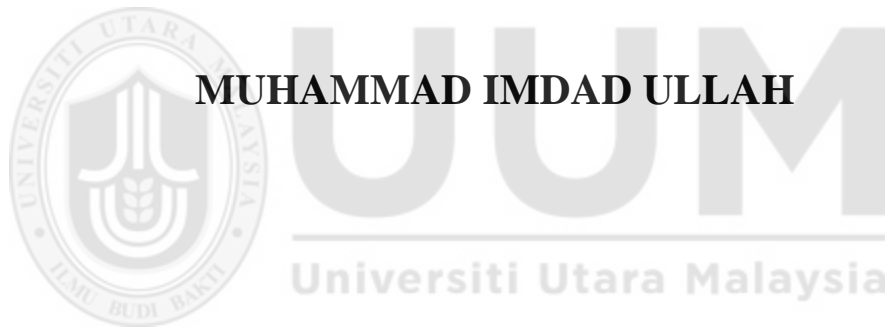


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**INDIVIDUAL, ORGANIZATIONAL, TECHNOLOGICAL
AND INDUSTRY FACTORS EFFECTS ON INNOVATION
CAPABILITY OF DAIRY SMES IN PAKISTAN:
KNOWLEDGE SHARING AS MEDIATED**



**DOCTOR OF PHILOSOPHY
UNIVERSITI OF UTARA MALAYSIA
APRIL 2017**

**INDIVIDUAL, ORGANIZATIONAL, TECHNOLOGICAL AND INDUSTRY
FACTORS EFFECTS ON INNOVATION CAPABILITY OF DAIRY SMES IN
PAKISTAN: KNOWLEDGE SHARING AS MEDIATED**

By

MUHAMMAD IMDAD ULLAH



UUM
Universiti Utara Malaysia

**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**



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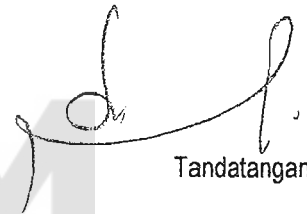
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ABSTRACT

Existing literature reveals a gap in the empirical knowledge on innovation capability in the dairy sector of Punjab, Pakistan. Innovation capability is a key player in the growth and success of a business. Therefore, the major objective of this study was to examine the mediating role of knowledge sharing on trust, motivation, training & development, supervisor support, ICT use, and industry cluster resources with innovation capability of the dairy sector. This research contributes to the growth of GDP through the dairy sector. The research framework in the study was based on the diffusion of innovation and the resource-based view theories. The data were collected from dairy farm owners and managers in the study locality, i.e. Punjab, Pakistan. The study instrument was 410 self-administered questionnaires which were distributed to the dairy farm managers/owners through the simple random sampling technique. 254 valid questionnaires were used for the analysis. The SPSS and SMART PLS 3.0 were used for the basic screening of the raw data and testing the hypothetical statements. The study found that motivation, training & development, supervisor support and industry cluster resources have positive significant impacts on knowledge-sharing. Furthermore, motivation, training & development, ICT used and industry cluster resources also have positive impacts on innovation capability; and knowledge-sharing mediated the relationship between motivation, training & development, supervisor support and innovation capability. The results of the study provide important insights to outcome, policy-makers and researchers to further understand the effects of the innovation capability of dairy SMEs (small medium enterprises) in Pakistan. This study suggested that managers and owners of dairy farms must provide motivation, training & development and supervisor support to enhance the innovation capability of dairy workers.

Keywords: Innovation capability, knowledge sharing, dairy sector, Punjab Pakistan.

ABSTRAK

Tinjauan terhadap kajian yang sedia ada menunjukkan adanya jurang dalam pengetahuan empirikal tentang keupayaan inovasi dalam sektor tenusu di Punjab, Pakistan. Keupayaan inovasi adalah pemain utama dalam pertumbuhan dan kejayaan sesebuah perniagaan. Oleh itu, objektif utama kajian ini adalah untuk mengkaji peranan pengantara bagi perkongsian pengetahuan ke atas amanah, motivasi, latihan dan pembangunan, sokongan penyelia, ICT dan sumber industri kelompok dengan keupayaan inovasi sektor tenusu. Kajian ini memberi sumbangan yang besar kepada pertumbuhan KDNK melalui sektor tenusu. Rangka kerja penyelidikan dalam kajian ini adalah berdasarkan kepada penyebaran inovasi dan teori berasaskan pandangan - sumber . Data telah dikumpulkan daripada pemilik ladang tenusu dan pengurus daripada kawasan kajian iaitu Punjab, Pakistan. Instrumen kajian adalah sebanyak 410 soal selidik yang direka sendiri dan diedarkan kepada pengurus ladang tenusu / pemilik melalui teknik persampelan rawak mudah. Sebanyak 254 soal selidik yang sah telah digunakan untuk dianalisis. Perisian SPSS dan SMART PLS 3.0 telah digunakan untuk pemeriksaan asas data mentah dan ujian penyata hipotesis . Kajian ini mendapati bahawa motivasi, latihan dan pembangunan, sokongan penyelia dan sumber industri kelompok mempunyai impak positif yang besar kepada perkongsian pengetahuan. Tambahan pula, motivasi, latihan dan pembangunan, penggunaan ICT dan sumber industri kelompok juga mempunyai kesan positif ke atas keupayaan inovasi, manakala perkongsian pengetahuan telah menjadi pengantara antara motivasi, latihan dan pembangunan, sokongan penyelia dan keupayaan inovasi. Hasil kajian ini penting kepada hasil, penggubal dasar dan penyelidik untuk terus memahami kesan keupayaan inovasi IKS (industri kecil dan sederhana) tenusu di Pakistan. Kajian ini mencadangkan agar pengurus dan pemilik ladang tenusu memberi motivasi, latihan dan pembangunan serta sokongan penyeliabagi meningkatkan keupayaan inovasi dalam kalangan pekerja tenusu.

Kata kunci: keupayaan inovasi, perkongsian pengetahuan, sektor tenusu, Punjab Pakistan

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LIST OF ABBREVIATION

TR Trust

MO Motivation

TD Training & Development

SS Supervisor Support

TE Technology Factor

IN Industry Cluster Resources

KS Knowledge Sharing

IC Innovation Capability

ICT Information Communication Technology

GII Global Innovation Index

UHT Ultra High Temperature

PDDC Pakistan Dairy Development Corporation

PDA Punjab Dairy Association

SME Small Medium Enterprise

SMEDA Small Medium Enterprise Development Authority Malaysia

FAO Food Agriculture Organization

IT Information Technology

KM Knowledge Management

GDP Gross Domestic Products

HRM Human Resource Management

HR Human Resource

RBV Resource Based View

SEM Structural Equation Modeling

SPSS Statistical Packages for Social Sciences

PLS Partial Least Square

CR Composite Reliability

CA Cronbach's Alpha

VIF Variance inflation Factor

AVE Average Variance Extract

GOF Goodness of Fit

SD Standard Deviation

SE Standard Error

KMO Kaiser–Meyer–Olkin

TOL Tolerance

UL Upper Limit

LL Lower Limit

PES Pakistan Economic Survey

EPS Enterprise Survey

BCIP Business Climate in Pakistan

WB World Bank



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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In the 21st century, innovation capability is viewed as an important component to survive in the global business world (Yeşil, Koska, & Büyükbeşe, 2013; Corrocher & Solito, 2017; Strobel & Kratzer, 2017). Innovation capability is now taken place as the success of firms and growth for any country (Mawson & Brown, 2017; Woschke, Haase, & Kratzer, 2017; Zou, Guo, & Song, 2017). It is clearly stated that innovation capability provided more benefits to the firms such as eliminating the cost of the firms, product differentiation from competitors and produce a better quality of the existing products and uplifting the services (Eren, Kabadayi, & Sahin, 1999; Hult, Hurley, & Knight, 2004; Kilelu, Klerkx, & Leeuwis, 2013; Ngo & O'Cass, 2013; Dutta & Lanvin, 2016; Johnston & Marshall, 2016). In the study of Lin (2007) mentioned that if the firms do not practice their capability for the development then no firms can survive in the current competitive environment. It is argued that the innovation is a capability through which managers can find the solution of their business-related problem (Porter, 1990; Henard & Szymanski, 2001; Hult, Hurley, & Knight, 2004).

Therefore, innovation capability has become generally recognized as a major source to competitive success and for the economic growth (Sena, 2004; Francis & Bessant, 2005).

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REFERENCES

- Ab Rahim, N. Z., & Ibrahim, R. (2015). *Measurement Model of Relationship Between Knowledge Management Enablers and Knowledge Management Performance in Public Sector*. Paper presented at the International Conference on Knowledge Management in Organizations.
- Abbasi, Tarhini, A., & Elyas, T. (2015). Impact of individualism and collectivism over the individual's technology acceptance behaviour: A multi-group analysis between Pakistan and Turkey. *Journal of Enterprise Information Management*, 28(6), 747-768.
- Abbasi, Tarhini, A., Elyas, T., & Shah, F. (2015). Impact of individualism and collectivism over the individual's technology acceptance behaviour: A multi-group analysis between Pakistan and Turkey. *Journal of Enterprise Information Management*, 28(6), 747-768.
- Abdullah. (2000). *Small and Medium Enterprises in Asian Pacific Countries: Roles and issues* (Vol. 1): Nova Publishers.
- Abdullah, D. F., & Sofian, S. (2012). The relationship between intellectual capital and corporate performance. *Procedia-Social and Behavioral Sciences*, 40, 537-541.
- Abimbola, T. (2001). Branding as a competitive strategy for demand management in SMEs. *Journal of research in marketing and entrepreneurship*, 3(2), 97-106.
- ACO. (2010). *Agricultural census 2010: Pakistan report*, Statistics Division, Government of Pakistan, Gurumangat Road, Gulberg-III, Lahore – Pakistan.
- Adams, Ahmed, & Evans. (2014). Innovation for universal health coverage in Bangladesh: a call to action. *The Lancet*, 382(9910), 2104-2111.

- Adams, & Lamont. (2003). Knowledge management systems and developing sustainable competitive advantage. *Journal of knowledge management*, 7(2), 142-154.
- Adenfelt, M., & Lagerström, K. (2006). Enabling knowledge creation and sharing in transnational projects. *International journal of project management*, 24(3), 191-198.
- Agostini, Nosella, & Filippini. (2017). Does intellectual capital allow improving innovation performance? A quantitative analysis in the SME context. *Journal of Intellectual Capital*, 18(2), 400-418.
- Ahmad. (2015). Entrepreneurship in the small and medium-sized hotel sector. *Current Issues in Tourism*, 18(4), 328-349.
- Ahmad, S., Hinch, G., Prior, J., Thomas, P., & Burrell, D. (2012). The role of extension in changing the dairy industry in Pakistan: a review. *JAPS, Journal of Animal and Plant Sciences*, 22(2 Supplement), 113-116.
- Ahmadani, M. M., Shaikh, N., & Shaikh, F. M. (2012). Impact Analysis of SMEs Sector in Economic Development of Pakistan: A Case of Sindh. *Journal of Asian Business Strategy*, 2(2), 44.
- Ahmed, Shahzad, & Khilji. (2010). Information technology and SMEs in Pakistan. *International Business Research*, 3(4), 237.
- Ahmed, I., Nawaz, M. M., Ahmad, Z., Shaukat, M. Z., Usman, A., Rehman, W.-u., & Ahmed, N. (2010). Determinants of students' entrepreneurial career intentions: Evidence from business graduates. *European Journal of Social Sciences*, 15(2), 14-22.

- Ahmed, I., Nawaz, M. M., Iqbal, N., Ali, I., Shaukat, Z., & Usman, A. (2010). Effects of motivational factors on employees job satisfaction a case study of University of the Punjab, Pakistan. *International Journal of Business and management*, 5(3), 70.
- Akbar, H., Rashid, M. I., Shehzad, W., Saeed, K., & Oneeb, M. (2014). Parastic Challenges to Booming Dairy Industry of Pakistan. *Science International*, 26(3).
- Akhavan, P., & Mahdi Hosseini, S. (2016). Social capital, knowledge sharing, and innovation capability: an empirical study of R&D teams in Iran. *Technology Analysis & Strategic Management*, 28(1), 96-113.
- Akhavan, P., Rahimi, A., & Mehralian, G. (2013). Developing a model for knowledge sharing in research centers. *Vine*, 43(3), 357-393.
- Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Factors influencing the profitability of Islamic banks of Pakistan. *International Research Journal of Finance and Economics*, 66, 125-132.
- Al-bahussin, S. A., & El-Garaihy, W. H. (2013). The impact of human resource management practices, organisational culture, organisational innovation and knowledge management on organisational performance in large Saudi organisations: Structural equation modeling with conceptual framework. *International Journal of Business and management*, 8(22), 1.
- Al-Saudi, M. A. (2012). The impact of organizational climate upon the innovative behavior at Jordanian Private Universities as perceived by employees: A field study. *International Business and Management*, 5(2), 14-27.

- Alavi, M., & Leidner, D. E. (2001). Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS quarterly*, 107-136.
- Alegre, J., Sengupta, K., & Lapiedra, R. (2013). Knowledge management and innovation performance in a high-tech SMEs industry. *International Small Business Journal*, 31(4), 454-470.
- Allocca, M. A., & Kessler, E. H. (2006). Innovation speed in small and medium-sized enterprises. *Creativity and Innovation Management*, 15(3), 279-295.
- Amabile, T. M. (1996). *Creativity in context: Update to "the social psychology of creativity."*: Westview press.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management journal*, 39(5), 1154-1184.
- Amankwah, K., Klerkx, L., Oosting, S., Sakyi-Dawson, O., van der Zijpp, A., & Millar, D. (2013). *Diagnosing constraints to market participation of small ruminant producers in Northern Ghana*. Paper presented at the Book of abstracts of the 64th Annual Meeting of the European Federation of Animal Science, Nantes, 26-30 August 2013.
- Amit, R., & Schoemaker, P. J. (1993). Strategic assets and organizational rent. *Strategic management journal*, 14(1), 33-46.
- Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic management journal*, 22(6-7), 493-520.

- Amores-Salvadó, J., Martín-de Castro, G., & Navas-López, J. E. (2015). The importance of the complementarity between environmental management systems and environmental innovation capabilities: A firm level approach to environmental and business performance benefits. *Technological Forecasting and Social Change, 96*, 288-297.
- Anderson, G. (1994). Industry clustering for economic development. *Economic Development Review, 12*, 26-26.
- Ansari, Barati, & Sharabiani. (2016). The role of dynamic capability in intellectual capital and innovative performance. *International Journal of Innovation and Learning, 20*(1), 47-67.
- Ansari, Malik, & Shehla. (2017). Ability-based emotional intelligence and knowledge sharing: the moderating role of trust in co-workers. *VINE Journal of Information and Knowledge Management Systems, 47*(2).
- Apak, S., & Atay, E. (2014). Global innovation and knowledge management practice in small and medium enterprises (SMEs) in Turkey and the Balkans. *Procedia-Social and Behavioral Sciences, 150*, 1260-1266.
- Aragón-Sánchez, A., & Sánchez-Marín, G. (2005). Strategic orientation, management characteristics, and performance: A study of Spanish SMEs. *Journal of small business management, 43*(3), 287-308.
- Ardichvili, A., Page, V., & Wentling, T. (2003). Motivation and barriers to participation in virtual knowledge-sharing communities of practice. *Journal of knowledge management, 7*(1), 64-77.

- Arikan, A. T. (2009). Interfirm knowledge exchanges and the knowledge creation capability of clusters. *Academy of Management Review*, 34(4), 658-676.
- Arinaitwe, S. K. (2006). Factors constraining the growth and survival of small scale businesses. A developing countries analysis. *Journal of American Academy of Business, Cambridge*, 8(2), 167-178.
- Arthur, J. B., & Kim, D.-O. (2005). Gainsharing and knowledge sharing: the effects of labour–management co-operation. *The International Journal of Human Resource Management*, 16(9), 1564-1582.
- Aryee, S., Budhwar, P. S., & Chen, Z. X. (2002). Trust as a mediator of the relationship between organizational justice and work outcomes: Test of a social exchange model. *Journal of organizational Behavior*, 23(3), 267-285.
- Asante, B. O., Villano, R. A., & Battese, G. E. (2017). Integrated Crop-Livestock Management Practices, Technical Efficiency and Technology Ratios in Extensive Small-Ruminant Systems in Ghana. *Livestock Science*.
- Asch, D. A., Jedrzejewski, M. K., & Christakis, N. A. (1997). Response rates to mail surveys published in medical journals. *Journal of clinical epidemiology*, 50(10), 1129-1136.
- Asgharian, R., Zohoori, M., Malakouti, M., & Attarnezhad, O. (2013). Interdisciplinary Journal of Contemporary Research in Business.
- Aslesen, H. W., & Pettersen, I. B. (2017). Entrepreneurial firms in STI and DUI mode clusters: do they need differentiated cluster facilitation? *European Planning Studies*, 25(6), 904-922.

- Assink, M. (2006). Inhibitors of disruptive innovation capability: a conceptual model. *European Journal of Innovation Management*, 9(2), 215-233.
- Audretsch, D., & Keilbach, M. (2004). Entrepreneurship capital and economic performance. *Regional studies*, 38(8), 949-959.
- Audretsch, D. B., & Feldman, M. P. (1996). Innovative clusters and the industry life cycle. *Review of industrial organization*, 11(2), 253-273.
- Avermaete, T., Viaene, J., Morgan, E. J., Pitts, E., Crawford, N., & Mahon, D. (2004). Determinants of product and process innovation in small food manufacturing firms. *Trends in Food Science & Technology*, 15(10), 474-483.
- Awan, K. Z., & Akram, M. (2012). The relationship between Islamic work ethics and innovation capability and knowledge sharing plays moderation role. *International Journal of Economics and Management Sciences*, 1(8), 34-48.
- Badawy, M. K. (1993). Management as a new technology. *Computers in Industry*, 23(153), 153.
- Bagozzi, R. P. (2011). Measurement and Meaning in Information Systems and Organizational Research: Methodological and Philosophical Foundations. *MIS quarterly*, 35(2), 261-292.
- Bagozzi, R. P., & Yi, Y. (1990). Assessing method variance in multitrait-multimethod matrices: The case of self-reported affect and perceptions at work. *Journal of applied psychology*, 75(5), 547.
- Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative science quarterly*, 421-458.

- Baptista, R., & Swann, P. (1998). Do firms in clusters innovate more? *Research Policy*, 27(5), 525-540.
- Barachini, F. (2009). Cultural and social issues for knowledge sharing. *Journal of knowledge management*, 13(1), 98-110.
- Barasa, L., Knoben, J., Vermeulen, P., Kimuyu, P., & Kinyanjui, B. (2017). Institutions, resources and innovation in East Africa: A firm level approach. *Research Policy*, 46(1), 280-291.
- Barker, R. (2015). Management of knowledge creation and sharing to create virtual knowledge-sharing communities: a tracking study. *Journal of knowledge management*, 19(2), 334-350.
- Barkham, R., Gudgin, G., Hart, M., & Hanvey, E. (1996). The Determinants of Small.
- Barney. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Barney. (1999). How a firm's capabilities affect boundary decisions. *MIT Sloan Management Review*, 40(3), 137.
- Barney. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, 27(6), 643-650.
- Barney, & Clark. (2007). *Resource-based theory: Creating and sustaining competitive advantage*: Oxford University Press on Demand.
- Barney, & Ouchi. (1986). *Organizational economics*: Jossey-Bass.

- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
- Bartol, K. M., & Srivastava, A. (2002). Encouraging knowledge sharing: The role of organizational reward systems. *Journal of Leadership & Organizational Studies*, 9(1), 64-76.
- Bass, F. M. (1969). A new product growth for model consumer durables. *Management science*, 15(5), 215-227.
- Bassus, O., Ahrens, A., & Zaščerinska, J. (2014). Engineering Student's Direct Experience in Entrepreneurship. *Scientific and organising committee*, 9.
- Bathelt, H., Malmberg, A., & Maskell, P. (2004). Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in human geography*, 28(1), 31-56.
- Bell DeTienne, K., & Jackson, L. A. (2001). Knowledge management: understanding theory and developing strategy. *Competitiveness Review: An International Business Journal*, 11(1), 1-11.
- Bell, S. J., Tracey, P., & Heide, J. B. (2009). The organization of regional clusters. *Academy of Management Review*, 34(4), 623-642.
- Bellé, N. (2013). Experimental evidence on the relationship between public service motivation and job performance. *Public Administration Review*, 73(1), 143-153.
- Belso-Martínez, J. A., Xavier Molina-Morales, F., & Mas-Verdu, F. (2011). Clustering and internal resources: moderation and mediation effects. *Journal of knowledge management*, 15(5), 738-758.

- Berthon, P., Mac Hulbert, J., & Pitt, L. (2004). Innovation or customer orientation? An empirical investigation. *European Journal of Marketing*, 38(9/10), 1065-1090.
- Bettis, R. A., & Sampler, J. (1998). Commentary on'Redefining industry structure for the information age'by JL Sampler. *Strategic management journal*, 357-361.
- Bharadwaj, N., & Matsuno, K. (2006). Investigating the antecedents and outcomes of customer firm transaction cost savings in a supply chain relationship. *Journal of Business Research*, 59(1), 62-72.
- Bhatnagar, J. (2014). Mediator analysis in the management of innovation in Indian knowledge workers: the role of perceived supervisor support, psychological contract, reward and recognition and turnover intention. *The International Journal of Human Resource Management*, 25(10), 1395-1416.
- Bhutta, Khan, & Omar. (2008). An exploratory study of the characteristics affecting the success of SMEs in Pakistan. *International Journal of Entrepreneurship and Small Business*, 7(1), 107-122.
- Bilal, M., Suleman, M., & Raziq, A. (2006). Buffalo: black gold of Pakistan. *Livestock research for rural development*, 18(9), 140-151.
- Birkinshaw, J., Hamel, G., & Mol, M. J. (2008). Management innovation. *Academy of Management Review*, 33(4), 825-845.
- Blommerde, T., & Lynch, P. (2015). A service innovation capability maturity model for SMEs.
- Blommerde, T., & Lynch, P. (2016). Assessing SME Service Innovation Capability Using a Maturity Matrix.

- Bloodgood, J. (2014). Enhancing the resource-based view of the firm: Increasing the role of awareness. *Strategic Management Review*, 8(1), 61-75.
- Bock, G.-W., Zmud, R. W., Kim, Y.-G., & Lee, J.-N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS quarterly*, 87-111.
- Boh, W. F., & Wong, S.-S. (2015). Managers versus co-workers as referents: Comparing social influence effects on within-and outside-subsidary knowledge sharing. *Organizational Behavior and Human Decision Processes*, 126, 1-17.
- Bollinger, A. S., & Smith, R. D. (2001). Managing organizational knowledge as a strategic asset. *Journal of knowledge management*, 5(1), 8-18.
- Bond, E. U., & Houston, M. B. (2003). Barriers to matching new technologies and market opportunities in established firms. *Journal of product innovation management*, 20(2), 120-135.
- Bontis, N., Chua Chong Keow, W., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, 1(1), 85-100.
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: state-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9-19.
- Borghini, S. (2005). Organizational creativity: Breaking equilibrium and order to innovate. *Journal of knowledge management*, 9(4), 19-33.
- Borins, S. (2001). Encouraging innovation in the public sector. *Journal of Intellectual Capital*, 2(3), 310-319.

- Börjesson, S., & Elmquist, M. (2011). Developing innovation capabilities: a longitudinal study of a project at Volvo Cars. *Creativity and Innovation Management*, 20(3), 171-184.
- Börjesson, S., Elmquist, M., & Hooge, S. (2014). The challenges of innovation capability building: Learning from longitudinal studies of innovation efforts at Renault and Volvo Cars. *Journal of Engineering and Technology Management*, 31, 120-140.
- Bounfour, A. (2003). *The management of intangibles: The organisation's most valuable assets* (Vol. 16): Psychology Press.
- Branine, M. (2005). Cross-cultural training of managers: An evaluation of a management development programme for Chinese managers. *Journal of Management Development*, 24(5), 459-472.
- Breschi, S., & Malerba, F. (2001). The geography of innovation and economic clustering: some introductory notes. *Industrial and corporate change*, 10(4), 817-833.
- Bresnen, M., Edelman, L., Newell, S., Scarbrough, H., & Swan, J. (2003). Social practices and the management of knowledge in project environments. *International journal of project management*, 21(3), 157-166.
- Breznik, L., & D. Hisrich, R. (2014). Dynamic capabilities vs. innovation capability: are they related? *Journal of small business and enterprise development*, 21(3), 368-384.
- Bright, L. (2013). Where does public service motivation count the most in government work environments? A preliminary empirical investigation and hypotheses. *Public Personnel Management*, 42(1), 5-26.

- Brown, J. (2002). Statistics corner: Questions and answers about language testing statistics: The Cronbach alpha reliability estimate. *Shiken: JALT Testing & Evaluation SIG Newsletter* 6 (1), 17-19.
- Bruton, G. D., Dess, G. G., & Janney, J. J. (2007). Knowledge management in technology-focused firms in emerging economies: Caveats on capabilities, networks, and real options. *Asia Pacific Journal of Management*, 24(2), 115-130.
- Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of mixed methods research*, 1(1), 8-22.
- Buenechea-Elberdin, M., Kianto, A., & Sáenz, J. (2017). Intellectual capital drivers of product and managerial innovation in high-tech and low-tech firms. *R&D Management*.
- Burke, M., Mohammed Fathi, N., Cyril Eze, U., & Guan Gan Goh, G. (2011). Key determinants of knowledge sharing in an electronics manufacturing firm in Malaysia. *Library Review*, 60(1), 53-67.
- Burki, A. A., & Khan, M. A. (2011). Formal participation in a milk supply chain and technical inefficiency of smallholder dairy farms in Pakistan. *The Pakistan Development Review*, 63-81.
- Burki, A. A., Khan, M. A., & Bari, F. (2004). The state of Pakistan's dairy sector: an assessment. *The Pakistan Development Review*, 149-174.
- Büschgens, T., Bausch, A., & Balkin, D. B. (2013). Organizational culture and innovation: A meta-analytic review. *Journal of product innovation management*, 30(4), 763-781.

- Cabrera, & Cabrera, A. (2005). Fostering knowledge sharing through people management practices. *The International Journal of Human Resource Management*, 16(5), 720-735.
- Cabrera, Collins, & Salgado. (2006). Determinants of individual engagement in knowledge sharing. *The International Journal of Human Resource Management*, 17(2), 245-264.
- Cadwallader, S., Jarvis, C. B., Bitner, M. J., & Ostrom, A. L. (2010). Frontline employee motivation to participate in service innovation implementation. *Journal of the Academy of Marketing Science*, 38(2), 219-239.
- Caiazza, R., Richardson, A., & Audretsch, D. (2015). Knowledge effects on competitiveness: From firms to regional advantage. *The Journal of Technology Transfer*, 40(6), 899-909.
- Cain, P., Anwar, M., & Rowlinson, P. (2007). Assessing the critical factors affecting the viability of small-scale dairy farms in the Punjab region of Pakistan to inform agricultural extension programmes. *Agricultural Systems*, 94(2), 320-330.
- Çakar, N. D., & Ertürk, A. (2010). Comparing innovation capability of small and medium-sized enterprises: examining the effects of organizational culture and empowerment. *Journal of small business management*, 48(3), 325-359.
- Calantone, Cavusgil, & Zhao. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial marketing management*, 31(6), 515-524.
- Calantone, Garcia, & Dröge. (2003). The effects of environmental turbulence on new product development strategy planning. *Journal of product innovation management*, 20(2), 90-103.

- Camelo-Ordaz, C., Garcia-Cruz, J., Sousa-Ginel, E., & Valle-Cabrera, R. (2011). The influence of human resource management on knowledge sharing and innovation in Spain: the mediating role of affective commitment. *The International Journal of Human Resource Management*, 22(07), 1442-1463.
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891-2902.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin*, 56(2), 81.
- Campbell, D. T., & O'Connell, E. J. (1982). Methods as diluting trait relationships rather than adding irrelevant systematic variance. *New Directions for Methodology of Social & Behavioral Science*.
- Canals, J. (2001). How to Think about Corporate Growth? This paper is based on the author's book, *Managing Corporate Growth*, Oxford University Press, Oxford, 2000. *European management journal*, 19(6), 587-598.
- Caniels, M. C., & Romijn, H. A. (2003). SME clusters, acquisition of technological capabilities and development: concepts, practice and policy lessons. *Journal of Industry, Competition and Trade*, 3(3), 187-210.
- Cantwell, J. (2017). Innovation and international business. *Industry and Innovation*, 24(1), 41-60.
- Carbonell, P., & Rodríguez-Escudero, A. I. (2009). Relationships among team's organizational context, innovation speed, and technological uncertainty: An

- empirical analysis. *Journal of Engineering and Technology Management*, 26(1), 28-45.
- Cardinal, L. B., Alessandri, T. M., & Turner, S. F. (2001). Knowledge codifiability, resources, and science-based innovation. *Journal of knowledge management*, 5(2), 195-204.
- Carmeli, A., & Paulus, P. B. (2015). CEO ideational facilitation leadership and team creativity: The mediating role of knowledge sharing. *The Journal of Creative Behavior*, 49(1), 53-75.
- Carrero, V., Peiro, J. M., & Salanova, M. (2000). Studying radical organizational innovation through grounded theory. *European Journal of Work and Organizational Psychology*, 9(4), 489-514.
- Carrillo, F. J., Brachos, D., Kostopoulos, K., Eric Soderquist, K., & Prastacos, G. (2007). Knowledge effectiveness, social context and innovation. *Journal of knowledge management*, 11(5), 31-44.
- Carrillo, J. E., & Gaimon, C. (2004). Managing knowledge-based resource capabilities under uncertainty. *Management science*, 50(11), 1504-1518.
- Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics. *Long Range Planning*, 43(2), 195-215.
- Casanueva, C., Castro, I., & Galán, J. L. (2013). Informational networks and innovation in mature industrial clusters. *Journal of Business Research*, 66(5), 603-613.
- Casimir, G., Lee, K., & Loon, M. (2012). Knowledge sharing: influences of trust, commitment and cost. *Journal of knowledge management*, 16(5), 740-753.

- Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*: John Wiley & Sons Australia.
- Chang, & Lee. (2007). The effects of organizational culture and knowledge management mechanisms on organizational innovation: An empirical study in Taiwan. *The Business Review*, 7(1), 295-301.
- Chang, Liao, & Wu. (2017). Relationships among organizational culture, knowledge sharing, and innovation capability: a case of the automobile industry in Taiwan. *Knowledge Management Research & Practice*, 1-20.
- Chang, C.-M., Hsu, M.-H., & Yen, C.-H. (2012). Factors affecting knowledge management success: the fit perspective. *Journal of knowledge management*, 16(6), 847-861.
- Chang, Y.-Y., Gong, Y., & Peng, M. W. (2012). Expatriate knowledge transfer, subsidiary absorptive capacity, and subsidiary performance. *Academy of Management journal*, 55(4), 927-948.
- Chaochotechuang, P. (2016). *Investing innovation strategies of new product development: Multiple case study of Thai food and Beverage Manufactureing SMEs*.
- Chatterji, A. K., & Fabrizio, K. R. (2014a). Does the market for ideas influence the rate and direction of innovative activity? Evidence from the medical device industry. *Strategic management journal*.
- Chatterji, A. K., & Fabrizio, K. R. (2014b). Using users: When does external knowledge enhance corporate product innovation? *Strategic management journal*, 35(10), 1427-1445.

- Chen, & Huang. (2009). Strategic human resource practices and innovation performance—The mediating role of knowledge management capacity. *Journal of Business Research*, 62(1), 104-114.
- Chen, C. W., Chang, M. L., Tseng, C. P., Chen, B. C., & Chang, Y. Y. C. (2013). Critical human factor evaluation of knowledge sharing intention in Taiwanese enterprises. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 23(2), 95-106.
- Chen, J., Zhao, X., Lewis, M., & Squire, B. (2015). A Multi-Method Investigation of Buyer Power and Supplier Motivation to Share Knowledge. *Production and Operations Management*.
- Chen, J., Zhu, Z., & Yuan Xie, H. (2004). Measuring intellectual capital: a new model and empirical study. *Journal of Intellectual Capital*, 5(1), 195-212.
- Cheng, C. (2017). of strategic orientations and the. *Research Handbook of Innovation and Creativity for Marketing Management*, 45.
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research*, 14(2), 189-217.
- Chinying Lang, J. (2001). Managerial concerns in knowledge management. *Journal of knowledge management*, 5(1), 43-59.
- Cho, H. J., & Pucik, V. (2005). Relationship between innovativeness, quality, growth, profitability, and market value. *Strategic management journal*, 26(6), 555-575.

- Choi, S. Y., Lee, H., & Yoo, Y. (2010). The impact of information technology and transactive memory systems on knowledge sharing, application, and team performance: a field study. *MIS quarterly*, 855-870.
- Chow, W. S., & Chan, L. S. (2008). Social network, social trust and shared goals in organizational knowledge sharing. *Information & management*, 45(7), 458-465.
- Choy, C. S., Yew, W. K., & Lin, B. (2006). Criteria for measuring KM performance outcomes in organisations. *Industrial Management & Data Systems*, 106(7), 917-936.
- Chu, K.-M., & Chan, H.-C. (2009). Community based innovation: its antecedents and its impact on innovation success. *Internet Research*, 19(5), 496-516.
- Chuang, S.-H., & Lin, H.-N. (2017). Performance implications of information-value offering in e-service systems: Examining the resource-based perspective and innovation strategy. *The Journal of Strategic Information Systems*, 26(1), 22-38.
- Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of marketing Research*, 64-73.
- Clark, M., & Goodwin, N. (2010). *Sustaining innovation in telehealth and telecare: WSD Action Network*, King's Fund.
- Clarke, T., & Rollo, C. (2001). Corporate initiatives in knowledge management. *Education+ Training*, 43(4/5), 206-214.
- Clemons, E. K., & Row, M. C. (1991). Information technology at Rosenbluth Travel: competitive advantage in a rapidly growing global service company. *Journal of management information systems*, 8(2), 53-80.

- Coakes, S. J., Steed, L. G., Coakes, S., & Steed, L. (2003). Multiple response and multiple dichotomy analysis. *SPSS: analysis without anguish: Version 11.0 for Windows*, 215-224.
- Cohen, J. F., & Olsen, K. (2015). Knowledge management capabilities and firm performance: A test of universalistic, contingency and complementarity perspectives. *Expert Systems with Applications*, 42(3), 1178-1188.
- Cohen, S. (1988). Perceived stress in a probability sample of the United States.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 128-152.
- Collins, C. J., & Clark, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of Management journal*, 46(6), 740-751.
- Connell, J., & Voola, R. (2013). Knowledge integration and competitiveness: a longitudinal study of an industry cluster. *Journal of knowledge management*, 17(2), 208-225.
- Connelly, C. E., & Kevin Kelloway, E. (2003). Predictors of employees' perceptions of knowledge sharing cultures. *Leadership & Organization Development Journal*, 24(5), 294-301.
- Conner, K. R. (1991). A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm? *Journal of Management*, 17(1), 121-154.

- Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology, 25*(3), 325-334.
- Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of occupational psychology, 53*(1), 39-52.
- Cooper, C. L. (2005). The future of work: careers, stress and well-being. *Career Development International, 10*(5), 396-399.
- Coopey, J., Keegan, O., & Emler, N. (1998). Managers' innovations and the structuration of organizations. *Journal of management studies, 35*(3), 263-284.
- Corrocher, N., & Solito, I. (2017). How do firms capture value from environmental innovations? An empirical analysis on European SMEs. *Industry and Innovation, 1*-17.
- Cortese, A., & McDonough, W. (2001). *Education for sustainability: Accelerating the transition to sustainability through higher education*. Paper presented at the Second Nature Regional Workshop “Shaping a Sustainable Future: Best Practices in Higher Education,” June.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of applied psychology, 78*(1), 98.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*: Sage.
- Crook, T. R., Ketchen, D. J., Combs, J. G., & Todd, S. Y. (2008). Strategic resources and performance: a meta-analysis. *Strategic management journal, 29*(11), 1141-1154.

- Crossan Mary, M., Fry Joseph, N., & Killing Peter, J. (2005). *Strategic Analysis and Action*: Prentice Hall.
- Cua, F. C., & Garrett, T. C. (2009). *Diffusion of Innovations Theory*.
- Cui, A. S., Griffith, D. A., & Cavusgil, S. T. (2005). The influence of competitive intensity and market dynamism on knowledge management capabilities of multinational corporation subsidiaries. *Journal of International Marketing*, 13(3), 32-53.
- Cummings, J. L., & Teng, B.-S. (2003). Transferring R&D knowledge: the key factors affecting knowledge transfer success. *Journal of Engineering and Technology Management*, 20(1), 39-68.
- Curran-Everett, D., Taylor, S., & Kafadar, K. (1998). Fundamental concepts in statistics: elucidation and illustration. *Journal of Applied Physiology*, 85(3), 775-786.
- Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological methods*, 1(1), 16.
- Currie, G., & Kerrin, M. (2003). Human resource management and knowledge management: enhancing knowledge sharing in a pharmaceutical company. *The International Journal of Human Resource Management*, 14(6), 1027-1045.
- Curtin, R., Presser, S., & Singer, E. (2000). The effects of response rate changes on the index of consumer sentiment. *Public opinion quarterly*, 64(4), 413-428.
- Cyril Eze, U., Guan Gan Goh, G., Yih Goh, C., & Ling Tan, T. (2013). Perspectives of SMEs on knowledge sharing. *Vine*, 43(2), 210-236.

- Dahlberg, G. (1940). Statistical methods for medical and biological students. *Statistical Methods for Medical and Biological Students*.
- Damanpour, F. (1996). Organizational complexity and innovation: developing and testing multiple contingency models. *Management science*, 42(5), 693-716.
- Damanpour, F., & Evan, W. M. (1984). Organizational innovation and performance: the problem of "organizational lag". *Administrative science quarterly*, 392-409.
- Damanpour, F., & Gopalakrishnan, S. (2001). The dynamics of the adoption of product and process innovations in organizations. *Journal of management studies*, 38(1), 45-65.
- Dana, L. P., Bajramovic, M. B., & Wright, R. W. (2005). The new paradigm of multipolar competition and its implications for entrepreneurship research in Europe. *Entrepreneurship Research in Europe: Outcomes and Perspectives*, 102-117.
- Danneels, E. (2011). Trying to become a different type of company: dynamic capability at Smith Corona. *Strategic management journal*, 32(1), 1-31.
- Dar, Shafique, M., & Ahmed. (2017). SMALL AND MEDIUM-SIZE ENTERPRISES IN PAKISTAN: DEFINITION AND CRITICAL ISSUES. *Pakistan Business Review*, 19(1), 46-70.
- Darroch, J. (2003). Developing a measure of knowledge management behaviors and practices. *Journal of knowledge management*, 7(5), 41-54.
- Darroch, J. (2005). Knowledge management, innovation and firm performance. *Journal of knowledge management*, 9(3), 101-115.

- Darroch, J., & McNaughton, R. (2002). Examining the link between knowledge management practices and types of innovation. *Journal of Intellectual Capital*, 3(3), 210-222.
- Darroch, J., McNaughton, R., & Bontis, N. (2002). *Developing a measure of knowledge management*. Paper presented at the World congress on intellectual capital readings.
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*: Harvard Business Press.
- Davenport, T. H., & Völpel, S. C. (2001). The rise of knowledge towards attention management. *Journal of knowledge management*, 5(3), 212-222.
- Davidson, A. P., Ahmad, M., & Ali, T. (2001). *Dilemmas of agricultural extension in Pakistan: Food for thought*: Overseas development institute (ODI). Agricultural research & extension network (AgREN).
- Dayan, P., & Balleine, B. W. (2002). Reward, motivation, and reinforcement learning. *Neuron*, 36(2), 285-298.
- de Castro Hilsdorf, W., de Mattos, C. A., & de Campos Maciel, L. O. (2017). Principles of sustainability and practices in the heavy-duty vehicle industry: A study of multiple cases. *Journal of Cleaner Production*, 141, 1231-1239.
- De Souza, E. F., de Almeida Falbo, R., & Vijaykumar, N. L. (2015). Knowledge management initiatives in software testing: A mapping study. *Information and Software Technology*, 57, 378-391.

- Dedrick, J., Gurbaxani, V., & Kraemer, K. L. (2003). Information technology and economic performance: A critical review of the empirical evidence. *ACM Computing Surveys (CSUR)*, 35(1), 1-28.
- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management journal*, 39(4), 802-835.
- Dermol, V., & Cater, T. (2013). The influence of training and training transfer factors on organisational learning and performance. *Personnel review*, 42(3), 324-348.
- Deshpandé, R., & Farley, J. U. (2004). Organizational culture, market orientation, innovativeness, and firm performance: an international research odyssey. *International Journal of Research in Marketing*, 21(1), 3-22.
- DeTienne, K. B., Dyer, G., Hoopes, C., & Harris, S. (2004). Toward a model of effective knowledge management and directions for future research: Culture, leadership, and CKOs. *Journal of Leadership & Organizational Studies*, 10(4), 26-43.
- Devaraj, S., & Kohli, R. (2003). Performance impacts of information technology: Is actual usage the missing link? *Management science*, 49(3), 273-289.
- Dhanaraj, C., & Beamish, P. W. (2003). A resource-based approach to the study of export performance. *Journal of small business management*, 41(3), 242-261.
- Dhewanto, W., Prasetyo, E. A., Ratnaningtyas, S., Herliana, S., Chaerudin, R., Aina, Q., & Rachmawaty, E. (2012). Moderating effect of cluster on firm's innovation capability and business performance: A conceptual framework. *Procedia-Social and Behavioral Sciences*, 65, 867-872.

- Diana, G. C., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., & Kannan, D. (2017). Putting environmental technologies into the mainstream: adoption of environmental technologies by medium-sized manufacturing firms in Brazil. *Journal of Cleaner Production, 142*, 4011-4018.
- Dibrell, C., Davis, P. S., & Craig, J. (2008). Fueling innovation through information technology in SMEs. *Journal of small business management, 46*(2), 203-218.
- Dielman, T. E. (2005). Least absolute value regression: recent contributions. *Journal of Statistical Computation and Simulation, 75*(4), 263-286.
- Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (Vol. 2): Wiley New York.
- Dillman, D. A. (2011). *Mail and Internet surveys: The tailored design method--2007 Update with new Internet, visual, and mixed-mode guide*: John Wiley & Sons.
- Dixon, W. J., & Massey Jr, F. J. (1957). Introduction to statistical analysis.
- Doane, D. P., & Seward, L. E. (2007). Quality Management. *Applied Statistics in Business and Economics, 735*.
- Donate, M. J., & de Pablo, J. D. S. (2015). The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research, 68*(2), 360-370.
- Donate, M. J., & Guadamillas, F. (2015). An empirical study on the relationships between knowledge management, knowledge-oriented human resource practices and innovation. *Knowledge Management Research & Practice, 13*(2), 134-148.

- Dost, M., Dost, M., Badir, Y. F., Badir, Y. F., Ali, Z., Ali, Z., . . . Tariq, A. (2016). The impact of intellectual capital on innovation generation and adoption. *Journal of Intellectual Capital*, 17(4), 675-695.
- Dovey, K. (2009). The role of trust in innovation. *The Learning Organization*, 16(4), 311-325.
- Dowling, P. (2008). *International human resource management: Managing people in a multinational context*: Cengage Learning.
- Drucker, P. F. (1985). *Innovation and entrepreneurship practices and principles*: AMACON.
- Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge. *California management review*, 41(2), 79-94.
- Drucker, P. F. (2007). *Management challenges for the 21st century*: Routledge.
- Du Plessis, M. (2007). The role of knowledge management in innovation. *Journal of knowledge management*, 11(4), 20-29.
- du Plessis, M., & Boon, J. (2004). Knowledge management in eBusiness and customer relationship management: South African case study findings. *International Journal of Information Management*, 24(1), 73-86.
- Duarte Alonso, A., & Duarte Alonso, A. (2017). An exploration of Cava wineries: a resource-based approach. *International Journal of Wine Business Research*, 29(1), 20-36.
- Duku, S., Price, L., van der Zijpp, A., & Tobi, H. (2011). Influence of male or female headship on the keeping and care of small ruminants: the case of the transitional zone of Ghana. *Livestock research for rural development*, 23(1).

- Dundon, E. (2002). *The seeds of innovation: Cultivating the synergy that fosters new ideas*: AMACOM Div American Mgmt Assn.
- Dutta, S., & Lanvin, B. (2016). The global innovation index 2013: The local dynamics of innovation.
- Dyer, J. H., & Nobeoka, K. (2000). Creating and managing a high-performance knowledge-sharing network: the Toyota case. *Strategic management journal*, 21(3), 345-367.
- Earl, M. (2001). Knowledge management strategies: Toward a taxonomy. *Journal of management information systems*, 18(1), 215-233.
- Edison, Bin Ali, & Torkar. (2013). Towards innovation measurement in the software industry. *Journal of Systems and Software*, 86(5), 1390-1407.
- Edwards, A., Elwyn, G., Covey, J., Matthews, E., & Pill, R. (2001). Presenting risk information a review of the effects of framing and other manipulations on patient outcomes. *Journal of health communication*, 6(1), 61-82.
- Edwards, R. W., Kumar, P., & Ranjan, R. (2002). *Understanding organisation culture and innovation: a case study approach*. Paper presented at the Sixth International Research Conference on Quality, Innovation and Knowledge Management, Kuala Lumpur.
- Efimova, L., & Swaak, J. (2002). KM and (e)-learning: towards an integral approach. *Proc. KMSS02, EKMF, Sophia Antipolis*, 4, 63-69.
- Ellonen, R., Blomqvist, K., & Puumalainen, K. (2008). The role of trust in organisational innovativeness. *European Journal of Innovation Management*, 11(2), 160-181.
- Enders, C. K. (2010). *Applied missing data analysis*: Guilford Press.

- EPS. (2015). Enterprise server, 2015.
- Erakovic, L., & Goel, S. (2008). Board-management relationships: Resources and internal dynamics. *Management Review*, 53-69.
- Eren, E., Kabadayi, M. E., & Sahin, A. (1999). *The evaluation of innovative and technological management consciousness of leading Turkish firms*. Paper presented at the Management of Engineering and Technology, 1999. Technology and Innovation Management. PICMET'99. Portland International Conference on.
- Ertürk, A. (2012). Linking psychological empowerment to innovation capability: Investigating the moderating effect of supervisory trust. *International Journal of Business and Social Science*, 3(14).
- Esfahani, A. N., Safari, A., & Mirzaei, N. H. (2015). The Effect of Internal Marketing on the Knowledge Sharing (Mobarake Steel Company as a Case Study). *Asian Journal of Research in Business Economics and Management*, 5(3), 285-291.
- Esposito Vinzi, V., Trinchera, L., & Amato, S. (2010). PLS path modeling: from foundations to recent developments and open issues for model assessment and improvement. *Handbook of Partial Least Squares: Concepts, Methods and Applications in Marketing and Related Fields*, 47-82.
- EU. (2003). Report of European on SMEs.
- EU. (2014). European union Commission report on agriculture sector.
- Evans, M., Dalkir, K., & Bidian, C. (2015). A holistic view of the knowledge life cycle: the knowledge management cycle (KMC) model. *Leading Issues in Knowledge Management, Volume Two*, 2, 47.

- Fadel, K. J., & Durcikova, A. (2014). *Enhancing the motivation, opportunity, and ability of knowledge workers to participate in knowledge exchange*. Paper presented at the 2014 47th Hawaii International Conference on System Sciences.
- Fagerberg, J. (2004). *Innovation: a guide to the literature*.
- Fainshmidt, S., Pezeshkan, A., Lance Frazier, M., Nair, A., & Markowski, E. (2016). *Dynamic Capabilities and Organizational Performance: A Meta-Analytic Evaluation and Extension*. *Journal of management studies*.
- Fan, S., Fang, C., & Zhang, X. (2003). Agricultural research and urban poverty: The case of China. *World Development*, 31(4), 733-741.
- FAO. (2011). *FAO 2011, Report on Dairy development in Pakistan*, Food and Agriculture Organization, Rome.
- Faraj, S., & Sproull, L. (2000). Coordinating expertise in software development teams. *Management science*, 46(12), 1554-1568.
- Fazlzadeh, A., & Khoshhal, M. R. (2010). *Strategic Human Resource Practices and Innovation Performance—The Mediating Role of Knowledge Management Capacity*. *SSRN Working Paper Series*.
- Feldman, M. P., & Florida, R. (1994). The geographic sources of innovation: technological infrastructure and product innovation in the United States. *Annals of the Association of American Geographers*, 84(2), 210-229.
- Feng, T., Sun, L., & Zhang, Y. (2010). The effects of customer and supplier involvement on competitive advantage: An empirical study in China. *Industrial marketing management*, 39(8), 1384-1394.

- Fernández-Mesa, A., & Alegre, J. (2015). Entrepreneurial orientation and export intensity: Examining the interplay of organizational learning and innovation. *International Business Review*, 24(1), 148-156.
- Fess, E. E. (1989). Assessment of normative statements through measures of variance. *Journal of Hand Therapy*, 2(1), 41-42.
- Fidalgo Blanco, Á., Echaluze, S., Luisa, M., & García Peñalvo, F. J. (2014). Knowledge Spirals in higher education teaching Innovation.
- Fidell, S., Tabachnick, B., Mestre, V., & Fidell, L. (2013). Aircraft noise-induced awakenings are more reasonably predicted from relative than from absolute sound exposure levels. *The Journal of the Acoustical Society of America*, 134(5), 3645-3653.
- Finkelstein, M. A. (1926). Correlates of individualism and collectivism: Predicting organizational citizenship behavior. *International Journal of Psychology and Behavioral Sciences*, 3(2), 57-62.
- Fleig-Palmer, M. M., & Schoorman, F. D. (2011). Trust as a moderator of the relationship between mentoring and knowledge transfer. *Journal of Leadership & Organizational Studies*, 18(3), 334-343.
- Forest Europe, U. (2011). *FAO (2011). State of Europe's forests 2011. Status and trends in sustainable forest management in Europe*. Paper presented at the Ministerial Conference on the Protection of Forests in Europe, Oslo.
- Foroudi, P., Jin, Z., Gupta, S., Melewar, T., & Foroudi, M. M. (2016). Influence of innovation capability and customer experience on reputation and loyalty. *Journal of Business Research*.

- Foss, N. J. (2007). The emerging knowledge governance approach: Challenges and characteristics. *Organization, 14*(1), 29-52.
- Foss, N. J., & Minbaeva, D. (2009). Governing knowledge: the strategic human resource management dimension.
- Foss, N. J., Minbaeva, D. B., Pedersen, T., & Reinholt, M. (2009). Encouraging knowledge sharing among employees: How job design matters. *Human resource management, 48*(6), 871-893.
- Francis, D., & Bessant, J. (2005). Targeting innovation and implications for capability development. *Technovation, 25*(3), 171-183.
- Frear, K. A., Donsbach, J., Theilgard, N., & Shanock, L. R. (2017). Supported Supervisors Are More Supportive, but Why? A Multilevel Study of Mechanisms and Outcomes. *Journal of Business and Psychology, 1-15*.
- Freel, (2005). Patterns of innovation and skills in small firms. *Technovation, 25*(2), 123-134.
- Freel, & Marke. (2005). The Characteristics of Innovation-Intensive Small Firms: Evidence from" Northern Britain". *International journal of innovation management, 9*(04), 401-429.
- Freeman, C., & Soete, L. (1997). *The economics of industrial innovation: Psychology Press*.
- Freeman, J., Carroll, G. R., & Hannan, M. T. (1983). The liability of newness: Age dependence in organizational death rates. *American Sociological Review, 692-710*.

- Fritsch, M., & Franke, G. (2004). Innovation, regional knowledge spillovers and R&D cooperation. *Research Policy*, 33(2), 245-255.
- Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity*: JSTOR.
- Fulk, J., & Yuan, Y. C. (2013). Location, motivation, and social capitalization via enterprise social networking. *Journal of Computer-Mediated Communication*, 19(1), 20-37.
- Galbreath, J. (2005). Which resources matter the most to firm success? An exploratory study of resource-based theory. *Technovation*, 25(9), 979-987.
- Gao, Q., & Zhang, C. (2011). Analysis of innovation capability of 125 agricultural high-tech enterprises in China. *Innovation*, 13(3), 278-290.
- Garavelli, C., Gorgoglione, M., & Scozzi, B. (2004). Knowledge management strategy and organization: A perspective of analysis. *Knowledge and process management*, 11(4), 273-282.
- García-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez. (2012). Transformational leadership influence on organizational performance through organizational learning and innovation. *Journal of Business Research*, 65(7), 1040-1050.
- García-Morales, Lloréns-Montes, & Verdú-Jover. (2007). Influence of personal mastery on organizational performance through organizational learning and innovation in large firms and SMEs. *Technovation*, 27(9), 547-568.
- García-Morales, Matias-Reche, & Hurtado-Torres. (2008). Influence of transformational leadership on organizational innovation and performance depending on the level of organizational learning in the pharmaceutical sector. *Journal of Organizational Change Management*, 21(2), 188-212.

- García, Fernández, Zofío, & Jos. (2003). The economic dimension of the culture and leisure industry in Spain: national, sectoral and regional analysis. *Journal of Cultural Economics*, 27(1), 9-30.
- García, Sanzo, & Trespalacios. (2008). New product internal performance and market performance: Evidence from Spanish firms regarding the role of trust, interfunctional integration, and innovation type. *Technovation*, 28(11), 713-725.
- Garengo, Biazzo, & Simonetti. (2005). Benchmarking on managerial practices: a tool for SMEs. *The TQM Magazine*, 17(5), 440-455.
- Garner, J. L., Nam, J., & Ottoo, R. E. (2002). Determinants of corporate growth opportunities of emerging firms. *Journal of Economics and Business*, 54(1), 73-93.
- Gay, L., & Diehl, P. (1992). *Research methods for business and management*: Macmillan Coll Div.
- Gefen, D., Benbasat, I., & Pavlou, P. (2008). A research agenda for trust in online environments. *Journal of management information systems*, 24(4), 275-286.
- Geisler, E., & Wickramasinghe, N. (2015). *Principles of knowledge management: Theory, practice, and cases*: Routledge.
- Gentry, W. A., Kuhnert, K. W., Mondore, S. P., & Page, E. E. (2007). The influence of supervisory-support climate and unemployment rate on part-time employee retention: A multilevel analysis. *Journal of Management Development*, 26(10), 1005-1022.

- Gertler, M. S. (2003). Tacit knowledge and the economic geography of context, or the undefinable tacitness of being (there). *Journal of economic geography*, 3(1), 75-99.
- Gibbons, D. E. (2004). Friendship and advice networks in the context of changing professional values. *Administrative science quarterly*, 49(2), 238-262.
- Gloet, M., & Berrell, M. (2003). The dual paradigm nature of knowledge management: implications for achieving quality outcomes in human resource management. *Journal of knowledge management*, 7(1), 78-89.
- Gloet, M., & Terziovski, M. (2004). Exploring the relationship between knowledge management practices and innovation performance. *Journal of Manufacturing Technology Management*, 15(5), 402-409.
- Gnyawali, D. R., & Srivastava, M. K. (2013). Complementary effects of clusters and networks on firm innovation: A conceptual model. *Journal of Engineering and Technology Management*, 30(1), 1-20.
- Gobble, M. M. (2013). Outsourcing Innovation. *Research-Technology Management*, 56(4), 64-67.
- Godfrey, P. C., & Hill, C. W. (1995). The problem of unobservables in strategic management research. *Strategic management journal*, 16(7), 519-533.
- Gold, A. H., & Arvind Malhotra, A. H. S. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, 18(1), 185-214.

- González-Ramos, M. I., Donate, M. J., & Guadamillas, F. (2014). Technological Posture and Corporate Social Responsibility: Effects on Innovation Performance,“. *Environmental Engineering and Management Journal*, 13(10), 2497-2505.
- Gooderham, P. N. (2007). Enhancing knowledge transfer in multinational corporations: a dynamic capabilities driven model. *Knowledge Management Research & Practice*, 5(1), 34-43.
- GOP. (2008). Government of Pakistan development in dairy sectors.
- GOP. (2009). Government of Pakistan, 2009.
- GOP. (2014-15). Government of Pakistan census report on economy.
- Graham, J. W. (2012). *Missing data: Analysis and design*: Springer Science & Business Media.
- Grandori, A. (2001). Neither hierarchy nor identity: knowledge-governance mechanisms and the theory of the firm. *Journal of management and Governance*, 5(3-4), 381-399.
- Grant, R. (2002). *Contemporary strategic analysis: Concepts, techniques, applications*. Malden, MA: Blackwell Publishers.
- Gray, C., & Kinnear, P. (1994). *SPSS for Windows made simple*: Psychology Press, Hove.
- Groves, R. M. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public opinion quarterly*, 70(5), 646-675.
- Guadamillas-Gómez, F., & Donate-Manzanares, M. J. (2011). Ethics and corporate social responsibility integrated into knowledge management and innovation technology: A case study. *The Journal of Management Development*, 30(6), 569-581.

- Guadamillas, F., Donate, M. J., & Pablo, J. D. (2008). Knowledge management for corporate entrepreneurship and growth: A case study. *Knowledge and process management, 15*(1), 32-44.
- Guan, J. C., Yam, R. C., Mok, C. K., & Ma, N. (2006). A study of the relationship between competitiveness and technological innovation capability based on DEA models. *European Journal of Operational Research, 170*(3), 971-986.
- Gudmundson, D., Tower, C. B., & Hartman, E. A. (2003). Innovation in small businesses: Culture and ownership structure do matter. *Journal of Developmental entrepreneurship, 8*(1), 1.
- Gujarati, D. N. (2009). *Basic econometrics*: Tata McGraw-Hill Education.
- Günday, G., Ulusoy, G., Kılıç, K., & Alpkın, L. (2009). Determining the factor structure of an integrated innovation model.
- Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of Management journal, 49*(4), 693-706.
- Gye-Soo, K. (2016). Partial Least Squares Structural Equation Modeling (PLS-SEM): An application in Customer Satisfaction Research. *International Journal of u-and e-Service, Science and Technology, 9*(4), 61-68.
- Hadjimanolis, A. (1999). Barriers to innovation for SMEs in a small less developed country (Cyprus). *Technovation, 19*(9), 561-570.
- Hadjimanolis, A. (2000). A resource-based view of innovativeness in small firms. *Technology Analysis & Strategic Management, 12*(2), 263-281.
- Haesli, A., & Boxall, P. (2005). When knowledge management meets HR strategy: an exploration of personalization-retention and codification-recruitment

- configurations. *The International Journal of Human Resource Management*, 16(11), 1955-1975.
- Hafeez, M. H., Shariff, M. N. M., & bin Mad Lazim, H. (2012). Relationship between Entrepreneurial Orientation, Firm Resources, SME Branding and Firm's Performance: Is Innovation the Missing Link? *American Journal of Industrial and Business Management*, 2(04), 153.
- Hafeez, M. H., Shariff, M. N. M., & bin Mad Lazim, H. (2013). Does Innovation and Relational Learning Influence SME Performance? An Empirical Evidence from Pakistan. *Asian Social Science*, 9(15), 204.
- Hair, J., Sarstedt, M., & Hopkins, L. K., Volker. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Hair, J. F. (2010). *Multivariate data analysis*: Pearson College Division.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2009). *Análise multivariada de dados*: Bookman Editora.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012). The use of partial least squares structural equation modeling in strategic management research: a review of past practices and recommendations for future applications. *Long Range Planning*, 45(5), 320-340.

- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433.
- Hair, S., Marko, Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Hakala, H., & Kohtamäki, M. (2010). The interplay between orientations: Entrepreneurial, technology and customer orientations in software companies. *Journal of Enterprising Culture*, 18(03), 265-290.
- Hall, B. (2001). Learning management and knowledge management: Is the holy grail of integration close at hand? *Brandon-Hall, Sunnyvale*.
- Hall, H. (2003). The challenge of innovating for sustainable development. *MIT Sloan Management Review*, 45(1), 61.
- Hanif, A., & Manarvi, I. A. (2009). *Influence of quality, innovation and new product/services design on small and medium enterprises*. Paper presented at the Proceedings of the World Congress on Engineering, London, UK.
- Hanifah, Halim, & Ahmad. (2017). Innovation Culture as a Mediator Between Specific Human Capital and Innovation Performance Among Bumiputera SMEs in Malaysia *Handbook of Research on Small and Medium Enterprises in Developing Countries* (pp. 261-279): IGI Global.
- Hariharan, A. (2015). Knowledge Management Is Fun. *The Journal for Quality and Participation*, 38(2), 34.

- Harkema, S. (2003). A complex adaptive perspective on learning within innovation projects. *The Learning Organization*, 10(6), 340-346.
- Hasanali, F. (2002). Critical success factors of knowledge management.
- Hau, Y. S., Kim, B., & Lee, H. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, 33(2), 356-366.
- Hau, Y. S., Kim, B., Lee, H., & Kim, Y.-G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, 33(2), 356-366.
- Hausman, A. (2005). Innovativeness among small businesses: Theory and propositions for future research. *Industrial marketing management*, 34(8), 773-782.
- Hayes, M. H. (2009). *Statistical digital signal processing and modeling*: John Wiley & Sons.
- Haynes, S. N., Richard, D., & Kubany, E. S. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological assessment*, 7(3), 238.
- He, Z.-L., & Wong, P.-K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization science*, 15(4), 481-494.
- Heberlein, T. A., & Baumgartner, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American Sociological Review*, 447-462.

- Helfat, C. E., & Peteraf, M. A. (2015). Managerial cognitive capabilities and the microfoundations of dynamic capabilities. *Strategic management journal*, 36(6), 831-850.
- Henard, D. H., & Szymanski, D. M. (2001). Why some new products are more successful than others. *Journal of marketing Research*, 38(3), 362-375.
- Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and process management*, 6(2), 91.
- Henseler, Dijkstra, Sarstedt, Ringle, Diamantopoulos, Straub, D. W., . . . Calantone, R. J. (2014). Common beliefs and reality about PLS comments on Rönkkö and Evermann (2013). *Organizational Research Methods*, 1094428114526928.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in international marketing*, 20(1), 277-319.
- Herstad, S. J., Sandven, T., & Ebersberger, B. (2015). Recruitment, knowledge integration and modes of innovation. *Research Policy*, 44(1), 138-153.
- Hislop, D. (2013). *Knowledge management in organizations: A critical introduction*: Oxford University Press.
- Hjalager, A.-M. (2010). A review of innovation research in tourism. *Tourism management*, 31(1), 1-12.
- Ho, L.-A. (2011). Meditation, learning, organizational innovation and performance. *Industrial Management & Data Systems*, 111(1), 113-131.
- Ho, L.-A., Kuo, T.-H., & Lin, B. (2012). How social identification and trust influence organizational online knowledge sharing. *Internet Research*, 22(1), 4-28.

- Hoegl, M., Parboteeah, K. P., & Munson, C. L. (2003). Team-level antecedents of individuals' knowledge networks. *Decision Sciences*, 34(4), 741-770.
- Hogan, S. J., & Coote, L. V. (2014). Organizational culture, innovation, and performance: A test of Schein's model. *Journal of Business Research*, 67(8), 1609-1621.
- Hogan, S. J., Soutar, G. N., McColl-Kennedy, J. R., & Sweeney, J. C. (2011). Reconceptualizing professional service firm innovation capability: Scale development. *Industrial marketing management*, 40(8), 1264-1273.
- Holste, J. S., & Fields, D. (2010). Trust and tacit knowledge sharing and use. *Journal of knowledge management*, 14(1), 128-140.
- Hoogstra, G. J., & van Dijk, J. (2004). Explaining firm employment growth: does location matter? *Small Business Economics*, 22(3-4), 179-192.
- Horman, Y., & Kaminka, G. A. (2005). *Removing statistical biases in unsupervised sequence learning*. Paper presented at the International Symposium on Intelligent Data Analysis.
- Hornsby, J. S., Kuratko, D. F., & Zahra, S. A. (2002). Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale. *Journal of Business Venturing*, 17(3), 253-273.
- Hossain, M. (2015). A review of literature on open innovation in small and medium-sized enterprises. *Journal of Global Entrepreneurship Research*, 5(1), 1-12.
- Hoyle, R. H., & Robinson, J. C. (2004). Mediated and moderated effects in social psychological research. *Handbook of methods in social psychology*, 213-233.

- Hu, L., & Randel, A. E. (2014). Knowledge sharing in teams: Social capital, extrinsic incentives, and team innovation. *Group & Organization Management*, 1059601114520969.
- Huemer, L. (2004). Balancing between stability and variety: Identity and trust trade-offs in networks. *Industrial marketing management*, 33(3), 251-259.
- Hulland, J., & Business, R. I. S. o. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, 20(2), 195-204.
- Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial marketing management*, 33(5), 429-438.
- Humphreys, P., McAdam, R., & Leckey, J. (2005). Longitudinal evaluation of innovation implementation in SMEs. *European Journal of Innovation Management*, 8(3), 283-304.
- Hung, S.-Y., Durcikova, A., Lai, H.-M., & Lin, W.-M. (2011). The influence of intrinsic and extrinsic motivation on individuals' knowledge sharing behavior. *International Journal of Human-Computer Studies*, 69(6), 415-427.
- Hung, S.-Y., Lai, H.-M., & Chang, W.-W. (2011). Knowledge-sharing motivations affecting R&D employees' acceptance of electronic knowledge repository. *Behaviour & Information Technology*, 30(2), 213-230.
- Hussain, I., Si, S., Xie, X., & Wang, L. (2010). Comparative study on impact of internal and external CFFs on SMEs. *Journal of Small Business & Entrepreneurship*, 23(4), 637-648.

- Huysman, M., & Wulf, V. (2006). IT to support knowledge sharing in communities, towards a social capital analysis. *Journal of information technology*, 21(1), 40-51.
- Ichniowski, C., Shaw, K., & Prennushi, G. (1997). The effects of human resource management practices on productivity: A study of steel finishing lines. *The American Economic Review*, 291-313.
- Ihua, U. B. (2009). SMEs key failure-factors: a comparison between the United Kingdom and Nigeria. *Journal of Social Science*, 18(3), 199-207.
- Inan, G. G., & Bititci, U. S. (2015). Understanding organizational capabilities and dynamic capabilities in the context of micro enterprises: a research agenda. *Procedia-Social and Behavioral Sciences*, 210, 310-319.
- Ipe, M. (2003). Knowledge sharing in organizations: A conceptual framework. *Human Resource Development Review*, 2(4), 337-359.
- Iqbal, S., Toulson, P., & Tweed, D. HRM Practices and Knowledge Sharing Behaviour: Lessons from Pakistani Knowledge Intensive Firms. *Malaysia*
- Iturrioz, C., Aragón, C., & Narvaiza, L. (2015). How to foster shared innovation within SMEs' networks: Social capital and the role of intermediaries. *European management journal*, 33(2), 104-115.
- Jaakkola, M., Luoma, J., & Frösén, J. (2015). Complementarity of Innovation Capability and Customer-Linking Capability: A Configurational Approach *Marketing Dynamism & Sustainability: Things Change, Things Stay the Same...* (pp. 131-134): Springer.

- Jack, S., Mary Rose, P., & Darabi, F. (2012). Developing business school/SMEs collaboration: the role of trust. *International Journal of Entrepreneurial Behavior & Research*, 18(4), 477-493.
- Jahanshahi, A. A., Khaksar, S. M. S., Yaghoobi, N. M., & Nawaser, K. (2011). Comprehensive model of mobile government in Iran. *Indian Journal of Science and Technology*, 4(9), 1188-1197.
- Jain, D., Mahajan, V., & Muller, E. (1991). Innovation diffusion in the presence of supply restrictions. *Marketing science*, 10(1), 83-90.
- Janaratne, & Nissanka. (2014). A framework for improving innovation capability of SMEs to enhance competitiveness in the digital economy.
- Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management science*, 52(11), 1661-1674.
- Jantunen, A. (2005). Knowledge-processing capabilities and innovative performance: an empirical study. *European Journal of Innovation Management*, 8(3), 336-349.
- Jarvenpaa, S. L., & Staples, D. S. (2001). Exploring perceptions of organizational ownership of information and expertise. *Journal of management information systems*, 18(1), 151-183.
- Jaw, B. S., & Liu, W. (2003). Promoting organizational learning and self-renewal in Taiwanese companies: The role of HRM. *Human resource management*, 42(3), 223-241.
- Jayakumar, G. D. S., & Sulthan, A. (2014). Modelling: Employee perception on training and development. *SCMS Journal of Indian Management*, 11(2), 57.

- Jiang, X., & Li, Y. (2009). An empirical investigation of knowledge management and innovative performance: The case of alliances. *Research Policy*, 38(2), 358-368.
- Jimenez-Jimenez, D., & Sanz-Valle, R. (2005). Innovation and human resource management fit: an empirical study. *International Journal of manpower*, 26(4), 364-381.
- Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of Business Research*, 64(4), 408-417.
- Jin, Z., Hewitt-Dundas, N., & Thompson, N. J. (2004). Innovativeness and performance: Evidence from manufacturing sectors. *Journal of strategic marketing*, 12(4), 255-266.
- Jogarathnam, G. (2017). How organizational culture influences market orientation and business performance in the restaurant industry. *Journal of Hospitality and Tourism Management*, 31, 211-219.
- Johannessen, J.-A., & Olsen, B. (2010). The future of value creation and innovations: Aspects of a theory of value creation and innovation in a global knowledge economy. *International Journal of Information Management*, 30(6), 502-511.
- Johnson, J. D. (2005). Innovation and knowledge management. *Books*.
- Johnston, M. W., & Marshall, G. W. (2016). *Sales force management: Leadership, innovation, technology*: Routledge.
- Jones, B., & Grimshaw, D. (2012). The effects of policies for training and skills on improving innovation capabilities in firms. *Compendium of Evidence on the Effectiveness of Innovation Policy Intervention*. NESTA. Manchester, Manchester Institute of Innovation Research, University of Manchester, 38.

- Jyoti, J., Gupta, P., & Kotwal, S. (2011). Impact of Knowledge Management Practices on Innovative Capacity A Study of Telecommunication Sector. *Vision: The Journal of Business Perspective*, 15(4), 315-330.
- Kafetzopoulos, D., & Psomas, E. (2015). The impact of innovation capability on the performance of manufacturing companies: The Greek case. *Journal of Manufacturing Technology Management*, 26(1), 104-130.
- Kahan, D. M., & Stanovich, K. E. (2016). Rationality and Belief in Human Evolution. *Annenberg Public Policy Center Working Paper*(5).
- Kajanus, Heinonen, & Eskelinen. (2012). Challenges in Commercialisation Processes of Product Innovation among SMEs. *Journal of SMEs*, 1(2), 14.
- Kalemci Tuzun, I., & Arzu Kalemci, R. (2012). Organizational and supervisory support in relation to employee turnover intentions. *Journal of Managerial Psychology*, 27(5), 518-534.
- Kandybin, A. (2009). Which innovation efforts will pay? *MIT Sloan Management Review*, 51(1), 53.
- Kang, K.-N., & Lee, Y.-S. (2008). What affects the innovation performance of small and medium-sized enterprises (SMEs) in the biotechnology industry? An empirical study on Korean biotech SMEs. *Biotechnology letters*, 30(10), 1699-1704.
- Kant, R., & Singh, M. (2008). *ICT enablement of knowledge sharing: Modeling the enablers*. Paper presented at the Management of Innovation and Technology, 2008. ICMIT 2008. 4th IEEE International Conference on.
- Kanter, R. M. (1984). *Change masters: Simon and Schuster*.

- Kaplowitz, M. D., Hadlock, T. D., & Levine, R. (2004). A comparison of web and mail survey response rates. *Public opinion quarterly*, 68(1), 94-101.
- Kapurubandara, M., & Lawson, R. (2006). Barriers to Adopting ICT and e-commerce with SMEs in developing countries: an Exploratory study in Sri Lanka. *University of Western Sydney, Australia*, 2005-2016.
- Katsikeas, C. S., Leonidou, L. C., & Morgan, N. A. (2000). Firm-level export performance assessment: review, evaluation, and development. *Journal of the Academy of Marketing Science*, 28(4), 493-511.
- Kazmier, L. J. (1996). *Schaum's outline of theory and problems of business statistics: Schaum's Outline Series*.
- Keeter, S., Miller, C., Kohut, A., Groves, R. M., & Presser, S. (2000). Consequences of reducing nonresponse in a national telephone survey. *Public opinion quarterly*, 64(2), 125-148.
- Kelman, H. C. (2005). Building trust among enemies: The central challenge for international conflict resolution. *International Journal of Intercultural Relations*, 29(6), 639-650.
- Kerlinger, F., & Lee, H. (2000). Survey research. *Foundations of behavioral research*, 599-619.
- Keskin, H. (2006). Market orientation, learning orientation, and innovation capabilities in SMEs: An extended model. *European Journal of Innovation Management*, 9(4), 396-417.
- Khaliq, C. A., Rehman, C. A., Roomi, M. A., Rehman, S., & Irem, K. (2014). The Role of Social Capital and Knowledge Management in the Performance of SMEs: An

- Empirical Investigation in Pakistan. *American Academic & Scholarly Research Journal*, 6(4), 1.
- Khalique, M., Isa, A. H. B. M., Shaari, N., & Abdul, J. (2011). Challenges for Pakistani SMEs in a knowledge-based economy. *Indus Journal of Management & Social Sciences*, 5(2).
- Khalique, M., Shaari, N., & Abdul, J. (2011). Intellectual capital and its major components.
- Khan, Khawaja, & Waheed. (2006). Knowledge and attitudes about health research amongst a group of Pakistani medical students. *BMC Medical Education*, 6(1), 1.
- Khan, Sarwar, & Malik. (2014). Influence of Transformational Leadership on Organizational Innovation in Telecommunication Industry in Pakistan. *Asian Journal of Business Management*, 6(3), 138-145.
- Khilji, S. E. (2004). Whither tradition? Evidence of generational differences in HR satisfaction from Pakistan. *International Journal of Cross Cultural Management*, 4(2), 141-156.
- Kilelu, C. W., Klerkx, L., & Leeuwis, C. (2013). Unravelling the role of innovation platforms in supporting co-evolution of innovation: contributions and tensions in a smallholder dairy development programme. *Agricultural Systems*, 118, 65-77.
- Kim, & Ko, J. (2014). HR Practices and Knowledge Sharing Behavior Focusing on the Moderating Effect of Trust in Supervisor. *Public Personnel Management*, 0091026014542342.

- Kim, Lee, Chun, & Benbasat. (2014). Understanding the effect of knowledge management strategies on knowledge management performance: A contingency perspective. *Information & management*, 51(4), 398-416.
- Kim, S. L., & Yun, S. (2015). The effect of coworker knowledge sharing on performance and its boundary conditions: An interactional perspective. *Journal of applied psychology*, 100(2), 575.
- Kiss, A. N., Fernhaber, S., & McDougall-Covin, P. P. (2017). Slack, Innovation, and Export Intensity: Implications for Small-and Medium-Sized Enterprises. *Entrepreneurship theory and practice*.
- Kline, T. J., Sulsky, L. M., & Rever-Moriyama, S. D. (2000). Common method variance and specification errors: A practical approach to detection. *The Journal of psychology*, 134(4), 401-421.
- Koc, T., & Ceylan, C. (2007). Factors impacting the innovative capacity in large-scale companies. *Technovation*, 27(3), 105-114.
- Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization science*, 3(3), 383-397.
- Koh, J., & Kim, Y.-G. (2004). Knowledge sharing in virtual communities: an e-business perspective. *Expert Systems with Applications*, 26(2), 155-166.
- Kohtamaki, M., Hakala, H., Partanen, J., Parida, V., & Wincent, J. (2015). The performance impact of industrial services and service orientation on manufacturing companies. *Journal of Service Theory and Practice*, 25(4), 463-485.

- Kor, Y. Y., & Mahoney, J. T. (2004). Edith Penrose's (1959) contributions to the resource-based view of strategic management. *Journal of management studies*, 41(1), 183-191.
- Koskinen, K. U. (2000). Tacit knowledge as a promoter of project success. *European Journal of Purchasing & Supply Management*, 6(1), 41-47.
- Koskinen, K. U., Pihlanto, P., & Vanharanta, H. (2003). Tacit knowledge acquisition and sharing in a project work context. *International journal of project management*, 21(4), 281-290.
- Kotler, P., & Armstrong, G. (2010). *Principles of marketing*: pearson education.
- Kraaijenbrink, J., Spender, J.-C., & Groen, A. J. (2010). The resource-based view: a review and assessment of its critiques. *Journal of Management*, 36(1), 349-372.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educ psychol meas.*
- Kropff, D. M. (2015). Obstacle of dairy SMEs in Pakistan. *Malaysia*
- Kumar, N., & Che Rose, R. (2012). The impact of knowledge sharing and Islamic work ethic on innovation capability. *Cross Cultural Management: An International Journal*, 19(2), 142-165.
- Kuratko, D. F., & Hodgetts, R. M. (2004). Entrepreneurship: Theory, Process. *Practice*, 6.
- Lacan, J., & Fink, B. (2002). *Ecrits: A selection*: WW Norton & Company.
- Laforet, S. (2009). Effects of size, market and strategic orientation on innovation in non-high-tech manufacturing SMEs. *European Journal of Marketing*, 43(1/2), 188-212.

- Laforet, S., & Tann, J. (2006). Innovative characteristics of small manufacturing firms. *Journal of small business and enterprise development*, 13(3), 363-380.
- Lai, Y.-L., Hsu, M.-S., Lin, F.-J., Chen, Y.-M., & Lin, Y.-H. (2014). The effects of industry cluster knowledge management on innovation performance. *Journal of Business Research*, 67(5), 734-739.
- Lamond, D., Huang, Y.-C., & Jim Wu, Y.-C. (2010). Intellectual capital and knowledge productivity: the Taiwan biotech industry. *Management decision*, 48(4), 580-599.
- Landoni, P., Dell'Era, C., Ferraloro, G., Peradotto, M., Karlsson, H., & Verganti, R. (2016). Design Contribution to the Competitive Performance of SMEs: The Role of Design Innovation Capabilities. *Creativity and Innovation Management*, 25(4), 484-499.
- Latham, M. E. C., LL. (2000). Collectivism, propensity to trust and self-esteem as predictors of organizational citizenship in a non-work setting.
- Lau, P. Y. Y., McLean, G. N., & Hsu, Y.-C. (2017). Learning organization, organizational culture, and affective commitment in Malaysia: A person–organization fit theory. *Human Resource Development International*, 20(2), 159-179.
- Laursen, K., & Foss, N. J. (2003). New human resource management practices, complementarities and the impact on innovation performance. *Cambridge Journal of economics*, 27(2), 243-263.
- Laursen, K., & Mahnke, V. (2001). Knowledge strategies, firm types, and complementarity in human-resource practices. *Journal of management and Governance*, 5(1), 1-27.

- Lawson, & Samson. (2001). Developing innovation capability in organisations: a dynamic capabilities approach. *International journal of innovation management*, 5(03), 377-400.
- Lee, H., & Choi, B. (2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of management information systems*, 20(1), 179-228.
- Lee, H., Kelley, D., Lee, J., & Lee, S. (2012). SME survival: the impact of internationalization, technology resources, and alliances. *Journal of small business management*, 50(1), 1-19.
- Lee, J.-N. (2001). The impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing success. *Information & management*, 38(5), 323-335.
- Lee, K. C., Lee, S., & Kang, I. W. (2005). KMPI: measuring knowledge management performance. *Information & management*, 42(3), 469-482.
- Lee, S., Park, G., Yoon, B., & Park, J. (2010). Open innovation in SMEs—An intermediated network model. *Research Policy*, 39(2), 290-300.
- Leiponen, A. (2005). Skills and innovation. *International Journal of Industrial Organization*, 23(5), 303-323.
- Levin, D. Z., Cross, R., Abrams, L. C., & Lesser, E. L. (2002). Trust and knowledge sharing: A critical combination. *IBM Institute for Knowledge-Based Organizations*, 19.

- Levin, D. Z., Whitener, E. M., & Cross, R. (2006). Perceived trustworthiness of knowledge sources: the moderating impact of relationship length. *Journal of applied psychology, 91*(5), 1163.
- Li, X. (2011). Sources of external technology, absorptive capacity, and innovation capability in Chinese state-owned high-tech enterprises. *World Development, 39*(7), 1240-1248.
- Liao, S.-H., Fei, W.-C., & Chen, C.-C. (2007). Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries. *Journal of Information Science, 33*(3), 340-359.
- Lieberman, M. B., & Montgomery, D. B. (1998). First-mover (dis) advantages: Retrospective and link with the resource-based view. *Strategic management journal, 11*11-1125.
- Lieberman, M. D. (2010). Social cognitive neuroscience. *Handbook of social psychology*.
- Liebowitz, J. (2002). Facilitating innovation through knowledge sharing: a look at the US Naval Surface Warfare Center-Carderock Division. *Journal of Computer Information Systems, 42*(5), 1-6.
- Liedholm, C., & Mead, D. C. (1987). Small scale industries in developing countries: Empirical evidence and policy implications: Michigan State University, Department of Agricultural, Food, and Resource Economics.
- Lijun, L., & Binbin, Y. (2010). *Industrial Cluster, Innovation Networks and Enterprise Cluster Technical Capacity [J]*. Paper presented at the Forum on Science and Technology in China.

- Lin. (2007a). Factors affecting innovation in logistics technologies for logistics service providers in China. *Journal of Technology Management in China*, 2(1), 22-37.
- Lin. (2007b). To share or not to share: Modeling tacit knowledge sharing, its mediators and antecedents. *Journal of business ethics*, 70(4), 411-428.
- Lin, Chen, & Chiu, K.-S. (2010). Customer relationship management and innovation capability: an empirical study. *Industrial Management & Data Systems*, 110(1), 111-133.
- Lin, B.-W., & Chen, C.-J. (2006). Fostering product innovation in industry networks: the mediating role of knowledge integration. *The International Journal of Human Resource Management*, 17(1), 155-173.
- Lin, C., Lin, P., Song, F. M., & Li, C. (2011). Managerial incentives, CEO characteristics and corporate innovation in China's private sector. *Journal of Comparative Economics*, 39(2), 176-190.
- Lin, C., Wu, J.-C., & Yen, D. C. (2012). Exploring barriers to knowledge flow at different knowledge management maturity stages. *Information & management*, 49(1), 10-23.
- Lin, H.-F. (2006). Impact of organizational support on organizational intention to facilitate knowledge sharing. *Knowledge Management Research & Practice*, 4(1), 26-35.
- Lin, H.-F. (2011). The effects of employee motivation, social interaction, and knowledge management strategy on KM implementation level. *Knowledge Management Research & Practice*, 9(3), 263-275.

- Lin, H.-F., & Lee, G.-G. (2004). Perceptions of senior managers toward knowledge-sharing behaviour. *Management decision*, 42(1), 108-125.
- Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of applied psychology*, 86(1), 114.
- Lindner, F., & Wald, A. (2011). Success factors of knowledge management in temporary organizations. *International journal of project management*, 29(7), 877-888.
- Lissoni, F. (2001). Knowledge codification and the geography of innovation: the case of Brescia mechanical cluster. *Research Policy*, 30(9), 1479-1500.
- Little, R. J., & Rubin, D. B. (2014). *Statistical analysis with missing data*: John Wiley & Sons.
- Liu, Y., & Phillips, J. S. (2011). Examining the antecedents of knowledge sharing in facilitating team innovativeness from a multilevel perspective. *International Journal of Information Management*, 31(1), 44-52.
- Lorenzen, M. (2005). Introduction: knowledge and geography. *Industry and Innovation*, 12(4), 399-407.
- Lorenzen, M. (2007). Social capital and localised learning: proximity and place in technological and institutional dynamics. *Urban Studies*, 44(4), 799-817.
- Love, J. H., & Roper, S. (2015). SME innovation, exporting and growth: a review of existing evidence. *International Small Business Journal*, 33(1), 28-48.
- Low, Chapman, & Sloan. (2007). Inter-relationships between innovation and market orientation in SMEs. *Management Research News*, 30(12), 878-891.
- Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to

- choose it and how to use it. *IEEE Transactions on Professional Communication*, 57(2), 123-146.
- Lu. (2017). Explaining Customer Orientation and Entrepreneurial Orientation on Performance of SMEs: Evidence from China and Korea. *Global Journal of Management And Business Research*, 16(12).
- Lu, L., L. Cooper, C., & Yen Lin, H. (2013). A cross-cultural examination of presenteeism and supervisory support. *Career Development International*, 18(5), 440-456.
- Lu, L., Leung, K., & Koch, P. T. (2006). Managerial knowledge sharing: The role of individual, interpersonal, and organizational factors. *Management and Organization Review*, 2(1), 15-41.
- Lundvall, B.-Å. (2010). *National systems of innovation: Toward a theory of innovation and interactive learning* (Vol. 2): Anthem Press.
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing research*, 35(6), 382-386.
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual review of psychology*, 58, 593.
- MacKinnon, D. P., Fritz, M. S., Williams, J., & Lockwood, C. M. (2007). Distribution of the product confidence limits for the indirect effect: Program Prodclin. *Behavior research methods*, 39(3), 384-389.
- MacKinnon, D. P., Lockwood, C. M., & Hoffman, J. (1998). *A new method to test for mediation*. Paper presented at the annual meeting of the Society for Prevention Research, Park City, UT.

- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological methods*, 7(1), 83.
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate behavioral research*, 39(1), 99-128.
- MacNeil, C. M. (2003). Line managers: facilitators of knowledge sharing in teams. *Employee Relations*, 25(3), 294-307.
- Madrid-Guijarro, A., Garcia, D., & Van Auken, H. (2009). Barriers to innovation among Spanish manufacturing SMEs. *Journal of small business management*, 47(4), 465-488.
- Magretta, J., & Stone, N. (2002). *What management is*: Simon and Schuster.
- Mahajan, V., Muller, E., & Wind, Y. (2000). *New-product diffusion models* (Vol. 11): Springer Science & Business Media.
- Mahar, Q., & Jamali, K. (2013). Impact of Dairy Industry on Milk Market Value and Production: A Comparative Study of Dairy Industrial and Non Industrial Regions of Sindh. *Pakistan Vision*, 14(2), 165.
- Majchrzak, A., Cooper, L. P., & Neece, O. E. (2004). Knowledge reuse for innovation. *Management science*, 50(2), 174-188.
- Mäkimattila, M., Kallio, A., & Salminen, J. (2012). *Issues in absorbing foresight knowledge for innovation in SMEs*. Paper presented at the 13th International CINet Conference.

- Malmberg, A., & Power, D. (2005). (How) do (firms in) clusters create knowledge? *Industry and Innovation*, 12(4), 409-431.
- Mani, S. (2006). Innovation capability in developing countries. *An Analysis of the Telecommunications Industry in Brazil, China, India and Korea*, Cheltenham, UK and Northampton, Mass: Edward Elgar.
- Mansury, M. A., & Love, J. H. (2008). Innovation, productivity and growth in US business services: A firm-level analysis. *Technovation*, 28(1), 52-62.
- Mariano, S., & Walter, C. (2015). The construct of absorptive capacity in knowledge management and intellectual capital research: content and text analyses. *Journal of knowledge management*, 19(2), 372-400.
- Mark, S., Philip, L., & Adrian, T. (2009). Research methods for business students. Harlow: Prentice Hall.
- Markides, C., & Oyon, D. (2010). What to do against disruptive business models (when and how to play two games at once). *MIT Sloan Management Review*, 51(4), 25.
- Marsh, S. J., & Stock, G. N. (2006). Creating dynamic capability: the role of intertemporal integration, knowledge retention, and interpretation. *Journal of product innovation management*, 23(5), 422-436.
- Martín-de Castro, G. (2015). Knowledge management and innovation in knowledge-based and high-tech industrial markets: The role of openness and absorptive capacity. *Industrial marketing management*, 47, 143-146.
- Martín-de Castro, G., López-Sáez, P., Delgado-Verde, M., Donate, M. J., & Guadamillas, F. (2011). Organizational factors to support knowledge management and innovation. *Journal of knowledge management*, 15(6), 890-914.

- Martínez-Román, J. A., Tamayo, J. A., & Gamero, J. (2017). Innovativeness and its influence on growth and market extension in construction firms in the Andalusian region. *Journal of Engineering and Technology Management*, 43, 19-33.
- Mary MacNeil, C. (2004). Exploring the supervisor role as a facilitator of knowledge sharing in teams. *Journal of European industrial training*, 28(1), 93-102.
- Maskell, P. (2001a). The firm in economic geography. *Economic Geography*, 77(4), 329-344.
- Maskell, P. (2001b). Towards a knowledge-based theory of the geographical cluster. *Industrial and corporate change*, 10(4), 921-943.
- Maskell, P., & Lorenzen, M. (2004). The cluster as market organisation. *Urban Studies*, 41(5-6), 991-1009.
- Massey, D. S., & Tourangeau, R. (2013). Where do we go from here? Nonresponse and social measurement. *The ANNALS of the American Academy of Political and Social Science*, 645(1), 222-236.
- Matzler, K., Renzl, B., Mooradian, T., von Krogh, G., & Mueller, J. (2011). Personality traits, affective commitment, documentation of knowledge, and knowledge sharing. *The International Journal of Human Resource Management*, 22(02), 296-310.
- Mawson, S., & Brown, R. (2017). Entrepreneurial acquisitions, open innovation and UK high growth SMEs. *Industry and Innovation*, 24(4), 382-402.
- May, W. (1998). *Innovation, collaboration and proximity: a case study of the UK specialist hi-fi industry*. University of Southampton.

- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709-734.
- McCauley, D. P., & Kuhnert, K. W. (1992). A theoretical review and empirical investigation of employee trust in management. *Public Administration Quarterly*, 265-284.
- McDermott, P. A., Mordell, M., & Stoltzfus, J. C. (2001). The organization of student performance in American schools: Discipline, motivation, verbal learning, nonverbal learning. *Journal of Educational Psychology*, 93(1), 65.
- McDermott, R., & O'dell, C. (2001). Overcoming cultural barriers to sharing knowledge. *Journal of knowledge management*, 5(1), 76-85.
- McEvily, B., & Zaheer, A. (1999). Bridging ties: A source of firm heterogeneity in competitive capabilities. *Strategic management journal*, 1133-1156.
- Mehta, N. (2008). Successful knowledge management implementation in global software companies. *Journal of knowledge management*, 12(2), 42-56.
- Meier, K. J., & Brudney, J. L. (2002). *Applied statistics for public administration*: Harcourt Press.
- Meihami, B., & Meihami, H. (2014). Knowledge Management a way to gain a competitive advantage in firms (evidence of manufacturing companies). *International Letters of Social and Humanistic Sciences*(14), 80-91.
- Memon, Rohra, & Lal. (2010). Critical analysis of the performance management system (pms) in SMEs of Karachi. *Australian Journal of Basic and Applied Sciences*, 4(6), 1495-1503.

- Mendelson, H., & Pillai, R. R. (1999). Information age organizations, dynamics and performance. *Journal of Economic Behavior & Organization*, 38(3), 253-281.
- Menon, A. G. (2008). Revisiting dynamic capability. *IIMB Management Review*, 20(1), 22-33.
- Meyer-Stamer, J., & Haar, J. (2008). *Small firms, global markets: competitive challenges in the new economy*: Palgrave Macmillan.
- Middleton, Fyall, & Morgan. (2009). *Marketing in travel and tourism*: Routledge.
- Miles, R. E., Miles, G., & Snow, C. C. (2005). *Collaborative entrepreneurship: How communities of networked firms use continuous innovation to create economic wealth*: Stanford University Press.
- Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, H. J. (1978). Organizational strategy, structure, and process. *Academy of Management Review*, 3(3), 546-562.
- Miller, B. K., Bierly III, P. E., & Daly, P. S. (2007). The knowledge strategy orientation scale: individual perceptions of firm-level phenomena. *Journal of Managerial Issues*, 414-435.
- Miller, D., & Shamsie, J. (1996). The resource-based view of the firm in two environments: The Hollywood film studios from 1936 to 1965. *Academy of Management journal*, 39(3), 519-543.
- Miller, R., Olleros, X., & Molinie, L. (2008). Innovation games: a new approach to the competitive challenge. *Long Range Planning*, 41(4), 378-394.
- Minbaeva, D., Foss, N., & Snell, S. (2009). Bringing the knowledge perspective into HRM. *Human resource management*, 48(4), 477-483.

- Minniti, M., Bygrave, W. D., & Autio, E. (2006). *GEM Global Entrepreneurship Monitor: 2005 Executive Report*: London Business School.
- Mitch Casselman, R., & Samson, D. (2007). Aligning knowledge strategy and knowledge capabilities. *Technology Analysis & Strategic Management*, 19(1), 69-81.
- Mitchell, D. W., & Bruckner Coles, C. (2004). Business model innovation breakthrough moves. *Journal of business strategy*, 25(1), 16-26.
- Mittal, S., & Dhar, R. L. (2015). Transformational leadership and employee creativity: mediating role of creative self-efficacy and moderating role of knowledge sharing. *Management decision*, 53(5), 894-910.
- MOF. (2015). Ministry of Finance, Pakistan.
- Mohd, R., & Rosman, M. (2012). *Human Resource Management And The Performance Of Selected Small And Medium Manufacturing Enterprises*. Paper presented at the proceedings intl conf information system business competitiveness.
- Mohrman, S. A., Finegold, D., & Klein, J. A. (2002). Designing the knowledge enterprise: Beyond programs and tools. *Organizational Dynamics*, 31(2), 134-150.
- Molina-Morales, F. X., Martínez-Fernández, M. T., & Torlo, V. J. (2011). The dark side of trust: The benefits, costs and optimal levels of trust for innovation performance. *Long Range Planning*, 44(2), 118-133.
- Möller, K., & Svahn, S. (2004). Crossing East-West boundaries: Knowledge sharing in intercultural business networks. *Industrial marketing management*, 33(3), 219-228.

- Morgan. (2009). Smallholder dairy development: Lessons learned in Asia. *Animal Production and Health Commotion for Asia and the Pacific and FAO*.
- Morgan, N. A., Katsikeas, C. S., & Vorhies, D. W. (2012). Export marketing strategy implementation, export marketing capabilities, and export venture performance. *Journal of the Academy of Marketing Science*, 40(2), 271-289.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *The Journal of Marketing*, 20-38.
- Morosini, P. (2004). Industrial clusters, knowledge integration and performance. *World Development*, 32(2), 305-326.
- Morris, M. H., Kuratko, D. F., & Covin, J. G. (2010). *Corporate entrepreneurship & innovation*: Cengage Learning.
- Morrison, P. D., Roberts, J. H., & Von Hippel, E. (2000). Determinants of user innovation and innovation sharing in a local market. *Management science*, 46(12), 1513-1527.
- Mumford, M. D. (2000). Managing creative people: Strategies and tactics for innovation. *Human Resource Management Review*, 10(3), 313-351.
- Murat Ar, I., & Baki, B. (2011). Antecedents and performance impacts of product versus process innovation: Empirical evidence from SMEs located in Turkish science and technology parks. *European Journal of Innovation Management*, 14(2), 172-206.
- Mustaffa, N., Ibrahim, F., & Mahmud, W. A. W. (2011). Diffusion of innovations: The adoption of Facebook among youth in Malaysia. *The Public Sector Innovation Journal*, 16(3), 1-15.

- Nachmias, D., & Nachmias, C. (1976). Content analysis. *Research methods in the social sciences*, 132-139.
- Nada, N., Ghanem, M., Mesbah, S., & Turkylmaz, A. (2012). Innovation and Knowledge Management Practice in Turkish SMEs'. *Fatih University, Istanbul, Turkey, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt*.
- Nawaz, S., & Khatoon, I. (2015). Importance of Innovation in Manufacturing Sector: A Case Study of Fan Industry. *Issues*, 3(1).
- Neely, A., Filippini, R., Forza, C., Vinelli, A., & Hii, J. (2001). A framework for analysing business performance, firm innovation and related contextual factors: perceptions of managers and policy makers in two European regions. *Integrated manufacturing systems*, 12(2), 114-124.
- Nelson, K. M., & Coopriker, J. G. (1996). The contribution of shared knowledge to IS group performance. *MIS quarterly*, 409-432.
- Nelson, R. R., & Winter, S. G. (1982). The Schumpeterian tradeoff revisited. *The American Economic Review*, 72(1), 114-132.
- Ngo, L. V., & O'Cass, A. (2013). Innovation and business success: The mediating role of customer participation. *Journal of Business Research*, 66(8), 1134-1142.
- Nguyen, T. H., Newby, M., & Macaulay, M. J. (2015). Information technology adoption in small business: Confirmation of a proposed framework. *Journal of small business management*, 53(1), 207-227.
- Nicholson, N., Soane, E., Fenton-O'Creevy, M., & Willman, P. (2005). Personality and domain-specific risk taking. *Journal of Risk Research*, 8(2), 157-176.

- Nielsen, B. B., & Nielsen, S. (2009). Learning and innovation in international strategic alliances: An empirical test of the role of trust and tacitness. *Journal of management studies*, 46(6), 1031-1056.
- Nielsen, P., Rasmussen, P., Camps, J., Alegre, J., & Torres, F. (2011). Towards a methodology to assess organizational learning capability: A study among faculty members. *International Journal of manpower*, 32(5/6), 687-703.
- Noe, R. A. (2010). *Employee training and development*: McGraw-Hill/Irwin.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, 5(1), 14-37.
- Nonaka, I. (2007). *Strategy as distributed phronesis: Knowledge creation for the common good*. Paper presented at the Proceedings of the International Productivity conference.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*: Oxford university press.
- Nonaka, I., Takeuchi, H., & Umemoto, K. (1996). A theory of organizational knowledge creation. *International Journal of Technology Management*, 11(7-8), 833-845.
- Noordin, M., & Karim, Z. (2015). Modeling the Relationship between Human Intelligence, Knowledge Management Practices, and Innovation Performance. *Journal of Information & Knowledge Management*, 14(01), 1550012.
- North, D., Smallbone, D., & Vickers, I. (2001). Public sector support for innovating SMEs. *Small Business Economics*, 16(4), 303-317.
- Nunnally, J. (1978). *Psychometric methods*: New York: McGraw-Hill.

- Nunnally, J. C., & Bernstein, I. (1994). The assessment of reliability. *Psychometric theory*, 3(1), 248-292.
- Nyhan, R. C. (2000). Changing the paradigm trust and its role in public sector organizations. *The American Review of Public Administration*, 30(1), 87-109.
- O'Regan, N., Ghobadian, A., & Sims, M. (2006). Fast tracking innovation in manufacturing SMEs. *Technovation*, 26(2), 251-261.
- O'Connor, G. C. (2006). Open, radical innovation: toward an integrated model in large established firms. *Chesbrough, H; West, J. Open innovation: researching a new paradigm. Oxford: Oxford University.*
- O'Leary, Z. (2004). *Guide to Doing Research*: London: SAGE Publications.
- Obeidat, B. Y., Al-Dmour, R. H., & Tarhini, A. (2015). Knowledge Management Strategies as Intermediary Variables between IT Business strategic Alignment and Firm Performance. *European Scientific Journal*, 11(7).
- Ohlan, R. (2012). Globalisation and world dairy trade: an assessment.
- Ojeda-López, R. N., Mul-Encalada, J., & Barrera-Canto, J. L. (2015). Analysis of Knowledge Management in Companies Involved in Innovation Activities in Yucatan, Mexico. *Journal of Management*, 3(1), 84-93.
- Oke, A., Burke, G., & Myers, A. (2007). Innovation types and performance in growing UK SMEs. *International Journal of Operations & Production Management*, 27(7), 735-753.
- Okpara, F. O. (2007). The value of creativity and innovation in entrepreneurship. *Journal of Asia Entrepreneurship and Sustainability*, 3(2), 1.

- Olander, H., Vanhala, M., Hurmelinna-Laukkanen, P., & Blomqvist, K. (2015). HR-related Knowledge Protection and Innovation Performance: The Moderating Effect of Trust. *Knowledge and process management*, 22(3), 220-233.
- Olekalns, M., & Smith, P. L. (2005). Moments in time: Metacognition, trust, and outcomes in dyadic negotiations. *Personality and Social Psychology Bulletin*, 31(12), 1696-1707.
- Oliver, N., Dostaler, I., & Dewberry, E. (2004). New product development benchmarks: The Japanese, North American, and UK consumer electronics industries. *The Journal of High Technology Management Research*, 15(2), 249-265.
- Oliver, S., & Reddy Kandadi, K. (2006). How to develop knowledge culture in organizations? A multiple case study of large distributed organizations. *Journal of knowledge management*, 10(4), 6-24.
- Omar Sharifuddin Syed-Ikhsan, S., & Rowland, F. (2004). Knowledge management in a public organization: a study on the relationship between organizational elements and the performance of knowledge transfer. *Journal of knowledge management*, 8(2), 95-111.
- Omer, B. M. R., Asaad, Z. A., & Mohamed, S. A. (2010). Evaluate the Standard of Innovative Behavior in Kurdistan Region Ministry. *European Journal of Social Sciences*, 16(4).
- Orfila-Sintes, F., & Mattsson, J. (2009). Innovation behavior in the hotel industry. *Omega*, 37(2), 380-394.

- Orlikowski, W. J., & Barley, S. R. (2001). Technology and institutions: What can research on information technology and research on organizations learn from each other? *MIS quarterly*, 25(2), 145-165.
- Ozkaya, Hult, Calantone, & Droge. (2015). Which is More Important for Innovation? What you Know or how you Share it Within your Firm? *Ideas in Marketing: Finding the New and Polishing the Old* (pp. 140-148): Springer.
- Pak, Y. S., Ra, W., & Lee, J. M. (2015). An integrated multi-stage model of knowledge management in international joint ventures: Identifying a trigger for knowledge exploration and knowledge harvest. *Journal of world Business*, 50(1), 180-191.
- Paliszkiwicz, J. O. (2011). Trust Management: Literature Review. *Management (18544223)*, 6(4).
- Paliszkiwicz, J. O. (2011). Trust and Knowledge Sharing: A critical combination. *Studia i Materiały Polskiego Stowarzyszenia Zarządzania Wiedza/Studies & Proceedings Polish Association for Knowledge Management*(42).
- Pallant, J. (2007). SPSS survival manual: A step-by-step guide to data analysis using SPSS version 15. *Nova Iorque: McGraw Hill*.
- Pallant, J. (2013). *SPSS survival manual*: McGraw-Hill Education (UK).
- Pan, S. L., & Leidner, D. E. (2003). Bridging communities of practice with information technology in pursuit of global knowledge sharing. *The Journal of Strategic Information Systems*, 12(1), 71-88.
- Panayides, P. (2006). Enhancing innovation capability through relationship management and implications for performance. *European Journal of Innovation Management*, 9(4), 466-483.

- Panayides, P. M., & Lun, Y. V. (2009). The impact of trust on innovativeness and supply chain performance. *International Journal of Production Economics*, 122(1), 35-46.
- Papadakis, V., & Bourantas, D. (1998). The chief executive officer as corporate champion of technological innovation: an empirical investigation. *Technology Analysis & Strategic Management*, 10(1), 89-110.
- Passey, S. J., Chai, K. H., & Galanakis, K. (2003). *Managing product innovation in design chain environments: Extending the creative factory model*. Paper presented at the Proceedings of the 9th international conference of concurrent enterprising.
- Patterson, D. W. (1998). *Artificial neural networks: theory and applications*: Prentice Hall PTR.
- PDA. (2014). Pakistan dairy agriculture development.
- PDDC. (2006). Pakistan Dairy Development Corporation.
- PDDC. (2014). Pakistan DaIRY Development Corporation Malaysia
- Peng Wong, W., & Yew Wong, K. (2011). Supply chain management, knowledge management capability, and their linkages towards firm performance. *Business Process Management Journal*, 17(6), 940-964.
- Penrose, E. T. (1959). The theory of the growth of the firm. *New York: Sharpe*.
- Pérez, J. E. A., & Mesías, J. F. T. (2015). Linking Knowledge Management maturity and Innovation in Leading Companies in Research and Development. *Revista Republicana*(18).

- Persaud, A. (2005). Enhancing synergistic innovative capability in multinational corporations: An empirical investigation. *Journal of product innovation management*, 22(5), 412-429.
- PES. (2014). Pakistan Economic Survey, 2014.
- Peteraf, M. A., & Bergen, M. E. (2003). Scanning dynamic competitive landscapes: a market-based and resource-based framework. *Strategic management journal*, 24(10), 1027-1041.
- Pfeffer, J. (1998). *The human equation: Building profits by putting people first*: Harvard Business Press.
- Pfeffermann, N. (2011). Innovation communication as a cross-functional dynamic capability: Strategies for organizations and networks *Strategies and communications for innovations* (pp. 257-289): Springer.
- Pfeffermann, N. (2017). The role of communication as a dynamic capability in business model innovation *Revolution of Innovation Management* (pp. 191-212): Springer.
- Phelps, C. C. (2010). A longitudinal study of the influence of alliance network structure and composition on firm exploratory innovation. *Academy of Management journal*, 53(4), 890-913.
- Phonkaew, S. (2001). Propensity for innovation adoption: Integration of structural contingency and resource dependence perspectives. *ABAC Journal*, 21(1).
- Pieskä, S., Kaarela, J., & Luimula, M. (2015). Enhancing innovation capability with cognitive infocommunications. *Intelligent Decision Technologies*, 9(1), 67-78.
- Podsakoff, N. P., Podsakoff, P. M., MacKenzie, S. B., & Klinger, R. L. (2013). Are we really measuring what we say we're measuring? Using video techniques to

- supplement traditional construct validation procedures. *Journal of applied psychology*, 98(1), 99.
- Politis, J. D. (2003). The connection between trust and knowledge management: what are its implications for team performance. *Journal of knowledge management*, 7(5), 55-66.
- Porter, M. E. (1990). The competitive advantage of notions. *Harvard business review*, 68(2), 73-93.
- Prajogo, McDermott, & Christopher. (2014). Antecedents of service innovation in SMEs: comparing the effects of external and internal factors. *Journal of small business management*, 52(3), 521-540.
- Prajogo, McDermott, C. M., & McDermott, M. A. (2013). Innovation orientations and their effects on business performance: contrasting small-and medium-sized service firms. *R&D Management*, 43(5), 486-500.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.
- Preacher, K. J., & Hayes, A. F. (2008). Assessing mediation in communication research. *The Sage sourcebook of advanced data analysis methods for communication research*, 13-54.
- Presbitero, Roxas, B., & Chadee, D. (2017). Sustaining innovation of information technology service providers: Focus on the role of organisational collectivism. *International Journal of Physical Distribution & Logistics Management*, 47(2/3), 156-174.

- Psarras, J. E. (2007). Education and training in the knowledge-based economy: the application of knowledge management. *International journal of information technology and management*, 6(1), 92-104.
- Pyka, A. (2002). Innovation networks in economics: from the incentive-based to the knowledge-based approaches. *European Journal of Innovation Management*, 5(3), 152-163.
- Quinn, J. B. (1999). Strategic outsourcing: leveraging knowledge capabilities. *MIT Sloan Management Review*, 40(4), 9.
- Rabelo, L., & Speller, T. H. (2005). Sustaining growth in the modern enterprise: A case study. *Journal of Engineering and Technology Management*, 22(4), 274-290.
- Radaelli, G., Lettieri, E., & Mura, M. (2014). Knowledge sharing and innovative work behaviour in healthcare: A micro-level investigation of direct and indirect effects. *Creativity and Innovation Management*, 23(4), 400-414.
- Radzi, N. M., Shamsuddin, A., & Wahab, E. (2017). Enhancing the Competitiveness of Malaysian SMES Through Technological Capability: A Perspective. *The Social Sciences*, 12(4), 719-724.
- Rahab, C. (2011). The development of innovation capability of small medium enterprises through knowledge sharing process: An empirical study of Indonesian creative industry. *International Journal of Business and Social Science*, 2(21), 112-123.
- Rahal, J. J., Anderson, J., Rosenberg, C., Reagan, T., & Thompson, L. L. (2004). Effect of interferon- α 2b therapy on St. Louis viral meningoencephalitis: clinical and laboratory results of a pilot study. *Journal of Infectious Diseases*, 190(6), 1084-1087.

- Rahman, M. S., Osmangani, A. M., Daud, N. M., & AbdelFattah, F. A. M. (2016). Knowledge sharing behaviors among non academic staff of higher learning institutions: Attitude, subjective norms and behavioral intention embedded model. *Library Review*, 65(1/2), 65-83.
- Ramayah, T., Lee, J. W. C., & In, J. B. C. (2011). Network collaboration and performance in the tourism sector. *Service Business*, 5(4), 411-428.
- Rammer, C., Czarnitzki, D., & Spielkamp, A. (2009). Innovation success of non-R&D-performers: substituting technology by management in SMEs. *Small Business Economics*, 33(1), 35-58.
- Ramus, C. A., & Steger, U. (2000). The Roles of Supervisory Support Behaviors and Environmental Policy in Employee “Ecoinitiatives” at Leading-Edge European Companies. *Academy of Management journal*, 43(4), 605-626.
- Raykov, T., & Marcoulides, G. A. (2006a). Estimation of generalizability coefficients via a structural equation modeling approach to scale reliability evaluation. *International Journal of Testing*, 6(1), 81-95.
- Raykov, T., & Marcoulides, G. A. (2006b). On multilevel model reliability estimation from the perspective of structural equation modeling. *Structural Equation Modeling*, 13(1), 130-141.
- Rayport, J. F., & Jaworski, B. J. (2001). *Cases in e-Commerce*: McGraw-Hill Higher Education.
- Rehman, F., Muhammad, S., Ashraf, I., Ch, K. M., & Ruby, T. (2013). Effect of Farmer's Socioeconomic characteristics on Access to Agricultural information: Empirical evidence from Pakistan. *Young (Up to 35)*, 52, 21.67.

- Ren, L., Zhang, L., Tao, F., Zhao, C., Chai, X., & Zhao, X. (2015). Cloud manufacturing: from concept to practice. *Enterprise Information Systems*, 9(2), 186-209.
- Ren, S., Eisingerich, A. B., & Tsai, H.-t. (2015). Search scope and innovation performance of emerging-market firms. *Journal of Business Research*, 68(1), 102-108.
- Renzl, B. (2008). Trust in management and knowledge sharing: The mediating effects of fear and knowledge documentation. *Omega*, 36(2), 206-220.
- Renzl, B., Matzler, K., & Mader, C. (2005). *Impact of trust in colleagues and management on knowledge sharing within and across work groups*. Paper presented at the CD-Proceedings of the 6th European Conference on Organizational Knowledge, Learning, and Capabilities, Bentley College, Boston/USA.
- Revilla, E., & Knoppen, D. (2015). Building knowledge integration in buyer-supplier relationships: The critical role of strategic supply management and trust. *International Journal of Operations & Production Management*, 35(10), 1408-1436.
- Revilla, E., Prieto, I. M., & Prado, B. R. (2010). Knowledge strategy: Its relationship to environmental dynamism and complexity in product development. *Knowledge and process management*, 17(1), 36-47.
- Rhee, Park, & Lee. (2010). Drivers of innovativeness and performance for innovative SMEs in South Korea: Mediation of learning orientation. *Technovation*, 30(1), 65-75.

- Ritala, P., Olander, H., Michailova, S., & Husted, K. (2015). Knowledge sharing, knowledge leaking and relative innovation performance: An empirical study. *Technovation, 35*, 22-31.
- Roberts, P. W., & Amit, R. (2003). The dynamics of innovative activity and competitive advantage: The case of Australian retail banking, 1981 to 1995. *Organization science, 14*(2), 107-122.
- Robertson, R., Gockel, C., & Brauner, E. (2012). Trust your teammates or bosses? Differential effects of trust on transactive memory, job satisfaction, and performance. *Employee Relations, 35*(2), 222-242.
- Roffe, I. (1999). Innovation and creativity in organisations: a review of the implications for training and development. *Journal of European industrial training, 23*(4/5), 224-241.
- Rogers, E. M. (2010). *Diffusion of innovations*: Simon and Schuster.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences [by] John T. Roscoe*: New York, NY: Holt, Rinehart and Winston.
- Roth, J. (2003). Enabling knowledge creation: learning from an R&D organization. *Journal of knowledge management, 7*(1), 32-48.
- Rothschild, M. L. (1999). Carrots, sticks, and promises: A conceptual framework for the management of public health and social issue behaviors. *The Journal of Marketing, 24*-37.
- Rousseeuw, P. J., & Leroy, A. M. (2005). *Robust regression and outlier detection* (Vol. 589): John Wiley & Sons.

- Rubera, G., & Kirca, A. H. (2012). Firm innovativeness and its performance outcomes: A meta-analytic review and theoretical integration. *Journal of Marketing*, 76(3), 130-147.
- Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, 5(6), 359-371.
- Rumelt, R. P. (1974). Strategy, structure, and economic performance.
- Sainaghi, R., Phillips, P., & Zavarrone, E. (2017). Performance measurement in tourism firms: A content analytical meta-approach. *Tourism management*, 59, 36-56.
- Salavou, H., Baltas, G., & Lioukas, S. (2004). Organisational innovation in SMEs: The importance of strategic orientation and competitive structure. *European Journal of Marketing*, 38(9/10), 1091-1112.
- Saleem, S. (2011). Examining success factors: Entrepreneurial approaches in mountainous regions of Pakistan. *framework*, 3(4). Malaysia
- Saleh, S. D., & Wang, C. K. (1993). The management of innovation: strategy, structure, and organizational climate. *IEEE transactions on engineering management*, 40(1), 14-21.
- Salkind, L., & Salkind, N. J. (1997). Gender and age differences in preference for works of art. *Studies in Art Education*, 38(4), 246-256.
- Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of extension*, 37(2), 1-5.

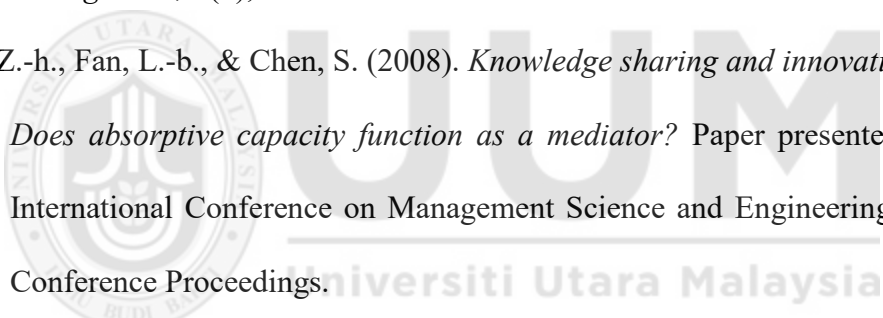
- Saperstein, A. M., Fiszdon, J. M., & Bell, M. D. (2011). Intrinsic motivation as a predictor of work outcome after vocational rehabilitation in schizophrenia. *The Journal of nervous and mental disease*, 199(9), 672-677.
- Saridakis, G., Lai, Y., & Cooper, C. L. (2017). Exploring the relationship between HRM and firm performance: A meta-analysis of longitudinal studies. *Human Resource Management Review*, 27(1), 87-96.
- Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105-115.
- Saunders, M. L. (1987). P. and Thornhill, A.(2009). *Research methods for business students*, 5.
- Saunila, M. (2016). Performance measurement approach for innovation capability in SMEs. *International Journal of Productivity and Performance Management*, 65(2), 162-176.
- Saunila, M., Pekkola, S., & Ukko, J. (2014). The relationship between innovation capability and performance: The moderating effect of measurement. *International Journal of Productivity and Performance Management*, 63(2), 234-249.
- Saunila, M., & Ukko, J. (2014). Intangible aspects of innovation capability in SMEs: Impacts of size and industry. *Journal of Engineering and Technology Management*, 33, 32-46.
- Saunila, M., Ukko, J., & Rantanen, H. (2012). Innovation capability and its measurement in Finnish SMEs *Practice-Based Innovation: Insights, Applications and Policy Implications* (pp. 417-435): Springer.

- Saville, C. W., Pawling, R., Trullinger, M., Daley, D., Intriligator, J., & Klein, C. (2011). On the stability of instability: Optimising the reliability of intra-subject variability of reaction times. *Personality and Individual Differences, 51*(2), 148-153.
- Scarbrough, H. (2003). Knowledge management, HRM and the innovation process. *International Journal of manpower, 24*(5), 501-516.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire a cross-national study. *Educational and psychological measurement, 66*(4), 701-716.
- Schmittlein, D. C., & Mahajan, V. (1982). Maximum likelihood estimation for an innovation diffusion model of new product acceptance. *Marketing science, 1*(1), 57-78.
- Schulman, J. (1969). *Remaking an organization: innovation in a specialized psychiatric hospital*: SUNY Press.
- Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle* (Vol. 55): Transaction publishers.
- Scullen, S. E. (1999). Using confirmatory factor analysis of correlated uniquenesses to estimate method variance in multitrait-multimethod matrices. *Organizational Research Methods, 2*(3), 275-292.
- Scully, J. A., Kirkpatrick, S. A., & Locke, E. A. (1995). Locus of knowledge as a determinant of the effects of participation on performance, affect, and perceptions. *Organizational Behavior and Human Decision Processes, 61*(3), 276-288.

- Seidler-de Alwis, R., & Hartmann, E. (2008). The use of tacit knowledge within innovative companies: knowledge management in innovative enterprises. *Journal of knowledge management*, 12(1), 133-147.
- Sekaran, U. (2003). *Research methods for business: A skill approach*. New Jersey: John Willey and Sons, Inc.
- Sekaran, U. (2006). *Research methods for business: A skill building approach*: John Wiley & Sons.
- Sekaran, U., & Bougie, R. (2011). *Research method for business: A skill building approach*: Taylor & Francis.
- Sena, V. (2004). The return of the Prince of Denmark: A survey on recent developments in the economics of innovation. *The Economic Journal*, 114(496), F312-F332.
- Senge, P. M. (2014). *The fifth discipline fieldbook: Strategies and tools for building a learning organization*: Crown Business.
- Setyanti, S., Troena, E. A., Nimran, U., & Rahayu, M. (2013). Innovation Role in Mediating the Effect of Entrepreneurship Orientation, Management Capabilities and Knowledge Sharing Toward Business Performance: Study at Batik SMEs in East Java Indonesia. *IOSR Journal of Business and Management*, 8(4), 16-27.
- Sewdass, N. (2014). Identifying knowledge management processes and practices used for decision-making and knowledge sharing in the modern San community. *The Journal for Transdisciplinary Research in Southern Africa*, 10(4), 18.
- Shahid, H., Shafique, O., & Shokat, A. (2012). Dairy industry of Pakistan. *Eur. J. Bus. Manag*, 4(18), 1-4.

- Shahzad, K., Bajwa, S. U., Ali, Q., & Zia, S. A. (2012). Role of incubation in women entrepreneurship development in Pakistan. *Asian Journal of Business Management*, 4(2), 200-208.
- Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: where should we go from here? *Journal of Management*, 30(6), 933-958.
- Shani, A. B., Sena, J. A., & Olin, T. (2003). Knowledge management and new product development: a study of two companies. *European Journal of Innovation Management*, 6(3), 137-149.
- Shih, M.-H., Tsai, H.-T., Wu, C.-C., & Lu, C.-H. (2006). A holistic knowledge sharing framework in high-tech firms: game and co-opetition perspectives. *International Journal of Technology Management*, 36(4), 354-367.
- Shipton, H., Budhwar, P., Sparrow, P., & Brown, A. (2016). Human resource management, innovation and performance: looking across levels *Human Resource Management, Innovation and Performance* (pp. 1-12): Springer.
- Shockley-Zalabak, P., Ellis, K., & Winograd, G. (2000). Organizational trust: What it means, why it matters. *Organization Development Journal*, 18(4), 35.
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological methods*, 7(4), 422.
- Siemens, G. (2014). Connectivism: A learning theory for the digital age.
- Siemsen, E., Roth, A. V., & Balasubramanian, S. (2008). How motivation, opportunity, and ability drive knowledge sharing: The constraining-factor model. *Journal of Operations Management*, 26(3), 426-445.

- Sigala, M., & Chalkiti, K. (2015). Knowledge management, social media and employee creativity. *International Journal of Hospitality Management*, 45, 44-58.
- Singh, S. K. (2008). Role of leadership in knowledge management: a study. *Journal of knowledge management*, 12(4), 3-15.
- Singh, S. K. (2009). Role of firm culture in rapid innovation strategy: A.
- Sivalogathan, V., & Wu, X. (2015). Impact of Organization Motivation on Intellectual Capital and Innovation Capability of the Textile and Apparel Industry in Sri Lanka. *International Journal of Innovation Science*, 7(2), 153-168.
- Skardon, J. (2011). The role of trust in innovation networks. *Procedia-Social and Behavioral Sciences*, 26, 85-93.
- Škerlavaj, M., Černe, M., & Dysvik, A. (2014). I get by with a little help from my supervisor: Creative-idea generation, idea implementation, and perceived supervisor support. *The Leadership Quarterly*, 25(5), 987-1000.
- Skok, W., & Tahir, S. (2010). Developing a knowledge management strategy for the Arab world. *The Electronic Journal of Information Systems in Developing Countries*, 41.
- Slappendel, C. (1996). Perspectives on innovation in organizations. *Organization Studies*, 17(1), 107-129.
- Slater, S. F., Mohr, J. J., & Sengupta, S. (2014). Radical product innovation capability: Literature review, synthesis, and illustrative research propositions. *Journal of product innovation management*, 31(3), 552-566.
- SMEDAP. (2014). SMEs in Pakistan.

- Smith, P. A., Bakker, M., Leenders, R. T. A., Gabbay, S. M., Kratzer, J., & Van Engelen, J. M. (2006). Is trust really social capital? Knowledge sharing in product development projects. *The Learning Organization*, 13(6), 594-605.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological methodology*, 13(1982), 290-312.
- Soekijad, M., & Andriessen, E. (2003). Conditions for knowledge sharing in competitive alliances. *European management journal*, 21(5), 578-587.
- Sohail, A., Sabir, M. S., & Zaheer, A. (2011). Link between Product Innovation and Non-Technological: Organization Performance. *Asian Journal of Business Management*, 3(4), 287-293.
- Song, Z.-h., Fan, L.-b., & Chen, S. (2008). *Knowledge sharing and innovation capability: Does absorptive capacity function as a mediator?* Paper presented at the 2008 International Conference on Management Science and Engineering 15th Annual Conference Proceedings. Universiti Utara Malaysia
- Sorescu, A., Frambach, R. T., Singh, J., Rangaswamy, A., & Bridges, C. (2011). Innovations in retail business models. *Journal of Retailing*, 87, S3-S16.
- Speakman, Afzal, & Yuge. (2012). Toward an Innovation Policy for Pakistan. *Background paper to Pakistan Growth and Jobs Report. Pakistan Policy Paper Series*, 11, 12.
- Spearman, C. (1904). The proof and measurement of association between two things. *The American journal of psychology*, 15(1), 72-101.

- Spector, P. E. (1987). Method variance as an artifact in self-reported affect and perceptions at work: Myth or significant problem? *Journal of applied psychology*, 72(3), 438.
- Spender, J.-C. (1996). Organizational knowledge, learning and memory: three concepts in search of a theory. *Journal of Organizational Change Management*, 9(1), 63-78.
- Staples, D. S., & Webster, J. (2008). Exploring the effects of trust, task interdependence and virtualness on knowledge sharing in teams. *Information Systems Journal*, 18(6), 617-640.
- Stenmark, D. (2001). *The relationship between information and knowledge*. Paper presented at the Proceedings of IRIS.
- Stevens, R. H., Millage, J., & Clark, S. (2010). Waves of knowledge management: The flow between explicit and tacit knowledge. *American Journal of Economics and Business Administration*, 2(1), 129.
- Stevenson, H. H., & Jarillo, J. C. (2007). A paradigm of entrepreneurship: Entrepreneurial management *Entrepreneurship* (pp. 155-170): Springer.
- Stewart, I., & Fenn, P. (2006). Strategy: the motivation for innovation: Information Process Management.
- Stoker, J. I., & Van der Heijden, B. I. (2001). Competence development and appraisal in organizations. *Journal of Career Development*, 28(2), 97-113.
- Storey, D. J., Watson, R., & Wynarczyk, P. (1989). *Fast growth small businesses: case studies of 40 small firms in North East England*: Department of Employment North East England.

- Strobel, N., & Kratzer, J. (2017). Obstacles to Innovation for SMEs: Evidence from Germany. *International journal of innovation management*, 1750030.
- Subrahmanya, M. B. (2005). Pattern of technological innovations in small enterprises: a comparative perspective of Bangalore (India) and Northeast England (UK). *Technovation*, 25(3), 269-280.
- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management journal*, 48(3), 450-463.
- Sudman, S., & Bradburn, N. M. (1982). Asking questions: a practical guide to questionnaire design.
- Sulistiyani, R., & Harwiki, W. (2016). How SMEs Build Innovation Capability Based on Knowledge Sharing Behavior? Phenomenological Approach. *Procedia-Social and Behavioral Sciences*, 219, 741-747.
- Sun, H. (2009). A meta-analysis on the influence of national culture on innovation capability. *International Journal of Entrepreneurship and Innovation Management*, 10(3-4), 353-360.
- Sung, S. Y., & Choi, J. N. (2014). Do organizations spend wisely on employees? Effects of training and development investments on learning and innovation in organizations. *Journal of organizational Behavior*, 35(3), 393-412.
- Supyuenyong, V., & Islam, N. (2006). *Knowledge management architecture: Building blocks and their relationships*. Paper presented at the 2006 Technology Management for the Global Future-PICMET 2006 Conference.

- Suradi, N. R. M., Omar, A., & Shahabuddin, F. A. (2015). *The importance of basic factors in innovation processes and their effects on innovation capability of Malaysian-owned manufacturing companies*. Paper presented at the The 2nd ISM International Statistical Conference 2014 (ISM-II): Empowering the Applications of Statistical and Mathematical Sciences.
- Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic management journal*, 31(5), 463-490.
- Sveiby, K.-E., & Simons, R. (2002). Collaborative climate and effectiveness of knowledge work-an empirical study. *Journal of knowledge management*, 6(5), 420-433.
- Svetlik, I., Stavrou-Costea, E., & Lin, H.-F. (2007). Knowledge sharing and firm innovation capability: an empirical study. *International Journal of manpower*, 28(3/4), 315-332.
- Swap, W., Leonard, D., Shields, M., & Abrams, L. (2000). Transferring Tacit Knowledge Assets: Mentoring and Storytelling in the Workplace. *September. Cambridge, MA: Institute for Knowledge Management*.
- Tabachnik, B., & Fidell, S. (2013). Multicollinearity and singularity. *Using multivariate statistics. Boston: Pearson Education Inc*, 2(013), 88-91.
- Tallman, S., Jenkins, M., Henry, N., & Pinch, S. (2004). Knowledge, clusters, and competitive advantage. *Academy of Management Review*, 29(2), 258-271.
- Tamer Cavusgil, Calantone, & Zhao. (2003). Tacit knowledge transfer and firm innovation capability. *Journal of business & industrial marketing*, 18(1), 6-21.

- Tang, Chih-Hung, & Ya-Yun. (2015). Developing service innovation capability in the hotel industry. *Service Business*, 9(1), 97-113.
- Tang, J., & Murphy, P. J. (2012). Prior knowledge and new product and service introductions by entrepreneurial firms: the mediating role of technological innovation. *Journal of small business management*, 50(1), 41-62.
- Tanriverdi, H. (2005). Information technology relatedness, knowledge management capability, and performance of multibusiness firms. *MIS quarterly*, 311-334.
- Tanveer, M. A., Rizvi, S., & Riaz, W. (2012). Declining market share of Pakistan in football industry. *Asian Journal of Business and Management Sciences*, 1(11), 33-42.
- Tatikonda, M. V., & Stock, G. N. (2003). Product technology transfer in the upstream supply chain. *Journal of product innovation management*, 20(6), 444-467.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.
- Taylor, W. A., & Wright, G. H. (2004). Organizational readiness for successful knowledge sharing: Challenges for public sector managers. *Information resources management journal*, 17(2), 22.
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2), 172-194.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 509-533.

- Temme, D., Kreis, H., & Hildebrandt, L. (2010). A comparison of current PLS path modeling software: Features, ease-of-use, and performance *Handbook of partial least squares* (pp. 737-756): Springer.
- Tenenhaus, M., Amato, S., & Esposito Vinzi, V. (2004). *A global goodness-of-fit index for PLS structural equation modelling*. Paper presented at the Proceedings of the XLII SIS scientific meeting.
- Therrien, P., Doloreux, D., & Chamberlin, T. (2011). Innovation novelty and (commercial) performance in the service sector: A Canadian firm-level analysis. *Technovation, 31*(12), 655-665.
- Thomas, J. B., Sussman, S. W., & Henderson, J. C. (2001). Understanding “strategic learning”: Linking organizational learning, knowledge management, and sensemaking. *Organization science, 12*(3), 331-345.
- Tidd, J., Bessant, J., & Pavitt, K. (2002). Learning through alliances. *Henry, J. & Mayle, D. Managing Innovation and Change. Second edition. London: SAGE.*
- TIDD, J., Bessant, J., & Pavitt, K. (2005). Managing innovation: integrating technological, managerial organizational change. *New York.*
- Tong, C., Tak, W. I. W., & Wong, A. (2015). The impact of knowledge sharing on the relationship between organizational culture and job satisfaction: The perception of information communication and technology (ICT) practitioners in Hong Kong. *International Journal of Human Resource Studies, 5*(1), 19.
- Torraco, R. J., & Swanson, R. A. (1995). The strategic roles of human resource development. *People and Strategy, 18*(4), 10.

- Torugsa, N. A., Anthony. (2013). Private–public collaboration and innovation performance: Does training matter? *International journal of innovation management*, 17(03), 1340011.
- Trochim, W., & Donnelly, P. (2006). James: The research methods knowledge base: Atomic Dog, Cornell University, Sun-Buffalo USA.
- Tsai, W. (2002). Social structure of “coopetition” within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. *Organization science*, 13(2), 179-190.
- Tuan, N. P., & Yoshi, T. (2016). Organisational capabilities, competitive advantage and performance in supporting industries in Vietnam.
- Tufail, M. S., Ismail, H., & Zahra, S. (2016). The Impact of Work Social Support on Firm Innovation Capability: The Meditational Role of Knowledge Sharing Process and Job Satisfaction and Moderating Role of Organizational Trust. *Pakistan Journal of Social Sciences (PJSS)*, 36(2).
- Tukey, J. W. (1977). Exploratory data analysis.
- Turpin, T., & Krishna, V. V. (2007). *Science, technology policy and the diffusion of knowledge: understanding the dynamics of innovation systems in the Asia Pacific*: Edward Elgar Publishing.
- Tyaglov, S., Kushnarenko, T., Khokhlov, A., & Qeropyan, M. (2017). The Development of Cluster Relations within the State and Business Structures in Terms of Strategy of Non-Primary Sector Import-Substitution. *European Research Studies Journal*, 20(1), 198-207.

- Ullah, Kamal, & Arfan, S. (2016). The Determinants of Knowledge sharing to enhancing the Innovation Capability: An Empirical study of Dairy Farms in Pakistan. *Pakistan Journal of Social Sciences (PJSS)*, 36(1).
- Ullah, Kamal, & Shahzad, A. (2016). Impact of Transformational Leadership on Knowledge Sharing of Employees and Innovation Capability in the Dairy Sector of Pakistan. *Pakistan Journal of Social Sciences (PJSS)*, 36(1), 87-98.
- Ullah, Kamal, & Shahzad, A. (2017). Impact of Motivation and Supervisory Support to Enhancing the Innovation Capability of Dairy Farms in Pakistan.
- Ullah, Shah, & Hassan. (2011). The impact of owner psychological factors on entrepreneurial orientation: Evidence from Khyber Pakhtunkhwa-Pakistan. *International Journal of Education and Social Sciences*, 1(1), 1-16.
- Urgal, B., Quintás, M. A., & Arévalo-Tomé, R. (2013). Knowledge resources and innovation performance: the mediation of innovation capability moderated by management commitment. *Technology Analysis & Strategic Management*, 25(5), 543-565.
- Utami, M. M. (2013). How Intellectual Stimulation Effects Knowledge Sharing, Innovation and Firm Performance. *International Journal of Social Science and Humanity*, 3(4), 420.
- Utman, C. H. (1997). Performance effects of motivational state: A meta-analysis. *Personality and Social Psychology Review*, 1(2), 170-182.
- Utterback, J. M., & Afuah, A. N. (1998). The dynamic 'diamond': a technological innovation perspective. *Economics of Innovation and New Technology*, 6(2-3), 183-200.

- Valdez-Juárez, L. E., de Lema, D. G.-P., & Maldonado-Guzmán, G. (2016). Management of Knowledge, Innovation and Performance in SMEs. *IJIKM*, 11.
- Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management science*, 32(5), 590-607.
- Van de Ven, A. H., & Rogers, E. M. (1988). Innovations and organizations critical perspectives. *Communication research*, 15(5), 632-651.
- Van den Hooff, B., & de Leeuw van Weenen, F. (2004). Committed to share: commitment and CMC use as antecedents of knowledge sharing. *Knowledge and process management*, 11(1), 13-24.
- Van den Hooff, B., & De Ridder, J. A. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of knowledge management*, 8(6), 117-130.
- van der Valk, W., Sumo, R., Dul, J., & Schroeder, R. (2016). When are contracts and trust necessary for innovation in buyer-supplier relationships?: A necessary condition analysis. *Journal of Purchasing and Supply Management*.
- van Wijk, R., Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2012). How firms shape knowledge to explore and exploit: A study of knowledge flows, knowledge stocks and innovative performance across units. *Technology Analysis & Strategic Management*, 24(9), 929-950.
- Ventura, D. F., Cruz, A., & Landeira-Fernandez, J. (2011). Psychology and innovation. *Psychology & Neuroscience*, 4(3), 297-298.

- Verganti, R., & Shani, A. B. R. (2016). Vision transformation through radical circles: Enhancing innovation capability development. *Organizational Dynamics*, 45(2), 104-113.
- Villar, C., Alegre, J., & Pla-Barber, J. (2014). Exploring the role of knowledge management practices on exports: A dynamic capabilities view. *International Business Review*, 23(1), 38-44.
- Von Krogh, G. (2002). The communal resource and information systems. *The Journal of Strategic Information Systems*, 11(2), 85-107.
- Vukšić, V. B., Professor Mirjana Pejić Bach, P., Inkinen, H. T., Kianto, A., & Vanhala, M. (2015). Knowledge management practices and innovation performance in Finland. *Baltic Journal of Management*, 10(4), 432-455.
- Waarts, E., & Van Everdingen, Y. (2005). The Influence of National Culture on the Adoption Status of Innovations:: An Empirical Study of Firms Across Europe. *European management journal*, 23(6), 601-610.
- Wade-Woolley, L., & Heggie, L. (2015). Implicit knowledge of word stress and derivational morphology guides skilled readers' decoding of multisyllabic words. *Scientific Studies of Reading*, 19(1), 21-30.
- Wadhwa, A., & Kotha, S. (2006). Knowledge creation through external venturing: Evidence from the telecommunications equipment manufacturing industry. *Academy of Management journal*, 49(4), 819-835.
- Wadood, F., Shamsuddin, A., & Abdullah, N. H. (2013). Innovative competencies framework for SMEs of Pakistan: a conceptual framework.

- Wang, Jie, & Abareshi. (2015). *The role of innovation capability and operation capability in logistics performance of transport firms: a conceptual framework*. Paper presented at the AAOM 2015: Innovation for and from Asian Emerging Markets.
- Wang, & Jing. (2017). *Threats to privately-owned small and medium-sized enterprises (SMEs) in China from the state-owned enterprise policy and the state's interest: towards developing an effective legal framework for the protection of Chinese privately-owned SMEs*. Prifysgol Bangor University.
- Wang, & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131.
- Wang, C.-h., Lu, I.-y., & Chen, C.-b. (2008). Evaluating firm technological innovation capability under uncertainty. *Technovation*, 28(6), 349-363.
- Wang, C., & Han, Y. (2011). Linking properties of knowledge with innovation performance: the moderate role of absorptive capacity. *Journal of knowledge management*, 15(5), 802-819.
- Wang, C., & Kafouros, M. I. (2009). What factors determine innovation performance in emerging economies? Evidence from China. *International Business Review*, 18(6), 606-616.
- Wang, J.-K., Ashleigh, M., & Meyer, E. (2006). Knowledge sharing and team trustworthiness: it's all about social ties! *Knowledge Management Research & Practice*, 4(3), 175-186.
- Wang, L., & Kourouklis, A. (2012). *Knowledge management for innovation and product development in supply chains*. Paper presented at the International Joint

- Conference on Knowledge Discovery, Knowledge Engineering, and Knowledge Management.
- Wang, L., Yeung, J. H. Y., & Zhang, M. (2011). The impact of trust and contract on innovation performance: The moderating role of environmental uncertainty. *International Journal of Production Economics*, 134(1), 114-122.
- Wang, S., Noe, R. A., & Wang, Z.-M. (2014). Motivating knowledge sharing in knowledge management systems a quasi-field experiment. *Journal of Management*, 40(4), 978-1009.
- Wang, Y., & Rajagopalan, N. (2015). Alliance capabilities review and research agenda. *Journal of Management*, 41(1), 236-260.
- Wasko, M. M., & Faraj, S. (2000). "It is what one does": why people participate and help others in electronic communities of practice. *The Journal of Strategic Information Systems*, 9(2), 155-173.
- Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS quarterly*, 35-57.
- WB. (2012). WORLD BANK.
- Weaven, S., Grace, D., Dant, R., & R. Brown, J. (2014). Value creation through knowledge management in franchising: a multi-level conceptual framework. *Journal of Services Marketing*, 28(2), 97-104.
- Webster, P. J., Magana, V. O., Palmer, T., Shukla, J., Tomas, R., Yanai, M., & Yasunari, T. (1998). Monsoons: Processes, predictability, and the prospects for prediction. *Journal of Geophysical Research: Oceans*, 103(C7), 14451-14510.

- Weisberg, R. W. (2006). *Creativity: Understanding innovation in problem solving, science, invention, and the arts*: John Wiley & Sons.
- Welch, S., & Thompson, K. (1980). The impact of federal incentives on state policy innovation. *American journal of political science*, 715-729.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, 5(2), 171-180.
- WES. (2013). world economic survey, 2013.
- Wheeler, S., Waite, S., & Bromfield, C. (2002). Promoting creative thinking through the use of ICT. *Journal of Computer Assisted Learning*, 18(3), 367-378.
- White, M. A., & Bruton, G. D. (2010). *The management of technology and innovation: A strategic approach*: Cengage Learning.
- Wiedemann, A., Gewalt, H., & Weeger, A. (2017). *How IT Management Profile and IT Business Value Correlate—Exploring Cross-Domain Alignment*. Paper presented at the Proceedings of the 50th Hawaii International Conference on System Sciences.
- Wiggins, J. (2004). Motivation, ability and opportunity to participate: a reconceptualization of the RAND model of audience development. *International Journal of Arts Management*, 22-33.
- Wignaraja, G., & Jinjara, Y. (2015). Why Do SMEs Not Borrow More from Banks? Evidence from the People's Republic of China and Southeast Asia.
- Wiig, K. (2012). *People-focused knowledge management*: Routledge.

- Willem, A., Buelens, M., & Scarbrough, H. (2006). The role of inter-unit coordination mechanisms in knowledge sharing: a case study of a British MNC. *Journal of Information Science*, 32(6), 539-561.
- Willem, A., & Scarbrough, H. (2006). Social capital and political bias in knowledge sharing: An exploratory study. *Human Relations*, 59(10), 1343-1370.
- Williams, D. J. (2008). An Analysis of the Factors Affecting Training Transfer within the Work Environment: DTIC Document.
- Williams, L. J., & Anderson, S. E. (1994). An alternative approach to method effects by using latent-variable models: Applications in organizational behavior research. *Journal of applied psychology*, 79(3), 323.
- Williams, L. J., & Brown, B. K. (1994). Method variance in organizational behavior and human resources research: Effects on correlations, path coefficients, and hypothesis testing. *Organizational Behavior and Human Decision Processes*, 57(2), 185-209.
- Williamson, J. M., Lounsbury, J. W., & Han, L. D. (2013). Key personality traits of engineers for innovation and technology development. *Journal of Engineering and Technology Management*, 30(2), 157-168.
- Wilson, A. L., Ramamurthy, K., & Nystrom, P. C. (1999). A multi-attribute measure for innovation adoption: the context of imaging technology. *IEEE transactions on engineering management*, 46(3), 311-321.
- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic management journal*, 24(10), 991-995.

- Witt, L. A., Andrews, M. C., & Kacmar, K. M. (2000). The role of participation in decision-making in the organizational politics-job satisfaction relationship. *Human Relations, 53*(3), 341-358.
- Woschke, T., Haase, H., & Kratzer, J. (2017). Resource scarcity in SMEs: effects on incremental and radical innovations. *Management Research Review, 40*(2).
- Wu, D., Rosen, Wang, & Schaefer, D. (2015). Cloud-based design and manufacturing: A new paradigm in digital manufacturing and design innovation. *Computer-Aided Design, 59*, 1-14.
- Xiao, Y., Zheng, X., Pan, W., & Xie, X. (2010). Trust, relationship commitment and cooperative performance: supply chain management. *Chinese Management Studies, 4*(3), 231-243.
- Xie, X., Zeng, S., & Tam, C. M. (2010). Overcoming barriers to innovation in SMEs in China: A perspective based cooperation network. *Innovation, 12*(3), 298-310.
- Xu, C. (2005). Technology Innovation Diffusion in Industry Cluster [J]. *Chinese Journal of Management, 3*, 015.
- Yadav, M., Rangnekar, S., & Bamel, U. (2016). Workplace flexibility dimensions as enablers of organizational citizenship behavior. *Global Journal of Flexible Systems Management, 17*(1), 41-56.
- Yang. (2012). Innovation capability and corporate growth: An empirical investigation in China. *Journal of Engineering and Technology Management, 29*(1), 34-46.
- Yang, C., Bossink, B., & Peverelli, P. (2017). High-tech start-up firm survival originating from a combined use of internal resources. *Small Business Economics, 1*-26.

- Yang, H.-L., & Wu, T. C. (2008). Knowledge sharing in an organization. *Technological Forecasting and Social Change*, 75(8), 1128-1156.
- Yang, H., Phelps, C., & Steensma, H. K. (2010). Learning from what others have learned from you: The effects of knowledge spillovers on originating firms. *Academy of Management journal*, 53(2), 371-389.
- Yang, J.-t. (2007a). The impact of knowledge sharing on organizational learning and effectiveness. *Journal of knowledge management*, 11(2), 83-90.
- Yang, J.-T. (2007b). Knowledge sharing: Investigating appropriate leadership roles and collaborative culture. *Tourism management*, 28(2), 530-543.
- Yap, C. M., Chai, K. H., & Lemaire, P. (2005). An empirical study on functional diversity and innovation in SMEs. *Creativity and Innovation Management*, 14(2), 176-190.
- Yaseen, A. (2015). Collaborative innovation in the Pakistan's dairy industry: effectiveness of managerial leadership and organizational readiness.
- Yeh, Y.-J., Lai, S.-Q., & Ho, C.-T. (2006). Knowledge management enablers: a case study. *Industrial Management & Data Systems*, 106(6), 793-810.
- Yeşil, S., & Dereli, S. F. (2013). An empirical investigation of the organisational justice, knowledge sharing and innovation capability. *Procedia-Social and Behavioral Sciences*, 75, 199-208.
- Yeşil, S., Koska, A., & Büyükbeşe, T. (2013). Knowledge sharing process, innovation capability and innovation performance: an empirical study. *Procedia-Social and Behavioral Sciences*, 75, 217-225.

- Yew Wong, K. (2005). Critical success factors for implementing knowledge management in small and medium enterprises. *Industrial Management & Data Systems*, 105(3), 261-279.
- Yew Wong, K., & Aspinwall, E. (2005). An empirical study of the important factors for knowledge-management adoption in the SME sector. *Journal of knowledge management*, 9(3), 64-82.
- Yli-Renko, H., Autio, E., & Sapienza, H. J. (2001). Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms. *Strategic management journal*, 22(6-7), 587-613.
- Younas, M., & Schlecht, E. (2013). *The dairy value chain: a promoter of development and employment in Pakistan: ICDD*.
- Yukl, G. A., & Becker, W. S. (2006). Effective empowerment in organizations. *Organization Management Journal*, 3(3), 210-231.
- Yusof, Z. M., & Ismail, M. B. (2010). *The impact of awareness, trust and personality on knowledge sharing practice*. Paper presented at the Information Retrieval & Knowledge Management,(CAMP), 2010 International Conference on.
- Zack, McKeen, J., & Singh, S. (2009). Knowledge management and organizational performance: an exploratory analysis. *Journal of knowledge management*, 13(6), 392-409.
- Zack, M. H. (1999). Managing codified knowledge. *MIT Sloan Management Review*, 40(4), 45.

- Zack, M. H. (2002). *A strategic pretext for knowledge management*. Paper presented at the Proceedings of the Third European Conference on Organizational Knowledge, Learning and Capabilities.
- Zafar, Aslam, & Nasir. (2008). Knowledge, attitudes and practices of health care workers regarding needle stick injuries at a tertiary care hospital in Pakistan. *Journal of the Pakistan Medical Association*, 58(2), 57.
- Zahra, S. A. (1993). Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. *Journal of Business Venturing*, 8(4), 319-340.
- Zahra, S. A., & Covin, J. G. (1993). Business strategy, technology policy and firm performance. *Strategic management journal*, 14(6), 451-478.
- Zahra, S. A., & Covin, J. G. (1995). Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 10(1), 43-58.
- Zaim, H., Tatoglu, E., & Zaim, S. (2007). Performance of knowledge management practices: a causal analysis. *Journal of knowledge management*, 11(6), 54-67.
- Zawawi, N. F. M., Wahab, S. A., Al-Mamun, A., Yaacob, A. S., Samy, N. K. A., & Fazal, S. A. (2016). Defining the Concept of Innovation and Firm Innovativeness: A Critical Analysis from Resorce-Based View Perspective. *International Journal of Business and management*, 11(6), 87.
- Zeng, S. X., Xie, X., & Tam, C. M. (2010). Relationship between cooperation networks and innovation performance of SMEs. *Technovation*, 30(3), 181-194.

- Zhang, A. Y., Tsui, A. S., Song, L. J., Li, C., & Jia, L. (2008). How do I trust thee? The employee-organization relationship, supervisory support, and middle manager trust in the organization. *Human resource management, 47*(1), 111-132.
- Zhang, M. J. (2014). The Impacts of Trust and Feelings on Knowledge Sharing among Chinese Employees. *New England Journal of Entrepreneurship, 17*(1), 21.
- Zhang, Y., & Li, H. (2010). Innovation search of new ventures in a technology cluster: the role of ties with service intermediaries. *Strategic management journal, 31*(1), 88-109.
- Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research, 37*(2), 197-206.
- Zheng, T. (2017). A Literature Review on Knowledge Sharing. *Open Journal of Social Sciences, 5*(03), 51.
- Zhou, Fang, & Yang. (2017). The performance effect of micro-innovation in SMEs: evidence from China. *Chinese Management Studies, 11*(1).
- Zhou, K. Z., & Li, C. B. (2012). How knowledge affects radical innovation: Knowledge base, market knowledge acquisition, and internal knowledge sharing. *Strategic management journal, 33*(9), 1090-1102.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*: Cengage Learning.
- Ziman, J. (2003). *Technological innovation as an evolutionary process*: Cambridge University Press.

- Zin, S. M., Ahmad, N., Ngah, N. E. B., Ismail, R. B., Ibrahim, N. B., & Abdullah, I. H. T. B. (2012). Motivation Model for Employee Retention: Applicability to HRM Practices in Malaysian SME Sector. *Canadian Social Science*, 8(5), 8-12.
- Zippel-Schultz, B., & Schultz, C. (2011). Mediated and moderated effects of business and project planning on innovation projects in hospitals. *Creativity and Innovation Management*, 20(4), 296-310.
- Zollo, M., & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization science*, 13(3), 339-351.
- Zott, C., & Amit, R. (2007). Business model design and the performance of entrepreneurial firms. *Organization science*, 18(2), 181-199.
- Zott, C., Amit, R., & Massa, L. (2011). The business model: recent developments and future research. *Journal of Management*, 37(4), 1019-1042.
- Zou, B., Guo, F., & Song, M. (2017). Elastic and plastic innovation capability in firms. *Industrial Management & Data Systems*, 117(1).
- Zuboff, S. (1988). *In the age of the smart machine: The future of work and power*: Basic books.
- Zumitzavan, V., & Michie, J. (2015). *Personal knowledge management, leadership styles, and organisational performance: A case study of the healthcare industry in Thailand*: Springer.



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Appendix I

QUESTIONNAIRES

Dear Sir/Madam,

I am inviting you to participate in my research project entitled “**Individual, organizational, technological and industry factors effects on innovation capability of Dairy SMEs in Pakistan: Knowledge Sharing as Mediated**”. The present study will investigate the impact of Industry, Technological, organizational and individual factors which are shaped by the surrounding environment in the SMEs dairy sector of Pakistan. I hope you will be able to assist me by completing the enclosed questionnaires. All information provided will be treated as private and confidential. It will be used for academic purposes. As is normally in academic research, I shall not disclose the names of individuals who provided me with particular information. All data will be analyzed in a collective manner and will be not attributed to name individuals.

The survey should take approximately 15 minutes to answer. I shall be grateful if you could complete the enclosed questionnaires.

Thank you in advance for your time and cooperation.

Yours sincerely

Muhammad Imdad Ullah
P.hD Scholar (Management)
University of Utara,
Malaysia

Part I

1. Demographic Profile of Dairy SMEs

Please tick (√) the appropriate box to answer the question.

1.1 Dairy Farm Type

Public	Private
<input type="checkbox"/>	<input type="checkbox"/>

1.2 Dairy Farm Status

Declining	Growing
<input type="checkbox"/>	<input type="checkbox"/>

1.3 Size of Dairy Farm

Employee<=15	Employee 16 to 25	Employee>=26
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1.5 Age of dairy farm

Less Than and equal to 05 years	6-10 years	11-14 years	More than 15 years
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1.6 Location of dairy Farms

Lahore Division	Multan Division	DG Khan Division	Faisal Abad Division
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part II

Strongly Disagreed	Dis-agreed	Neutral	Agreed	Strongly Agreed
SD (1)	D (2)	N (3)	A (4)	SA (5)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Innovation Capability

The following questions ask you about the extent of your judgment on the tool of acceptance, generation of new ideas, processes, products or services. Please indicate your agreement or disagreement on the following statements by indicating your appropriate response based on the following scale.

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
2.1	Our company always tries for new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2	Our company try to find new ways of doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3	Our company is creative in its operating methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4	Our company is commonly the first in the market to give new products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.5	Our firm always paid for creativity and take suggestions in the innovation domain					
2.6	Our new product introduction has increased during the last five years					

Strongly Disagreed	Dis-agreed	Neutral	Agreed	Strongly Agreed
SD (1)	D (2)	N (3)	A (4)	SA (5)

3. Knowledge Sharing

The following questions ask you about the extent of your judgment on Communicating to others what one's personal intellectual capital. Please indicate your agreement or disagreement on the following statements by indicating your appropriate response based on the following scale.

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
3.1	In our firm employee shared their work reports and documents with other employees.					
3.2	In our firms employee shared their experience with other organization members.					
3.3	In our organization knowledge sharing with colleagues is an enjoyable experience.					
3.4	Our employee provides knowledge at the request of other colleagues.					
3.5	When our colleagues learned something new, they share with me and all of us.					
3.6	In our firm employee shared their work reports and documents with other employees.					

4. Individual Factors

The following questions ask you about the extent of your judgment on the degree to which an individual believes and loyalty another party to be trust worthy and about an individual or Unit's willingness to act.

Please indicate your agreement or disagreement on the following statements by indicating your appropriate response based on the following scale.

4.1 Trust

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
-----	-------	-------	------	------	------	-------

4.1.1	Our firms have fully trust on the expertise of employee that they have.					
4.1.2	Our firms believe that our employee do not exploit for their own interest.					
4.1.3	Our firm trust on employee that would help us in innovation.					

Strongly Disagreed	Dis-agreed	Neutral	Agreed	Strongly Agreed
SD (1)	D (2)	N (3)	A (4)	SA (5)

4.2 Motivation

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
4.2.1	Our firm would like more opportunities to share information					
4.2.2	Our firms motivated to share best practice knowledge					
4.2.3	In our firm exchanging information would be motivate and encourage					

5. Organizational Factors

The following questions ask you about the extent of your judgment on initiatives encourages employees to coherent their own concerns, ideas and initiations to investigate novel views and solutions to problems and promotes ideas further. Please indicate your agreement or disagreement on the following statements by indicating your appropriate response based on the following scale.

5.1 Training & Development

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
5.1.1	Our Company provides multiple career path opportunities for employees to move across multiple functional.					
5.1.2	Our company provides training for developing innovative ideas.					
5.1.3	Our company sponsor social events for employees to get new knowledge.					

5.1.4	Our company offers an orientation program that trains employees on the history and processes of the organization.								
5.1.5	Our company use job rotation techniques to develop new skills of employees.								
5.1.6	Our company use performance appraisals techniques for skill development and training for future advancement								
Strongly Disagreed		Dis-agreed		Neutral		Agreed		Strongly Agreed	
SD (1)		D (2)		N (3)		A (4)		SA (5)	

5.2 Supervisor Support

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
5.2.1	Our supervisor encourages us to develop new ideas, new development and be creative					
5.2.2	Our supervisor provides equal opportunities at work place for new idea					
5.2.3	Our Supervisor actively supports our new development at work.					
5.2.4	Our firm always feel that supervisor give respects and makes use the expertise and knowledge for innovative ideas					
5.2.5	Our needs and goals are important for supervisor in firm					

6. Technological Factors

The following questions ask you about the extent of your judgment on degree to which knowledge management is supported by the use of its. Please indicate your agreement or disagreement on the following statements by indicating your appropriate response based on the following scale.

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
6.1	Employees make extensive use of electronic storage (such as online databases and data warehousing) to access knowledge.					
6.2	Employees use knowledge networks (such as groupware, intranet, virtual communities, etc.) to communicate with colleagues.					

6.3	Our company use technology that allows employees to share knowledge with other persons inside the organization.					
6.4	Our company use technology that allows employees to share knowledge with other persons outside the organization.					
Strongly Disagreed		Dis-agreed	Neutral	Agreed	Strongly Agreed	
SD (1)		D (2)	N (3)	A (4)	SA (5)	

7. Industry Factors

The following questions ask you about the extent of your judgment about a new organization form that enhances the depth and breadth of cooperation and competition and brings together various industries to form a cluster relationship networks. Please indicate your agreement or disagreement on the following statements by indicating your appropriate response based on the following scale.

No.	Items	SD(1)	D(2)	N(3)	A(4)	SA(5)
7.1	Our Company use cluster to obtain individuals with talent and with high educational levels.					
7.2	Our company use to obtain experienced and required core technique talents.					
7.3	Our company can retain professional technical talents					
7.4	Our company use cluster to obtained technical interaction and innovation from the employees' flow.					



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Appendix 2

Common Method Variance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.688	20.778	20.778	7.688	20.778	20.778
2	3.690	9.972	30.750			
3	2.715	7.339	38.089			
4	2.193	5.927	44.016			
5	2.165	5.851	49.867			
6	1.730	4.677	54.544			
7	1.588	4.292	58.836			
8	1.334	3.605	62.441			
9	1.087	2.939	65.380			
10	1.029	2.782	68.163			
11	.966	2.611	70.774			
12	.864	2.336	73.110			
13	.779	2.106	75.216			
14	.753	2.035	77.251			
15	.657	1.775	79.025			
16	.630	1.703	80.728			
17	.604	1.633	82.361			
18	.524	1.416	83.777			
19	.507	1.369	85.146			
20	.492	1.330	86.476			
21	.462	1.249	87.726			
22	.443	1.196	88.922			
23	.438	1.184	90.106			
24	.399	1.077	91.183			
25	.382	1.032	92.215			
26	.346	.935	93.150			
27	.325	.878	94.028			
28	.304	.822	94.850			
29	.296	.799	95.648			
30	.264	.713	96.361			
31	.243	.656	97.017			

32	.237	.642	97.659		
33	.213	.575	98.234		
34	.190	.514	98.747		
35	.164	.444	99.192		
36	.158	.427	99.619		
37	.141	.381	100.000		

Extraction Method: Principal Component Analysis.

Appendix 3

Outlier Test:

Extreme Values

		Case Number	Value
Mahalanobis Distance	Highest	1	90 45.49483
		2	91 32.79602
		3	207 29.03180
		4	209 26.22347
		5	235 23.67131
	Lowest	1	94 .52210
		2	174 .59337
		3	78 .61265
		4	103 .63216
		5	64 .64750

