# Impact of Graduates' Quality of Education and Research on ICT Adoption at Workplace

Mohammed A. Kafaji

**Abstract**—This paper aims to investigate the influence of quality of education and quality of research, provided by local educational institutions, on the adoption of Information and Communication Technology (ICT) in managing business operations for companies in Saudi market. A model was developed and tested using data collected from 138 Chief Executive Officers (CEOs) of foreign companies in diverse business sectors. The data is analyzed and managed using multivariate approaches through standard statistical packages. The results showed that educational quality has little contribution to the ICT adoption while research quality seems to play a more prominent role. These results are analyzed in terms of business environment and market constraints and further extended to the perceived effectiveness of applied pedagogical approaches in schools and universities.

*Keywords*—Domestic Competition, Quality of Education, Quality of Research, ICT Adoption, Mediation.

## I. INTRODUCTION

WITH current globalization trend and impact on business competiveness, many companies are under constant pressure to explore ideas and channels to reach wider markets and diverse customer segments. A crucial part to facilitate such an endeavor is to benefit from the integration of information and communication technology (ICT) with the strategic management of business operations; i.e. an effective ICT adoption. The perceived benefit of ICT adoption manifested itself by indicators showing that low technology adoption results often in reduction of per capita income and work-force skills [1].

The ability of employees (thus the business) to innovate, strongly contributes to the firm performance [2]. One model to describe innovation is the competence-enhancing approach based upon and reinforces existing competencies, skills, and know-how [3]. While this definition is accepted by many, it has different interpretations by different companies depending on the company strategies, sector, size, and age [4], [5]. Based on their individual interpretation, the CEO's normally develop their strategic approach to achieve competitive advantage using their own education, work experience, and technical capabilities [6]. This leads to a natural question on what role is played by the quality of education and quality of research (defined below) of the company's work force in shaping and deciding the future perspective of a company. Establishment of sophisticated education and research institutions, which quite often means heavy investment in higher educations, is one approach to answer this question.

M. A. Kafaji is with the Alfaisal University, College of Business, PO Box 50927, Riyadh 11533, Kingdom of Saudi Arabia (phone: 00966-11-2157711; e-mail: mkafaji@alfaisal.edu).

This study aims to answer: To what extent the quality of education or/and quality of research influence the ICT adoption by companies in managing business day-to-day operations?

To answer this question, the study focuses on the role played by education and research capabilities of educational institutions to participate, directly or indirectly, in the adoption of information and communication technology (ICT) to manage business operations. It is appreciated that this influence may be mediated through various factors [7], thus the ICT adoption is treated in this paper as a form of a collective business innovation linked to the profile of the skilled workers employed by a firm. Based on this approach, the study starts by developing a conceptual model which is then tested using practical data gathered from interviews of CEOs of selected local businesses.

## II. RESEARCH METHODOLOGY AND APPROACH

#### A. Proposed Conceptual Model

A system approach was adopted with its usual components of input, process, and output to visualize the links between the key constructs, shown in Fig. 1, as a whole integrated system.



Fig. 1 Initial proposed conceptual model

The core causal relationships of this model links two exogenous variables (Quality of Education and Quality of Research) with one endogenous variable (ICT Adoption) to represent the company capability in adopting latest ICT technologies in managing its strategic business operations. This core casual model is represented within the dashed box in Fig. 1. The 'Domestic Competition' and 'ICT Penetration' are selected as mediators playing important roles in shaping the adoption of ICT by businesses (see for example [8]-[10]). The below paragraphs presents brief descriptions for each of the constructs and related hypothesis: **Quality of Education**: starting with the basic definition of education as the "the development of desirable qualities in people" [11], the quality of education in the context of this research is used to represents the schools' and universities' abilities to develop cognitive and creational skills of their graduates. Thus the related hypothesis is:

*H1: High quality of provided education will have a positive effect on the ICT Adoption in businesses.* 

**Quality of Research:** in a broader sense, research is defined as the ability to conduct an investigation for specific problem and discover or propose a solution through systematically collecting, analyzing, and interpreting the data [12]. In this study, the quality is measured in terms of the degree of collaboration and partnership between businesses and research institutions. Therefore the term 'quality of research' combines the research and quality to describe the capability of a university to equip their graduates with adequate ability to adopt scientific process and analytical skills to resolve business management issues. In other words, graduates need to acquire adequate skills and knowledge to manage a full lifecycle of research projects from the conceptualization to results and reporting stage. Thus, this research is aimed to test the hypothesis:

H2: High quality of research provided by educational institutes will have a positive effect on the ICT adoption by businesses.

**Domestic Competition:** effective competition in local market is an important factor to improve services and goods delivery by businesses. The main aim of adding this construct is to evaluate the impact of the presence of domestic competition on the adoption of ICT by businesses. Therefore, the below hypotheses is tested:

- *H1a: Domestic Competition meditates the effect of quality of education on the ICT Adoption.*
- H2a: Domestic Competition meditates the effect of quality of research on the ICT Adoption.
- H3: Domestic Competition is perceived to have positive effect on the ICT Adoption.

**ICT Penetration:** is the degree at which ICT technologies is available and used by users from the general population and through different industries. Although different terminologies such as technology capacity, technology usage, and technology penetration are also used, but they all meant to refer and measure the computer usage [9]. Therefore, this study aims to test the hypotheses:

- *H1b: ICT Penetration meditates the effect of quality of education on the ICT adoption by businesses.*
- H2b: ICT Penetration meditates the effect of quality of research on the ICT Adoption by businesses.
- *H4: ICT Penetration is perceived to have positive effect on the ICT Adoption.*

**ICT Adoption:** adoption of relevant business technologies is the decision taken by individuals or businesses to consider innovation as best means to address business management challenge (see for example [13]). In the context of this research, ICT adoption is considered as the degree at which businesses use ICT to manage day-to-day operations to

achieve customer satisfactions. No specific technology is given preference on others, but the construct in general terms means ability of the business to integrate various technologies to achieve business objectives in effective and efficient way.

The actual practice used for testing the proposed model and its constructs is performed through the assessment of the fitness between the model shown in Fig. 1 and the calculated correlation factors between these variable; calculated using a set of practically collected data. The details of this approach and associated practices are discussed and presented in the following sections.

## B. Population and Samples

A survey with 17 questions was used to analyze and measure the dependent variables of the proposed model in Fig. 1. The questions are carefully selected with due considerations to the specifics of this research and standard approaches. A total of over 500 surveys were distributed to selected firms for diverse sectors: manufacturing, telecommunications, services, and constructions. The CEO or one of top executive managers fills the survey and submits it on-line. These questions were answered by respondents in a seven-point Likert scale with 1 represents a 'Strongly Disagree' response and 7 represents 'Strongly Agree' response. The executive managers were consulted before administering the surveys and they expressed willingness to take part in this study.

## C. Statistical Approach

The gathered data was analyzed using a multivariate statistical which combines path analysis with Confirmatory Factor Analysis [14]. The SPSS application (version 21.0), with AMOS add-on was used to construct the Structural Equation Model (SEM), is used to test the relationships depicted in the tested casual model. These applications are used to study how and to what extent the selected exogenous variables affect the ability of a firm to adopt ICT in its business management. Errors were considered by adding error parameters to each variable which is a standard approach to manage error [15], [11]. Data analysis was applied to the gathered responded data, Each returned questionnaire was reviewed for completeness and, of the 138 received responses, nineteen were rejected either due to large amounts of missing data or/and due to 'disengaged' respondents, i.e. respondents that tend to select one or two answers on the point-scale questions.

## D.Data Analysis and Results

The tool used to gather the data for this work consists of the constructs listed in Table I. The reliability assessment is used to evaluate the internal consistency of these constructs, which is achieved by measuring the corresponding Cronbach's alphas. The Cronbach's alpha values are above 0.85, accept for Domestic Competition construct, which indicate high reliability of the selected constructs [16]. This is followed by testing the validity of the measurement model of all constructs using factor analysis which revealed Kaiser-Meyer-Olkin (KMO) value of 0.920 at p<0.001. The KMO value again indicates the appropriateness of the factor analysis and the

adequacy of research sampling [17].

In order to progress this analysis further, the relationships between these selected constructs were first evaluated. Table I shows the degree at which identified constructs relate to each other, through measurement of cross-correlation factors. The constructs are significantly correlated with each other which suggest they are convergent and exhibit discriminant validity.

TABLE I Pearson Correlations between the Const

PEARSON CORRELATIONS BETWEEN THE CONSTRUCTS							
	QoE	QoR	D_C	ICT_P	ICT_A		
QoE	1	.764**	.560**	.648**	.669**		
QoR	.764**	1	.563**	.682**	.695**		
D_C	.560**	.563**	1	.579**	.573**		
ICT_P	.648**	.682**	.579**	1	.841**		
ICT_A	.669**	.695**	.573**	.841**	1		

QoE=Quality of Education, QoR=Quality of Research, D\_C=Domestic Competition, ICT\_P=ICT Penetration, ICT\_A= ICT Adoption, and the two stars indicate a p-value <0.001 (2-tailed)



Fig. 2 The path diagram with coefficients of the whole model with constructs influencing the ICT adoption. The three starts indicates the level of significance with p<0.001, while no starts indicates insignificant p-value

TABLE II Standardized Regression Weights for the Paths Shown in Fig. 3								
Hs	Path	β	SE	CR	р			
H1	ICT Adoption < Quality of Education	0.07	0.07	0.66	0.51			
H1a	Domestic Competition < Quality of Education	0.13	0.15	0.77	0.44			
H1b	ICT Penetration < Quality of Education	0.09	0.12	0.62	0.53			
H2	ICT Adoption < Quality of Research	0.01	0.11	0.05	0.96			
H2a	Domestic Competition < Quality of Research	0.62	0.17	3.38	***			
H2b	ICT Penetration < Quality of Research	0.72	0.14	4.51	***			
H3	ICT Adoption < Domestic Competition	0.07	0.07	0.77	0.44			
H4	ICT Adoption < ICT Penetration	0.72	0.11	6.22	***			

Hs= Hypotheses,  $\beta$ = Path Coefficient, SE= Standard Error, CR= Critical ratio, and p= level of significance (p-value), and the three starts of p-value indicates level of significance <0.001.

The whole model is then tested using AMOS and the results are shown in Fig. 2.

The 'goodness of fit' of this model with all constructs was assessed by measuring the CFI (Comparative Fit Index), RMSEA (Root Mean Square Error of Approximation), and CMIN/DF; as shown as insert in Fig. 2. Based on published literature, vales greater than 0.95 for CFI, less than 0.08 for RMSEA, and less than 2 for CMIN/DF are considered as acceptable indicators for model good fit to the data [18]-[20]. Therefore, the model of Fig. 2 can be considered as a good fit for the data.

The paths of Fig. 2 where analyzed further and the results are presented in Table II.

These results support only the hypotheses related to the perceived impact of the quality of research on the domestic competition, ICT penetration, and ICT adoption. However, the data indicates that both the quality of education and quality of research seem to have little direct effect on the adoption of ICT in managing business operations. These results where further tested to evaluate different representations of the causal relationships in congestions with the mediation effects of both 'Domestic Competition' and 'ICT Penetration' on the adoption of ICT. For this purpose, four assumed hypotheses where converted into the below four models:

Model A (hypothesis H1a): 'Quality of Education>ICT Adoption', mediated by Domestic Competition.

- Model B (hypothesis H1b): 'Quality of Education>ICT Adoption' mediated by ICT Penetration.
- Model C (hypothesis H2a): 'Quality of Research>ICT Adoption', mediated by Domestic Competition.
- Model D (hypothesis H2a): 'Quality of Research>ICT Adoption', mediated by ICT Penetration.

To distinguish between these models, all tests were performed with the full-model shown in Fig. 3, but to isolate the effect of one mediator, the path to the other mediator was removed. The results from testing these models are shown in Table III.

To distinguish between these models, all tests were performed with the full-model shown in Fig. 2, but to isolate the effect of one mediator, the path to the other mediator was removed. The results from testing these models are shown in Table III.

TABLE III
COMPARISON OF PATH COEFFICIENTS WITH AND WITHOUT MEDIATION FOR
DIFFERENT MODELS

DIFFERENT MODELS								
	Dir	ect	Indirect	Mediation				
Model	NM	WM	WM	Analysis				
Model A: 'Quality of	0.20	0.06	0.003	No				
Education>ICT Adoption',	(.130)	(.560)	(.880)	Mediation				
mediated by Domestic								
Competition								
Model B: 'Quality of	0.20	0.05	0.050	No				
Education>ICT Adoption'	(.130)	(.670)	(.660)	Mediation				
mediated by ICT Penetration								
Model C: 'Quality of	0.62	0.21	0.020	Partial-				
Research>ICT Adoption',	(***)	(.080)	(.450)	Mediation				
mediated by Domestic								
Competition								
Model D: 'Quality of	0.62	0.10	0.500	Full-				
Research>ICT Adoption',	(***)	(.410)	(.009)	Mediation				
mediated by ICT Penetration	. /	. /	. /					

NM=no mediation, WM= with mediation, value in brackets represent corresponding p-values, and the three starts of p-value indicates level of significance <0.001.

Following the method proposed by [21], from Table III, models A and B show that direct paths of the 'Quality of Education' on 'ICT Adoption' are not significant and

remained not significant after adding the mediating constructs. Since the indirect effect of these paths also not significant, then it was concluded that both the 'Domestic Competition' and 'ICT Penetration' play no roles in mediating the relationship between 'Quality of Education' and 'ICT Adoption'.

For model C, the influence of the direct path of 'Quality of Research' on 'ICT Adoption' dropped in strength and significance but the indirect path is still not significant. This indicates that 'Domestic Competition' plays partial mediation role on this path. And finally for model D, the influence of the direct path of 'Quality of Research' on 'ICT Adoption' was dropped in strength and significance with the corresponding indirect path is significant. Therefore, model D indicate a fullmediation of 'ICT Penetration' in mediating the influence of 'Quality of Research' on 'ICT Adoption'.

With due considerations to these results, the model was revised and presented in Fig. 3 with solid lines representing the significant paths.



Fig. 3 Final path model shows the influence of two mediating constructs. The solid lines indicate significant paths

#### III. DISCUSSION AND CONCLUSIONS

The first attempt to test the model proposed by this study showed direct correlations between quality of education, quality of research, and ICT adoption. However, the results also showed that quality of education plays a minor role compared to the impact of quality of research on the ICT adoption. To explain this result, the study started by analyzing the role played by quality of education on the adoption of ICT by businesses. Generally speaking, it is commonly acknowledged that adoption of technology requires the working staff to acquire appropriate level of computer skills and knowledge [22] and that a business community with high computer literacy enjoy adoption of a high level of internetbased technologies to manage offered services [23]. In this respect, the quality of education normally play direct important role in promoting computer literacy and develop what is termed the 'digital divide' [24] that helps to acquire necessary computer skills. The finding of this paper seems to conflict this understanding and do not support its findings. This observation led the author of this paper to search for alternative constructs that may mediate the influence of quality of education onto ICT adoption. Two potential mediators were considered: Domestic Competition and ICT Penetration. The selection of these mediators was based on their perceived links with the ICT Adoption [9], [10]. Of these two mediators, from quality of education perspective, only the ICT Penetration seems to have strong but insignificant influence on ICT Adoption showing that no mediation is taking place. This result is again in conflict with studies that link ICT Penetration with ICT Adoption (see for example [9]). The finding seems to indicate that the CEO's of foreign investing companies think that ICT penetration plays little role in their adoption of ICT for managing business transactions. One explanation of this outcome may lay in the quantification of what is actually meant by computer literacy in terms of usage categories such as social media, business developments, and transactions. In other words, the high penetration rate reflects high adoption of social media and the related technologies for mainly non-business related activities. Another explanation is these companies rely more on their international operations practices and standards which are normally imported during the early stages of business setup. Therefore, as a consequence, the businesses may give little considerations to the quality of education or/and the level of ICT penetration in their adoption of required ICT technologies to manage their operations. To understand the possible root cause of this outcome, one would need to understand the underpinning causes in a multi-cause analysis. Many studies already conducted on the influence of internal and external factors on the quality of education offered by educational institutions, such as classroom technologies [25], [26]. Studies of these aspects are highly complicated and these results further add more complication and thus more detailed quantifications are required.

Moving on to discuss findings on the influence of quality of research on the ICT adoption, the results showed a clear positive and significant correlation. In other words, the study suggests that quality of the research institutions is positively correlated with the adoption of technology by businesses. Thus the path of Quality of Research-ICT Penetration-ICT Adoption seems to be the preferred interaction path with strong and significant coefficient. The positive correlation between quality of research and ICT adoption indicate that research activities do play greater role (compared with quality of education) in shaping the students' learnings. This result is supported by recent research [27] showing that highperforming research environments do generate high-quality learning and market ready skilled workers. Furthermore, this outcome indicates that companies interested to adopt advanced business technologies will likely employ graduates with high research capabilities. This outcome confirms that graduate students with research abilities benefits from higher employability and income compared with undergraduate students with little focus on reach abilities [28].

The ability of a company to innovate (considering that ICT Adoption is one form of innovation) is strongly tied to the company's intellectual capabilities and knowledge of the workforce [29]. The results of this study interns indicate the importance of workers' skills required to achieve efficient management of organizational operations. With current available information, it is unclear whether company's skilled workers are involved in 'incremental' or 'radical' innovation in their endeavour to adopt ICT technologies for effective management of business operations. Answering this question will have direct impact on the company's approach on whether to reinforce existing technology management approach or radically view the business from totally new innovative prospect. Again, this can be further elaborated for future research and analysis. In developing countries, small to medium companies lacks required human capital skills to develop and adopt new technologies therefore they relied on external ICT vendors and consultants to bridge the gap in adopting ICT technologies [30]. In Saudi Arabia, the market is heavily populated with vendors that provide professional support and consulting ICT services. On one hand this might be desirable stimulus for small companies to expedite their business setup, but may fail to achieve business desired benefits [31] due to high cost and management risks and overhead. Therefore, from current results, the market seems to rely more on the 'ready' expertise than in-house developed skills and knowledge.

### ACKNOWLEDGMENT

This work was supported by an internal grant from Alfaisal University, under the internal grant number: 1131101011419.

#### REFERENCES

- K.J. Stiroh, "Information technology and the U.S. productivity revival: what do the industry data say?," American Economic Review, vol. 92, no. 5, pp. 1559-76, 2002.
- [2] N. Bosma, M. van Praag, R. Thurik and G. de Wit, "The Value of Human and Social Capital Investments for the Business Performance of Startups," Small Business Economics, vol. 23, pp. 227–236, 2004.
- [3] P. Anderson and M. Tushman, "Technological discontinuities and dominant designs: A cyclical model of technological change," Admin. Sci. Quart, vol. 35, no. 4, pp. 604–633. 1999.
- [4] W. Tsai, "Knowledge Transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance," Academy of Management Journal, vol. 44, pp. 996-1004, 2001.
- [5] K.K. Reed, M. Lubatkin, and N. Srinivasan, "Proposing and Testing an Intellectual Capital-Based View of the Firm," Journal of Management Studies, vol. 43, pp. 867-893, 2006.
- [6] D. Ucbasaran, P. Westhead, and M. Wright, "Opportunity Identification and Pursuit: Does an Entrepreneurs Human Capital Matter?,", Small Business Economics, vol. 30, pp. 153–173, 2008.
- [7] M.A. Kafaji, "Evaluating the Roll of Quality of Service as a Mediator on User Satisfaction in E-Government Applications," Problems of Management in the 21st Century, vol. 8, no. 8, pp. 55-65, 2013.
- [8] B.M. Alberto, and L.L. Fernando, "A firm-level analysis of determinants of ICT adoption in Spain," Technovation, vol. 27, pp. 352-66, 2007.
  [9] J.B. Pick and R. Azari, "A Global Model of Technological Utilization
- [9] J.B. Pick and R. Azari, "A Global Model of Technological Utilization Based on Governmental Business-Investment, Social, and Economic Factors," Journal of Management Information Systems, vol. 28, no. 1, pp. 49–83, 2011.
- [10] G. Kannabiran, and P. Dharmalingam, "Enablers and inhibitors of advanced information technologies adoption by SMEs: An empirical study of auto ancillaries in India," Journal of Enterprise Information Management, vol. 25, no. 2, pp. 186 – 209, 2012.
- [11] P.H. Hirst, and R.S. Peters, "The Logic of Education," Routledge & Kegan Paul, London, 1970.
- [12] K.L. Wester, L.D. Borders, S. Boul, and E. Horton, "Research Quality: Critique of Quantitative Articles in the Journal of Counseling & Development," Journal of Counseling & Development, vol. 91, pp. 280-290, 2013
- [13] E.M. Rogers, "Diffusion of innovations," Free Press, New York, 2003.

- [14] J.F. Hair, W.C. Black, B.J. Babin, and R.E. Anderson, "Multivariate Data Analysis: International Version," 7th Ed, New Jersey, Pearson, 2010.
- [15] R.B. Kline, "Principles and practice of structural equation modeling," Guilford Press, New York, 1998.
- [16] J.C. Nunnally, "Psychometric Theory (2nd Ed)," McGraw-Hill, Now York, 1978.
- [17] B.G. Tabachnick, and L.S. Fidell, "Using multivariate statistics (5th ed.)," Pearson Education, Boston, 2007.
- [18] H.W. Marsh, and D. Hocevar, "Application of confirmatory factor analysis to the study of self-concept: First- and higher order factor models and their invariance across groups," Psychological Bulletin, vol. 97, pp. 362-582., 1985.
- [19] L. Hu, and P.M. Bentler, "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives," Structural Equation Modeling: A Multidisciplinary Journal, vol. 6, no. 1, pp. 1-55, 1999.
- [20] R.E. Schumacker, and R.G. Lomax, "A beginner's guide to structural equation modeling," Lawrence Erlbaum Associates, London, 2005.
- [21] R.M. Baron, and D. A. Kenny, D.A. "The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations," Journal of Personality and Social Psychology, vol. 51 no 6, pp. 1173–1182, 1986.
- [22] M. Kapurubandara and R. Lawson, "Availability of E-commerce Support for SMEs in Developing Countries," The International Journal on Advances in ICT for Emerging Regions, vol. 1, no. 1, pp. 3 – 11, 2008.
- [23] G. Worku, "Electronic-Banking in Ethiopia- Practices, Opportunities and Challenges," Journal of Internet Banking and Commerce, vol. 15, no. 2, pp. 2-8, 2010
- [24] M.D. Chinn, and R.W. Fairlie, "The determinants of the global digital divide: a cross-country analysis of computer and internet penetration," Oxford Economic Papers, Oxford University Press, vol. 59, no. 1, pp. 16-44, 2007.
- [25] T.K. Neo, and M. Neo, "Classroom innovation: engaging students in interactive multimedia learning; Campus," Wide Information Systems vol. 21, no. 3, pp. 118-124, 2004.
- [26] T,J. Newby, D.A. Stepich, J.D. Lehman, J.D. Russell, and A.T. Ottenbreit-Leftwich, "Instructional technology for teaching and learning: Designing instruction, integrating computers, and using media (5th ed)," Prentice-Hall, Englewood Cliffs, NJ, 2010.
- [27] G.F. Barrett, and R. Milbourne, "Do Excellent Research Environments Produce Better Learning and Teaching Outcomes?," The Economic Record, vol. 88, pp. 70–77, 2012.
- [28] P. Urwin, and G. Di Pietro, "The Impact of Research and Teaching Quality Inputs on the Employment Outcomes of Postgraduates," Higher Education Quarterly, vol. 59, no. 4, pp. 275–295, 2012.
- [29] M. Subramaniam, and M.A. Youndt, "The Influence of Intellectual Capital on the Types of Innovative Capabilities," Academy of Management Journal, vol. 48, no. 3, pp. 450–463., 2005.
- [30] S. Nevo, M.R. Wade, and W.D. Cook, "An examination of the trade-off between internal and external IT capabilities," The Journal of Strategic Information Systems, vol. 16, no. 1, pp. 5–23, 2007.
- [31] P. Cragg, M. Caldeira, and J. Ward, "Organizational information systems competences in small and medium-sized enterprises," Information and Management, vol. 48, no. 8, pp. 353-363, 2011.

### World Academy of Science, Engineering and Technology International Journal of Information and Communication Engineering Vol:9, No:2, 2015

Mohammed A. Kafaji has a PhD in computer simulation and engineering, MSc in mathematical modelling and BSc in science. He gained a number of professional certificates in Business Management and IT including: Lean Six Sigma, PMP, ITIL, IT Project+, CISA, OCP, and MCP. Dr.Kafaji has over 20 years of work experience, in the United Kingdom, Saudi Arabia, Oman, and Bahrain. His areas of expertise and research include management information systems, ITC Governance and PMO. He developed and managed specialized undergraduate and postgraduate courses in management information system, project management, operations, and technology management. In research, Dr.Kafaji conducted highly specialized state-of-the-art research projects that resulted in the publication of over 40 papers. At Alfaisal University, Dr.Kafaji current research areas are management. He supervised graduation research projects for 36 MBA Students.

In addition to research and teaching, Dr.Kafaji has strong consultancy experience gained from working with two of the big-four firms; Ernst & Young and KPMG. These roles gave Dr.Kafaji hands-on experience in business development, leadership, strategy development, project management, system implementation, and IT Governance. These experiences helped to enrich teaching practices plus added abilities to integrate people, process, and technology to drive changes and achieve strategic alignment with business goals and objectives.

Prior to joining Alfaisal University, Dr.Kafaji delivered critical business projects while serving as Senior Lecturer, Head of IT Department, Assistant Professor, Acting Director General, Senior Manager, IT Director, and Senior Lecturer. Dr.Kafaji is an active member of Information Systems Audit and Control Association (ISACA) and the Project Management Institute (PMI).