



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

University of Wollongong
Research Online

Faculty of Engineering and Information Sciences -
Papers: Part B

Faculty of Engineering and Information Sciences

2018

Assessing the Determinants of Business Value Related to IT Projects: A Strategic Alignment Perspective of Public-Sector Organisations in Saudi Arabia

Abdulaziz Alghazi

University of Wollongong, aa485@uowmail.edu.au

Tingru Cui

University of Wollongong, tingru@uow.edu.au

Samuel Fosso Wamba

University of Toulouse

Mengxiang Li

Hong Kong Baptist University, mli@uow.edu.au

Jun Shen

University of Wollongong, jshen@uow.edu.au

Publication Details

Al-Ghazi, A., Cui, T., Fosso, S., Li, M. & Shen, J. (2018). Assessing the Determinants of Business Value Related to IT Projects: A Strategic Alignment Perspective of Public-Sector Organisations in Saudi Arabia. 29th Australasian Conference on Information Systems (ACIS2018) (pp. 29-1-29-7). Australia: ACIS

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library:
research-pubs@uow.edu.au

Assessing the Determinants of Business Value Related to IT Projects: A Strategic Alignment Perspective of Public-Sector Organisations in Saudi Arabia

Abstract

Strategic alignment is considered an important construct in the study of business value related to IT projects. The proposed research study aims to identify and analyse the key determinants of business value related to IT projects using a business/IT strategy alignment perspective in Saudi public-sector organisations. The study will utilise a mixed methods design that includes a sample of senior managerial staff drawn from the financial and economic sectors in Saudi Arabia. Qualitative data will be collected via semi-structured interviews (n=15-20 participants) and quantitative data will be collected via survey (n=150-200 participants). Quantitative data will be analysed using SmartPLS software and qualitative data will be analysed using the NVivo software. The key findings from the data set will be discussed in depth to provide a deeper understanding of the determinants of business value related to IT projects from a strategic alignment perspective in public-sector organisations in Saudi Arabia.

Disciplines

Engineering | Science and Technology Studies

Publication Details

Al-Ghazi, A., Cui, T., Fosso, S., Li, M. & Shen, J. (2018). Assessing the Determinants of Business Value Related to IT Projects: A Strategic Alignment Perspective of Public-Sector Organisations in Saudi Arabia. 29th Australasian Conference on Information Systems (ACIS2018) (pp. 29-1-29-7). Australia: ACIS

Assessing the Determinants of Business Value Related to IT Projects: A Strategic Alignment Perspective of Public-Sector Organisations in Saudi Arabia

Abdulaziz Al-Ghazi

School of Computing and information technology
University of Wollongong
Australia-NSW
Email: aa485@uowmail.edu.au

Tingru Cui

School of Computing and information technology
University of Wollongong
Australia-NSW
Email: tingru@uow.edu.au

Samuel Fosso

Toulouse Business School
France- Toulouse
Email: fossowam@gmail.com

Mengxiang Li

Hong Kong Baptist University
Hong Kong
Email: mengxiang.li85@gmail.com

Jun Shen

School of Computing and information technology
University of Wollongong
Australia-NSW
Email: jshen@uow.edu.au

Abstract

Strategic alignment is considered an important construct in the study of business value related to IT projects. The proposed research study aims to identify and analyse the key determinants of business value related to IT projects using a business/IT strategy alignment perspective in Saudi public-sector organisations. The study will utilise a mixed methods design that includes a sample of senior managerial staff drawn from the financial and economic sectors in Saudi Arabia. Qualitative data will be collected via semi-structured interviews (n=15-20 participants) and quantitative data will be collected via survey (n=150-200 participants). Quantitative data will be analysed using SmartPLS software and qualitative data will be analysed using the NVivo software. The key findings from the data set will be discussed in depth to provide a deeper understanding of the determinants of business value related to IT projects from a strategic alignment perspective in public-sector organisations in Saudi Arabia.

Keywords: Business and IT strategy alignment, digital transformation strategy, IT governance mechanisms, top management support, quality of IT project planning, public sector, Saudi Arabia.

1 INTRODUCTION

1.1 Introduction

Strategic alignment is considered an important area of focus in the study of business value related to Information Technology (IT) projects (Coltman et al. 2015; Dulipovici and Robey 2013; Gerow et al. 2014). It is therefore not surprising that this topic has remained a top management (TM) priority for business and IT executives (Gerow et al. 2014; Gerow et al. 2015; Wu et al. .,2015). Indeed, business-IT strategic alignment is an enabler of business performance (Coltman et al. 2015; Cui et al. 2015) and a factor of critical importance and continuous challenge within the information systems (IS) discipline (Gerow et al. 2014; Luftman and Derksen 2012). As stated by Coltman et al. (2015) “organizations will perform well when key IT resources – physical IT infrastructure components, technical and managerial IT skills, and knowledge assets – are aligned with business strategy and when appropriate structures are used to supervise the deployment and effective management of these resources.”

Indeed, the value of IT projects to Saudi public sector organisations is well established. Al-Khowaiter, Dwivedi and Williams (2015) for instance point to benefits of well-aligned business-IT goals related to enhanced competitiveness due to improvements in resource uses as well as more streamlined human resource management procedures. Indeed, the management of information is increasingly crucial to modern human resource function in public organisations (Al-Khowaiter et al., 2015). It is therefore not surprising that the “creation of agile public organisations (Saudi Ministry of Economy and Planning, 2017). is central to the National Transformation Program 2020 and the Kingdom’s Vision 2030. Such agility emerges from improved operational efficiency, in which IT projects have a central role. It is for this reason that the Saudi governments has commitment to increase its investments in IT systems (Saudi Government n.d.). Public sector organisations in Saudi Arabia also recognise the value of IT projects to facilitate higher quality and more effective service delivery. New ICTs increasingly provide Saudi government organisations particularly with greater capacity of citizen engagement alongside more efficient operational outcomes. As Al-Barrak, Carr and Ryan (2016) state, the Saudi government “realises the enormous benefits” of ICTs and understands the importance of business-IT goal alignment in public sector organisations to its efforts to invigorate the public sector.

Although prior research has proposed a set of useful theoretical viewpoints for understanding strategic alignment, very few studies have been directed towards the role of IT projects in the context of strategic alignment assessment. Therefore, this research is an initial attempt to bridge the existing knowledge gap in the literature. More specifically, this research draws on prior studies on strategic alignment to answer the following research questions:

1.2 Research Questions

1. What is the impact of IT governance mechanisms on Business-IT strategic alignment in the context of IT projects?
2. What are the effects of TM characteristics (e.g. TM support, TM knowledge of IT, TM participation in business planning, and participation in strategic IT planning) on Business-IT strategic alignment and IT governance mechanisms in the context of IT projects?
3. What is the impact of Business-IT strategic alignment on the quality of IT project planning and for moderating the impact of organisational characteristics on this relationship?
4. What is the impact of the quality of IT project planning on IT project outcomes (organisational performance, service innovation, and operational excellence)?

1.3 Significance of the Research Problem

One of the leading factors contributing to the failure of IT projects is misalignment between the IT and business strategy (Alsudiri et al. 2013). As Barnes (2017) explains, a key reason for the misalignment to occur is the limited information available to IT business leaders regarding the nature of the relationship between project alignment, performance outputs, and successful project outcomes. The successful implementation of IT projects is an issue of relevance to SA. There are presently a range of technological, cultural, organisational, and social issues facing the SA government in its efforts to implement its National e-Government Strategy. However, only a limited number of studies have focused on how organisations achieve the alignment between IT and business strategies while developing or implementing IT projects. This study is therefore important to address business/IT strategy alignment/misalignment issues for public-sector organisations in SA and developing countries. The findings may also be valuable to the Saudi government during the implementation of the national

strategy to increase productivity and efficiency outcomes for public-sector organisations as part of the initiative to diversify the economy.

2 LITERATURE REVIEW

2.1 Gaps in our Academic Understanding

A review of the literature revealed a general lack of understanding and analysis of how different industries compare in relation to Business-IT strategy alignment issues and their resolution. The studies of strategic alignment reviewed primarily focused on a specific industry or workplace setting; for example, project management in telecommunications companies (Alsudiri et al. 2013), business performance in e-commerce industries (Schniederjans and Cao 2009), and governance factors in the banking sector (Reynolds and Yetton 2015). Comparative studies on strategic alignment across different business sectors and industries will therefore help to explain the primary catalysts of Business-IT strategy alignment as well as expand our understanding of potential solutions to Business-IT strategy alignment issues.

Furthermore, the absence of integrated IT strategies with business goals and objectives is always associated with a lack of IT credibility and a subsequent reduction in IT investment. As a result, proactive systems are created within a corporation instead of reactive ones (El-Telbany and Elragal 2014). In turn, a key finding to emerge from a review of the literature is that IT planning and shared domain knowledge such as TM knowledge of IT, TM participation in business planning, and participation in strategic IT planning are important factors when assessing the impacts of contextual factors on Business-IT strategic alignment.

2.2 Theoretical Perspectives of Strategic Alignment

Various theoretical perspectives have been applied in the study of strategic alignment including the RBV (Barney, 1991) and Dynamic Capability (DC) approach.

2.2.1 Resource based view, dynamic capability and knowledge view

The RBV was developed by Barney (1991) as a strategic tool to facilitate understanding of the source of a firm's competitive advantage. He argued that to create and sustain a competitive advantage a firm should possess resources that are valuable, rare, inimitable and non-substitutable (VRIN). The RBV has been extensively used in IS research to identify IT resources leading to improved organizational performance (Guangming Cao et al., 2016; Ravichandran and Lertwongsatien 2005). For instance, Park et al. (2017) used the RBV to conceptualize internal and external IT governance. Then, they proposed three alignment types between approaches to governance and assess their impact on organizational performance and found a hierarchy-based alignment structure improves the operational efficiency of firms.

The Dynamic Capability (DC) approach was proposed by Teece et al. (1997) as an extension of the RBV to explain how a firm creates and sustains a competitive advantage in dynamic and turbulence environments. The DC has proven to be a valuable theory in IS (Bradley 2002; Paul and Omar 2006, 2010; Shaker and Gerard 2002).

2.2.2 IT governance and top management literature

Governance of IT primarily deals with the effective use of IT (Wu et al. 2015) and usually falls under the responsibility of a firm's TM and board of directors (Turel et al. 2017). Drawing on IT governance and the RBV, Wu et al. (2015) developed a model that suggests IT governance mechanisms influence IS strategic alignment, which in turn influences organizational performance. The authors found "a positive, significant, and impactful linkage between IT governance mechanisms and strategic alignment and, further, between strategic alignment and organizational performance" (Wu et al. 2015 p. 497). Turel et al. (2017) studied the key determinants that help translate IT governance approaches by the board of directors into improved organisational performance. Drawing on two empirical studies, the authors found that "strategic alignment partially mediates the effect of board-level IT governance on performance" (p. 117).

2.3 Proposed Research Model

Drawing on the above discussion, the following research model was developed (see Figure 1):

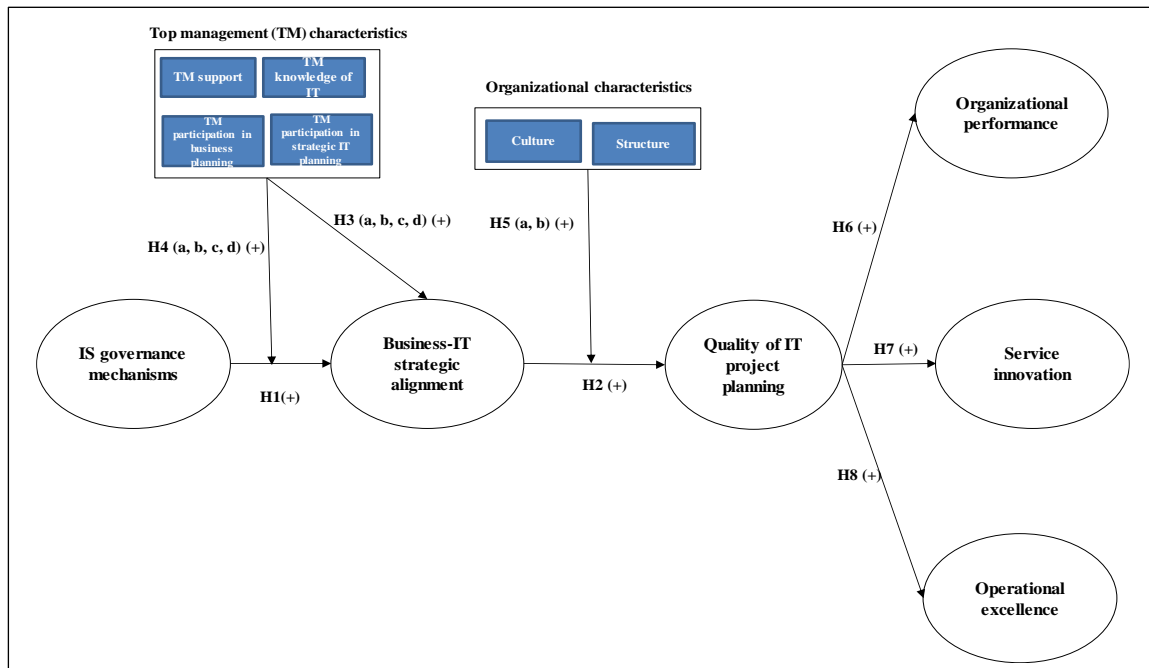


Figure 1 The proposed research model

In the proposed model, IT governance mechanisms influence IS strategic alignment, which in turn influences organizational performance (Wu et al. 2015). Therefore, the following two hypotheses have been formulated:

H1: IS governance mechanisms have a positive significant impact on Business-IT strategic alignment.

H2: Business-IT strategic alignment has a positive significant impact on the quality of IT project planning.

Research studies have also reported a relationship between IT governance practices (e.g. from TM and the board of directors) and IT project outcomes; for example Turel et al. (2017), and Kearns and Sabherwal (2006). To further examine the nature of this relationship, the following two hypotheses, each with four sub-divisions have been formulated:

H3a: TM support has a positive significant impact on Business-IT strategic alignment.

H3b: TM knowledge of IT has a positive significant impact on Business-IT strategic alignment.

H3c: TM participation in business planning has a positive significant impact on Business-IT strategic alignment.

H3d: TM participation in strategic planning has a positive significant impact on Business-IT strategic alignment.

H4a: TM support has a moderating effect on the relationship between IS governance mechanisms and Business-IT strategic alignment.

H4b: TM knowledge of IT has a moderating effect on the relationship between IS governance mechanisms and Business-IT strategic alignment.

H4c: TM participation in business planning has a moderating effect on the relationship between IS governance mechanisms and Business-IT strategic alignment.

H4d: TM participation in strategic planning has a moderating effect on the relationship between IS governance mechanisms and Business-IT strategic alignment.

Prior studies (e.g. Roberts et al. 2016) have reported the potential for organizational factors such as identity, culture, structure, and entrepreneurial orientation to impact the business value of IS. Drawing on these findings, the following hypotheses have been formulated:

H5a: Organisational culture will moderate the relationship between Business-IT strategic alignment and the quality of IT project planning.

H5b: Organisational structure will moderate the relationship between Business-IT strategic alignment and the quality of IT project planning.

Lastly, recent studies (e.g. Coltman et al. 2015; Wu et al. 2015) have also identified a correlation between factors related to Business-IT strategic alignment and organizational outcomes. Therefore, the following three hypotheses have been formulated in the context of Business-IT strategic alignments:

H6: The quality of IT project planning has a positive significant impact on organizational performance.

H7: The quality of IT project planning has a positive significant impact on service innovation.

H8: The quality of IT project planning has a positive significant impact on organizational operational excellence.

3 METHODOLOGY

The intent of this study is to understand and analyse key determinants of business value related to IT projects using a business/IT strategy alignment perspective in Saudi public-sector (government) organizations.. Focus in the examination is on Business-IT alignment maturity; namely, IT governance mechanism factors, TM characteristic factors, organizational characteristic factors and quality of IT project planning factors.

3.1 Challenges to Enhancing Business-IT alignment in SA e-Government

The failure to leverage IS may significantly decrease a business' performance and feasibility (Besson and Rowe 2012). Furthermore, the absence of IT strategies amongst business goals and objectives is always associated with a lack of IT credibility and subsequent reduction in IT investment. Despite the importance of IT to achieving government milestones or business goals, many challenges hinder the attainment of Business-IT alignment (Alaceva and Rusu 2015; Dent 2015). Governments tasked with providing services sometimes adopt high-end technologies for use in their systems and fail to make the necessary changes within the specific institutions to ensure that the system they have adopted is optimized. Moreover, many IT projects in businesses are fully directed by technology-driven IT organizations with a limited understanding of the actual needs of a business (Krotov 2015). In terms of SA, Shehry et al. (2011) has claimed that one of the most significant challenges to the SA e-government initiative is the lack of alignment between organizational goals and IT projects.

3.2 Study Design

This study will adopt a mixed-methods approach (i.e. quantitative and qualitative research paradigms) to explore how Business-IT strategy alignment perspectives are deployed to examine the aspects of strategy alignment (see Figure 2).

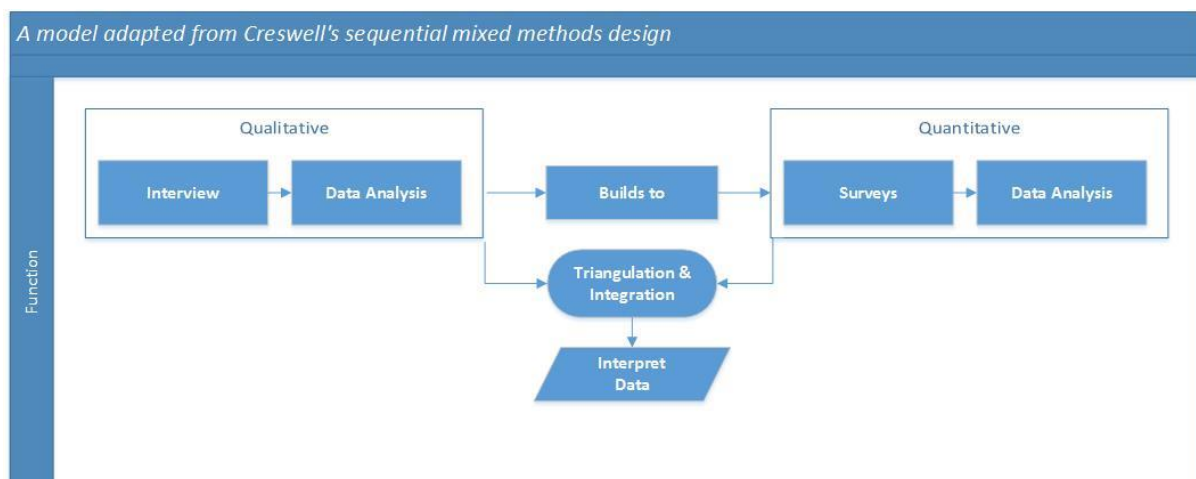


Figure 2 A model adapted from Creswell's (2013) sequential mixed methods design

The rationale for applying a mixed-methods design is to develop a deeper and inclusive understanding of the research phenomenon within the chosen population (Creswell, 2013). A sequential mixed-methods design will be used to explore the maturity level of alignment between business and IT. According to (Cooper et al., 2012), the proposed method provides the perfect opportunity to closely investigate all research aspects across multiple organisations. It also provides a deep level of understanding regarding the current situations and conditions of the research problem.

3.3 Expected Research Contribution

3.3.1 Theoretical contribution

This study will contribute to our academic and practical understanding of Business-IT strategy alignment through an analysis of the main causal factors of IT and business alignment and how alignment impacts organizational performance. There has been limited research to date to examine IT/business strategy alignment, in public-sector organisations in developing countries. Thus, this empirical study of IT/business strategy in Saudi public-sector organisations will enhance the development of alignment avoidance models and theories to guide managers in their decision making on the organization's IT and business strategy alignment. Moreover, the proposed research model and the findings of this study may extend the theories of RBV and Dynamic Capabilities and can contribute to overall knowledge and to the literature

3.3.2 Practical contribution

This study will contribute to preliminary knowledge in the following areas: the factors influencing IT performance and alignment between IT strategy and business strategy; the operational measures utilised in organisations to promote alignment and avoid misalignment; and the perspectives of misalignment as revealed the relevant research and academic literature and its implications for organisational performance.

4 REFERENCES

- Alaceva, C. and Rusu, L. 2015. "Barriers in Achieving Business/IT Alignment in a Large Swedish Company: What we have Learned?", *Computers in Human Behavior* (51), pp 715-728.
- Al-Barrak, K., Carr, L., & Ryan, M. (2016, September). Towards a Model for Monitoring Public Services Projects in Saudi Arabia. In 10th European Conference on Information Systems Management: ECISM 2016 (p. 1). Academic Conferences and publishing limited.
- Al-Khowaiter, W. A., Dwivedi, Y. K., & Williams, M. D. (2015). Examining the role of social influence, usefulness and ease of use for determining the mandatory use of a human resource information system in the context of Saudi Ministries. *International Journal of Electronic Government Research (IJEGR)*, 11(3), 24-42.
- Alsugiri, T., Al-Karaghoul, W., and Eldabi, T. 2013. "Alignment of Large Project Management Process to Business Strategy: A Review and Conceptual Framework," *Journal of Enterprise Information Management* (26:1), March, pp 596-615.
- Aversano, L., Grasso, C., and Tortorella, M. 2010 "Measuring the Alignment Between Business Processes and Software Systems: A Case Study," *Proceedings of the 2010 ACM Symposium on Applied Computing*, 2010. ACM, pp 2330-2336.
- Barney, J. 1991. "Firm Resources and Sustained Competitive Advantage," *Journal of Management* (17:1), March, pp 99-120.
- Besson, P., and Rowe, F. 2012. "Strategizing Information Systems-Enabled Organizational Transformation: A Transdisciplinary Review and New Directions," *The Journal of Strategic Information Systems* (21:2), June, pp 103-124.
- Bradley, C.W. 2002. "NEBIC: A Dynamic Capabilities Theory for Assessing Net-Enablement. *Information Systems Research* (125:2), June, pp 125-146.
- Cao, G., Duan, Y., Cadden, T., and Minocha, S. 2016. "Systemic Capabilities: The Source of IT Business Value," *Information Technology & People*, pp 556-567.
- Coltman, T., Tallon, P., Sharma, R., and Queiroz, M. 2015. "Strategic IT Alignment: Twenty-Five Years On. *Journal of Information Technology* (30:1), March pp 91-100.
- Cooper, H.E., Camic, P.M., Long, D.L., Panter, A.T., Rindskopf, D.E., and Sher, K.J. (Eds.) 2012. *APA Handbook of Research Methods in Psychology, Vol 2: Research Designs: Quantitative, Qualitative, Neuropsychological, and Biological*, Washington, DC, US: American Psychological Association.
- Creswell, J.W. 2013. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* Thousand Oaks, CA: SAGE.

- Cui, T., Ye, H., Teo, H.H. & Li, J. 2015. "Information Technology and Open Innovation: A Strategic Alignment Perspective, *Information & Management* (52:3), April pp 348-358.
- Dent, A. 2015. "Aligning IT and Business Strategy: An Australian University Case Study *Journal of Higher Education Policy and Management* (37:5), September, pp 519-533.
- Dulipovici, A., and Robey, D. 2013. "Strategic Alignment and Misalignment of Knowledge Management Systems: A Social Representation Perspective *Journal of Management Information Systems* (29:4), April, pp 103-126.
- El-Telbany O., and Elragal A. 2014. "Business-Information Systems Strategies: A Focus on Misalignment," *Procedia Technology* (16:1), January, pp 250-262.
- Gerow, J.E., Grover, V., Thatcher, J.B., and Roth, P.L. 2014. "Looking Toward the Future of IT-Business Strategic Alignment through the Past: A Meta-Analysis," *MIS Quarterly* (38:4), December, pp 1159-1186.
- Gerow, J.E., Thatcher, J.B., and Grover, V. 2015. Six Types of IT-business Strategic Alignment: An Investigation of the Constructs and their Measurement," *European Journal of Information Systems* (24:5), September, pp 465-491.
- Kearns, G.S., and Sabherwal, R. 2006. Strategic Alignment Between Business and Information Technology: A Knowledge-Based View of Behaviors, Outcome, and Consequences," *Journal of Management Information Systems* (23:3), December, pp 129-162.
- Krotov, V. 2015. Bridging the CIO-CEO Gap It Takes Two to Tango, *Business Horizons* (58:1), pp275-283.
- Luftman, J., and Derksen, B. 2012. "Key Issues for IT Executives 2012: Doing More with Less," *MIS Quarterly Executive* (11:4), December, 1-15.
- Park, J., Lee, J.N., Lee, O.K.D., and Koo, Y. 2017. "Alignment Between Internal and External IT Governance and Its Effects on Distinctive Firm Performance: An Extended Resource-Based View," *IEEE Transactions on Engineering Management* (64:3), August, pp 351-364.
- Pavlou, P.A., and El Sawy, O.A. 2006. "From IT Leveraging Competence to Competitive Advantage in Turbulent Environments: The Case of New Product Development," *Information Systems Research* (17:3), December, pp 198-227.
- Ravichandran, T., Lertwongsatien, C., and Lertwongsatien, C. 2005. "Effect of Information Systems Resources and Capabilities on Firm Performance: A Resource-Based Perspective," *Journal of Management Information Systems* (21:3), April, pp 237-276.
- Reynolds, P., and Yetton, P. 2015. "Aligning Business and IT Strategies in Multi-Business Organizations. *Journal of Information Technology* (30:2), June, pp 101-118.
- Roberts, N., Campbell, D.E., and Vijayasarathy, L.R. 2016. "Using Information Systems to Sense Opportunities for Innovation: Integrating Postadoptive Use Behaviors with the Dynamic Managerial Capability Perspective," *Journal of Management Information Systems*(33:1), January, pp 45-69.
- Schniederjans, M., and Cao, Q. 2009. "Alignment of Operations Strategy, Information Strategic Orientation, and Performance: An Empirical Study," *International Journal of Production Research* (47:10), May, pp 2535-2563.
- Shehry, A.A., Rogerson, S., Fairweather, N.B., and Prior, M. 2009. "The Key Organisational Issues Affecting E-Government Adoption in Saudi Arabia," *International Journal of Electronic Government Research* (5:4), September, pp 1-13.
- Teece, D.J., Pisano, G., and Shuen, A. 1997. "Dynamic Capabilities and Strategic Management," *Strategic Management Journal* (18:7), August, pp 509-533.
- Turel, O., Liu, P., and Bart, C. 2017. "Board-Level Information Technology Governance Effects on Organizational Performance: The Roles of Strategic Alignment and Authoritarian Governance Style," *Information Systems Management* (34:1), June, pp 117-136.
- Venkatesh, V., Brown, S.A., and Sullivan, Y.W. 2016. "Guidelines for Conducting Mixed-Methods Research: An Extension and Illustration," *Journal of the Association for Information Systems* (17:7), July, pp 435-449.
- Wu, S.P.J., Straub, D.W., and Liang, T.P. 2015. "How Information Technology Governance Mechanisms and Strategic Alignment Influence Organizational Performance: Insights from a Matched Survey of Business and IT Managers," *MIS Q.* (39:2), June, pp 497-518.
- Zahra, S.A., and George, G. 2002. "The Net-Enabled Business Innovation Cycle and the Evolution of Dynamic Capabilities," *Information Systems Research* (13:2), June, pp 147-150.

Copyright: © 2018 Abdulaziz Al-Ghazi, Tingru Cui, Samuel Fosso, Mengxiang Li and Jun Shen. This is an open-access article distributed under the terms of the [Creative Commons Attribution-NonCommercial 3.0 Australia License](https://creativecommons.org/licenses/by-nc/3.0/australia/), which permits non-commercial use, distribution, and reproduction in any medium, provided the original author and ACIS are credited