanese high-tech firm," *Int. J. Inf. Manage.*, vol. 26, no. 3, pp. 249–256, Jun. 2006.
- [43] M. Huysman and V. Wulf, "IT to support knowledge sharing in communities, towards a social capital analysis," *J. Inf. Technol.*, vol. 21, no. 1, pp. 40–51, Feb. 2006.
- [44] N. R. Sanders and R. Premus, "Modeling the relationship between firm IT capability, collaboration, and performance," *J. Bus. Logistics*, vol. 26, no. 1, pp. 1–23, Mar. 2005.
- [45] J. Lee, J.-G. Park, and S. Lee, "Raising team social capital with knowledge and communication in information systems development projects," *Int. J. Project Manage.*, vol. 33, no. 4, pp. 797–807, May 2015.
- [46] R. H. Chenhall, "Management control systems design within its organizational context: Findings from contingency-based research and directions for the future," *Accounting, Organizations Soc.*, vol. 28, nos. 2–3, pp. 127–168, Feb. 2003.
- [47] J. A. C. Baum, R. Cowan, and N. Jonard, "Network-independent partner selection and the evolution of innovation networks," *Manage. Sci.*, vol. 56, no. 11, pp. 2094–2110, Nov. 2010.
- [48] A. Tiwana and A. V. Bharadwaj Sambamurthy, "The antecedents of information systems development capability in firms: a knowledge integration perspective," in *Proc. 24th Int. Conf. Inf. Syst. (ICIS)*, Atlanta, GA, USA, vol. 2003, pp. 246–258.
- [49] K. Zolper, D. Beimbom, and T. Weitzel, "The effect of social network structures at the Business/IT interface on IT application change effectiveness," *J. Inf. Technol.*, vol. 29, no. 2, pp. 148–169, Jun. 2014.
- [50] R. Kohli and V. Grover, "Business value of IT: An essay on expanding research directions to keep up with the times," *J. Assoc. Inf. Syst.*, vol. 9, no. 1, pp. 23–39, Jan. 2008.
- [51] R. Papp, "Business-IT alignment: productivity paradox payoff?" *Ind. Manage. Data Syst.*, vol. 99, no. 8, pp. 367–373, 1999.
- [52] J. Benitez-Amado and R. M. Walczuch, "Information technology, the organizational capability of proactive corporate environmental strategy and firm performance: A resource-based analysis," *Eur. J. Inf. Syst.*, vol. 21, no. 6, pp. 664–679, Nov. 2012.
- [53] M. Zhang and P. S. Tansuhaj, "Organizational culture, information technology capability, and performance: The case of born global firms," *Multinational Bus. Rev.*, vol. 15, no. 3, pp. 43–77, 2007.
- [54] J.-W. Gu and H.-W. Jung, "The effects of IS resources, capabilities, and qualities on organizational performance: An integrated approach," *Inf. Manage.*, vol. 50, nos. 2–3, pp. 87–97, Mar. 2013.
- [55] A. S. Aydiner, E. Tatoglu, E. Bayraktar, and S. Zaim, "Information system capabilities and firm performance: Opening the black box through decision-making performance and business-process performance," *Int. J. Inf. Manage.*, vol. 47, pp. 168–182, Aug. 2019.
- [56] J. Peppard and J. Ward, "Beyond strategic information systems: Towards an IS capability," *J. Strategic Inf. Syst.*, vol. 13, no. 2, pp. 167–194, Jul. 2004.
- [57] D. Gefen, D. Straub, and M. C. Boudreau, "Structural equation modeling and regression: Guidelines for research practice," *Commun. Assoc. Inf. Syst.*, vol. 4, no. 7, pp. 1–77, 2000.
- [58] F. Faul, E. Erdfelder, A.-G. Lang, and A. Buchner, "G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences," *Behav. Res. Methods*, vol. 39, no. 2, pp. 175–191, May 2007.
- [59] F. Faul, E. Erdfelder, A. Buchner, and A. G. Lang, "Statistical power analyses using G\*Power 3.1: Tests for correlation and regression analyses," *Behav. Res. Methods*, vol. 41, no. 4, pp. 1149–1160, 2009.
- [60] OJK. (2018). *Daftar Alamat Kantor Pusat Bank Umum Dan Syariah*. Accessed: Jul. 29, 2017. [Online]. Available: <http://www.ojk.go.id/id/kanal/perbankan/data-dan-statistik/Pages/Daftar-Alamat-Kantor-Pusat-Bank-Umum-Dan-Syariah.aspx>
- [61] B. G. Tabachnick and L. S. Fidell, *Using Multivariate Statistics*, 5th ed. London, U.K.: Pearson, 2007.
- [62] A. S. Bharadwaj, "A resource-based perspective on information technology capability and firm performance: An empirical investigation," *MIS Quart.*, vol. 24, no. 1, pp. 169–196, 2000.
- [63] R. Sabherwal and Y. E. Chan, "Alignment between business and IS strategies: A study of prospectors, analyzers, and defenders," *Inf. Syst. Res.*, vol. 12, no. 1, pp. 11–33, Mar. 2001.
- [64] J. Nahapiet and S. Ghoshal, "Social capital, intellectual capital, and the organizational advantage," *Acad. Manage. Rev.*, vol. 23, no. 2, pp. 242–266, Apr. 1998.
- [65] T. C. Kinnear and J. R. Taylor, *Marketing Research: An Applied Approach*, vol. 3. New York, NY, USA: McGraw-Hill, 1987.
- [66] J. Hussey and R. Hussey, *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. London, U.K.: Macmillan, 1997.
- [67] J. R. Busemeyer and L. E. Jones, "Analysis of multiplicative combination rules when the causal variables are measured with error," *Psychol. Bull.*, vol. 93, no. 3, pp. 549–562, 1983.
- [68] D. A. Kenny and C. M. Judd, "Estimating the nonlinear and interactive effects of latent variables," *Psychol. Bull.*, vol. 96, no. 1, pp. 201–210, Jul. 1984.
- [69] H. W. Marsh, Z. Wen, and K. T. Hau, "Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator construction," *Psychol. Methods*, vol. 9, no. 3, pp. 275–300, 2004.

- [70] J. Henseler and W. W. Chin, "A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling," *Struct. Equation Model., A Multidisciplinary J.*, vol. 17, no. 1, pp. 82–109, Jan. 2010.
- [71] W. W. Chin, B. L. Marcolin, and P. R. Newsted, "A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail Emotion/Adoption study," *Inf. Syst. Res.*, vol. 14, no. 2, pp. 189–217, Jun. 2003.
- [72] L. Fink, "How do IT capabilities create strategic value? Toward greater integration of insights from reductionistic and holistic approaches," *Eur. J. Inf. Syst.*, vol. 20, no. 1, pp. 16–33, Jan. 2011.
- [73] L. Fink and S. Neumann, "Gaining agility through IT personnel capabilities: The mediating role of IT infrastructure capabilities," *J. Assoc. Inf. Syst.*, vol. 8, no. 8, pp. 440–462, Aug. 2007.
- [74] G. Kim, B. Shin, K. K. Kim, and H. G. Lee, "IT capabilities, process-oriented dynamic capabilities, and firm financial performance," *J. Assoc. Inf. Syst.*, vol. 12, no. 7, pp. 487–517, 2011.
- [75] H.-Y. Wu, G.-H. Tzeng, and Y.-H. Chen, "A fuzzy MCDM approach for evaluating banking performance based on balanced scorecard," *Expert Syst. Appl.*, vol. 36, no. 6, pp. 10135–10147, Aug. 2009.
- [76] H.-Y. Wu, "Constructing a strategy map for banking institutions with key performance indicators of the balanced scorecard," *Eval. Program Planning*, vol. 35, no. 3, pp. 303–320, 2012.
- [77] T. C. Powell and A. Dent-Micallef, "Information technology as competitive advantage: The role of human, business, and technology resources," *Strategic Manage. J.*, vol. 18, no. 5, pp. 375–405, May 1997.
- [78] Y. E. Chan, S. L. Huff, and D. G. Copeland, "Assessing realized information systems strategy," *J. Strategic Inf. Syst.*, vol. 6, no. 4, pp. 273–298, Dec. 1997.
- [79] H. H. Chang and S.-S. Chuang, "Social capital and individual motivations on knowledge sharing: Participant involvement as a moderator," *Inf. Manage.*, vol. 48, no. 1, pp. 9–18, Jan. 2011.
- [80] C.-M. Chiu, M.-H. Hsu, and E. T. G. Wang, "Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories," *Decis. Support Syst.*, vol. 42, no. 3, pp. 1872–1888, Dec. 2006.
- [81] R. Drazin and A. H. Van de Ven, "Alternative forms of fit in contingency theory," *Administ. Sci. Quart.*, vol. 30, no. 4, pp. 514–539, 1985.
- [82] N. Venkatraman, "The concept of fit in strategy research: Toward verbal and statistical correspondence," *Acad. Manage. Rev.*, vol. 14, no. 3, pp. 423–444, Jul. 1989.
- [83] S. Tsang, C. Roysse, and A. Terkawi, "Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine," *Saudi J. Anaesthesia*, vol. 11, no. 5, p. 80, 2017.
- [84] J. Pallant, *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows*, 4th ed. Berkshire, U.K.: McGraw-Hill, 2010.
- [85] J. F. J. Hair, *Multivariate Data Analysis*. 7th ed. London, U.K.: Pearson, 2014.
- [86] J. C. Nunnally and I. H. Bernstein, *Psychometric Theory*, vol. 3. New York, NY, USA: McGraw-Hill, 1994.
- [87] W. W. Chin, "Commentary: Issues and opinion on structural equation modeling," *MIS Quart.*, vol. 22, no. 1, pp. 17–26, 1998.
- [88] C. Fornell, "The American customer satisfaction index: Nature, purpose, and findings," *J. Marketing*, vol. 60, no. 4, pp. 7–18, 1996.
- [89] J. C. Loehlin and A. A. Beaujean, *Latent Variable Models An Introduction to Factor, Path, and Structural Equation Analysis*. 5th ed. New York, NY, USA: Routledge, 2017.
- [90] J. F. J. Hair, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd ed. Thousand Oaks, CA, USA: Sage, 2017.
- [91] J. F. J. Hair, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 1st ed. Thousand Oaks, CA, USA: Sage, 2014.
- [92] C. Fornell and D. F. Larcker, "Evaluating structural equation models with unobservable variables and measurement error," *J. Marketing Res.*, vol. 18, no. 1, pp. 39–50, Feb. 1981.
- [93] T. K. Dijkstra and J. Henseler, "Consistent partial least squares path modeling," *MIS Quart.*, vol. 39, no. 2, pp. 297–316, Feb. 2015.
- [94] K. J. Preacher and A. F. Hayes, "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models," *Behav. Res. Methods*, vol. 40, no. 3, pp. 879–891, Aug. 2008.
- [95] X. Zhao, J. G. Lynch, and Q. Chen, "Reconsidering baron and kenny: Myths and truths about mediation analysis," *J. Consum. Res.*, vol. 37, no. 2, pp. 197–206, Aug. 2010.



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