JDSS

Journal of Development and Social Sciences

www.jdss.org.pk

RESEARCH PAPER

An Empirical Review of Servant Leadership and Organizational Citizenship Behavior: A Case of Higher Education Institutes of Pakistan

[1]Dolat Khan [2]Sadia* [3]Hamza Khalil Chaudhry

1. Assistant Professor, Department of English, University of Gwadar, Gwadar, Balochistan, Pakistan
2. Lecturer, Department of Education, University of Gwadar, Gwadar, Balochistan, Pakistan
3. Assistant Professor, Department of Law, Shaheed Zulfiqar Ali Bhutto University of Law, Karachi, Sindh, Pakistan

| *Corresponding Author: | sadia.naseer@ug.edu.pk |

ABSTRACT

The education system plays a vital role in the development of any nation. This study aims to explain how the servant type of leadership will bring citizenship behavior among the faculty members of the higher education institutes of Pakistan by mediating organizational trust and employee recognition. A purposive sampling technique was used to the data from the 405 faculty members. SmartPLS was used to analyze data. From the findings of this study, it was concluded that servant leadership has a significant role in the organizational citizenship behavior of the faculty members by mediating organizational trust. While employee recognition doesn't channel this relationship in the context of higher education institutes in Pakistan.

Introduction

Higher education institutes are the institutes which produce skilled labor for the various sectors of the country (Gaur et al., 2020). Their network is spread throughout the country in all four provinces, almost equal the population (Qashou, 2021). More than 250 higher education institutes currently offer different higher-level degrees across Pakistan (Salmon, 2023). In other words, we can say that they are acting as the backbone of our skilled labor industry country-wise. A survey conducted by the higher education commission of Pakistan, the higher education institutions of Pakistan produce around 0.2 million skilled people for the national and international industries annually (Mudasser et al., 2022). Teacher plays a vital role in the progress of any higher education institute. Because they are the people who are responsible for the quality of skilled people being produced by the institutes (Ali, 2022). Several factors are responsible for the performance of educational institutes, where the faculty member's behavior is one of the main factors (Saraih et al., 2023). If the behavior of the faculty members in the educational institute is good, it will automatically lead towards a better and good performed organization (Ahmad, 2011). Educational organizations often try to find the factors and reasons responsible for their employees' behaviour development. Several researchers have discovered different factors that build up these (Awais & Ahmad, 2021).

This study examines the factors responsible for the organizational citizenship behavior of the faculty members of higher education institutions across Pakistan. This study also aims to determine how the leadership will boost this behavior and what leadership style is most effective in bringing citizenship behaviour among the faculty members. Furthermore, this study also explores the mediating channels that how leadership will affect the behaviour of the faculty members.

Literature Review

The foundation of servant leadership is the notion that leaders should put service to the common good first (Khan et al., 2022). This type of leader puts their people and organization first. They don't give their own goals priority (Heckel, 2022). Employees are more likely to feel heard in an environment of servant leadership. It is a type of leadership that supports its subordinates (Rehman et al., 2021). Several researchers have found that servant leadership is a leadership style that is most efficient and effective in the context of education institutes (Song, Zhao, Chang, Razi, & Dinca, 2022). Leadership plays a vital role in any organization's development, especially in the educational organization, which is the feeder of all organizations (Siyal et al., 2021). A leader is one of the main characters in the organization who is solely responsible for the behaviour of its followers (Pringle et al., 2022). Several researchers say the follower's behavior reflects the leader's behaviour. If the leadership behaves in a good manner with the follower automatically, that follower will start to behave in a good manner also (Irshad, 2022). There are several types of leadership which highly influence their follower behavior. Still, several researchers suggest that servant leadership is a behaviour which directly influences the follower citizenship behaviour in the educational organization (Irshad & Abro, 2022). Several researchers suggest that this mechanism is transferred to the follower directly without any mediating channel. Still, the current literature denies this argument that different factors are responsible for channelizing this mechanism (Okagbue et al., 2023). According to them, these factors may be organizational trust, employee recognition and employee hope. However, these mediating factors may vary from context to context (Singh, Singh, & Matthees, 2022).

Organizational trust can be defined simply as the staff's faith in the decisions made by the organization (Alkabaa, 2022). This might refer to trust in management or specific team members, but it also includes organizational aspects like the company's objective (Liu et al., 2022). The goal of senior leadership. The principles and culture of the organization. Organizational trust is an advanced level where employees build trust that the organization will own the employee like a family member at any cost. This level of trust takes years to develop in the mind of the employees (Khan et al., 2022). There are several factors which are responsible for building this level of trust. According to several researchers, the leader's behaviour is the main factor that built this trust (Mesmar & Badran, 2022). In those studies conducted in the educational context, it is often seen that the servant type of leadership was a prominent type that is majorly involved in building this trust. Once trust is developed, this will result in positive outcomes like good employee performance and citizenship behaviour (Asif, Khan, & Habib, 2022).

Employee recognition is the timely, informal or official acknowledgement of an individual's behaviour, effort, or business result that promotes the organization's aims and values and goes above and beyond what their superiors normally expect (Mhlanga, 2022). Recognition means acknowledging someone's progress (Sayed, Shahid, & Ahmad, 2020). If we look at the basic human, we can understand that recognition is a basic need of human beings if we want to promote their performance (Awan et al., 2011). The leader is the main character of any organization who is purely responsible for motivating its employees (Tlili et al., 2022). Recognition is a type of non-material motivation which brings a highly positive sense to the employee's heart. If the leadership continuously recognizes the efforts of their followers in the organization, this will, in the long term, fold up the employees' behaviour (M. Irshad, Hussain, Fahim, & Ghias, 2022). Organizational citizenship behaviour is a person's voluntary commitment inside a firm or organization that is separate from their contractual obligations, according to industrial and organizational psychology. Since the late 1970s, researchers have been studying organizational citizenship behaviour (Ibrahim, Shahid, & Ahmed, 2014). Several factors are responsible for the citizenship behavior of an employee in the organization, like leadership style, organizational trust and employee recognition (Ibrahim et al., 2015).

Based on the above literature discussion following research model and the hypothesis has been developed that the study will test.

Research Model
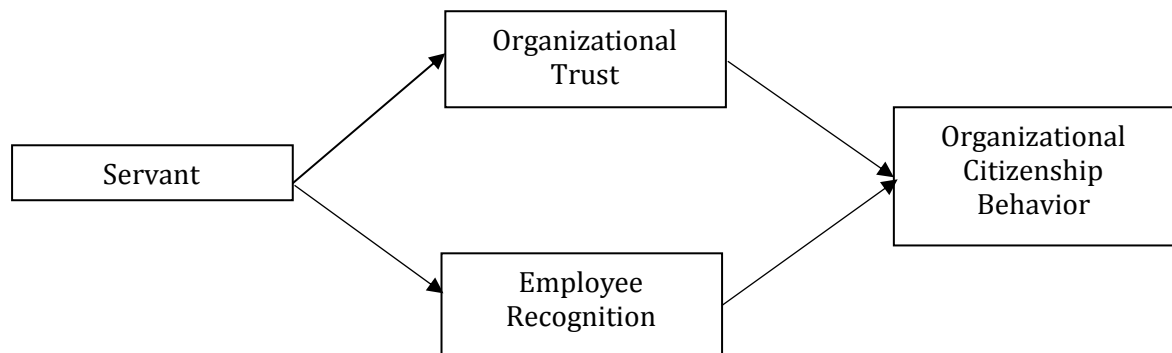
H1: Servant Leadership significantly impacts the organizational trust of the employees.

H2: Servant Leadership significantly impacts employee recognition of the employees.

H3: Organizational trust significantly impacts the organizational citizenship behavior of the employees.

H4: Employee recognition significantly impacts the organizational citizenship behavior of the employees.

Materials and Methods

The philosophical roots of this study are embedded with the positivism paradigm. The positivism paradigm is a paradigm which is solely based on the scientific method, where we assume a fixed and measurable reality. A quantitative approach was used to diagnose the problem in question. Because this approach will better diagnose and address a problem based on measurable reality. The reasoning method used for this study was deductive reasoning. Primary data was gathered from the faculty members of higher education institutes across Pakistan. A total of 405 faculty members' data was gathered by a non-probability sampling technique named purposive sampling. A closed-ended questionnaire was used as an instrument of data collection based on a five-point Likert scale. Where 1 denotes the lowest level of the agreement, and 5 denotes the highest level. While the gathered data was analyzed with the PLS-SEM technique with the help of the SmartPLS software.

Results and Discussion

Demographic Distribution of the Respondents

Table 1 of the demographic distribution of the respondents shows a total number of 405 respondents. This first part of the table shows the gender-wise distribution of the respondents, which shows that among the 405 respondents, 233 are males and 172 are females. The second section of the table shows the age group of the respondents, according to which 98 respondents are 21 to 30 years, 198 are 31 to 40 years, 85 are aged 41 to 50 years, and 24 are aged 51 and above. The third section of the table shows the designation of the respondents. This explains that 206 are lecturers, 123 are assistant professors, 54 are associate professors, and the rest of 22 are professors. The fourth and last section of the table shows the nature of the respondents' employment, which shows that among the 405 respondents, 324 are permanent, and 81 are contractual employees.

Table 1
Demographic Distribution of the Respondents

Gender	Frequency	Percentage
Male	233	57.5%
Female	172	42.5%
Total	405	100.0%
Age Group	**Frequency**	**Percentage**
21 to 30 Years	98	24.2%
31 to 40 Years	198	48.9%
41 to 50 Years	85	21.0%
51 and Above Years	24	5.9%
Total	405	100.0%
Designation	**Frequency**	**Percentage**
Lecturer	206	50.9%
Assistant Professor	123	30.4%
Associate Professor	54	13.3%
Professor	22	5.4%
Total	405	100.0%
Nature of Employment	**Frequency**	**Percentage**
Permanent	324	80.0%
Contract	81	20.0%
Total	405	100.0%

Reliability of the Instrument

Reliability is the measure of how the measure is accurate. Two types of basic reliability used in the structural equation modelling are item reliability and construct reliability. The measure used for the item's reliability is outer loading, while the measure used for the construct reliability is Cronbach alpha and composite reliability. The threshold value for both measures is 0.7 or above, but a value of 0.5 is also acceptable if the initial requirements of the convergent validity are established. Table 2 of the reliability shows that all the items and construct reliability values are above the threshold value, which indicates that all the items and the construct are reliable for further study.

Table 2
Reliability

Construct	Items	Loadings	CA	CR
Employee Recognition	ER1	0.886	0.702	0.812
	ER2	0.632		
	ER4	0.779		
	ER6	0.542		
OCB	OC1	0.802	0.87	0.88
	OC2	0.766		
	OC3	0.881		
	OC4	0.800		
	OC6	0.694		
	OC7	0.727		
Organizational Trust	OT1	0.817	0.888	0.89
	OT2	0.824		
	OT3	0.760		
	OT4	0.850		
	OT5	0.794		
	OT6	0.756		
Servant Leadership	SL1	0.839	0.828	0.828
	SL3	0.891		
	SL4	0.858		

Note: SL2, SL5, OC5, FR3 and ER5 were removed from the model due to insignificant loading values.

Convergent Validity of the Instrument

Convergent validity explains how much the construct is related to their respective items. The measure used for the convergent validity is AVE. The threshold value for the AVE is 0.5 or above. The below table of the AVE shows that all the constructs have AVE values greater than the threshold value, which denotes that all the constructs are convergently valid.

Table 3
Convergent Validity

| Construct	AVE
Employee Recognition	0.521
OCB	0.609
Organizational Trust	0.642
servant Leadership	0.744

Discriminant Validity of the Instrument

Discriminant validity explains how much one construct is theoretically different from another. The measure used for the discriminant validity is HTMT values. The threshold value for the HTMT value is 0.85 or below. Below, the table of the HTMT values shows that all the constructs have HTMT values lesser than the threshold value, indicating that all the constructs have achieved their discriminant validity.

Table 4
HTMT Values

	Employee Recognition	OCB	Organizational Trust
OCB	0.245		
Organizational Trust	0.311	0.829	
Servant Leadership	0.374	0.654	0.839

Structural Model

Below figure 2 of the structural model represents the relationship among the variables of the model of the study.
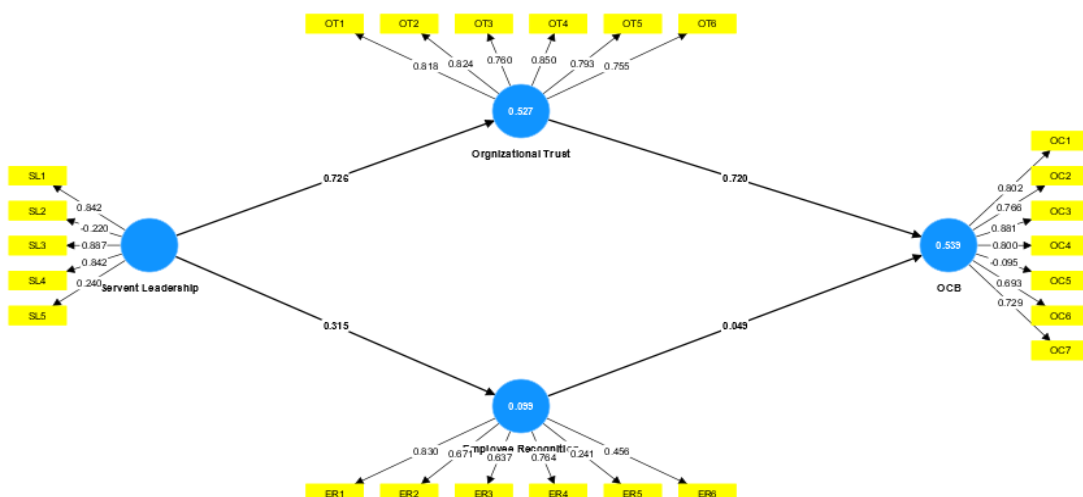
Hypothesis Testing

Table 5 of hypothesis testing shows the structural model of the study. The table shows that there are several four hypotheses which are based on direct relationships. For the statistical significance of a hypothesis, two main measures The threshold value for the t-value is 1.96 and above, while the threshold value for the p-value is 0.05 or less. The table below shows that three of the four hypotheses are statistically significant, while the other is statistically insignificant and has insignificant threshold values. While the beta value of each relationship will explain the strength of the relationships.

Table 5
Hypothesis Testing

Hypothesis	β	T statistics	P values	Results
H1: Servant Leadership -> Organizational Trust	0.722	12.247	0.000	*Supported*
H2: Servant Leadership -> Employee Recognition	0.313	2.820	0.005	*Supported*
H3: Organizational Trust -> OCB	0.728	14.700	0.000	*Supported*
H4: Employee Recognition -> OCB	0.017	0.224	0.823	*Not Supported*

Model Fitness

For the model fitness, several measures are available in the SmartPLS, like SRMR, Chi-square, NFI, etc., but most of the researchers recommend the SRMR for the model fitness in the PLS-SEM. When applying PLS-SEM, a value less than 0.08 is generally considered a good fit. However, the table of model fitness shows that the SRMR value is 0.074, which is less than the threshold value of 0.08, which indicates that the model is fit.

Table 6
Model Fitness

	Saturated model	Estimated model
SRMR	0.074	0.074
d_ULS	1.351	1.343
d_G	0.593	0.595
Chi-square	300.365	300.505
NFI	0.724	0.724

Conclusion

This study explores how servant leadership will bring positive change in the higher education institutes of Pakistan by motivating the faculty members to show highly beneficial behaviour for the organization. Researchers named that behavior organizational citizenship behavior (Rahmat et al., 2021). According to the literature based on servant leadership, first, servant leadership will hit the organizational trust and employee recognition of the employee and, in the end, will change the employee's behaviour (Seetharaman, 2020). According to the findings of this study, servant leadership is a leadership style which is highly responsible for the organizational citizenship behavior of the faculty members at the higher education institutes of Pakistan. This result also argues that although servant leadership doesn't impact the OCB directly, it will first develop the employee trust and lead them to behave like OCB. However, the literature says that this process will be followed by employee trust and employee recognition, but here, only employee trust mediates this relationship, but employee recognition does not.

References

Ahmad, S. F. (2011). The role of decision maker in designing a political party strategy (evidence from Pakistan). *Journal of Law, Policy and Globalization*, *1*(1), 29–34.

Ahmad, S. F., Alam, M. M., Rahmat, M. K., Mubarik, M. S., & Hyder, S. I. (2022). Academic and administrative role of Artificial Intelligence in education. *Sustainability*, *14*(3), 1101. doi:10.3390/su14031101

Ahmad, S. F., Rahmat, M. K., Mubarik, M. S., Alam, M. M., & Hyder, S. I. (2021). Artificial intelligence and its role in education. *Sustainability*, *13*(22), 12902. doi:10.3390/su132212902

Ahmad, S. F., & Shahid, M. K. (2015). Role of knowledge management in achieving customer relationship and its strategic outcomes. *Information and Knowledge Management*, *5*(1), 79–87.

Ahmad, S. F., & Shahid, M. K. (2015). Factors Influencing the Process of Decision Making in Telecommunication Sector. European Journal of Business and Management, 7(1), 106-114.

Ali, M. (2022). A systematic review on supply chain risk management: Issues, challenges, and future agenda. *PAKISTAN LANGUAGES AND HUMANITIES REVIEW*, *6*(II), 159–173. doi:10.47205/plhr.2022(6-ii)14

Alkabaa, A. S. (2022). Effectiveness of using E-learning systems during COVID-19 in Saudi Arabia: Experiences and perceptions analysis of engineering students. *Education and Information Technologies*, *27*(8), 10625–10645. doi:10.1007/s10639-022-11054-z

Asif, M., Khan, M. A., & Habib, S. (2022). Students' perception towards new face of education during this unprecedented phase of COVID-19 outbreak: An empirical study of higher educational institutions in Saudi Arabia. *European Journal of Investigation in Health Psychology and Education*, *12*(7), 835–853. doi:10.3390/ejihpe12070061

Awais, P. M., & Ahmad, S. F. (2021). Banking sector development, inflation and economic growth of Pakistan: The nexus. *Journal of Contemporary Issues in Business and Government*, *27*(5), 266–293.

Awan, Z. M., Ahmed, S. F., & Shahid, M. K. (2011). Organizational Commitment of IT Professionals in Public Sector. Journal of Social and Development Sciences, 2(6), 266-274.

Gaur, U., Majumder, M. A. A., Sa, B., Sarkar, S., Williams, A., & Singh, K. (2020). Challenges and opportunities of preclinical medical education: COVID-19 crisis and beyond. *SN Comprehensive Clinical Medicine*, *2*(11), 1992–1997. doi:10.1007/s42399-020-00528-1

Hassan, J., Devi, A., & Ray, B. (2022). Virtual Laboratories in tertiary education: Case study analysis by learning theories. *Education Sciences*, *12*(8), 554. doi:10.3390/educsci12080554

Heckel, H. (2022). Teaching at a distance: Seven teachable moments for art teachers. *Art Education*, *75*(6), 35–38. doi:10.1080/00043125.2022.2103358

Ibrahim, M., Ahmad, S. F., Shahid, M. K., & Asif, M. (2015). Factors influencing the performance of supply chain management in manufacturing industry of Pakistan. *Industrial Engineering Letters*, *5*(3), 34–41. Ibrahim, M., Shahid, M. K., &

Ahmed, S. F. (2014). The impact of telecom services characteristics on consumer for use in Pakistan. *Advances in Economics and Business*, *2*(4), 172–179. Retrieved from https://www.academia.edu/download/33627994/AEB3-17101999.pdf

Irshad, M. (2022). Macroeconomic variables the indicators for the economic growth of Pakistan. *Pakistan Social Sciences Review*, *6*(II), 58–72. doi:10.35484/pssr.2022(6-ii)06

Irshad, M., Arif, M., & Hussain, M. (2021). The Effects of verbal and nonverbal Ostracism on employee interpersonal work behavior. *Journal of Contemporary Issues in Business and Government*. doi:10.47750/cibg.2021.27.05.036

Irshad, M., Hussain, M., Fahim, S. M., & Ghias, S. (2022). Factors affecting customer satisfaction: A case study of Food Panda. *Reviews of Management Sciences*, *4*(1), 63–82. doi:10.53909/rms.04.01.0118

Irshad, M., Hussain, M., & Qureshi, M. A. (2021). Abusive supervision: A cataylist for the employee deviance work behavior. *Reviews of Management Sciences*, *3*(2), 114–130. doi:10.53909/rms.03.02.0102

Irshad, M., Khan, M. A., Akhlaq, A., & Hussain, M. (2022). Strategies to deregulate the downstream petroleum sector of Pakistan. *Journal of Economic Impact*, *4*(1), 122–131. doi:10.52223/jei4012214

Irshad, P. S. M., & Abro, S. (2022). Administrative practices and faculty performance: A case study of higher education institutes of Balochistan. *Annals of Human and Social Sciences*, *3*(3), 187–195.

Jung, J., Horta, H., & Postiglione, G. A. (2021). Living in uncertainty: the COVID-19 pandemic and higher education in Hong Kong. *Studies in Higher Education*, *46*(1), 107–120. doi:10.1080/03075079.2020.1859685

Khan, K. S., Shahid, M. K., & Ahmad, S. F. (2015). Critical Success Factors for IT Projects in the Telecom Sector. Industrial Engineering Letters, 5(11), 1-14.

Khan, Mudasser Ali, Ahmed, N., & Irshad, M. (2022). Effect of uncertainty, supplier involvement, Supplier Performance and partnership quality on buyer-supplier relationship. *Market Forces*, *17*(1), 41–58. doi:10.51153/mf.v17i1.537

Khan, Mudassir Ali, Ahmad, S. F., & Irshad, M. (2022). Quantifying the mediating effect of resilience in supply chain: Empirical evidence from oil and lubricant industry. *Journal of Development and Social Sciences*, *3*(II). doi:10.47205/jdss.2022(3-ii)21

Khan, N., ., M. I., & ., M. K. S. (2012). Impact of On-Job Training on Performance of Telecommunication Industry. *Journal of Social and Development Sciences*, *3*(2), 47-58. https://doi.org/10.22610/jsds.v3i2.685

Liu, X., Ahmad, S. F., Anser, M. K., Ke, J., Irshad, M., Ul-Haq, J., & Abbas, S. (2022). Cyber security threats: A never-ending challenge for e-commerce. *Frontiers in Psychology*, *13*, 927398. doi:10.3389/fpsyg.2022.927398

Mesmar, J., & Badran, A. (2022). The post-COVID classroom: Lessons from a pandemic. In *Higher Education in the Arab World* (pp. 11–41). Cham: Springer International Publishing.

Mgammal, M. H., Mohammed Al-Matari, E., & Bardai, B. (2022). How coronavirus (COVID-19) pandemic thought concern affects employees' work performance: evidence from

real time survey. *Cogent Business & Management*, *9*(1). doi:10.1080/23311975.2022.2064707

Mhlanga, D. (2022). The role of artificial intelligence and machine learning amid the COVID-19 pandemic: What lessons are we learning on 4IR and the sustainable development goals. *International Journal of Environmental Research and Public Health*, *19*(3), 1879. doi:10.3390/ijerph19031879

Mittal, S., Mahendra, S., Sanap, V., & Churi, P. (2022). How can machine learning be used in stress management: A systematic literature review of applications in workplaces and education. *International Journal of Information Management Data Insights*, *2*(2), 100110. doi:10.1016/j.jjimei.2022.100110

Okagbue, E. F., Ezeachikulo, U. P., Nchekwubemchukwu, I. S., Chidiebere, I. E., Kosiso, O., Ouattaraa, C. A. T., & Nwigwe, E. O. (2023). The effects of Covid-19 pandemic on the education system in Nigeria: The role of competency-based education. *International Journal of Educational Research Open*, *4*(100219), 100219. doi:10.1016/j.ijedro.2022.100219

Prasad, S., & Bara, A. H. (2022). Community participation in elementary education and COVID-19 pandemic: A case study of public schools in Bihar. *Journal of Asian and African Studies*, 002190962211294. doi:10.1177/00219096221129437

Pringle, J. K., Stimpson, I. G., Jeffery, A. J., Wisniewski, K. D., Grossey, T., Hobson, L., ... Rogers, S. L. (2022). Extended reality (XR) virtual practical and educational eGaming to provide effective immersive environments for learning and teaching in forensic science. *Science & Justice: Journal of the Forensic Science Society*, *62*(6), 696–707. doi:10.1016/j.scijus.2022.04.004

Qashou, A. (2021). Influencing factors in M-learning adoption in higher education. *Education and Information Technologies*, *26*(2), 1755–1785. doi:10.1007/s10639-020-10323-z

Rabbani, M., Subhan, I., Hussain, S., Ahmed, S. F., & Ibrahim, M. (2015). Impact of financial leverage on pakistani firms. *Journal of Poverty, Investment and Development*, *15*, 15–22.

Rehman, A., Fahim, S. M., Irshad, M., & Hussain, M. (2021). Effect of multisensory branding on purchase intention at cafes in Pakistan. *KASBIT Business Journal*, *14*(3), 101–119. Retrieved from https://www.kasbitoric.com/index.php/kbj/article/view/191

Salmon, G. (2005). Flying not flapping: a strategic framework for e-learning and pedagogical innovation in higher education institutions. *ALT-J*, *13*(3), 201–218. doi:10.1080/09687760500376439

Saraih, U. N. B., Qureshi, M. A. M. A., Irshad, M., & Ahmad, S. F. (2023). Impact of institutional climate on the students engagement and learning outcomes in private sector universities of Karachi. *International Journal of Management in Education*, *17*(1), 1. doi:10.1504/ijmie.2023.10053451

Sayed, A. F., Shahid, M. K., & Ahmad, S. F. (2020). Adoption of mobile payment application and its impact on business. In *Advances in Finance, Accounting, and Economics* (pp. 253–269). Hershey, PA: IGI Global.

Seetharaman, P. (2020). Business models shifts: Impact of Covid-19. *International Journal of Information Management*, *54*(102173), 102173. doi:10.1016/j.ijinfomgt.2020.102173

Sikandar, P., Aleemi, A. R., Irshad, M., & Sundus. (2022). Feeling black & blue yet at work: Physical job stressors and sickness presenteeism with the moderation of Organizational Justice. *Sustainable Business and Society in Emerging Economies*, *4*(1), 167–178. doi:10.26710/sbsee.v4i1.2207

Singh, J., Singh, L., & Matthees, B. (2022). Establishing social, cognitive, and teaching presence in online learning—A panacea in COVID-19 pandemic, post vaccine and post pandemic times. *Journal of Educational Technology Systems*, *51*(1), 28–45. doi:10.1177/00472395221095169

Siyal, S., Yaseen, M., Ahmed Siyal, S., & Fayaz Ahmad, S. (2021). Factors affecting firm performance: Evidence from family businesses in emerging economies. *Journal of Finance & Economic Research*, *6*(1), 66–78. doi:10.20547/jfer2106105

Song, Y., Zhao, P., Chang, H.-L., Razi, U., & Dinca, M. S. (2022). Does the COVID-19 pandemic affect the tourism industry in China? Evidence from extreme quantiles approach. *Economic Research-Ekonomska Istraživanja*, *35*(1), 2333–2350. doi:10.1080/1331677x.2021.1941180

Svatos, J., Holub, J., Fischer, J., & Sobotka, J. (2022). Online teaching of practical classes under the Covid-19 restrictions. *Measurement. Sensors*, *22*(100378), 100378. doi:10.1016/j.measen.2022.100378

Tlili, A., Huang, R., Shehata, B., Liu, D., Zhao, J., Metwally, A. H. S., … Burgos, D. (2022). Is Metaverse in education a blessing or a curse: a combined content and bibliometric analysis. *Smart Learning Environments*, *9*(1). doi:10.1186/s40561-022-00205-x

Zarcone, D., & Saverino, D. (2022). Online lessons of human anatomy: Experiences during the COVID-19 pandemic. *Clinical Anatomy (New York, N.Y.)*, *35*(1), 121–128. doi:10.1002/ca.23805

Zhong, Y., & Moon, H.-C. (2022). Investigating customer behavior of using contactless payment in China: A comparative study of facial recognition payment and mobile QR-code payment. *Sustainability*, *14*(12), 7150. doi:10.3390/su14127150