Effects of Partnership Quality and the Attributes of Clients and Vendors on the Success of Outsourced ERP System Implementation

Boonlert Watjatrakul[1]* *and Vimolluck Vatanapitukpong*[2]
[1] School of Information Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand
[2] IT Consultant, I Flex Co., Ltd. Bangkok, Thailand

Keywords	Abstract
	The partnership perspective is frequently used to assess the effectiveness of outsourced system implementations. Nevertheless, the relationship between partnership quality and the attributes of the parties involved in outsourcing success remains unclear. This research investigates how partnership quality relates to crucial attributes of clients and vendors, including client knowledge, client involvement, vendor responsibility, and vendor expertise. It explores their effects on the success of ERP system implementations in terms of performance impact and client satisfaction. Findings from a structural equation modeling analysis indicate that client and vendor attributes significantly affect partnership quality. Particularly, client knowledge plays a crucial role in shaping vendor responsibility and performance impact. Moreover, clients tend to emphasize system performance over the functional aspects of the partnership. This study enhances our understanding of client satisfaction in outsourced system implementations and provides useful insights for both clients and vendors to enhance ERP system implementation success.

1. Introduction

Organizations have adopted IS outsourcing as part of their business strategy and are taking the outsourcing benefits from cost saving, value acquisition, and competitive advantages. Previous studies attempted to understand how organizations successfully outsource their software and system implementation (Lee & Kim, 1999; Liu et al., 2023). Since all outsourcing arrangements involve participants' exchange relationships, a partnership is one of the most cited factors in identifying IS outsourcing success (Al-Azad et al., 2022; Lee & Kim, 1999). The partnership pulls a client's and vendor's resources to achieve mutual goals and benefits where

*corresponding author. Email: boonlert@it.kmitl.ac.th

both parties cannot achieve these benefits alone (Hancox & Hackney, 2000). Many studies posited that partnership quality is the critical success factor of IS outsourcing (Liu, 2021; Lee & Kim, 1999). The quality of partnership, enabling the level of collaboration between a vendor team and a client team during and after the system implementation phase, augments the likelihood of a successful outsourced system deployment. Even though partnership quality is a vital aspect of outsourcing success, it may not solely determine the success of outsourced system implementation.

Previous studies identified various factors that impact the success of IS outsourcing, including the type of transaction (Lee & Kim, 2010), technical capabilities of both clients and providers (Bardhan et al., 2007), a client's outsourcing readiness (McIvor et al., 2011), a client's transition management capability (Bajaj et al., 2023), a provider's domain knowledge (Navarro-Paule et al., 2023), contract specifics (Luo et al., 2010), commitment (Bardhan et al., 2007), and coordination (Levina & Su, 2008). However, there is a gap in understanding how these factors, particularly the attributes of the parties involved in outsourcing, interrelate with partnership quality and contribute to the success of implementing outsourced systems. This study seeks to explore this relationship, focusing on the attributes of clients and vendors in the success of outsourced system implementation. Specifically, it examines client knowledge, client involvement, vendor responsibility, and vendor expertise. Client knowledge of the outsourced system and organizational operation is necessary to assist and work with the vendor team (Bajaj et al., 2023). Client involvement reflects the client's willingness to engage with the vendor team throughout the system implementation process (Karimi et al., 2007). Vendor responsibility entails the vendor's commitment to executing both primary and ancillary duties outlined in the outsourcing contract (Lacity et al., 2016; Kaipia & Tanskanen, 2003). Vendor expertise in managing outsourced systems and business operations aids in meeting clients' needs efficiently, thereby enhancing the likelihood of successful implementation of the outsourced system (Navarro-Paule et al., 2023).

Unlike previous studies that focused on evaluating the impact of partnerships and client characteristics on the performance of outsourced system implementation (Al-Azad et al., 2022; Lee & Kim, 1999; Klepper, 1995), this study focuses on how the attributes of both the client and vendor, in relation to partnership quality, collectively influence client satisfaction in outsourced system implementation. Specifically, it explores the roles of partnership quality, client knowledge, client involvement, vendor responsibility, and vendor expertise, and their effects on both performance and client satisfaction in the implementation of outsourced ERP systems. The study focuses on ERP systems due to their widespread outsourcing by organizations and the implementation challenges encountered by service providers (Kiran & Reddy, 2019). By introducing a new framework, this study fills a gap in the literature on system implementation success, enhancing the understanding of effective outsourced ERP system implementation and expanding insights into the effects of partnership quality and the attributes of clients and vendors on IS outsourcing success. Furthermore, practical guidance is offered to both outsourcing clients and providers on enhancing system performance and user satisfaction.

The following section discusses the theoretical background of the research model, followed by hypothesis development, research methodology, and analysis results. Theoretical and practical implications are then discussed before concluding with a discussion of study limitations and future research directions.

2. Theoretical Background

This section delves into the essential elements that underpin the research model, involving partnership perspective, client and vendor attributes influencing the success of outsourced system implementation, and the metrics used to measure system implementation success.

2.1 Partnership Perspective

Partnership is a broad term encompassing a multitude of concepts and practices utilized to signify different types of relationships across various contexts and situations. The concept of synergy, wherein the combined effect exceeds the sum of individual elements, often constitutes a key aspect of partnerships (Al-Azad et al., 2022; Liu, 2021). Partnerships entail cooperative efforts in devising and executing strategies, projects, or operations, with each party contributing to varying extents at different phases. In public-private partnerships, the public sector usually doesn't solely pursue commercial objectives. Instead, these partnerships emphasize the importance of social partnership criteria, prioritizing social outcomes over strictly commercial transactions (Al-Azad et al., 2022). From an economic development standpoint, Sellgren (1990) defines partnership as a cooperative effort where multiple agencies contribute resources or support. Bennett and Krebs (1994) reiterate this perspective by highlighting the shared goals of the participating entities, describing the partnership as a collaborative initiative among stakeholders committed to collectively pursuing a particular economic development objective.

From the outsourcing perspective, a partnership is acknowledged as a crucial element in the success of implementing outsourced systems. It focuses on the joint efforts of involved parties pooling resources to achieve mutual goals that would not be easily achieved individually (Al-Azad et al., 2022; Liu, 2021). Previous literature has proposed various partnership models. Klepper (1995) examined marketing literature to devise an IS partnership model. Lee and Kim (1999) incorporated social exchange theory and a political power perspective into their partnership model. Kern and Willcocks (2000) utilized organization theory, social exchange theory, and relational contract theory to elucidate interactions in outsourcing relationships.

Partnership quality reflects the extent of the relationship between two parties in finding the probability of continuous interchange between those parties in the future (Al-Azad et al., 2022; Lee & Kim, 1999). It encompasses the degree of collaboration between vendor and client teams during system implementation (Liu, 2021). Studies have indicated that factors such as information exchange, communication, and collaborative involvement positively impact the intensity of the relationship with the outsourcing vendor, thus affecting partnership quality (Kern & Willcocks, 2000; Lee & Kim, 1999). Partnership quality serves as a critical determinant of outsourcing success and is influenced by factors such as top management support, participation, information sharing, and communication (Al-Azad et al., 2022). However, while partnership quality is vital for outsourcing success, it may not be the sole determinant of the success of outsourced system implementation.

2.2 Client and Vendor Attributes Influencing System Implementation Success

Previous research has explored various factors contributing to the success of system implementation, including experience, skills, involvement, responsibility, top management support, system and information quality, management commitment, technology, and task characteristics (Bajaj et al., 2023; DeLone & McLean, 1992; Goodhue & Thompson, 1995). In the IS outsourcing context, studies often assess outsourcing success based on project outcomes and are guided by key factors like commitment (Levina & Su, 2008), a provider's and client's size (Handley & Benton, 2012), measurement complexity (Tate & Ellram, 2009), transaction type (Lee & Kim, 2010), a client's technical capabilities, readiness and transition management (Bajaj et al., 2023; McIvor et al., 2011), a provider's technical expertise and domain knowledge (Lacity et al., 2016), as well as contract details (Luo et al., 2010). However, there remains a lack of clarity on how these success factors, particularly the attributes of the parties involved in outsourcing, influence the success of implementing outsourced systems. To address this gap, the current study examines the success of outsourced system implementation through the perspective of four critical attributes of clients and vendors: client knowledge, which reflects the outsourcing comprehension of the client; client involvement, indicating the readiness of the client for outsourcing; vendor responsibility, signifying the commitment of the provider to service delivery; and vendor expertise, representing the technical capabilities and domain knowledge of the provider.

Client knowledge refers to clients' comprehension, allowing them to utilize outsourced services and fulfill their task requirements (Bajaj et al., 2023). During the system implementation phase, client knowledge about outsourced systems and process operations is necessary for a service provider to proficiently develop the outsourced system and deliver services aligning with the client's needs (Bardhan et al., 2007). Client involvement refers to the willingness of a client to engage an outsourcing provider by supplying and supporting necessary resources during the system implementation process (Bajaj et al., 2023; McIvor et al., 2011). Clients can assist vendors during system implementation by determining system requirements and capabilities, as well as offering the necessary information and resources to facilitate successful system implementation (Al-Azad et al., 2022).

Vendor responsibility refers to the willingness of an outsourcing provider to deliver services as promised and assist clients as needed (Navarro-Paule et al., 2023). Providers who can provide services at times promise to do so (core services) and promptly respond to clients' requirements (associated services) can strengthen the relationship with clients and ease the system implementation process (Kaipia & Tanskanen, 2003). Vendor expertise refers to an outsourcing provider's specialized knowledge of a client's services related to technical standards and best practices (Lacity et al., 2016). Providers who have experience in implementing similar outsourced systems and are familiar with a client's business operation can simplify the system implementation process and improve the ability to meet the client's requirements.

2.3 Success of Outsourced System Implementation

The effectiveness of outsourced system implementation is commonly evaluated based on system performance outcomes. Vendors typically assess implementation success by focusing on system outputs, such as the quantity of products or services delivered as specified in the service contract. However, outsourcing clients consider not only system outputs but also outcomes such as client/user satisfaction, service quality, and business impact (Liu et al., 2023). This research assesses system implementation success based on two primary outcomes: client satisfaction and performance impact. Client satisfaction is a multifaceted concept encompassing various dimensions. It can be understood as a client's positive or negative evaluative judgment about their work situation or as the perception of the difference between the rewards received and those expected (Ravari et al., 2012). Clients tend to experience higher satisfaction when they perceive progress toward their goals and feel capable of achieving them. In the context of information systems outsourcing, client satisfaction pertains to the extent to which clients believe that the available information system meets their information needs, including the reliability and accuracy of the output information produced by the system (Othman et al., 2023). Performance impacts can be defined broadly as the effects or consequences that a specific system has on the overall performance of an organization or its users (Jantaro & Badir, 2024). In the realm of information systems, performance impact refers to leveraging information technology to enhance efficiency, effectiveness, and quality. In essence, it encapsulates the influence of computer systems and services on users' effectiveness, productivity, and job performance (Goodhue & Thompson, 1995; Viswanathan et al., 2021).

3. Hypotheses and Research Model

Clients who possess a deep understanding of the outsourced system and the operational procedures of the organization can leverage this knowledge to make more precise decisions regarding the services they require from a service provider (Al-Azad et al., 2022). During the system implementation process, they can use such knowledge to monitor vendor performance and to warrant that their initial requirements are attained (Bajaj et al., 2023). Thus, they are more likely to utilize their knowledge and contribute to the implementation of the outsourced systems.

H1: Client knowledge has a positive effect on client involvement.

Clients can use their knowledge of the outsourced system and business processes to monitor and evaluate vendor performance (Bajaj et al., 2023; Karimi et al., 2007). According to the service level agreement, a vendor is responsible for performing the contractual services to meet clients' requirements and respond to performance evaluation results, which is a manifestation of vendor responsibility.

H2: Client knowledge has a positive effect on vendor responsibility.

Vendors are required to gather information about the organizational processes and needs of their clients in order to implement a client's system effectively. Clients who know how to supply vital information required by the vendors will be able to share their knowledge with vendors, leading to the improvement of partnership quality (Al-Azad et al., 2022).

H3: Client knowledge has a positive effect on partnership quality.

A vendor relies on client information to establish and enhance system performance based on the specific needs and expectations of the client (Bajaj et al., 2023). As a result, the knowledge provided by the client to meet the vendor's requirements is crucial for the successful execution of the outsourced system and the efficient delivery of user performance.

H4: Client knowledge has a positive effect on performance impacts.

Clients who join the outsourced implementation process will coordinate with an outsourcing provider (Lee & Kim, 1999). They can supply and support crucial resources and information for the vendor's requirements (Bajaj et al., 2023). This involvement strengthens the collaboration and trust between vendors and clients resulting in the improvement of the partnership quality.

H5: Client involvement has a positive effect on partnership quality.

Responsible vendors demonstrate a high level of commitment by providing timely support to clients, which fosters strong collaboration and positive relationships (Levina & Su, 2008). In addition, they pledge to deliver services within the agreed-upon timelines. This will promote client trust in vendor services resulting in the partnership quality (Al-Azad et al., 2022).

H6: Vendor responsibility has a positive effect on partnership quality.

Vendor expertise encompasses the specific knowledge a vendor possesses about a client's outsourced system (Bardhan et al., 2007). Vendors experienced in implementing similar systems can effectively address client inquiries and issues promptly, ensuring the fulfillment of service commitments (Levina & Su, 2008).

H7: Vendor expertise has a positive effect on vendor responsibility.

Clients will trust an expert vendor who has specialized knowledge and experience in implementing their outsourced systems. On the other hand, expert vendors can leverage their proficiency to carry out tasks efficiently and collaborate effectively with clients, thereby enhancing the quality of partnership (Navarro-Paule et al., 2023).

H8: Vendor expertise has a positive effect on partnership quality.

Partnership quality plays a crucial role in fostering collaboration between vendor and client teams to ensure the system performance meets user requirements and expectations (Lee & Kim, 1999). Moreover, partnership quality significantly relates to less risk and better project performance (Al-Azad et al., 2022).

H9: Partnership quality has a positive effect on performance impacts.

Partnership quality concerns the collaborative efforts of parties pooling their resources to achieve a mutual goal that could not be easily achieved by each party (Hancox & Hackney, 2000). Partnership through the alignment of IT competencies between parties is a key driver of user satisfaction in IS implementations (Klepper, 1995)

H10: Partnership quality has a positive effect on client satisfaction.

Clients will be satisfied with the outsourced system if they can use the system to improve their work quality and productivity (Goodhue & Thompson, 1995). In other words, the more clients can derive expected benefits from the outsourced system, the more they will be satisfied with the system.

H11: Performance impact has a positive effect on client satisfaction.

Accordingly, the research model is constructed based on the causal relationships between the model variables specified in each hypothesis, as shown in Fig. 1.
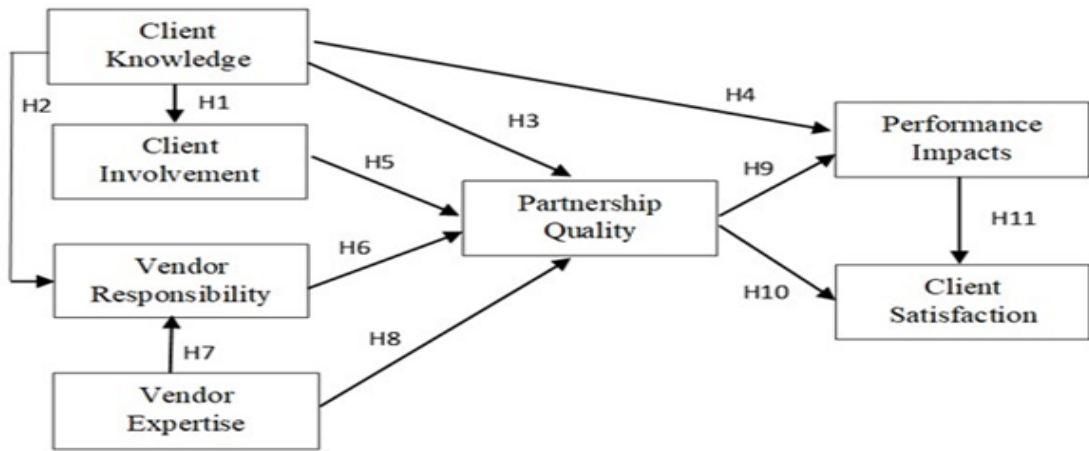

Fig. 1 *Research Model*

4. Methodology

This study utilized a survey method, employing a structured questionnaire to collect data. The research model variables were adapted from previous literature, as indicated in Table 1. The questionnaire comprised two sections. The first section gathered respondents' perceptions regarding the model variables using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The second section gathered demographic details from respondents, including age, job position, work unit, and experience with ERP usage.

Table 1 *Descriptions of Model Variables*

Variables	Description	References
Client Knowledge	The understanding held by clients empowers them to use outsourced services and meet their task requirements effectively. This includes comprehension of ERP applications, organizational operations, and ERP system management.	Adapted from Bassellier et al. (2003)
Client Involvement	The willingness of a client to engage an outsourcing provider involves supplying and supporting necessary resources during the system implementation process. This includes activities such as deciding the ERP system requirements and specifying the input/output functions of the ERP system.	Adapted from Karimi et al. (2007) and McIvor et al. (2011)
Vendor Expertise	The outsourcing provider's specialized knowledge of a client's services pertains to technical standards and best practices. This encompasses an in-depth understanding of implementing ERP systems and specific applications within ERP systems, as well as knowledge of the client's process functions.	Adapted from Bardhan et al. (2007) and Lacity et al. (2016)
Vendor Responsibility	The commitment of an outsourcing provider to deliver services as promised and support clients as necessary. This includes offering prompt service and proving a willingness to assist clients whenever needed.	Adapted from Kaipia & Tanskanen (2003)
Partnership Quality	The extent of the relationship between two parties in finding the probability of continuous interchange between those parties in the future. This includes factors such as infrequent conflicts with service providers, trust in the relationship, and keeping a long-term association with ERP service providers.	Adapted from Kern & Willcocks (2000) and Lee & Kim (1999)
Performance Impact	The effects or consequences that a specific system has on the overall performance of organizational users, such as improving the quality of work, reducing error rates, and enhancing effectiveness in client operations.	Adapted from Goodhue & Thompson (1995)
Client Satisfaction	The extent to which clients believe that the available information system meets their information needs and expectations. Examples of this include ERP systems fulfilling intended functional requirements and meeting client expectations.	Adapted from Ravari et al. (2012)

4.1 Data Collection

Data was collected using a purposive sampling technique from 12 companies that have successfully outsourced their ERP systems. Questionnaires were directly given to individuals designated by their companies to complete the survey. All respondents were users of a company's ERP system, including senior managers, department managers, and department users. An incentive was offered to encourage a higher rate of completed responses. A total of 495 questionnaires were distributed and returned within a month. Following the removal of missing and outlier responses, 435 questionnaires, accounting for 88 percent, were used for further

analysis. This sample size surpasses the recommended threshold of 200. It is more than 20 times the value of the study parameters, suggesting the appropriateness of utilizing the structural equation modeling (SEM) technique (Kline, 2023). Table 2 demonstrates that the skewness and kurtosis of observed variables fall within the absolute limits of 3 and 8, respectively. This indicates a normal distribution and supports the use of maximum likelihood estimation for SEM analysis (Kline, 2023).

Table 2 *Descriptive Statistics*

Variables	Mean	Skewness	Kurtosis	Variables	Mean	Skewness	Kurtosis
CIV1	3.9701	-.688	1.493	PNQ1	4.4138	-.630	-.581
CIV2	3.8736	-.557	.546	PNQ2	4.1862	-.591	-.535
CIV3	3.8437	-.177	-.231	PNQ3	4.3195	-.881	-.216
CKN1	4.1218	-.301	-.793	PNQ4	4.3977	-1.096	.769
CKN2	3.9540	-.185	-.721	PNQ5	4.3126	-.556	-.660
CKN3	4.1793	-.179	-.636	PFI1	4.4023	-.533	.144
VRP1	3.8552	-.324	.208	PFI2	4.6713	-1.064	-.120
VRP2	3.7632	-.536	-.026	PFI3	4.4667	-.606	-.574
VRP3	4.3310	-.966	-.137	PFI4	4.7034	-1.201	.172
VEP1	4.5931	-1.416	1.752	PFI5	4.6253	-.783	-.782
VEP2	4.0276	-.857	.897	CSF1	4.2851	-.390	-.767
VEP3	4.4621	-.759	1.839	CSF2	4.0782	-.086	.108
				CSF3	4.2506	-.427	.737

CIV = Client Involvement; CKN = Client Knowledge; VRP = Vendor Responsibility; VEP = Vendor Expertise; PNQ = Partnership Quality; PFI = Performance Impact; CSF = Client Satisfaction

4.2 Respondent Profile

The demographic characteristics of the respondents, as shown in Table 3, indicate that 53.8 percent of respondents are female, with 75.1 percent aged between 20 and 35 years. The majority of respondents are department staff who regularly use ERP systems (84.3 percent). Among them, 35 percent primarily work in logistics departments, while 23.4 percent are in production departments. Additionally, 61 percent of respondents have more than three years of experience using ERP systems.

Table 3 *Respondent Profile*

Items	Frequency	Percent	Items	Frequency	Percent
Gender			*Industry*		
Male	201	46.2	Glass	106	24.4
Female	234	53.8	Plastic	107	24.6
			Food	115	26.4
			Service	107	24.6
Age			*Department*		
20-24 years	16	3.6	Accounting	81	18.6
25-30 years	179	41.2	Logistic	152	35
31-35 years	132	30.3	Sales/Marketing	67	15.4
36-40 years	47	10.8	Purchasing	33	7.6
> 40 years	61	14.1	Production	102	23.4
Position			*ERP Exp.*		
Sen. Mgr.	12	2.76	1-3 years	170	39
Dept. Mgr.	56	12.87	3-5 years	131	30.1
Dept. Staff	367	84.37	5-10 years	80	18.4
			>10 years	54	12.5

4.3 Data Analysis

The structural equation modeling (SEM) method is used to analyze the research model. SEM allows for the examination of causal relationships between variables, enhancing the understanding of their overall performance. Traditional statistical methods, such as correlation and regression, often fall short when dealing with complex multivariate relationships. SEM effectively integrates factor analysis and multiple regression to investigate interactions among multiple variables (Jöreskog, 1970). It allows for the simultaneous use of multiple indicator variables for each construct, leading to more precise conclusions at the construct level (Hair et al., 2019). Thus, utilizing SEM in this study is beneficial for investigating the multivariate and causal relationships between partnership quality and the four attributes of clients and vendors in relation to the two success factors of outsourced ERP system implementation.

SEM involves assessing both a measurement model and a structural model. The measurement model evaluates the relationships between latent variables and observed variables. Meanwhile, the structural model investigates path analysis and the causal impacts of the latent variables. In this study, the analysis of moment structures (AMOS) software was employed to analyze both the measurement model and the structural model. AMOS provides researchers with the tools necessary to conduct comprehensive structural equation modeling analyses, facilitating the examination of complex relationships among variables and the assessment of model fit.

4.3.1 Measurement Model Analysis

A confirmatory factor analysis was employed to examine whether the observed data conform to a measurement model, focusing on model-fit indices, construct reliability, convergent validity, and discriminant validity. Following the removal of observed variables with standardized regression weights below 0.5 from each model variable, the model-fit indices in Table 4 reach the suggested thresholds, indicating the consistency of the observed data with the model.

Table 4 *Model-fit Results of the Measurement Model*

Fit indices	χ^2/df	GFI	NFI	CFI	IFI	RMSEA
Suggested value	< 3.0	> 0.9	> 0.9	> 0.9	> 0.9	< 0.08
Measured value	2.30	0.93	0.94	0.96	0.96	0.05

Construct reliability was assessed using composite reliability (CR), where a CR value exceeding 0.7 indicates acceptable reliability (Hair et al., 2019). As shown in Table 5, all CR values ranging from 0.72 to 0.91 surpass the threshold, demonstrating the satisfactory reliability of the model variables. Convergent validity was assessed through the average variance extracted (AVE) with an AVE value exceeding 0.5, indicating the level of acceptable convergent validity (Hair et al., 2019). Table 5 shows that all AVE values ranging from 0.58 to 0.80 surpass the threshold, confirming the acceptable convergent validity. Discriminant validity was estimated by contrasting the correlation between variables with the square root of the AVE. As indicated in Table 5, the square roots of AVE (diagonal elements) are greater than the correlation values of any two variables (off-diagonal elements), indicating acceptable discriminant validity (Kline, 2023).

Table 5   *Construct Reliability and Validity*

	CR	AVE	CKN	CIV	VEP	VRP	PNQ	PFI	CSF
CKN	0.86	0.67	0.82						
CIV	0.91	0.79	0.46	0.89					
VEP	0.72	0.58	0.25	0.18	0.76				
VRP	0.89	0.80	0.42	0.30	0.47	0.90			
PNQ	0.85	0.66	0.39	0.31	0.37	0.46	0.81		
PFI	0.88	0.70	0.31	0.23	0.08	0.26	0.32	0.84	
CSF	0.85	0.65	0.22	0.27	0.12	0.18	0.34	0.57	0.80

Diagonal elements are the square root of AVE. Off-diagonal elements are the correlation between any two constructs.

4.3.2 Structural Model Analysis

The structural model depicted in Fig. 2 illustrates the analysis findings of the proposed model. It reveals that all causal relationships among model variables are significant (p<.05), and 34 percent of the variance in client satisfaction can be explained by other model variables. Additionally, all model-fit indices meet the recommended values, indicating that the model fits well with the data.
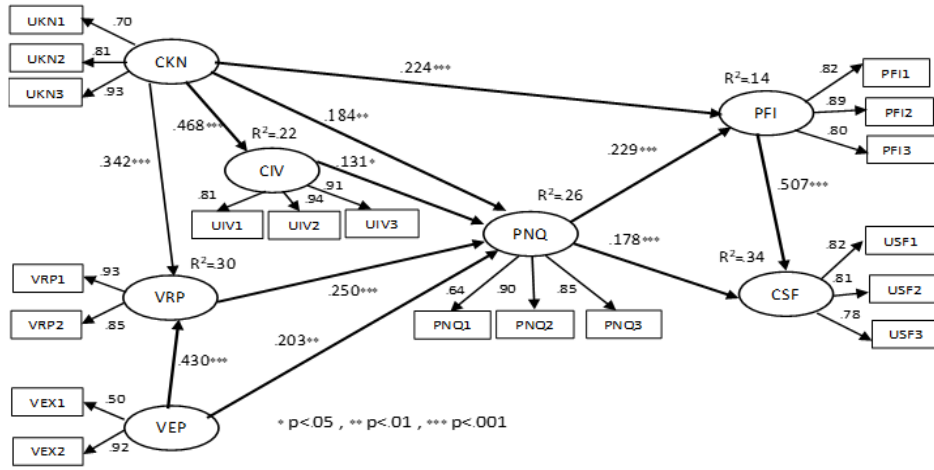
Model-Fit Indices: $\chi 2/df$=2.44, GFI=0.92, NFI=0.93, CFI=0.96, IFI=0.96, RMSEA=0.06

Fig.2 *Structural Model and Testing Results*

5.   Discussion

The results show that client knowledge of the outsourced ERP system and organizational operation promotes clients to be actively involved in the ERP system implementation (H1: supported). Clients leverage their knowledge to oversee and assess vendor performance, prompting vendors to assume greater responsibility for their performance (H2: supported). Moreover, clients utilize their knowledge to communicate and collaborate effectively with the vendor team during the implementation process, thereby enhancing partnership quality (H3: supported). Client knowledge of ERP systems and organizational operations enables clients to utilize the ERP system more effectively in their work processes. This knowledge positively impacts performance outcomes (H4: supported). Moreover, clients who actively engage in the system implementation process prompt vendors to provide quick responses to their requirements, thereby enhancing vendor responsibility (H5: supported).

A responsible vendor fulfills service commitments as agreed upon and promptly communicates any unforeseen issues that may impact client requirements. This fosters trust and strengthens client relationships, thereby enhancing partnership quality (H6: supported). Vendor expertise in implementing ERP systems and handling business processes enables a vendor to provide contractual services as promised and respond to contingencies during a system implementation process more effectively, demonstrating vendor responsibility. Accordingly, vendor expertise positively influences vendor responsibility (H7: supported). In addition, vendor expertise builds client trust and facilitates collaboration during the system implementation process, thereby improving partnership quality. As a result, vendor expertise positively influences partnership quality (H8: supported).

In many cases of system implementation projects, contingent issues such as software problems and additional functional requirements take place during the implementation process. Strong cooperation and trust in each other, manifesting partnership quality, are crucial to

resolving these contingent issues effectively. This, in turn, enhances client performance associated with work quality and productivity. Accordingly, partnership quality positively affects performance impacts (H9: supported). During the implementation process, effective collaboration between both parties enables vendors to implement the ERP system to meet client expectations effectively, thereby enhancing client satisfaction. Accordingly, partnership quality influences client satisfaction (H10: supported). Finally, when an outsourced ERP system implemented by a vendor enhances clients' productivity and work quality, clients are satisfied with the outsourced system (H11: supported). In addition, findings from the path analysis (Fig. 2) indicate that the overall effect of performance impacts on client satisfaction (0.507) is stronger than the total effect of partnership quality on client satisfaction ((0.229x0.507)+0.178=0.294)). This indicates that client satisfaction is more significantly influenced by performance impacts rather than the partnership quality.

6.   Implications of the Study

This study provides important implications for both theory and practice. The implications for practice consist of the practical implications for outsourcing clients and vendors.

6.1 Implications for Theory

The study provides three theoretical implications. Firstly, this study proposes a new framework to understand the success of outsourced system implementation. Particularly, it hypothesizes causal relationships between partnership quality and the attributes of clients and vendors. It explores their influence on the success of outsourced ERP system implementation concerning performance impacts and client satisfaction. Secondly, this research contributes to our understanding of how client and vendor attributes—specifically client knowledge, client involvement, vendor expertise, and vendor responsibility—affect partnership quality. Among these attributes, client knowledge has the greatest impact on partnership quality, with a coefficient of 0.33 (refer to Table 6). Following this, vendor expertise, vendor responsibility, and client involvement contribute coefficients of 0.31, 0.25, and 0.13, respectively. Finally, this study provides insight into how clients are satisfied with the outsourced system implementation. The findings reveal that both partnership quality and performance impact contribute to enhancing client satisfaction. Nonetheless, performance impact exerts a stronger influence on client satisfaction compared to partnership quality. This suggests that clients prioritize the tangible benefits and outcomes derived from the system over the collaborative aspects of how the system operates.

Table 6 *Effects of Client and Vendor Attributes on Partnership Quality*

Relationship	Direct effect	Indirect effect	Total Effect
CKN→ PNQ			0.330
CKN→PNQ	0.184		
CKN→CIV→PNQ		0.468 x 0.131	
CKN→VRP→PNQ		0.342 x 0.250	
CIV→PNQ	0.131		0.131
VRP→PNQ	0.250		0.250
VEP→PNQ			0.310
VEP→PNQ	0.203		
VEP→VRP→PNQ		0.43 x 0.25	

6.2 Implications for Practice

The study provides three practical implications for outsourcing clients. Firstly, this study suggests that client teams should possess sufficient knowledge to effectively support vendor teams in implementing the outsourced system and fulfilling client expectations. In addition, clients can use their knowledge to monitor and evaluate vendor performance according to contractual agreements. As a result, client organizations should prioritize training programs to enhance their staff's knowledge and assign knowledgeable individuals to participate in the outsourced system implementation. Secondly, the study recommends that client organizations foster high-quality partnerships built on trust and robust collaboration to drive the success of the outsourced system implementation. In this light, the organizations should encourage their staff to help and support vendor teams throughout the implementation process. Establishing mutual benefits and conducting regular meetings with vendors is also crucial to strengthen collaboration and partnership quality. Thirdly, the study advises that client organizations should carefully select a service provider with extensive experience in implementing a similar client system. Vendor expertise in outsourced system implementation ensures the vendor's ability to cope with client requirements effectively and enhances the possibility of a system implementation success.

This study also provides two practical implications for outsourcing vendors. Firstly, vendors should improve partnership quality during the system implementation process, as the result shows that the success of outsourced system implementation (performance impacts and client satisfaction) depends on partnership quality. To improve the partnership quality, vendors should uphold high levels of responsibility in delivering their services as agreed and promptly address client inquiries. In addition, vendor expertise in outsourced system implementation plays a crucial role in fostering client trust and improving partnership quality. Secondly, vendors should prioritize enhancing client satisfaction by improving the performance of the implemented system. According to the findings, the performance impacts on users' work quality and productivity have the most significant effect on client satisfaction. It is essential for vendors to provide a highly efficient system that enhances their client's performance, which can include factors like user-interface design and system availability. Moreover, vendors can offer more value-added services on their implemented system such as new functionalities and applications to create new client experiences that contribute to satisfaction.

7.   Conclusion and Limitations

This study proposes a new research model to better understand ERP implementation success by focusing on partnership quality and the attributes of both clients and vendors—specifically client knowledge, client involvement, vendor responsibility, and vendor expertise. The model seeks to explain the success of outsourced ERP system implementation in terms of performance outcomes and client satisfaction. The findings reinforce previous research indicating that client attributes, including knowledge and involvement, influence partnership quality (Al-Azad et al., 2022). The study also suggests that client knowledge not only affects vendor responsibility, as noted by Bajaj et al. (2023), but also directly impacts performance outcomes. Additionally, it asserts that vendor attributes, including expertise and responsibility, play a significant role in shaping partnership quality. While previous studies, such as those by Al-Azad et al. (2022) and Lee & Kim (1999), highlight the importance of partnership quality as a key factor for outsourcing success, this study argues that clients are more concerned with the performance impacts they can achieve from the system rather than on how partnership quality can help make the system function effectively. The study makes a valuable contribution to the IS outsourcing success literature by offering new insights into the factors that influence client satisfaction in outsourced ERP system implementation. It provides guidance to outsourcing clients on managing aspects to enhance partnership quality and advises outsourcing vendors on strategies to improve client performance and satisfaction.

This study has two noteworthy limitations, which should be further considered in future studies. Firstly, the study solely focuses on the success of outsourced ERP system implementation. Since each system possesses unique attributes and requires varied implementation strategies, it is advisable to reassess the research model by incorporating the implementation of other systems to enhance its applicability across different contexts. In contrast, all variables in the model demonstrate satisfactory levels of reliability and validity; a few indicators for certain variables may not sufficiently capture the essence of those variables. Future research is recommended to incorporate a broader range of indicators for each model variable and to re-evaluate the validity and reliability of these variables.

References

Al-Azad, M. S., Mohiuddin, M., & Su, Z. (2022). The client and service provider relationship in IT outsourcing project success: The moderating effects of organizational attitudes on knowledge sharing and partnership quality. *Journal of Global Information Management, 30*(1), 1–27. https://doi.org/DOI: 10.4018/jgim.299325

Bajaj, A., Leonard, L. N. K., & Sun, L. (2023). Client Peripheral Knowledge and Outsourcing Project Outcomes. *Journal of Computer Information Systems*, 1–13. https://doi.org/ 10.1080/08874417.2023.2291156

Bardhan, I. R., Mithas, S., & Lin, S. (2007). Performance impacts of strategy, information technology applications, and business process outsourcing in U.S. manufacturing plants. *Production and Operations Management, 16*(6), 747–762. https://doi.org/10.1111/j.1937-5956.2007.tb00293.x

Bassellier, G., Benbasat, I., & Reich, B. H. (2003). The influence of business managers' IT competence on championing IT. *Information Systems Research, 14*(4), 317–336. https://doi.org/ 10.1287/isre.14.4.317.24899

Bennett, R. J., & Krebs, G. (1994). Local Economic Development Partnerships: An Analysis of Policy Networks in EC-LEDA Local Employment Development Strategies. *Regional Studies, 28*(2), 119–140. https://doi.org/10.1080/00343409412331348126

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research, 3*(1), 60–95. https://doi.org/10.1287/isre.3.1.60

Goodhue, D. L., & Thompson, R. (1995). Task-Technology fit and individual performance. *Management Information Systems Quarterly, 19*(2), 213–236. https://doi.org/10.2307/249689

Hair J. F., Babin B. J., Black W.C., & Anderson R. E. (2019). *Multivariate Data Analysis* (8th ed.). Cengage.

Hancox, M., & Hackney, R. (2000). IT outsourcing: frameworks for conceptualizing practice and perception. *Information Systems Journal, 10*(3), 217–237. https://doi.org/10.1046/j.1365-2575.2000.00082.x

Handley, S. M., & Benton, W. C. (2012). Mediated power and outsourcing relationships. *Journal of Operations Management, 30*(3), 253–267. https://doi.org/10.1016/j.jom.2011.11.004

Jantaro, N., & Badir, Y. F. M. (2024). The performance impact of digital technology adoption in procurement: A case study of the manufacturing industry in the Eastern Economic Corridor, Thailand. *Uncertain Supply Chain Management*, 12(1), 151–158. https://doi.org/10.5267/j.uscm.2023.10.009

Kaipia, R., & Tanskanen, K. (2003). Vendor managed category management—an outsourcing solution in retailing. *Journal of Purchasing and Supply Management, 9*(4), 165–175. https://doi.org/10.1016/s1478-4092(03)00009-8

Karimi, J., Somers, T., & Bhattacherjee, A. (2007). The impact of ERP implementation on business process outcomes: A factor-based study. *Journal of Management Information Systems, 24*(1), 101–134. https://doi.org/10.2753/MIS0742-1222240103

Kern, T., & Willcocks, L. P. (2000). Exploring information technology outsourcing relationships: theory and practice. *Journal of Strategic Information Systems, 9*(4), 321–350. https://doi.org/10.1016/s0963-8687(00)00048-2

Kiran, T. S., & Reddy, A. D. (2019). Critical success factors of ERP implementation in SMEs. *Journal of Project Management, 4*(4), 267–280. https://doi.org/10.5267/j.jpm.2019.6.001

Klepper, R. (1995). The management of partnering development in I/S outsourcing. *Journal of Information Technology, 10*(4), 249–258. https://doi.org/10.1057/jit.1995.28

Kline, R. B. (2023). *Principles and practice of structural equation modeling.* Guilford.

Lacity, M. C., Khan, S. A., & Yan, A. (2016). Review of the empirical business services sourcing literature: An update and future directions. *Journal of Information Technology, 31*(3), 269–328. https://doi.org/10.1057/jit.2016.2

Lee, J. N., & Kim, T. G. (1999). Effect of partnership quality on IS Outsourcing Success: Conceptual framework and empirical validation. *Journal of Management Information Systems, 15*(4), 29–61. https://doi.org/10.1080/07421222.1999.11518221

Lee, R. P., & Kim, D. (2010). Implications of service processes outsourcing on firm value. *Industrial Marketing Management, 39*(5), 853–861. https://doi.org/10.1016/j.indmarman.2010.01.002

Levina, N., & Su, N. (2008). Global multisourcing strategy: The emergence of a supplier portfolio in services offshoring. *Decision Sciences, 39*(3), 541–570. https://doi.org/10.1111/j.1540-5915.2008.00202.x

Liu, H. M. (2021). Effect of partnership quality on SMEs success: Mediating role of coordination capability and organisational agility. *Total Quality Management and Business Excellence, 32*(15–16), 1786–1802. https://doi.org/10.1080/14783363.2020.1773782

Liu, Y. C., Huang, C. M. K., Chang, Y. S., Lin, H. M., & Chen, P. L. (2023). An integrative model of information processing and contextual factors on exploring information systems outsourcing success. *Asia Pacific Management Review, 28*(3), 327–335. https://doi.org/10.1016/j.apmrv.2022.12.001

Luo, Y., Zheng, Q., & Jayaraman, V. (2010). Managing business process outsourcing. *Organizational Dynamics, 39*(3), 205–217. https://doi.org/10.1016/j.orgdyn.2010.03.005

McIvor, R., McCracken, M., & McHugh, M. (2011). Creating outsourced shared services arrangements: Lessons from the public sector. *European Management Journal, 29*(6), 448–461. https://doi.org/10.1016/j.emj.2011.06.001

Navarro-Paule, A.J., Romerosa-Martínez, M.M. and Lloréns-Montes, F.J. (2023). IT vendor integration as catalyst of IT outsourcing success. *Journal of Business & Industrial Marketing, 38*(10), 2240-2258. https://doi.org/10.1108/JBIM-10-2021-0491

Othman, H., Mahalingam, K., Gunasekaran, S., Nyanaprakasam, V. D., & Ravintharan, S. (2023). Job Satisfaction Among Employees in a Business Process Outsourcing Company. *International Journal of Business and Technology Management, 5*(3), 619–624. https://doi.org/10.55057/ijbtm.2023.5.3.52

Ravari, A., Mirzaei, T., Kazemi, M., & Jamalizadeh, A. (2012). Job satisfaction as a multidimensional concept: A systematic review study. *Journal of Occupational Health and Epidemiology, 1*(2), 95–102. https://doi.org/10.18869/acadpub.johe.1.2.95

Sellgren, J. (1990). Local economic development partnerships — An assessment of local authority economic development initiatives. *Local Government Studies, 16*(4), 57–78. https://doi.org/10.1080/03003939008433537

Tate, W. L., & Ellram, L. M. (2009). Offshore outsourcing: a managerial framework. *Journal of Business & Industrial Marketing, 24*(3/4), 256–268. https://doi.org/10.1108/08858620910939804

Viswanathan, M., Mukherji, P., Narasimhan, O., & Chandy, R. (2021). The Performance Impact of Core-Component Outsourcing: Insights from the LCD TV Industry. *Journal of Marketing Research, 58*(4), 801–826. https://doi.org/10.1177/00222437211010766

Boonlert Watjatrakul
School of Information Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand
E-mail address: boonlert@it.kmitl.ac.th
Major area(s): E-commerce Adoption, IS Outsourcing, Enterprise System Implementation

Vimolluck Vatanapitukpong
IT Consultant, I Flex Co., Ltd.   Bangkok, Thailand
E-mail address: vimolluckv@gmail.com
Major area(s): Enterprise System Implementation, IS Success, Project Management