

Format: Electronic Book

**3rd Global Conference on Human
Resource Management 2023**

Conference Proceeding

ISBN: 978-1-998259-01-4

Table of Contents

| Name and Affiliation | Title | Page Number |
|---|---|---------------------|
| <p>Mahdi Hamzehloo (Author) <i>Institute of Higher Education Mehr Alborz, Tehran, Iran</i></p> | <p>Investigating the Relationship Between Users' Information Technology Knowledge and the Fault Rate of Industrial Computer</p> | <p>03-15</p> |
| <p>Muhammad Tayyab (Author) <i>The University of Lahore, Main Campus Lahore</i></p> <p>Saba Saira <i>The University of Lahore, Main Campus Lahore</i></p> | <p>Beyond Borders: Unravelling Intra-National Cross-Cultural Dynamics in Pakistan's Private Sector</p> | <p>16-48</p> |
| <p>Ada Sandoval Madrid (Author) <i>Vancouver Community College</i></p> <p>Dr. Badr-un-nisa Chand <i>University Canada West</i></p> | <p>The Nexus of Sustainability and Industry 5.0: Assessing Canadian Organizations' Readiness for the Next Technological Revolution through British Columbian manager's perspective</p> | <p>49-57</p> |

Content Details:

| | |
|---|--|
| <p>Mahdi Hamzehloo (Author) <i>Institute of Higher Education Mehr Alborz, Tehran, Iran</i></p> | <p>Investigating the Relationship Between Users' Information Technology Knowledge and the Fault Rate of Industrial Computer</p> |
|---|--|

Abstract

This study aims to find the fault rate of industrial computers with the users' knowledge of information technology due to the importance of information technology and its widespread use in all fields as well as industries. This is important because the use of such systems are highly sensitive in industries such as aerospace, the Ministry of Defense as well as manufacturing and industrial plants. Investigating and rooting the fault rate of such systems saves time and reduces damage and waste of resources, which is always one of the main priorities of the industry. To achieve the study objectives, information was collected through stopped workstations forms and also by looking at users' resumes to review the courses passed in the field of information related to information technology. Using statistical software, the conclusion was made by considering two basic assumptions. The statistical hypothesis was expressed as two types of hypothesis, null hypothesis H_0 , and alternative hypothesis H_A . Based on this statistical result, companies and industries should increase the knowledge of their users by preparing courses in this field or distributing information packages in the form of checklist to reduce the fault rate.

Keywords: knowledge, information technology, fault rate, industrial computer

1. Introduction

Industrial computers are systems that operate under harder working conditions in terms of temperature, electrical, shock, and vibration stress and have a longer lifespan than conventional computers (Peiravi and Fazel, 2004). They are used in various industries, including military, aerospace, oil, and gas, as well as manufacturing plants. In terms of the importance of mentioned areas, such systems are expensive and require more maintenance and attention.

The system in question in this research is industrial computers located in production lines of factories that are responsible for commanding robots and devices that produce products. The importance of these systems is that the fault and defects in such systems have caused a stop in the production process of the factory, which is not desirable for factories nor manufacturing

industries, and depending on the time of line closure can cause financial, time and planning losses to the organization.

Human error can be defined as any human action which results from an undesirable state of affairs and generally causes problems in achieving company targets and goals and includes individual knowledge and contextual situations (Barroso and Wilson,2000). The main problem with the industrial computer is the importance of their in real-time operation. Industrial environments are always exposed to surge and usually do not operate at standard and protected temperatures. It must be resistant to electrical shock and execute processing commands in real-time. All these factors make the importance and role of the industrial computer more prominent and make the need for proper use of these systems more important. Human tasks are cognitive during abnormal running like disturbances of industrial processes and to ensure the smooth running of the process, operators have to make complex decisions (Riera, 2001).

These systems, like other computer systems, have somewhat similar hardware to personal computers as well as operating systems that are designed to be limited and specific to them. In terms of hardware maintenance, it is no different from other electronic systems. For example, proper ventilation to reduce the ambient temperature and the presence of fabric filters to absorb dust. But the most important thing to maintain this type of system is the knowledge of how to deal with this type of system. Therefore, using them requires a minimum of knowledge related to information technology. For example, shutting down these systems, like other electrical devices, should not be done by cutting off power because this can cause an industrial computer to malfunction. Of course, factories for these systems usually use an uninterruptible power supply(ups) that automatically enters the circuit after the power outage and prevents the system from shutting down, but it should be noted that this method is used for temporary outages and power fluctuations.

Jahani et al. pointed companies are interested in knowledge management due to the fact that they realize it can contribute to their competitive advantage (2012). To realize and achieve the best solutions for implementing knowledge management systems, organizations must assess the dimensions of their organizations and interactions of them with knowledge management (Jafari et al., 2008). They mentioned that knowledge capture is the process of retrieving explicit or tacit knowledge that is within people.

In general, users can gain knowledge of using the industrial computer in two ways. The knowledge that is obtained through passing theoretical courses and is formulated, which is called explicit, and the knowledge that is implicitly present in the users, which in most cases is difficult to transfer and is called tacit (Brown, 1998). Zagzebski (2017) claimed that knowledge is a state in which a person is in cognitive contact with reality, on one side of the relation is a conscious subject, and on the other side is a portion of reality to which a person is directly or indirectly

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



related. Knowledge plays a direct role in the organization's success in the competitive environment (Sadq et al, 2020). Ode and Ayavoo pointed that Knowledge management practices contribute directly and indirectly to firm innovation and have a significant effect on firm innovation (2019). Information technology changes all aspects of doing business, while knowledge and human resources are increasingly regarded as key levers of competitive advantage in today's complex business environment (Turulja and Bajgoric, 2018).

Managers always know that it is costly for the organizations to train and teach their employees and employing a new and inexperienced person can be very expensive and time-consuming for the organizations.

On the other hand, the skills and working methods of employees and operators create valuable knowledge and this new organizational knowledge improves the production of processes and services. The irreplaceability of knowledge also means that the knowledge generated in one organization is not generally used in other organizations (Erser and Mohammadi, 2014 cited by Van Kruch, 1999). Information plays a crucial role in human activities such as decision making, creativity, and innovation (Boon, 1992). He continued that people who are involved with development at the operational level need the information to facilitate development.

explicit knowledge can be evaluated through the documents of the courses passed and another tacit knowledge that can be calculated through the work history in the company and user with this type of system.

The purpose of this study is to investigate the extent to which the IT knowledge and literacy of users of production lines and industrial computers can reduce the fault rate and thus stop the production line. This is done by collecting and reviewing information on the report of production lines that had stopped stations, as well as training courses related to information technology that users have passed.

Research in the field of an industrial computer has often examined the technical areas of these systems and so far there is no research in the field of research that was mentioned. This research can be considered important as it can stop the invisible chain of faults. It will make positive result in this field and prevent many tangible and intangible material losses in the production line of factories.

2. Review of literature

2.1 Information technology knowledge

The Information Technology Association of America(ITAA) definition of information technology(IT) refers to the study, design, development, implementation, support, or management of computer-based information systems, especially software and hardware.

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Given the extent of this technology at all levels of human life, education in this field is certainly important and effective. Certainly, education in this field is important and effective.

"The opportunities and threats that businesses face due to the advent of information technology have made the operational tasks of IT managers such as software management, network management, hardware, and software installation strategic tasks" (Rouhani et al, 1379, p.2).

It is essential in human supervisory control to plan the task, teach the computer, monitor the automation system, and intervene if faults happen (Li and Wieringa, 2000).

Some companies try to implement technologies only among more 'qualified' computer-savvy staff because new IT platforms are probably best used and deployed by front line workers who are in contact with the details of day-to-day operations or have detailed knowledge of equipment, however, this group is often the least likely to have enough knowledge of computerization (DiBello and Missildine, 2010).

There are many articles on information technology and related knowledge, but the study of this knowledge in users and its impact on the performance and fault rate of the industrial computer used by users is a new case that has not been researched in this field.

2.2 industrial computer

In different organizations, the use of each aspect of information technology varies according to the level of need of the organization. Mainly in hardware factories, it plays a more prominent role in production lines. From the perspective that the hardware should always be able to provide service and have minimum downtime. In the twenty-first century and with the development of industry, it is vital for operators to integrate more information to work with machines efficiently, and wearable cognitive assistants facilitate access to information and information processing and can help operators and support them with this heavy mental load (Belletier and et al, 2019). Maintenance actions are significantly effective in optimizing production capacities which can be destabilized in the production environment by variability (Ben Said and et al., 2016).

Industrial computers are designed to be separated and movable so that the industrial computer does not vibrate or break when moved.

Peiravi and Fazel said various researches have been done in the field of industrial systems. For example, estimating the useful life of a particular type of industrial computer by the Monte Carlo method and providing a solution to increase it, which has been researched (2004). Due to the diversity of such systems, different types of them have been studied and evaluated.

Since almost all industrial computers are made in foreign countries, including the United States and Germany, and their repairs are almost impossible due to their complexity, this makes the need for training in the proper use of this equipment more important.

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



On the other hand, the computer industry is rapidly updating, so that other industries are lagging behind this growth rate. For this reason, when industrial machines are purchased that are controlled by an industrial computer, after a while, the computer system is removed from the support of the manufacturer and more powerful and upgraded systems are replaced, and in case of computer damage, older ones can hardly be repaired or replaced. Again, the importance of teaching proper use to employees is important from this perspective.

Such machines are usually seen in factories that have been left unused due to defects and breakdowns of industrial computers and the lack of troubleshooting or lack of alternatives for them and organizations are forced to choose an alternative method to reduce their production rate.

3. Research methodology

In this research, information has been collected in two ways. The first is by examining the inspection forms at the stopped workstations of the lines in such a way that the workstations in which there is an industrial computer are identified. And the second case is through checking the inspection forms of stopped stations in such a way that the name of the operator is determined and the relevant records of the human resources unit are evaluated to check the amount of work experience and courses passed. In this study, the tacit knowledge of each operator is also measured through the amount of work experience in workstations where industrial computers are available.

The information was collected from an Iranian company that has been done on 58 production line operators for 6 years. When a station has a problem, the relevant unit is informed through the planning department. Specialists in this field, who are mainly working in the production engineering and equipment unit of the organization, take action to repair the breakdown. The report of this fault and stop is recorded in a form and delivered to the planning unit. Information such as the time that the station stopped, the cause of the breakdown, the actions that are taken and the name of the operator and expert are stated.

Data description

In this part of the research, we provide descriptive and inferential statistics as well as data analysis so that we can use them to judge whether to reject or confirm the test hypothesis.

In the descriptive statistics section, using the SPSS software and its non-parametric tests, the test hypothesis is examined. Mann-Whitney test was used to judge the test hypothesis.

After collecting information, the analysis and classification were done as follows:

About 55% of employees had an associate degree, 31% had a diploma and 14% had a bachelor's degree.

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Eighty-one percent of employees had not been trained in IT-related courses, and only 19 percent had been trained in these courses.

Out of 58 operators, 11 have been trained.

64% of employees had more than two years and 36% had less than 2 years of work experience.

In the breakdown report, this type of segmentation can determine how much of the damage is imposed by device users and what types of breakdowns, often hardware, users do not play a significant role.

89% of the breakdowns, equivalent to 347 cases, caused the workstation to stop that if this type of problem is reduced in this volume, station and line downtime will be reduced and production downtime will be reduced, and in the same proportion, cost wastage will be reduced and profitability will increase. 1% is reserved for changes that were not from software and hardware.

For example, the clutter of production program items in industrial systems, which leads to a decrease in the accuracy of the device and the production of defective parts, and it cannot be considered equal to software problems, but cause waste and defective production of parts.

But hardware problems cannot be easily rooted out and the causes of the fault must be investigated. Repairs are often not possible in this field and if possible, it requires a lot of time, in such cases, the existence of spare parts and their replacement in the least time is the best solution to reduce production stoppage in this regard.

Figure 1 shows the fault rate of systems.

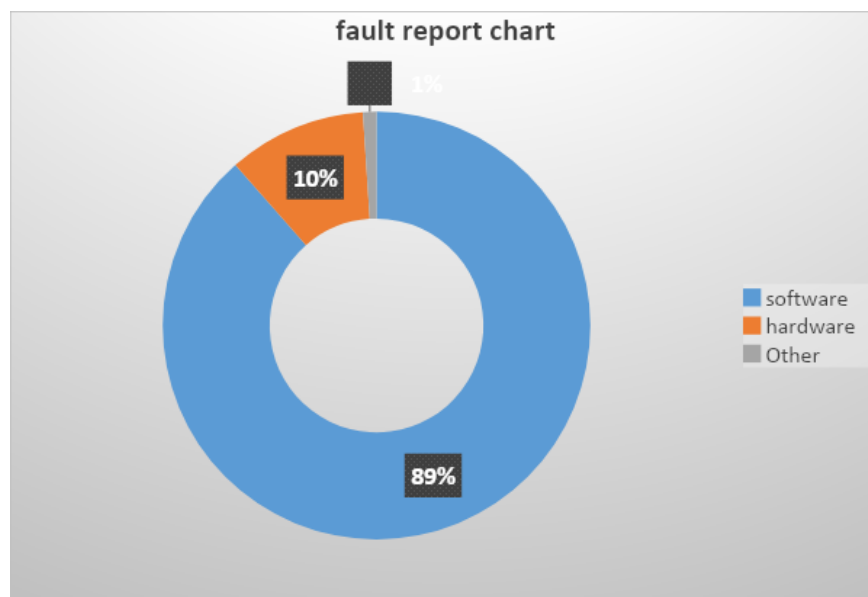


Figure 1: Diagram of workstation fault reports

3.1 Assumption test

A statistical assumption is a claim about one or more populations that may be true or false. In other words, a statistical assumption is a claim or statement about the distribution of a population or a distribution parameter of a random variable. A statistical hypothesis is the starting point of the hypothesis test, and in principle, it is difficult to perform a test without having a statistical hypothesis. A statistical hypothesis is expressed in two types: null hypothesis zero H_0 and alternative hypothesis H_A . The hypothesis that is tested in statistical tests is the null hypothesis, which always indicates that there is no difference.

3.2 Definition of words - terms and abbreviations

Variable: Features that are observed and measured in research.

Independent variable: In fact, it is the default variable through which the changes of the dependent variable are measured and determined.

Dependent variable: Dependent variable is a variable that its value depends on the independent variable and is not available to the researcher.

Descriptive statistics: is a logical procedure for organizing data and arranging them for understandable and fast interpretation of quantitative data.

Inferential statistics: Knowledge about inference about large groups through the findings of small groups. It is the science of expanding information from small groups to large groups.

Histogram: A graph through which classified information is displayed in a frequency distribution table.

Society: A group of people, objects, or events that share at least one attribute or characteristic. This research refers to people who are subject to generalization.

Parameter: is the numerical characteristic of a society.

Sample: A sample is a subset that is selected from the whole community and represents it.

Statistics: These are the numerical properties of the sample.

The main difference between descriptive and inferential statistics is that in descriptive statistics, the results obtained from the statistical sample can never be generalized to the entire statistical population. Because the purpose of this type of statistics is to describe the characteristics of the statistical sample of the research along with the indicators of a tendency to the center or indicators of the tendency to dispersion. While in inferential or analytical statistics, the results and findings obtained from the statistical sample can be generalized to the entire statistical

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



population of the research. In other words, the central concept of inferential statistics is generalizability.

3.3 Hypothesis test

Mann-Whitney test is a non-parametric test and is used to measure differences between samples. Parametric statistics require assumptions about the sampled population. As the most important assumption in parametric statistics, it is assumed that the distribution of the population is normal, but non-parametric statistics do not require any assumptions about the distribution. That is why many humanities studies that are measured by qualitative scales and have no distribution use non-parametric statistical indices.

The Mann-Whitney test is the non-parametric equivalent of the independent t-test and is used to compare data obtained from independent group designs. If the conditions for using parametric tests are not available in the variables, as in our study, it means that the variables are not continuous and normal, this test is used.

Regarding the test hypothesis, hypotheses zero and one are defined as follows:

IT-trained operators working with industrial machines do not cause less damage and repairs to machines than others. = H0

Trained IT operators working with industrial machinery cause less breakdown and repair of machinery than others. = H1

After entering the information into the program, the Mann-Whitney test was performed and the output is as follows:

Descriptive statistics

| | N | Mean | Std. Deviation | Minimum | Maximum | percentiles | | |
|-------------|---|-------------------|------------------------|---------------|---------------|-----------------------|---------------------------|-----------------------|
| | | | | | | 25th | 50 th (Median) | 75th |
| Point group | | 34.3000 1.5000 | 10.8219 1 .50855 | 12.00 1.00 | 56.00 2.00 | 25.000 0 1.0000 | 36.0000 1.5000 | 44.000 0 2.0000 |

Mann-Whitney test

Test statistics

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
 Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



| | point |
|-----------------------------|---------|
| Mann-whitney U | 4.500 |
| Wilcoxon W | 124.500 |
| Z | -4.491 |
| asymp.Sig.(2-tailed) | .000 |
| Exact Sig.[2*(tailed sig.)] | .000* |

Figure 2: Results of the information entered in the statistical program

In the Test Statistic table, which contains the main test result, the significant value of Sig is zero, which is less than 0.05. Therefore, the null hypothesis is rejected. Therefore, by interpreting the output of SPSS software, it can be concluded that:

With 95% confidence, IT-trained operators working with machines with industrial computers cause fewer breakdowns and repairs than others.

4. Conclusion

In the analysis of the results, two groups, one with knowledge related to information technology and the other group without knowledge, were examined

According to the statistical results, it was found that employees who had knowledge related to information technology; were 95% less likely than others to fail in the industrial computer, reflecting the positive impact of information technology-related knowledge that causes systems to fail less. Since almost all industrial computers are made in foreign countries, including the United States and Germany, and their repairs are almost impossible due to their complexity, this makes the need for training in the proper use of this equipment more important.

Training can be done by reading magazines and books, electronically and virtually. Education is not necessarily possible through the study of long texts and specialized studies but can be instructions for using a simple device, such as a radio. Some knowledge is also acquired implicitly. In a way that a person acquires that knowledge after working and devoting time to a subject, for example, workers and operators of devices who, after devoting time and training, become familiar with different aspects of knowledge in a job-related field.

However, this acquired knowledge deserves further review by experts and higher-level managers in terms of functional accuracy and effectiveness of the findings, in which the discussion of knowledge management is very useful.

The benefits of knowledge management include reducing information retrieval time and skills acquisition in less time by employees and helping employees' job ability by expanding the resources available to them (Erser and Mohammadi, 2014 cited by Van Kruch, 1999).

Due to the limitations in conducting research, there are limitations in gathering information, including access to staff personal information to extract information about courses taken. Employees' personal information is always considered confidential and is not easily accessible, and employers and human resource managers often do not show the flexibility to provide this information. Another problem and limitation is the collection of information about stopped devices, which requires a lot of time. Accuracy in recording the information contained in the forms at the time of the stop as well as a clear and accurate reference to the problem that occurred is another problem that can be one of the uncertainties of the data and can affect the results.

Usually in organizations that follow the principles of knowledge management and always the knowledge in the organization and employees are valuable to them, policies are adopted to collect this knowledge and prepare the collected knowledge of employees in a package and archive it for use in the organization.

In the present research, the knowledge related to information technology of users of industrial systems has been studied from two perspectives. One is the knowledge that they have acquired in the form of IT courses and the other is the knowledge that has been implicitly acquired, which is followed by examining how to measure and examine the types of knowledge of employees.

In previous researches in the field of industrial systems, only the performance characteristics of such systems have been introduced and comparisons and studies in the field of users' behavior with such systems and the knowledge required for proper use have not been done. The importance of such systems in important industries requires further research to minimize system fault rates and find the causes of failures.

Given the importance of this field in industry and production, it is necessary to take measures to disable and reduce downtime and similar problems, and different options can be offered for improvement:

1. That user can be trained in IT training in the form of training courses that are familiar with the minimum in this area.
2. That experts in this field in the organization who are proficient in industrial computers have conducted specialized courses in this field for users who directly teach them the minimum user knowledge with these systems.

3. That the organization, using experts in this field, prepare knowledge packages in the field of general training of industrial computer to users. In such a way that experts briefly introduce such systems and write how to use the device. It seems that this method can be effective to a large extent in terms of not wasting the time of specialists for repeated training to new users.
4. The emphasis of this research was on the hardware in the production lines and it should not be understood that software is not very important in this regard. It is quite clear that software creates the ability to use hardware and is of great importance.
5. In this study, the relationship between users' knowledge of information technology and the fault rate of industrial computers was investigated. However, there is still a need for further investigation into cases related to the reduction of failure and malfunction of such systems in terms of usability. In cases that need further research, the ratio of employees' work experiences in the field of industrial computers and the fault rate of such systems can be examined.

References

1. Barroso, M. P., & Wilson, J. R. (2000). *Human error and disturbance occurrence in manufacturing systems (HEDOMS): a framework and a toolkit for practical analysis*. *Cognition, Technology & Work*, 2(2), 51-61. <https://doi.org/10.1007/s101110050027>
2. Belletier, C., Charkhabi, M., de Andrade Silva, G. P., Ametepe, K., Lutz, M., & Izaute, M. (2019). *Wearable cognitive assistants in a factory setting: a critical review of a promising way of enhancing cognitive performance and well-being*. *Cognition, Technology & Work*, 1-14. <https://doi.org/10.1007/s10111-019-00610-2>
3. Boon, J. A. (1992). *Information and development: some reasons for failures*. *The Information Society*, 8(4), 227-241. <https://doi.org/10.1080/01972243.1992.9960122>
4. Brown, J. S., & Duguid, P. (1998). *Organizing knowledge Californian Management Review*. <https://doi.org/10.2307/41165945>
5. DiBello, L., & Missildine, W. (2010). *Information technologies and intuitive expertise: a method for implementing complex organizational change among New York City Transit Authority's Bus Maintainers*. *Cognition, Technology & Work*, 12(1), 61-75. <https://doi.org/10.1007/s10111-008-0126-z>
6. Erser and Mohammadi (2014) *The Role of Information Technology in Knowledge Management in Organizations, The First National Electronic Conference on New Achievements in Management and Accounting, Tehran, Payame Noor; West of Tehran*.

7. Jafari, M., Fathian, M., Jahani, A., & Akhavan, P. (2008). *Exploring the contextual dimensions of organization from knowledge management perspective*. VINE. <https://doi.org/10.1108/03055720810870897>
8. Jahani, A., Murad, M. A. A., Sulaiman, M. N., & Selamat, H. (2012, March). *An intelligent case-based supplier selection framework: customer knowledge management perspective*. In *2012 International Conference on Information Retrieval & Knowledge Management* (pp. 95-99). IEEE. 10.1109/InfRKM.2012.6205013
9. Li, K., & Wieringa, P. A. (2000). *Understanding perceived complexity in human supervisory control*. *Cognition, Technology & Work*, 2(2), 75-88. <https://doi.org/10.1007/s101110050029>
10. Ode, E., & Ayavoo, R. (2020). *The mediating role of knowledge application in the relationship between knowledge management practices and firm innovation*. *Journal of Innovation & Knowledge*, 5(3), 210-218. <https://doi.org/10.1016/j.jik.2019.08.002>
11. Peiravi and Fazel (2004, May). *Estimating the average useful life of a type of industrial computer by Monte Carlo method and providing a solution to increase it*. *12th Iranian Electrical Engineering Conference*.
12. Riera, B. (2001). *Specifications, design and evaluation of an advanced human-adapted supervisory system*. *Cognition, Technology & Work*, 3(1), 53-65. <https://doi.org/10.1007/PL00011522>
13. Rouhani, Akbari Qatar, Pouria, and Amozad. *Evaluation and selection of ICT service management software with fuzzy multi-objective mathematical model approach*. *Iran Information Management*, 4 (1), 1-24.
14. Sadq, Z., Othman, B., & Mohammed, H. (2020). *Attitudes of managers in the Iraqi Kurdistan region private banks towards the impact of knowledge management on organizational effectiveness*. *Management Science Letters*, 10(8), 1835-1842. 10.5267/j.msl.2019.12.035
15. Said, A. B., Shahzad, M. K., Zamai, E., Hubac, S., & Tollenaere, M. (2016). *Experts' knowledge renewal and maintenance actions effectiveness in high-mix low-volume industries, using Bayesian approach*. *Cognition, Technology & Work*, 18(1), 193-213. <https://doi.org/10.1007/s10111-015-0354-y>
16. Turulja, L., & Bajgoric, N. (2018). *Information technology, knowledge management and human resource management*. *VINE Journal of Information and Knowledge Management Systems*. <https://doi.org/10.1108/VJIKMS-06-2017-0035>

- 17. Zagzebski, L. (2017). *What is knowledge?. The Blackwell guide to epistemology*, 92-116.

Appendix

Workstation stop form

Form number:

Date:

Stopped workstations form

Workstation repair request number:

Date and time of fault: Time: Date:

Reasons of default:

.....

.....

Actions taken:

.....

.....

.....

.....

.....

.....

Operator name:

Expert name:

| | |
|---|---|
| <p>Muhammad Tayyab (Author) <i>The University of Lahore, Main Campus Lahore</i></p> <p>Saba Saira <i>The University of Lahore, Main Campus Lahore</i></p> | <p>Beyond Borders: Unravelling Intra-National Cross-Cultural Dynamics in Pakistan’s Private Sector</p> |
|---|---|

Abstract

This study delves into the intricate dynamics of cultural intelligence and its profound influence on cross-cultural adaptation within Pakistan's private sector. Recognizing the rich cultural tapestry of Pakistan, characterized by diverse ethnic groups such as Punjabis, Sindhis, Balochs, Pashtuns, and certain others, the research underscores the challenges faced by employees migrating between these cultural realms for work. Unlike prevailing literature that predominantly focuses on international cross-cultural adaptation, this research emphasizes the national context. With structured questionnaire, the researcher collected 339 responses from employees of private organizations and institutions in Pakistan. This study employed structural equation modelling technique by using SmartPLS software. Empirical findings reveal significant positive impacts of cultural intelligence on cross-cultural adaptation, both directly as well as in the mediating role of psychological resilience and perceived insider status. However, the moderating role of exposure to diversity presents mixed results, warranting further exploration. This research not only contributes a fresh perspective to the domain of cross-cultural studies but also offers valuable insights for private sector organizations in Pakistan, emphasizing the importance of fostering cultural intelligence to enhance workplace adaptation and cohesion.

Keywords: Cultural intelligence, cross-cultural adaptation, psychological resilience, perceived insider status, exposure to diversity, private sector

Introduction

In an increasingly interconnected world, the concept of Cross-Cultural Adaptation (CCA) has gained significant attention in academic and organizational spheres (Mu et al., 2023). Traditionally, the bulk of this research has been directed towards understanding the challenges and processes associated with international employees adapting to foreign work environments (Scarpis et al., 2022). However, a nuanced understanding of CCA is not limited to international borders. Within countries, particularly those with rich ethnic and cultural diversity, employees often traverse regional boundaries, bringing with them distinct cultural backgrounds that can influence their adaptation in new work settings (Wood, Kleinbaum and Wheatley, 2023).

Pakistan, with its myriad of ethnic groups such as Punjabis, Sindhis, Baloch, Pashtuns, Kashmiris, Hazaras, Makranis, Baltis, and Muhajirs, presents a unique tapestry of cultural diversity (Sheikh and Gillani, 2023). Each of these groups carries its own set of cultural norms, values, and practices, which can significantly differ from one another (Ikram et al., 2022). For instance, an employee from Balochistan working in Punjab might experience cultural barriers that are as profound as those faced by international employees in a foreign country. These cultural barriers create a sense of unfamiliarity and isolation for employees, hindering their assimilation into the workplace culture (Morgan et al., 2020). This lack of integration can lead to feelings of being an outsider, impacting their Perceived Insider Status (PIS), and may result in reduced morale and productivity (Adu-Ampong and Adams, 2020). Despite the potential challenges and implications for organizational performance and employee well-being, there is a conspicuous gap in the literature addressing CCA at a national level within Pakistan.

Furthermore, the public and private sectors in Pakistan, each with its own set of organizational cultures and practices, may offer different experiences for employees in terms of CCA. While the public sector is often characterized by its bureaucratic nature and rigid structures (Amber et al., 2019), the private sector is perceived as more dynamic and market-driven (Malik and Nicholson, 2020). These inherent differences can further compound the challenges of CCA for employees moving between regions. Both sectors have different exposure to cultural diversity as well as use different approaches to deal with such diversity. However, owing to huge number of employees working in private sector from different backgrounds and cultures (Arshad, Iqbal and Shahbaz,

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



2018), private sector is more significant to address cultural differences and adaptation; therefore, current study will focus on private sector in Pakistan.

CCA refers to both an outcome and an ongoing process, which is deeply influenced by each individual's unique strengths and abilities (Mu et al., 2023). People differ widely in their ability to adapt to different cultures. Research suggests that factors like personality, how one views others, prevailing stereotypes, and one's level of openness or bias towards other cultures play a big role in how well one can adapt (Scarpis et al., 2022). A crucial aspect that hasn't been thoroughly studied is the importance of Cultural Intelligence (CQ). This refers to a person's capacity to navigate and operate effectively in diverse cultural situations (Chedru and Ostapchuk, 2023). CQ involves gathering and understanding information, making informed decisions, and then acting in ways that are appropriate for the cultural setting. It's about aligning one's mindset and actions to fit seamlessly into a new cultural context (Grosch , Boonen and Hoefnagels, 2023).

Having strong CQ enhances an individual's mental resilience, especially when working in diverse environments (Reed et al., 2023). Mental resilience, in general, is the capability of a person to handle challenges, stresses, and unexpected setbacks, yet remain positive and functional (Hartmann et al., 2022). Ellis , Draheim and Anderson (2022) pointed out that lacking this resilience can lead to difficulties in adjusting to different cultures. Therefore, in the context of Pakistan, could CQ be the key to easing the challenges faced by employees moving between regions? Furthermore, in such a setting, how do Psychological Resilience (PR) and PIS factor in? Do they act as buffers, aiding individuals in navigating the tumultuous waters of cultural adaptation? Or do they play a more intricate role, intertwined with the individual's CQ? Additionally, the role of Exposure to Diversity (ETD) cannot be overlooked. In a country as diverse as Pakistan, exposure to different cultures can either be a boon, equipping individuals with the tools to adapt, or it can be a bane, overwhelming them with the sheer magnitude of diversity (Moieni and Mousaferiadis, 2022).

This study seeks to address these pressing questions, aiming to bridge the existing gap in the literature by examining CCA at a national level in Pakistan, particularly focusing on the experiences of employees in the private sector. By doing so, it seeks to shed light on the unique

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4

Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



challenges faced by employees within the country and offer insights into how organizations can better support their workforce in an era of increasing internal mobility and diversity.

Literature Review

Cross-Cultural Adaptation (CCA)

In an age characterized by global interconnectedness and heightened travel, the importance of grasping the essence of CCA has skyrocketed. As businesses branch out into new territories and our communities transform into cultural blends, individuals are forced not only to fit into diverse settings but also to flourish within them (Scarpis et al., 2022). This emphasis is not solely about individual growth; as Min Chen (2019) pointed out, it's integral to the well-being of organizations and cohesive societies. CCA, eloquently described by Mu et al. (2023), signifies the comprehensive journey a person embarks upon when they immerse themselves into a culture that stands apart from their native one. This journey is layered and complex. It involves the cognitive aspect, which is getting acquainted with and understanding unfamiliar cultural practices (Ennis et al., 2020); the affective aspect, which pertains to the emotional responses and feelings as one processes this novel environment (Lou and Noels, 2019); and the behavioral aspect, which relates to the tangible actions and behaviors one adopts in response to the new cultural context, as expounded by Saroglou et al. (2020).

When we turn our lens towards countries with a myriad of cultures, like Pakistan, we uncover a fascinating narrative. Though unified as a nation, its vibrant cultural tapestry spread across regions such as Punjab, Sindh, Balochistan, Khyber Pakhtunkhwa, Islamabad Territory, Azad Jammu & Kashmir, and Gilgit-Baltistan offers invaluable insights into the intricacies of intra-national CCA (Alizai, 2021). The experience of an individual transitioning between these regions can present challenges and adjustments that are strikingly reminiscent of those faced during international relocations. This lens, viewing adaptation within a country's borders, is indispensable for corporate entities with operations spread across Pakistan. Grasping these intra-national cultural nuances becomes the cornerstone for devising impactful training modules, championing a culture of inclusivity, and safeguarding smooth communication within diverse teams, a sentiment echoed by Hofstede (2001).

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Cultural Intelligence (CQ)

In an increasingly global society where interactions across borders are commonplace, being proficient in cross-cultural communication isn't just an added advantage—it's imperative. This growing need has brought to light the concept of CQ (Wang and Goh, 2020). Think of CQ as a person's aptitude to effectively operate and engage within a mixture of cultural backgrounds. This idea, stemming from Earley and Ang (2003) and further refined by Ang and Inkpen (2008), is about having the awareness, knowledge, and skills to navigate various cultural landscapes. Examining the facets of CQ, one can identify three core dimensions. The cognitive dimension relates to the depth of understanding one has about various cultural norms, values, and practices. It's akin to recognizing cultural patterns and distinguishing between them (Mangla, 2021). The motivational dimension is about the individual's zeal and enthusiasm to immerse themselves in new cultural environments. It's this spark that fuels the desire to connect with and learn from an array of cultural narratives (Rüth and Netzer, 2020). Finally, the behavioral dimension speaks to the practical side of things (Wang and Goh, 2020). How does one adjust their actions, both in speech and deeds, based on their understanding of cultural nuances?

Recognizing the prominence of CQ today is pivotal. Be it in the spheres of trade, academia, or international relations, the prowess to bridge cultural divides is invaluable. To put it into a business context, organizations led by individuals with elevated CQ levels are better poised to succeed in the international arena. Such frontrunners are adept at steering multicultural teams, forging partnerships, and navigating negotiations. This isn't mere speculation; studies by Schlaegel , Richter and Taras (2021) and Zhao , Liu and Zhou (2020) have found tangible links between high CQ and outcomes like improved job efficiency, seamless workplace adjustment, and heightened job contentment. And as scholars, including Yari et al. (2020), have noted, our understanding of CQ is ever-evolving. It's not merely about recognizing cultural distinctions but also having the finesse to modify, engage, and flourish within them. With the globe drawing closer each day, the essence of CQ is set to become even more pronounced, solidifying its position as a cornerstone skill in this interconnected epoch (Grosch , Boonen and Hoefnagels, 2023, Reed et al., 2023).

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Psychological Resilience (PR)

In the rapidly evolving landscape of today's world, the capacity to adapt and flourish amidst adversity stands as a beacon of strength. This capacity, known as PR, is especially vital as individuals navigate the multifaceted challenges of personal and professional life (Vella and Pai, 2019). Killgore et al. (2020) aptly define PR as the ability of an individual to bounce back from adversities, stressors, or traumas, not merely enduring them but learning, growing, and thriving amidst such challenges. Delving deeper into the intricacies of resilience, it becomes evident that this trait is not monolithic. It encompasses several dimensions, each crucial in its own right. Emotional resilience pertains to managing and recovering from emotional upheavals (Jing Hu et al., 2023), while physical resilience focuses on the strength, health, and wellness that enable one to withstand physical challenges (F-W Hu et al., 2021). Social resilience emphasizes the significance of social networks and communities during times of need, and mental resilience underscores the cognitive capacities essential for clear thinking and decision-making during challenging times (Ungar and Theron, 2020).

The importance of understanding these dimensions becomes even more pronounced when considering diverse cultural settings. Take, for instance, the rich tapestry of ethnicities in Pakistan, ranging from Punjabis and Sindhis to Baloch and Pashtuns. For employees transitioning from one cultural background to another, such as from KPK to Punjab, the challenges can be manifold. The shifts in culture, variations in work ethics, and differing societal norms can all pose significant adaptation challenges (Shah and Amjad, 2011). In such scenarios, the multifaceted nature of PR becomes the linchpin, aiding individuals not just in coping but thriving in these new settings. Recognizing the role of resilience in such intra-country cultural transitions offers invaluable insights, potentially guiding organizations and policymakers in fostering more harmonious and productive work environments (Swaroop and DeLoach, 2015).

Perceived Insider Status (PIS)

Perceived insider status has emerged as a significant construct in understanding the psychological and social experiences of employees within diverse organizational settings. At its core, PIS reflects the extent to which employees perceive themselves as integral members of their workgroup or organization, transcending mere tenure or position (Zhu, Zhang and Shen, 2019). This perception is deeply rooted in feelings of belongingness, acceptance, and recognition

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



within the organizational setting. Drawing from social identity theory, individuals derive a sense of self-worth and identity from the groups they associate with (Guo , Qiu and Gan, 2020). In the organizational realm, when employees view themselves as insiders, it fosters a stronger connection to the organization, leading to enhanced commitment, job satisfaction, and even performance (Zheng et al., 2019).

Diving deeper into the construct, research has delineated two primary dimensions of PIS: felt acceptance and felt insider-ness (Yvonne Bulk and Collins, 2023). While felt acceptance pertains to the degree of value and recognition employees feel from their peers and superiors, felt insider-ness encapsulates the sense of being an integral cog in the organizational machinery, privy to inside information and involved in pivotal decision-making processes (Ragon and Reyes, 2023). In the unique context of Pakistan, with its rich tapestry of cultures and ethnicities, PIS takes on heightened importance. Employees migrating from one region to another, such as from KPK to Punjab, bring with them distinct cultural nuances. As they navigate this new organizational landscape, their PIS can significantly influence their adaptation process. Feeling like an "insider" can ease the challenges of CCA, fostering a sense of belonging even amidst cultural differences. Conversely, feeling like an "outsider" can exacerbate the challenges of cultural integration, leading to feelings of isolation and alienation (Seise, 2019).

Exposure to Diversity (ETD)

In our ever-evolving global landscape, interactions with individuals from various cultural backgrounds have become the norm. Immersing ourselves in the richness of diverse cultures isn't just about curiosity—it's a necessity in a world that's intricately interwoven (Alexandra , Ehrhart and Randel, 2021). When we speak of cultural exposure, we delve into the realm of understanding people whose traditions, convictions, and lifestyles differ from ours (Civitillo et al., 2019). But what's the driving force behind this emphasis on cultural understanding? Quite simply, comprehension of varied cultures equips us to collaborate, learn, and bond more effectively with those from diverse origins. A pivotal term that captures this essence is "cultural intelligence". This concept transcends mere factual knowledge of cultures. It encapsulates awareness, an earnest desire to learn, and the competency to engage fruitfully with diverse individuals, as outlined by Ang & Van Dyne in 2008.

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Visualize the exploration of cultures as a transformative expedition. As we progress on this path, our insight into linguistic nuances and diverse lifestyles deepens. The DivCon framework, as introduced by Kramsch (2013), offers a structured approach to understanding the tapestry of languages and cultures. Intense and authentic encounters with varied cultures refine our capabilities, fostering a more harmonious interaction with a diverse populace (Bratož and Sila, 2022). Consider a tourist or someone with a multicultural circle of friends—they're likely to seamlessly integrate into a multi-ethnic team, as Ward and Kennedy (2001). Yet, mere exposure doesn't guarantee comprehension or appreciation. Structured learning experiences, whether through formal education, workshops, or tools, enhance our cultural literacy (Maine, Cook and Lähdesmäki, 2019). The Multicultural Experience Inventory-Revised (MEI-R) serves as an illustrative example, assessing an individual's cultural grasp and aiding educators in crafting a more globally-aware curriculum (Harun et al., 2022).

Hypotheses Development and Theoretical Framework

Cultural Intelligence and Psychological Resilience

Understanding and interacting with diverse cultures necessitates a proficiency referred to as Cultural Intelligence (CQ) (Alexandra, Ehrhart and Randel, 2021). CQ transcends mere knowledge of cultural differences and delves into an individual's capacity to discern, interpret, and suitably respond within varied cultural contexts (Grosch, Boonen and Hoefnagels, 2023). Concurrently, an integral component of this proficiency is PR, which serves as the foundation for such adaptability. At the heart of CQ lies cognitive aspect of cultural norms and practices. This facet provides individuals with a frame of reference when navigating unfamiliar cultural terrains. Yet, possessing knowledge is only a segment of the journey. Applying this understanding amidst real-world, often unpredictable, cultural interactions can introduce stress and challenges. It's within these moments that PR becomes crucial, offering individuals the mental stamina to effectively employ their cultural insights (Azevedo and Shane, 2019).

With respect to the motivational aspect, a heightened CQ prompts a genuine enthusiasm for and confidence in cross-cultural encounters. Engaging deeply within varied cultural settings might, at times, introduce situations where one's ingrained beliefs or values are tested (Yari et al., 2020). It's here that PR acts as a safeguard, allowing individuals to perceive such encounters as

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



constructive learning experiences rather than overwhelming obstacles (Renbarger et al., 2020). From a behavioral perspective, CQ necessitates flexibility, ensuring culturally congruent actions and communications. Encountering cultural misunderstandings is inevitable; however, bolstered by PR, individuals can amend and recalibrate without persistent adverse effects (Azevedo and Shane, 2019).

Recent scholarly investigations have spotlighted the relationship between CQ and PR. Chen et al. (2018), for example, noted that individuals with elevated CQ were more adept at managing cross-cultural stressors, attributed largely to their augmented resilience. This resilience served as a protective mechanism, facilitating effective recovery from intricate situations. Similarly, research by Reed et al. (2023) illuminated the pivotal role of resilience, mediating the nexus between CQ and proficient CCA. Their findings underscored that those with advanced CQ not only exhibited superior adaptability but were further bolstered by enhanced levels of PR, streamlining their acclimatization processes.

Hypothesis 1: There is a significant positive impact of CQ on PR.

Cultural Intelligence and Perceived Insider Status

In the context of today's globalized work environment, where cultural diversity is the norm, the impact of CQ on PIS is profound. It's not just about understanding different cultures but leveraging that understanding to foster a sense of belonging and acceptance. The relationship between CQ and PIS can be explained through Social Identity Theory. When individuals possess high CQ, they are better equipped to understand, interpret, and adapt to various cultural cues within the workplace (Earley & Ang, 2003). This adaptability fosters a sense of belonging, leading to higher PIS.

Empirical studies have further substantiated this relationship. For instance, a study by Sun and Nie (2020) found that employees with higher CQ were more likely to feel like insiders within their organizations. Their ability to decode cultural nuances enabled them to integrate more effectively, enhancing their PIS. Moreover, the Interaction Adaptation Theory posits that individuals with higher CQ can modify their behavior according to the cultural context (Gerasimova , Gerasymova and Dmytryuk, 2021). This adaptive behavior can lead to better

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4

Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



relationships with colleagues and superiors, further enhancing PIS. Based on above discussion and evidence, following hypothesis is developed.

Hypothesis 2: There is a significant positive impact of CQ on PIS.

Cultural Intelligence and Cross-Cultural Adaptation

From the perspective of the Dynamic Constructivist Theory, individuals with high CQ can activate the appropriate cultural schema depending on the cultural context they are in, aiding in effective adaptation (Garneau and Pepin, 2015). This ability to swiftly and accurately tap into relevant cultural nuances enhances adaptability, as evidenced by studies that have found a direct correlation between CQ and successful adaptation in diverse settings (Jurásek and Wawrosz, 2023). One of the recent studies conducted by Alifuddin and Widodo (2022) highlights the necessity of CQ in today's globalized world¹. The study posits that CQ plays a pivotal role in CCA and adjustments. This is particularly crucial in a world where interactions with individuals from diverse cultural backgrounds are commonplace.

Another study conducted by Kai Liao et al. (2021) emphasizes the beneficial effects of CQ. The research suggests that individuals with higher levels of CQ are better equipped to adapt to new cultural contexts. This adaptation is not just about understanding cultural norms but also about navigating through potential cultural pitfalls and leveraging cultural differences for mutual benefit. Furthermore, a study by Reed (2023) touches upon the predictive nature of resilience, acculturative stress, and CQ on cross-cultural adjustment. The research conducted in Singapore underscores the significant influence of these factors on the performance and adjustment of expatriates. Hence, based on above discussion, following hypothesis is developed.

Hypothesis 3: There is a significant positive impact of CQ on CCA.

Psychological Resilience and Cross-Cultural Adaptation

PR, often characterized as the ability to bounce back from adversities and maintain psychological well-being, is increasingly recognized as a crucial factor in determining how individuals adapt to new and diverse cultural environments (Jing Hu et al., 2023). From a theoretical standpoint, the Conservation of Resources (COR) theory posits that individuals strive to retain, protect, and build resources, and that the potential or actual loss of these resources can be a significant source of stress (Qian Hu et al., 2022). In the context of CCA, the challenges and stressors faced by

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



individuals in a new cultural environment can be perceived as threats to their psychological resources. However, those with high PR possess a unique ability to mobilize and acquire new resources, enabling them to cope effectively with these challenges and, in turn, facilitating smoother adaptation (Davies , Stoermer and Froese, 2019).

Empirically, studies have consistently demonstrated a positive relationship between PR and CCA. For instance, a study involving international students found that those with higher levels of resilience reported better socio-cultural and psychological adaptation in their host countries (Dereli , Kahraman and France, 2023). This is likely because resilient individuals possess cognitive flexibility, allowing them to reframe potentially stressful cross-cultural encounters in a positive light, thereby reducing the impact of culture shock and enhancing their overall adaptation process (González and Macias-Alonso, 2023). Furthermore, the Transactional Model of Stress and Coping provides a logical framework to understand this relationship. It suggests that individuals assess potential stressors (in this case, challenges related to CCA) and deploy coping strategies based on this assessment (Loewenstein , Barroso and Phillips, 2019). Resilient individuals, equipped with a repertoire of effective coping strategies, are better positioned to navigate the complexities of a new cultural environment, leading to successful adaptation (Fullerton , Zhang and Kleitman, 2021). In essence, PR acts as a buffer against the potential stressors of CCA, equipping individuals with the tools they need to navigate unfamiliar terrains. Hence, following hypothesis is developed.

Hypothesis 4: There is a significant positive impact of PR on CCA.

Perceived Insider Status and Cross-Cultural Adaptation

PIS refers to the extent to which employees feel accepted and included as valued members within their workplace (Guo , Qiu and Gan, 2020). This sense of belonging can be particularly salient for individuals navigating the complexities of a different cultural setting. The Social Identity Theory provides a foundational understanding of this relationship. According to this theory, individuals categorize themselves into various social groups, and these group memberships provide them with a sense of belonging and self-esteem (Scheepers and Ellemers, 2019). When individuals perceive themselves as insiders, they identify more strongly with the group, which in the context of a workplace in a foreign culture, can significantly bolster their

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



CCA. Feeling like an 'insider' can mitigate feelings of alienation or otherness, which are common challenges in cross-cultural contexts (Zheng et al., 2019, Zhu , Zhang and Shen, 2019).

Empirical studies have echoed these theoretical postulations. Research has shown that when expatriates or employees from diverse cultural backgrounds feel a sense of belonging in their workplace, they exhibit better adjustment and performance (Castellanos et al., 2020). This sense of belonging, or PIS, acts as a bridge, aiding individuals in navigating the cultural nuances and expectations of their new environment. Moreover, the Organizational Support Theory offers additional insights into this relationship. The theory posits that employees develop global beliefs concerning the extent to which the organization values their contributions and cares about their well-being (Valenzuela , Flinchbaugh and Rogers, 2020). When employees feel like insiders, they are more likely to believe that the organization supports them, which can be a crucial factor in their adaptation process in a new cultural setting.

Furthermore, a study focusing on diverse teams found that members who felt they had insider status were more likely to engage in knowledge sharing, which is a critical component of CCA (Guo , Qiu and Gan, 2020). Sharing and receiving knowledge about cultural norms, expectations, and practices can significantly smoothen the adaptation curve. Based on above discussion, it is appropriate to develop the following hypothesis.

Hypothesis 5: There is a significant positive impact of PIS on CCA.

Mediation Role of Psychological Resilience and Perceived Insider Status

CQ, often conceptualized as an individual's capability to function effectively across various cultural contexts, is foundational to CCA (Setti , Sommovigo and Argentero, 2020). It encompasses metacognitive, cognitive, motivational, and behavioral facets that equip individuals to interpret ambiguous cross-cultural scenarios and respond appropriately (Li, 2020). Earley and Ang's seminal work on CQ underscores its pivotal role in facilitating effective interactions in multicultural settings (Ang and Inkpen, 2008). However, while CQ provides the necessary tools and mindset for cross-cultural interactions, it's the individual's PR and PIS that often determine the success of their adaptation process. PR refers to an individual's ability to bounce back from adversities, maintain mental well-being in stressful situations, and even experience growth as a result of challenges (Dereli , Kahraman and France, 2023). In the context of CCA, resilience can

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4

Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



be seen as a buffer against the inevitable culture shocks and stresses that come with navigating a new cultural setting (Renbarger et al., 2020).

The Conservation of Resources theory provides a lens through which the mediating role of PR can be understood. According to this theory, individuals strive to acquire, retain, and protect valuable resources (Sullivan and Al Ariss, 2022). In cross-cultural scenarios, CQ provides individuals with cognitive resources to understand and interpret cultural differences. However, it's their PR that ensures they don't deplete these resources when faced with cultural challenges (Theron et al., 2022). Resilient individuals, equipped with CQ, are better poised to leverage their understanding of cultural nuances, ensuring smoother adaptation. On the other hand, PIS plays a crucial role in how individuals internalize their cross-cultural experiences (Marom, 2022). The Social Identity Theory posits that individuals derive their self-concept from their membership in social groups (Scheepers and Ellemers, 2019). When individuals, armed with CQ, perceive themselves as insiders, they are more likely to feel a sense of belonging, making the adaptation process more organic and less fraught with challenges (Liu et al., 2022).

Empirical evidence further cements the mediating roles of PR and PIS. A study found that expatriates with high CQ levels were more likely to exhibit resilience when faced with cross-cultural challenges, leading to better adaptation outcomes (Angela Shin-yih Chen, Lin and Sawangpattanakul, 2011). Similarly, research by Stamper and Masterson highlighted that employees' perceptions of insider status were directly linked to their workplace adjustment, especially in culturally diverse teams (Stamper and Masterson, 2002). In synthesizing the above, it becomes evident that while CQ lays the groundwork for CCA, it's the mediating effects of PR and PIS that actualize this adaptation. Hence, following hypotheses are developed.

Hypothesis 6: There is a significant mediating role of PR between CQ and CCA.

Hypothesis 7: There is a significant mediating role of PIS between CQ and CCA.

Moderation Role of Exposure to Diversity

While CQ equips individuals with the tools to navigate cultural differences, the extent of their ETD can significantly influence how this intelligence translates into PR and feelings of insider status. The Contact Hypothesis, proposed by Allport, Clark and Pettigrew (1954), posits that intergroup contact, under specific conditions, can reduce prejudice between majority and

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



minority group members. Extending this theory to our context, ETD can be seen as a form of intergroup contact. Individuals with higher exposure to diverse cultures, ethnicities, or backgrounds are more likely to have reduced biases and increased understanding of different cultural norms (Hummelstedt, 2022). This exposure can amplify the effects of CQ. For instance, an individual with high CQ who has been frequently exposed to diverse cultures is more likely to develop resilience in the face of cross-cultural challenges compared to someone with limited exposure.

Furthermore, the Social Cognitive Theory suggests that individuals learn by observing others (Schunk and DiBenedetto, 2020). In diverse environments, individuals are exposed to a myriad of coping strategies and behaviors that others employ to navigate cultural challenges. This observational learning can bolster PR. An individual with high CQ, when exposed to diverse settings, can assimilate and learn from diverse coping mechanisms, thereby enhancing their resilience (Duchek, Raetze and Scheuch, 2020). Apart from this, the relationship between CQ and PIS can also be influenced by ETD. The Social Identity Theory posits that individuals derive their self-concept from their membership in social groups. In diverse settings, CQ can aid individuals in understanding and aligning with multiple group norms. However, the depth of this alignment can be moderated by their ETD. An individual with high CQ but limited ETD might struggle to fully integrate into diverse teams, affecting their PIS (Gong et al., 2021). Conversely, those with extensive exposure are more likely to leverage their CQ to foster a sense of belonging, enhancing their insider status.

Empirical evidence further underscores the moderating role of ETD. A study by Chua, Morris and Mor (2012) found that individuals with high CQ were better able to leverage their diverse networks, leading to enhanced creativity. This effect was more pronounced for individuals who had lived abroad, indicating the moderating role of ETD. Based on above theoretical support, empirical evidence, and logical underpinnings, following hypotheses are developed.

Hypothesis 8: There is a significant moderating role of ETD on the relationship of CQ and PR in such a way that the impact of CQ on PR increases with high level of ETD.

Hypothesis 9: There is a significant moderating role of ETD on the relationship of CQ and PIS in such a way that the impact of CQ on PIS increases with high level of ETD.

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Based on above mentioned hypotheses, the following theoretical framework is developed (see figure 1).

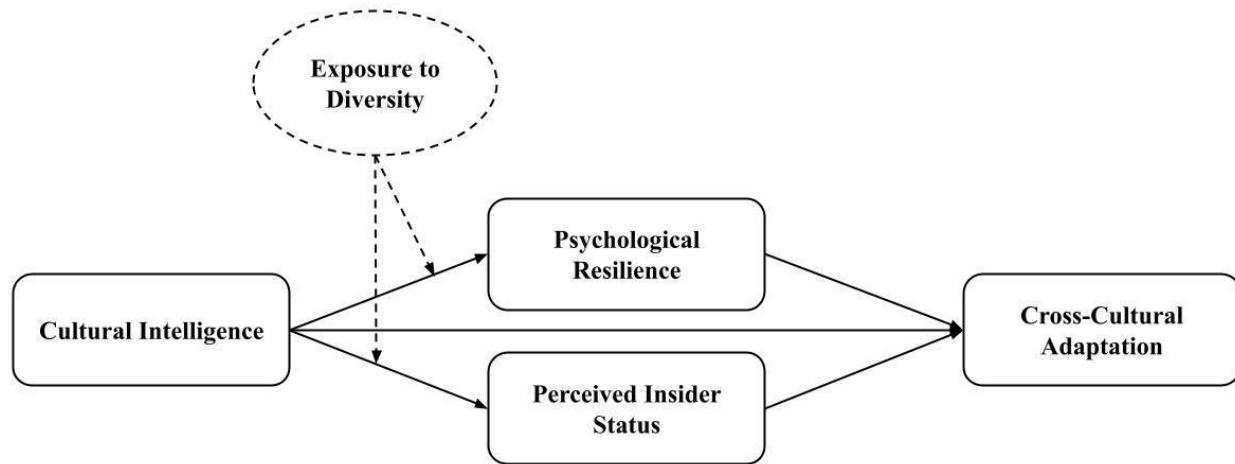


Figure 1. Theoretical Framework

Methods

Study Context and Sampling

The target population for this study comprises employees working in private sector organizations and institutions in Pakistan. The private sector was chosen due to its significant contribution to the country's economy and its diverse workforce (Namoos Zaheer, 2022), which offers a rich context for studying cross-cultural dynamics. The private sector's dynamic nature, coupled with its exposure to global business practices, makes it an ideal setting to study the constructs of interest. For this study, the convenience sampling technique was employed. Convenience sampling is a non-probability sampling method where participants are selected based on their easy accessibility and proximity to the researcher (Stratton, 2021). This method was chosen due to its practicality and efficiency, especially when dealing with a large and diverse population such as private sector employees in Pakistan (Hair Jr , Page and Brunsveld, 2019).

Measures

CQ was measured with a scale developed by Thomas et al. (2015). This scale involves 10 items for four dimensions of CQ including metacognition, cognition, motivation, and behavior. One sample item of this scale is, "I know the ways in which cultures around the world are different." This scale was measured on a 5-points Likert scale ranging from 1=strongly disagree to

Global Conference Alliance Inc.

5=strongly agree. PR was measured with a 13 items scale which was developed regarding its state and trait dimensions (Lock , Rees and Heritage, 2020). One sample item includes, “At the moment I can cope with any difficulties I might face in my life.” This scale is measured on a 5-points Likert scale ranging from 1=strongly disagree to 5=strongly agree. In order to measure PIS, the researcher used 6 items scale developed by Stamper and Masterson (2002). One sample item includes, “I feel very much a part of my work organization.” For measuring CCA, the researcher adapted a 12 items scale developed by Black (1988). One sample item includes, “How adjusted are you to your job and responsibilities?” This scale was measured on a 5-points Likert scale ranging from 1=not adjusted at all to 5=very well adjusted. Finally, ETD was measured with 6 items scale developed by Fuertes et al. (2000). One sample item includes, “I have a close friend who is not my race.” This scale is measured on a 5-points Likert scale ranging from 1=strongly disagree to 5=strongly agree.

Data Collection and Analysis

Data was collected using structured questionnaires. The researcher personally visited various private sector organizations and institutions in Pakistan to administer these questionnaires. This hands-on approach ensured a higher response rate and allowed for any immediate clarifications if needed. For data analysis, the Structural Equation Modeling (SEM) technique was employed, specifically using the PLS Algorithm and Bootstrapping. SEM is a comprehensive statistical approach that tests the structural relationships between observed and latent variables, making it apt for this study (Hair Jr et al., 2021). In order to examine the demographic characteristics, the researcher used frequency distribution.

Table 1. Demographic Profile

| | | Frequency | Percent |
|--------|------------|-----------|---------|
| Gender | Male | 198 | 58.4 |
| | Female | 141 | 41.6 |
| | Total | 339 | 100.0 |
| Age | ≤ 25 years | 24 | 7.1 |
| | 26-35 | 166 | 49.0 |
| | 36-45 | 97 | 28.6 |
| | 46-55 | 43 | 12.7 |

| | | | |
|---------------------|------------------------------------|-----|-------|
| | 55 and above | 9 | 2.7 |
| | Total | 339 | 100.0 |
| Qualification | Intermediate or Less | 4 | 1.2 |
| | Graduation | 217 | 64.0 |
| | Master | 86 | 25.4 |
| | PhD or Above | 18 | 5.3 |
| | Diploma or Technical Qualification | 14 | 4.1 |
| | Total | 339 | 100.0 |
| Experience | Less than 1 year | 16 | 4.7 |
| | 1-3 years | 134 | 39.5 |
| | 3-5 years | 132 | 38.9 |
| | More than 5 years | 57 | 16.8 |
| | Total | 339 | 100.0 |
| Permanent Residence | Punjab | 83 | 24.5 |
| | Sindh | 58 | 17.1 |
| | Balochistan | 45 | 13.3 |
| | KPK | 40 | 11.8 |
| | AJK | 55 | 16.2 |
| | Gilgit-Baltistan | 33 | 9.7 |
| | Islamabad | 25 | 7.4 |
| | Total | 339 | 100.0 |
| Working Place | Punjab | 167 | 49.3 |
| | Sindh | 35 | 10.3 |
| | Balochistan | 22 | 6.5 |
| | KPK | 23 | 6.8 |
| | AJK | 12 | 3.5 |

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4

Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



| | | | |
|--|------------------|-----|-------|
| | Gilgit-Baltistan | 8 | 2.4 |
| | Islamabad | 72 | 21.2 |
| | Total | 339 | 100.0 |

The demographic profile is presented in table 1, which shows that a majority of the respondents are male (58.4%), and the largest age group is between 26-35 years (49%). Most respondents have a graduation degree (64%), and the experience distribution shows that a majority have between 1-3 years (39.5%) and 3-5 years (38.9%) of experience. The distribution of permanent residence and working place indicates a diverse sample, with Punjab being the predominant region for both (24.5% residence and 49.3% working place). However, importantly, most of the respondents have moved to Punjab and Islamabad for working, despite their residence in other territories.

Results

Mishra et al. (2019) asserted that descriptive statistics particularly mean and standard deviation (SD) are significant to provide an overview of the results, where mean values represent the average responses (in survey research), while SD shows the deviation from average responses. Table 2 shows that mean values are greater than 3; hence, indicate the same direction of constructs that direct towards positive relationship between these variables. Majorly this study employed structural equation modeling technique that combines elements of factor analysis and multiple regression analysis to examine complex relationships between observed and latent (unobserved) variables (Ringle et al., 2020).

In SEM technique, table 3 shows the values of factor loadings, which represent the correlation between the observed variables (items) and the latent variable (factor) (Shrestha, 2021). They indicate the extent to which each observed variable contributes to the latent factor. A high factor loading for an item suggests that the item is a good indicator of the latent factor. Sellbom and Tellegen (2019) noted sufficient factor loadings are required to measure validity and low factor loadings are removed. In order to bring reliability and validity up to the standard, two items (one each from PR and ETD) were removed for being holding low factor loadings.

Table 2. Descriptive Statistics

| | Mean | SD | 1 | 2 | 3 | 4 | 5 |
|---------------------------|--------|--------|--------------|--------------|--------------|--------------|--------------|
| Cross-Cultural Adaptation | 3.6450 | .65934 | 0.764 | | | | |
| Cultural Intelligence | 3.7059 | .72945 | 0.480 | 0.771 | | | |
| Exposure to Diversity | 3.4077 | .71373 | 0.396 | 0.189 | 0.724 | | |
| Perceived Insider Status | 3.4218 | .71326 | 0.629 | 0.297 | 0.454 | 0.776 | |
| Psychological Resilience | 3.6340 | .78206 | 0.545 | 0.363 | 0.431 | 0.525 | 0.765 |

Table 3 further shows values of Variance Inflation Factor (VIF) which is commonly used to measure multicollinearity. Hanafiah (2020) noted that multicollinearity arises in SEM analysis when two or more independent variables are highly correlated with each other. This can distort the results and make it difficult to determine the individual effect of each predictor on the dependent variable. They further noted that lower than 5 values of VIF are acceptable and show lack of multicollinearity. Table 3 shows that values of VIF are lower than 5; hence, there is no multicollinearity issue in the model. The researcher used Cronbach’s alpha, Rho_A, and Composite Reliability (CR) to measure the reliability of scales, which is in line with Van Nguyen and Habók (2021). Reliability refers to the consistency and stability of a measure over time. It indicates how free a measurement is from random error. If a measure produces similar results under consistent conditions, it is said to be reliable (Sürücü and Maslakci, 2020). In all of the above-mentioned three measures of reliability, the threshold value is 0.7, and table 3 proves the reliability statistics in accordance with this threshold value.

Table 3. Reliability and Validity

| Variable Name | Item | Loadings | VIF | Cronbach’s Alpha | Rho_A | CR | AVE |
|--------------------------|------|----------|-------|------------------|-------|-------|-------|
| Cultural Intelligence | CI1 | 0.784 | 2.617 | 0.924 | 0.934 | 0.936 | 0.594 |
| | CI2 | 0.806 | 2.892 | | | | |
| | CI3 | 0.847 | 2.963 | | | | |
| | CI4 | 0.745 | 2.171 | | | | |
| | CI5 | 0.835 | 2.747 | | | | |
| | CI6 | 0.764 | 2.118 | | | | |
| | CI7 | 0.748 | 2.288 | | | | |
| | CI8 | 0.774 | 2.444 | | | | |
| | CI9 | 0.753 | 2.353 | | | | |
| | CI10 | 0.631 | 1.768 | | | | |
| Psychological Resilience | PR1 | 0.815 | 3.086 | 0.935 | 0.937 | 0.944 | 0.586 |

| | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|
| | PR2 | 0.809 | 2.996 | | | | |
| | PR3 | 0.691 | 2.423 | | | | |
| | PR4 | 0.720 | 2.453 | | | | |
| | PR5 | 0.814 | 3.153 | | | | |
| | PR6 | 0.811 | 3.200 | | | | |
| | PR7 | 0.778 | 2.787 | | | | |
| | PR8 | 0.738 | 2.203 | | | | |
| | PR9 | 0.789 | 2.801 | | | | |
| | PR10 | 0.713 | 2.075 | | | | |
| | PR11 | 0.770 | 2.476 | | | | |
| | PR12 | 0.724 | 2.295 | | | | |
| Perceived Insider Status | PIS1 | 0.792 | 1.866 | 0.869 | 0.882 | 0.901 | 0.602 |
| | PIS2 | 0.739 | 1.977 | | | | |
| | PIS3 | 0.812 | 2.232 | | | | |
| | PIS4 | 0.810 | 1.927 | | | | |
| | PIS5 | 0.770 | 1.848 | | | | |
| | PIS6 | 0.731 | 1.760 | | | | |
| Cross-Cultural Adaptation | CCA1 | 0.667 | 1.888 | 0.935 | 0.936 | 0.944 | 0.584 |
| | CCA2 | 0.736 | 2.186 | | | | |
| | CCA3 | 0.754 | 2.328 | | | | |
| | CCA4 | 0.745 | 2.076 | | | | |
| | CCA5 | 0.745 | 2.154 | | | | |
| | CCA6 | 0.819 | 2.878 | | | | |
| | CCA7 | 0.817 | 2.973 | | | | |
| | CCA8 | 0.742 | 2.059 | | | | |
| | CCA9 | 0.831 | 2.886 | | | | |
| | CCA10 | 0.806 | 2.671 | | | | |
| | CCA11 | 0.724 | 1.970 | | | | |
| | CCA12 | 0.770 | 2.389 | | | | |
| Exposure to Diversity | ETD1 | 0.562 | 1.113 | 0.771 | 0.760 | 0.844 | 0.524 |
| | ETD2 | 0.793 | 1.854 | | | | |
| | ETD3 | 0.774 | 2.171 | | | | |
| | ETD4 | 0.764 | 2.043 | | | | |
| | ETD5 | 0.702 | 1.651 | | | | |

Apart from reliability, validity (construct validity) is also important, which pertains to the accuracy of a measure. It assesses whether a tool measures what it is intended to measure (Flake et al., 2022). Construct validity (CV) often divided among two kinds including convergent and discriminant validity. Convergent validity assesses the degree to which two measures that should theoretically be related are, in fact, related, while discriminant validity evaluates the degree to

Global Conference Alliance Inc.



which two measures that shouldn't be related are actually unrelated (Rasoolimanesh, 2022). CV is commonly measured with Average Variance Extracted, also commonly known as AVE, which should be equal or greater than 0.5 (Sarstedt and Cheah, 2019). Table 3 shows the values of AVE to be greater than 0.5; hence, convergent validity is sufficient. Discriminant validity was measured by using Fornell and Larcker (1981) criterion. The diagonal values (see table 2) represent the square root of the AVE for each construct. These values should ideally be greater than the inter-construct correlations to establish discriminant validity. For instance, the value for CCA (0.764) is greater than its correlations with other constructs, confirming its discriminant validity.

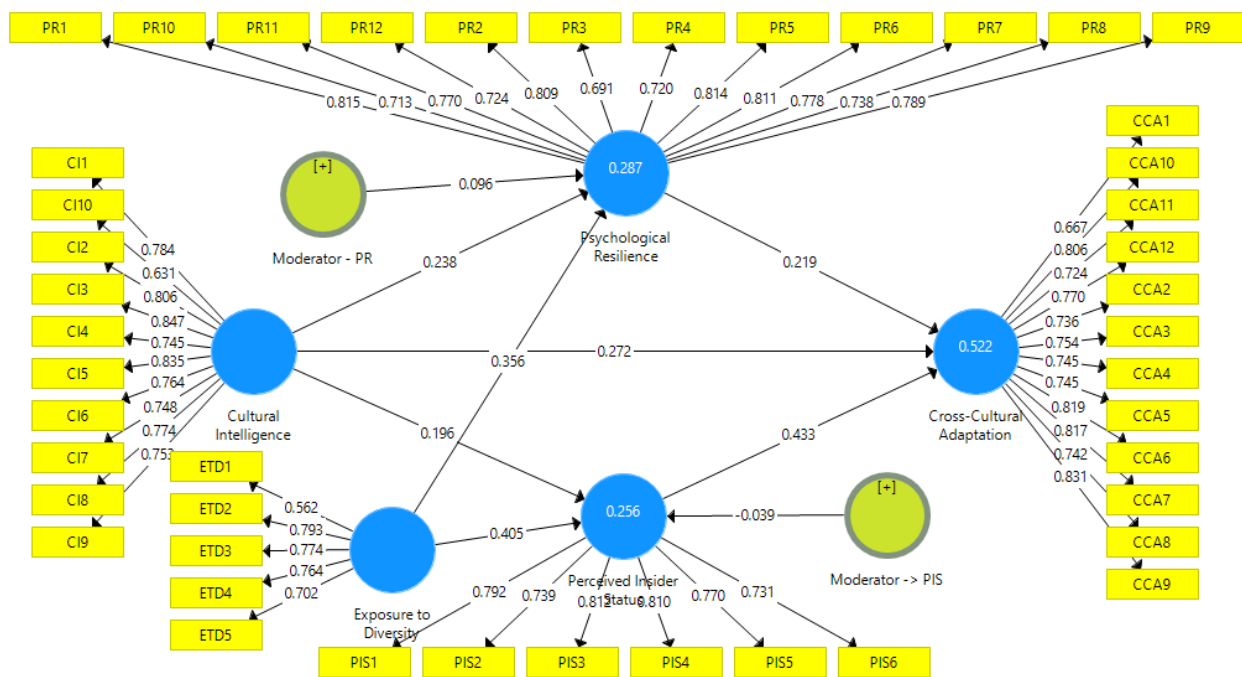


Figure 2. Measurement Model

In Smart-PLS software, PLS Algorithm is used to measure the values of factor loadings, construct validity, and reliability, while bootstrapping is used to measure the relationship between variables (Cheah et al., 2020). The results of PLS Algorithm is represented in figure 2 measurement model.

Table 4. Path Coefficients

| Hypotheses | β | Mean | SD | T | P |
|---|---------|-------|-------|-------|-------|
| Cultural Intelligence -> Psychological Resilience | 0.238 | 0.239 | 0.051 | 4.653 | 0.000 |
| Cultural Intelligence -> Perceived Insider Status | 0.196 | 0.198 | 0.060 | 3.280 | 0.001 |
| Cultural Intelligence -> Cross-Cultural Adaptation | 0.272 | 0.269 | 0.056 | 4.870 | 0.000 |
| Psychological Resilience -> Cross-Cultural Adaptation | 0.219 | 0.221 | 0.059 | 3.720 | 0.000 |
| Perceived Insider Status -> Cross-Cultural Adaptation | 0.433 | 0.432 | 0.047 | 9.286 | 0.000 |

The results of bootstrapping are presented in table 4. This table shows that CQ has ($\beta=0.238$, $p<0.01$) significant positive impact on PR. Here the beta value 0.238 indicates that for each one unit increase in CQ, the PR will increase by 0.238. This relationship supports the first hypothesis of this study. Further, this table shows that CQ has ($\beta=0.196$, $p<0.01$) significant positive impact on PIS, which supports the second hypothesis of this study. In addition, CQ has ($\beta=0.272$, $p<0.01$) significant positive impact on CCA, and this relationship supports the third hypothesis of this study. Also, table 4 shows that PR has ($\beta=0.219$, $p<0.01$) significant positive impact on CCA, and this relationship supports the fourth hypothesis of this study. Finally, path coefficients shows that PIS has ($\beta=0.433$, $p<0.01$) significant positive impact on CCA, and this relationship supports the fifth hypothesis of this study. With respect to influencing CCA, PIS is the leading variable.

Table 5. Indirect Effects

| Hypothesized Relationships | β | Mean | SD | T | P |
|--|---------|-------|-------|-------|-------|
| Cultural Intelligence -> Psychological Resilience -> Cross-Cultural Adaptation | 0.052 | 0.053 | 0.019 | 2.696 | 0.007 |
| Cultural Intelligence -> Perceived Insider Status -> Cross-Cultural Adaptation | 0.085 | 0.086 | 0.028 | 3.036 | 0.002 |

Indirect effects of CQ on CCA are presented in table 5. It shows that CQ has ($\beta=0.052$, $p<0.01$) positive and significant impact on CCA in the mediation role of PR, while CQ has ($\beta=0.085$, $p<0.01$) positive and significant impact on CCA in the mediation role of PIS. These relationships support the sixth and seventh hypotheses, respectively. Importantly, these effects show partial mediation as CQ has both direct and indirect effect on CCA.

Table 6. Moderating Effects

| | β | Mean | SD | T | P |
|---------------------------------------|---------|--------|-------|-------|-------|
| Moderator -> Psychological Resilience | 0.096 | -0.092 | 0.031 | 3.146 | 0.002 |
| Moderator -> Perceived Insider Status | -0.039 | -0.036 | 0.042 | 0.947 | 0.344 |

The moderating effects of ETD are presented in table 6. It shows that the impact of CQ on PR increases by 0.096 in the presence of ETD. This relationship is significant at $p < 0.01$ and it supports the eighth hypothesis. However, the moderating effect on the relationship of CQ on PIS is insignificant as $p = 0.344 > 0.05$; hence, the ninth hypothesis is rejected.

Discussion

This study aims to investigate the impact of CQ on CCA in the mediating role of PR and PIS and the moderating effect of ETD in the context of private sector of Pakistan. This study, set against the rich cultural tapestry of Pakistan, offers a nuanced understanding of these dynamics, shedding light on the intricate relationships between these constructs. At the heart of this exploration is the concept of CQ. Rooted in the ability to understand, interpret, and act in culturally diverse situations, CQ emerges as a pivotal factor influencing both PR and PIS. This finding aligns with the broader literature suggesting that individuals equipped with CQ are better poised to navigate the challenges and uncertainties inherent in diverse settings (Alexandra, Ehrhart and Randel, 2021). Their adeptness at decoding cultural cues fosters a sense of belonging and acceptance, which is encapsulated in the construct of PIS. Feeling integrated and valued within an organization, or having a high PIS, is crucial for employees to effectively adapt to new cultural environments (Gong et al., 2021).

The study further underscores the role of PR in the adaptation process. Resilient individuals, with their selection of coping strategies and positive outlook, are naturally better positioned to navigate the challenges of adapting to new cultural settings (Dereli, Kahraman and France, 2023). This resilience, bolstered by CQ, facilitates smoother CCA, a finding that resonates with past research (Chu and Zhu, 2023). An intriguing aspect of the study is the mediating roles of PR and PIS. While CQ directly influences adaptation, its impact is also channeled through these mediators. This suggests a multi-faceted adaptation process where CQ not only has a direct

influence but also indirectly shapes adaptation by enhancing one's resilience and fostering a sense of belonging within the organization.

Adding another layer of complexity is the moderating role of ETD. The study posits that exposure to diverse environments can amplify the effects of CQ, particularly on PR. This is consistent with the idea that involvement in diverse settings can enhance one's ability to leverage CQ, thereby bolstering resilience (Reed et al., 2023). However, the absence of a significant moderating effect on the relationship between CQ and PIS points to the unique cultural dynamics of Pakistan's private sector. It suggests that mere ETD might not be the sole determinant in shaping one's sense of belonging; other factors, perhaps organizational or societal, could be at play.

Drawing parallels with existing literature, the findings of this study largely echo the established views on CQ and CCA (Kour and Jyoti, 2022). However, the unique context of Pakistan's private sector, with its myriad of ethnicities and cultures, offers fresh perspectives. The challenges faced by employees migrating from one region to another within the country, such as from Baloch to Punjab, underscore the importance of understanding CCA at a national level.

Study Implications

The findings of this study, set against the backdrop of Pakistan's diverse cultural landscape, offer a rich tapestry of insights that weave together both theoretical and practical implications, bridging the gap between academia and organizational practices. From a theoretical standpoint, this research serves as a beacon, illuminating the less explored area of CCA at a national level. By delving into the details of diverse cultural backgrounds within Pakistan, the study underscores the unique challenges and distinctions faced by employees adapting to different regional cultures within a single nation. This perspective enriches the broader literature on CCA, which has traditionally been viewed through an international lens (Yılmaz and Temizkan, 2022). Furthermore, by seamlessly integrating constructs like CQ, PR, PIS, and ETD, the study crafts a comprehensive model that elucidates the dynamics of CCA. This holistic approach not only strengthens the theoretical foundations of each individual construct but also offers a wide view of how they intersect and interact. Particularly, noteworthy is the introduction of the moderating

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



role of ETD, which emphasizes the pivotal role diverse experiences play in shaping an individual's adaptability and sense of belonging.

On the practical front, the implications are manifold and deeply intertwined. Organizations stand to gain immensely by championing training programs that bolster employees' CQ. Such initiatives can serve as powerful tools, developing employees with the requisite skills and knowledge to navigate the web of diverse cultural settings, thereby fostering harmony and reducing potential barriers. But the benefits don't stop there. By actively promoting a culture of diversity, organizations can amplify the positive impact of CQ on PR. This creates a virtuous cycle where a diverse workforce not only enriches the organizational performance but also enhances individual adaptability. Moreover, by recognizing the pivotal role of PR in CCA, organizations can craft interventions that not only facilitate smoother adaptation but also boost overall well-being, acting as bulwarks against burnout and attrition. This is further complemented by the emphasis on the PIS of employees. By valuing and nurturing this sense of belonging, organizations can unlock higher levels of job satisfaction, loyalty, and commitment.

Study Limitations and Future Directions

The current research, while shedding light on the intricate dynamics of CQ and CCA within Pakistan's private sector, has its boundaries. One of the primary constraints is its geographical focus, which, while offering a rich understanding of Pakistan's cultural nuances, might not resonate with other regions or even the public sector within the same country. This geographical concentration, combined with the use of convenience sampling, could potentially limit the broader applicability of the findings. It's worth noting that while convenience sampling offers ease, it might not capture the full spectrum of experiences and perspectives of all private sector employees in Pakistan. Moreover, the study's design, being cross-sectional, offers a glimpse into the phenomena at a specific point in time. This snapshot approach might not encapsulate the evolving nature of CQ and adaptation. Additionally, the reliance on self-reported measures, although common in such research, might have its pitfalls. There's always a possibility that participants, even unintentionally, might portray themselves in a light they deem favorable, introducing biases.

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Looking ahead, there's a vast expanse of possibilities for future research. It would be intriguing to see how the findings of this study compare when the lens is broadened to other countries or even compared with Pakistan's public sector. A longitudinal approach, tracking the same participants over time, could unravel the dynamic interplay of CQ, resilience, and adaptation. Furthermore, the organizational landscape is crowded with factors that could influence CCA. For instance, how crucial is organizational support in this matter? A study conducted by Sarfraz , Nisar and Raza (2023) suggests that such support can significantly sway employees' adjustment in diverse settings.

Similarly, the role of effective communication, highlighted by Peng and Wu (2019), in cross-cultural settings can't be understated. As employees from diverse backgrounds, like those from one part of Pakistan traveling to travelling to the other part, navigate the cultural path, they might encounter cultural shocks. How do they cope, and what strategies can mitigate such shocks? In today's digital age, it's also worth pondering over the role of technology in CCA. With virtual reality making strides, its potential in cross-cultural training, as explored by Chang , Chuang and Chao (2011), could be a game-changer.

Conclusion

In the intricate tapestry of today's globalized world, understanding the dynamics of CQ and CCA is more crucial than ever. In the context of Pakistan's multifaceted private sector, this research delves into an intricate examination of the interrelation between PR, PIS, and ETD. By highlighting these interwoven dynamics, the study emphasizes the pivotal role of CQ in enhancing employees' sense of affiliation and adaptability amidst varied cultural terrains.

The results align with the overarching discourse that values diversity not merely as a symbolic acknowledgment but as a concerted effort to tap into the depth of insights it provides. The outcomes of this research corroborate the transformative power of CQ in narrowing divides, bolstering resilience, and augmenting feelings of inclusivity among staff. Additionally, the study accentuates the vital interceding role of firsthand experiences with diversity in deepening cultural comprehension. While this research offers instrumental perspectives, it simultaneously invites future scholars to further probe into this compelling field. As businesses increasingly confront the intricacies linked to cultural diversity, such investigations act as beacons, directing the way

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



forward. To conclude, recognizing and internalizing cultural diversity transcends being a mere commendable goal; it embodies an operational imperative for flourishing in our globally interwoven era. This scholarly endeavor substantiates this assertion, presenting both introspection and guidance for the ongoing expedition.

References

- Adu-Ampong, E. A. and Adams, E. A. (2020). “But you are also Ghanaian, you should know”: Negotiating the insider–outsider research positionality in the fieldwork encounter. *Qualitative Inquiry*, 26(6), p.583-592.
- Alexandra, V., Ehrhart, K. H. and Randel, A. E. (2021). Cultural intelligence, perceived inclusion, and cultural diversity in workgroups. *Personality and Individual Differences*, 168(p.110285).
- Alifuddin, M. and Widodo, W. (2022). How is cultural intelligence related to human behavior? *Journal of Intelligence*, 10(1), p.3.
- Alizai, K. (2021). A case study of Punjabi language diglossia and language shift in Baluchistan province. *Pedagogika Społeczna Nova*, 1(2), p.163-181.
- Allport, G. W., Clark, K. and Pettigrew, T. (1954). The nature of prejudice.
- Amber, Q., Ahmad, M., Khan, I. A. and Hashmi, F. A. (2019). Knowledge sharing and social dilemma in bureaucratic organizations: Evidence from public sector in Pakistan. *Cogent Business & Management*, 6(1), p.1685445.
- Ang, S. and Inkpen, A. C. (2008). Cultural intelligence and offshore outsourcing success: A framework of firm-level intercultural capability. *Decision Sciences*, 39(3), p.337-358.
- Arshad, M. I., Iqbal, M. A. and Shahbaz, M. (2018). Pakistan tourism industry and challenges: A review. *Asia Pacific Journal of Tourism Research*, 23(2), p.121-132.
- Azevedo, A. and Shane, M. J. (2019). A new training program in developing cultural intelligence can also improve innovative work behavior and resilience: A longitudinal pilot study of graduate students and professional employees. *The International Journal of Management Education*, 17(3), p.100303.
- Black, J. S. (1988). Work role transitions: A study of American expatriate managers in Japan. *Journal of International Business Studies*, 19(p.277-294).
- Bratož, S. and Sila, A. (2022). Analysing preschoolers’ awareness of linguistic and cultural diversity through the DivCon model. *Porta Linguarum Revista Interuniversitaria de Didáctica de las Lenguas Extranjeras*, p.115-131.
- Castellanos, R., Yildiz Spinel, M., Phan, V., Orengo-Aguayo, R., Humphreys, K. L. and Flory, K. (2020). A systematic review and meta-analysis of cultural adaptations of mindfulness-based interventions for Hispanic populations. *Mindfulness*, 11(p.317-332).
- Chang, H. H., Chuang, S.-S. and Chao, S. H. (2011). Determinants of cultural adaptation, communication quality, and trust in virtual teams' performance. *Total Quality Management*, 22(3), p.305-329.
- Cheah, J.-H., Thurasamy, R., Memon, M. A., Chuah, F. and Ting, H. (2020). Multigroup analysis using SmartPLS: Step-by-step guidelines for business research. *Asian Journal of Business Research*, 10(3), p.I-XIX.

- Chedru, M. and Ostapchuk, M. (2023). The effect of study abroad and personality on cultural intelligence: A deeper understanding using the expanded model of cultural intelligence. *International Journal of Intercultural Relations*, 92(p.101737).
- Chen, A. S.-Y., Lin, Y.-C. and Sawangpattanakul, A. (2011). The relationship between cultural intelligence and performance with the mediating effect of culture shock: A case from philippine laborers in taiwan. *International Journal of Intercultural Relations*, 35(2), p.246-258.
- Chen, M. (2019). The impact of expatriates' cross-cultural adjustment on work stress and job involvement in the high-tech industry. *Frontiers in psychology*, 10(p.2228).
- Chu, K. and Zhu, F. (2023). Impact of cultural intelligence on the cross-cultural adaptation of international students in china: The mediating effect of psychological resilience. *Frontiers in Psychology*, 14(p.1077424).
- Chua, R. Y., Morris, M. W. and Mor, S. (2012). Collaborating across cultures: Cultural metacognition and affect-based trust in creative collaboration. *Organizational behavior and human decision processes*, 118(2), p.116-131.
- Civitillo, S., Juang, L. P., Badra, M. and Schachner, M. K. (2019). The interplay between culturally responsive teaching, cultural diversity beliefs, and self-reflection: A multiple case study. *Teaching and Teacher Education*, 77(p.341-351).
- Davies, S. E., Stoermer, S. and Froese, F. J. (2019). When the going gets tough: The influence of expatriate resilience and perceived organizational inclusion climate on work adjustment and turnover intentions. *The International Journal of Human Resource Management*, 30(8), p.1393-1417.
- Dereli, M., Kahraman, T. and France, C. R. (2023). Cross-cultural adaptation and psychometric validation of the turkish version of pain resilience scale. *Evaluation & the Health Professions*, 46(2), p.140-151.
- Duchek, S., Raetze, S. and Scheuch, I. (2020). The role of diversity in organizational resilience: A theoretical framework. *Business research*, 13(2), p.387-423.
- Earley, P. C. and Ang, S. (2003). Cultural intelligence: Individual interactions across cultures.
- Ellis, D. M., Draheim, A. A. and Anderson, P. L. (2022). Culturally adapted digital mental health interventions for ethnic/racial minorities: A systematic review and meta-analysis. *Journal of consulting and clinical psychology*, 90(10), p.717.
- Ennis, N., Shorer, S., Shoval-Zuckerman, Y., Freedman, S., Monson, C. M. and Dekel, R. (2020). Treating posttraumatic stress disorder across cultures: A systematic review of cultural adaptations of trauma-focused cognitive behavioral therapies. *Journal of Clinical Psychology*, 76(4), p.587-611.
- Flake, J. K., Davidson, I. J., Wong, O. and Pek, J. (2022). Construct validity and the validity of replication studies: A systematic review. *American Psychologist*, 77(4), p.576.
- Fornell, C. and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), p.39-50.
- Fuertes, J. N., Miville, M. L., Mohr, J. J., Sedlacek, W. E. and Gretchen, D. (2000). Factor structure and short form of the miville-guzman universality-diversity scale. *Measurement and Evaluation in Counseling and Development*, 33(3), p.157-169.
- Fullerton, D. J., Zhang, L. M. and Kleitman, S. (2021). An integrative process model of resilience in an academic context: Resilience resources, coping strategies, and positive adaptation. *Plos one*, 16(2), p.e0246000.

- Garneau, A. B. and Pepin, J. (2015). Cultural competence: A constructivist definition. *Journal of Transcultural Nursing*, 26(1), p.9-15.
- Gerasimova, N., Gerasymova, I. and Dmytryuk, S. (2021). Students' adaptation to learning as a psychological problem. *Social capital: vectors of development of behavioral economics*.
- Gong, Y., Gao, X., Li, M. and Lai, C. (2021). Cultural adaptation challenges and strategies during study abroad: New zealand students in china. *Language, Culture and Curriculum*, 34(4), p.417-437.
- González, A. L. and Macias-Alonso, I. (2023). Resilience, adaptation and strategic engagement: Saudi female entrepreneurs confront covid-19. *International Journal of Gender and Entrepreneurship*.
- Grosch, I., Boonen, J. and Hoefnagels, A. (2023). Cultural intelligence and the role of international classroom composition: Insights from dutch higher education. *International Journal of Intercultural Relations*, 96(p.101866.
- Guo, J., Qiu, Y. and Gan, Y. (2020). Workplace incivility and work engagement: The chain mediating effects of perceived insider status, affective organizational commitment and organizational identification. *Current Psychology*, p.1-12.
- Hair Jr, J., Hair Jr, J. F., Hult, G. T. M., Ringle, C. M. and Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (pls-sem)*, Sage publications.
- Hair Jr, J., Page, M. and Brunsveld, N. (2019). *Essentials of business research methods*, Routledge.
- Hanafiah, M. H. (2020). Formative vs. Reflective measurement model: Guidelines for structural equation modeling research. *International Journal of Analysis and Applications*, 18(5), p.876-889.
- Hartmann, S., Backmann, J., Newman, A., Brykman, K. M. and Pidduck, R. J. (2022). Psychological resilience of entrepreneurs: A review and agenda for future research. *Journal of small business management*, 60(5), p.1041-1079.
- Harun, M. M., Jaafar, W. M. W., Ismail, A. and Noah, S. M. (2022). Psychometric properties of the malay translated and adapted multicultural experience inventory-revised in the malaysian context. *Asian Journal of University Education*, 18(2), p.554-568.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*, sage.
- Hu, F.-W., Lin, C.-H., Lai, P.-H. and Lin, C.-Y. (2021). Predictive validity of the physical resilience instrument for older adults (prifor). *The journal of nutrition, health & aging*, 25(9), p.1042-1045.
- Hu, J., Ye, B., Yildirim, M. and Yang, Q. (2023). Perceived stress and life satisfaction during covid-19 pandemic: The mediating role of social adaptation and the moderating role of emotional resilience. *Psychology, Health & Medicine*, 28(1), p.124-130.
- Hu, Q., Lu, Y., Pan, Z. and Wang, B. (2022). How does ai use drive individual digital resilience? A conservation of resources (cor) theory perspective. *Behaviour & Information Technology*, p.1-20.
- Hummelstedt, I. (2022). Acknowledging diversity but reproducing the other: A critical analysis of finnish multicultural education. *Helsinki Studies in Education*, number 138.
- Ikram, M. S., Mehmood, T., Rakha, A., Akhtar, S., Khan, M. I. M., Al-Qahtani, W. S., Safhi, F. A., Hadi, S., Wang, C.-C. and Adnan, A. (2022). Genetic diversity and forensic application of y-filer strs in four major ethnic groups of pakistan. *BMC genomics*, 23(1), p.788.

- Jurásek, M. and Wawrosz, P. (2023). The relationship between cultural intelligence and cross-cultural adjustment. *Periodica Polytechnica Social and Management Sciences*.
- Kai Liao, Y., Wu, W.-Y., Dao, T. C. and Ngoc Luu, T.-M. (2021). The influence of emotional intelligence and cultural adaptability on cross-cultural adjustment and performance with the mediating effect of cross-cultural competence: A study of expatriates in taiwan. *Sustainability*, 13(6), p.3374.
- Killgore, W. D., Taylor, E. C., Cloonan, S. A. and Dailey, N. S. (2020). Psychological resilience during the covid-19 lockdown. *Psychiatry research*, 291(p.113216).
- Kour, S. and Jyoti, J. (2022). Cross-cultural training and adjustment through the lens of cultural intelligence and type of expatriates. *Employee Relations: The International Journal*, 44(1), p.1-36.
- Kramsch, C. (2013). Culture in foreign language teaching. *Iranian journal of language teaching research*, 1(1), p.57-78.
- Li, M. (2020). An examination of two major constructs of cross-cultural competence: Cultural intelligence and intercultural competence. *Personality and individual differences*, 164(p.110105).
- Liu, D., Bakari, H., Niaz, M., Zhang, Q. and Shah, I. A. (2022). Impact of managerial trustworthy behavior on employee engagement: Mediating role of perceived insider status. *Frontiers in Psychology*, 13(p.942697).
- Lock, S., Rees, C. S. and Heritage, B. (2020). Development and validation of a brief measure of psychological resilience: The state–trait assessment of resilience scale. *Australian Psychologist*, 55(1), p.10-25.
- Loewenstein, K., Barroso, J. and Phillips, S. (2019). The experiences of parents in the neonatal intensive care unit: An integrative review of qualitative studies within the transactional model of stress and coping. *The Journal of perinatal & neonatal nursing*, 33(4), p.340-349.
- Lou, N. M. and Noels, K. A. (2019). Sensitivity to language-based rejection in intercultural communication: The role of language mindsets and implications for migrants' cross-cultural adaptation. *Applied Linguistics*, 40(3), p.478-505.
- Maine, F., Cook, V. and Lähdesmäki, T. (2019). Reconceptualizing cultural literacy as a dialogic practice. *London Review of Education*, 17(3).
- Malik, F. and Nicholson, B. (2020). Understanding the interplay of institutional logics and management practices in impact sourcing. *Information Systems Journal*, 30(1), p.125-149.
- Mangla, N. (2021). Working in a pandemic and post-pandemic period—cultural intelligence is the key. *International Journal of Cross Cultural Management*, 21(1), p.53-69.
- Marom, L. (2022). Outsiders-insiders-in between: Punjabi international students in canada navigating identity amid intraethnic tensions. *Globalisation, Societies and Education*, 20(2), p.221-235.
- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C. and Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of cardiac anaesthesia*, 22(1), p.67.
- Moieni, R. and Mousaferiadis, P. (2022). Analysis of cultural diversity concept in different countries using fractal analysis. *International Journal of Organizational Diversity*, 22(1).
- Morgan, T., Wiles, J., Moeke-Maxwell, T., Black, S., Park, H.-J., Dewes, O., Williams, L. A. and Gott, M. (2020). 'People haven't got that close connection': Meanings of loneliness and

- social isolation to culturally diverse older people. *Aging & mental health*, 24(10), p.1627-1635.
- Mu, Y., Wang, Y., Yuan, J., Knutson, K. L., Zhu, D., Izci-Balserak, B., Wu, Y. and Zhu, B. (2023). Cross-cultural adaptation and validation of the chinese version of the sleep health index. *Sleep Health*, 9(1), p.117-123.
- Namoos Zaheer, R. K. (2022). Financing private sector-led growth in pakistan [Online]. *World Bank*. Available: <https://blogs.worldbank.org/endpovertyinsouthasia/financing-private-sector-led-growth-pakistan> [Accessed 10 August 2023].
- Peng, R.-Z. and Wu, W.-P. (2019). Measuring communication patterns and intercultural transformation of international students in cross-cultural adaptation. *International Journal of Intercultural Relations*, 70(p.78-88).
- Ragon, K. A. and Reyes, D. V. (2023). Insider-outsider dynamics and identity in qualitative studies of social movements. *Methodological advances in research on social movements, conflict, and change*. Emerald Publishing Limited.
- Rasoolimanesh, S. M. (2022). Discriminant validity assessment in pls-sem: A comprehensive composite-based approach. *Data Analysis Perspectives Journal*, 3(2), p.1-8.
- Reed, M. (2023). *The impact of cultural, psychological and family factors on expatriate family adjustment*. University of Basel.
- Reed, M., Jones, E., Gaab, J. and Ooi, Y. P. (2023). Exploring resilience as a mediator and moderator in the relationship between cultural intelligence and sociocultural adjustment: A study of expatriates in switzerland. *International Journal of Intercultural Relations*, 94(p.101783).
- Renbarger, R. L., Padgett, R. N., Cowden, R. G., Govender, K., Yilmaz, M. Z., Scott, L. M., Makhnash, A. V., Novotny, J. S., Nugent, G. and Rosenbaum, L. (2020). Culturally relevant resilience: A psychometric meta-analysis of the child and youth resilience measure (cyrm). *Journal of Research on Adolescence*, 30(4), p.896-912.
- Ringle, C. M., Sarstedt, M., Mitchell, R. and Gudergan, S. P. (2020). Partial least squares structural equation modeling in hrm research. *The International Journal of Human Resource Management*, 31(12), p.1617-1643.
- Rüth, R. and Netzer, T. (2020). The key elements of cultural intelligence as a driver for digital leadership success. *Leadership, Education, Personality: An Interdisciplinary Journal*, 2(1), p.3-8.
- Sarfraz, M., Nisar, Q. A. and Raza, A. (2023). Expatriates' adjustment and performance in risky environments: The role of organizational support and rewards, risk propensity and resilience. *Personnel Review*, 52(4), p.1126-1145.
- Saroglou, V., Clobert, M., Cohen, A. B., Johnson, K. A., Ladd, K. L., Van Pachterbeke, M., Adamovova, L., Blogowska, J., Brandt, P.-Y. and Çukur, C. S. (2020). Believing, bonding, behaving, and belonging: The cognitive, emotional, moral, and social dimensions of religiousness across cultures. *Journal of Cross-Cultural Psychology*, 51(7-8), p.551-575.
- Sarstedt, M. and Cheah, J.-H. 2019. Partial least squares structural equation modeling using smartpls: A software review. Springer.
- Scarpis, E., Castriotta, L., Ruscio, E., Bianchet, B., Doimo, A., Moretti, V., Cocconi, R., Farneti, F. and Quattrin, R. (2022). The second victim experience and support tool: A

- cross-cultural adaptation and psychometric evaluation in italy (it-svest). *Journal of patient safety*, 18(2), p.88-93.
- Scheepers, D. and Ellemers, N. (2019). Social identity theory. *Social psychology in action: Evidence-based interventions from theory to practice*, p.129-143.
- Schlaegel, C., Richter, N. F. and Taras, V. (2021). Cultural intelligence and work-related outcomes: A meta-analytic examination of joint effects and incremental predictive validity. *Journal of World Business*, 56(4), p.101209.
- Schunk, D. H. and Dibenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary educational psychology*, 60(p.101832).
- Seise, C. (2019). The muslim researcher reflections on insider/outsider research in indonesia (peneliti muslim refleksi penelitian insider dan outsider di indonesia). *Journal of Islam in Asia (E-ISSN 2289-8077)*, 16(1), p.297-324.
- Sellbom, M. and Tellegen, A. (2019). Factor analysis in psychological assessment research: Common pitfalls and recommendations. *Psychological assessment*, 31(12), p.1428.
- Setti, I., Sommovigo, V. and Argentero, P. (2020). Enhancing expatriates' assignments success: The relationships between cultural intelligence, cross-cultural adaptation and performance. *Current Psychology*, p.1-21.
- Shah, S. a. M. and Amjad, S. (2011). Cultural diversity in pakistan: National vs provincial. *Mediterranean Journal of Social Sciences*, 2(2), p.331-344.
- Sheikh, M. K. and Gillani, A. H. (2023). Ethnic issues and national integration in pakistan: A review. *Pakistan Journal of Humanities and Social Sciences*, 11(1), p.187-195.
- Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, 9(1), p.4-11.
- Stamper, C. L. and Masterson, S. S. (2002). Insider or outsider? How employee perceptions of insider status affect their work behavior. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 23(8), p.875-894.
- Stratton, S. J. (2021). Population research: Convenience sampling strategies. *Prehospital and disaster Medicine*, 36(4), p.373-374.
- Sullivan, S. E. and Al Ariss, A. (2022). A conservation of resources approach to inter-role career transitions. *Human Resource Management Review*, 32(3), p.100852.
- Sun, Y. and Nie, T. (2020). Family-friendly practices and adaptive performance: Alternative role of cultural intelligence? *Solid State Technology*, p.1751-1762.
- Sürücü, L. and Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, 8(3), p.2694-2726.
- Swaroop, S. R. and Deloach, C. D. (2015). Voices of trauma and resilience: Cultural and gender distinctive responses to war and displacement in pakistan. *Psychology and developing societies*, 27(1), p.1-30.
- Theron, L., Rothmann, S., Höltge, J. and Ungar, M. (2022). Differential adaptation to adversity: A latent profile analysis of youth engagement with resilience-enabling cultural resources and mental health outcomes in a stressed canadian and south african community. *Journal of Cross-Cultural Psychology*, 53(3-4), p.403-425.
- Thomas, D. C., Liao, Y., Aycan, Z., Cerdin, J.-L., Pekerti, A. A., Ravlin, E. C., Stahl, G. K., Lazarova, M. B., Fock, H. and Arli, D. (2015). Cultural intelligence: A theory-based, short form measure. *Journal of International Business Studies*, 46(p.1099-1118).

- Ungar, M. and Theron, L. (2020). Resilience and mental health: How multisystemic processes contribute to positive outcomes. *The Lancet Psychiatry*, 7(5), p.441-448.
- Valenzuela, M. A., Flinchbaugh, C. and Rogers, S. E. (2020). Can organizations help adjust?: The effect of perceived organizational climate on immigrants' acculturation and consequent effect on perceived fit. *Journal of International Management*, 26(3), p.100775.
- Van Nguyen, S. and Habók, A. (2021). Designing and validating the learner autonomy perception questionnaire. *Heliyon*, 7(4).
- Vella, S.-L. C. and Pai, N. B. (2019). A theoretical review of psychological resilience: Defining resilience and resilience research over the decades. *Archives of Medicine and Health Sciences*, 7(2), p.233-239.
- Wang, K. T. and Goh, M. (2020). Cultural intelligence. *The Wiley Encyclopedia of Personality and Individual Differences: Clinical, Applied, and Cross-Cultural Research*, p.269-273.
- Ward, C. and Kennedy, A. (2001). Coping with cross-cultural transition. *Journal of cross-cultural psychology*, 32(5), p.636-642.
- Wood, A., Kleinbaum, A. M. and Wheatley, T. (2023). Cultural diversity broadens social networks. *Journal of Personality and Social Psychology*, 124(1), p.109.
- Yari, N., Lankut, E., Alon, I. and Richter, N. F. (2020). Cultural intelligence, global mindset, and cross-cultural competencies: A systematic review using bibliometric methods. *European Journal of International Management*, 14(2), p.210-250.
- Yilmaz, K. and Temizkan, V. (2022). The effects of educational service quality and socio-cultural adaptation difficulties on international students' higher education satisfaction. *SAGE Open*, 12(1), p.21582440221078316.
- Yvonne Bulk, L. and Collins, B. (2023). Blurry lines: Reflections on “insider” research. *Qualitative Inquiry*, p.10778004231188048.
- Zhao, S., Liu, Y. and Zhou, L. (2020). How does a boundaryless mindset enhance expatriate job performance? The mediating role of proactive resource acquisition tactics and the moderating role of behavioural cultural intelligence. *The International Journal of Human Resource Management*, 31(10), p.1333-1357.
- Zheng, X., Li, L., Zhang, F. and Zhu, M. (2019). The roles of power distance orientation and perceived insider status in the subordinates' moqi with supervisors and sustainable knowledge-sharing. *Sustainability*, 11(5), p.1421.
- Zhu, Y., Zhang, S. and Shen, Y. (2019). Humble leadership and employee resilience: Exploring the mediating mechanism of work-related promotion focus and perceived insider identity. *Frontiers in Psychology*, 10(p.673).

| | |
|--|---|
| <p>Ada Sandoval Madrid (Author) <i>Vancouver Community College</i></p> <p>Dr. Badr-un-nisa Chand <i>University Canada West</i></p> | <p>The Nexus of Sustainability and Industry 5.0: Assessing Canadian Organizations' Readiness for the Next Technological Revolution through British Columbian manager's perspective</p> |
|--|---|

Abstract

The contemporary business landscape currently witnesses one of the most profound and revolutionary technological transformations -Industry 5.0. This revolution compels organizations with the need to navigate the intricate balance between the adoption of innovation and upholding the principles of sustainable economic growth. This investigation aims to uncover the strategies currently employed by Canadian organizations in anticipation of the challenges and opportunities presented by the synergy between sustainability and technological integration.

This paper presents a qualitative approach to research based on fourteen in-depth interviews conducted with senior managers and executives from various industrial sectors in Canada. Results obtained from a qualitative approach show that although Canadian organizations have adopted sustainable practices with regards to technology usage, they have yet to navigate through the challenges including financial constraints and other strategic priorities before the opportunities of sustainable business practices can be explored.

Keywords: *Industry 5.0, Sustainable business practices, British Columbian Organizations, Qualitative Research.*

Introduction

Organizations face new challenges to balance economic growth with sustainable practices in an era of rapid technological advancements, adaptive environments, and changing global settings as part of a world becoming more inclusive, respectful, and emphatic towards human-centric values (Prasanna et al., 2019; Gupta, 2022).

Canadian organizations are no exception in the face of unprecedented global environmental challenges, and they are also realizing the relevance and importance of implementing sustainable practices and incorporating cutting-edge technologies in their organizational goals and regular operations to foster a more ethically responsible business landscape (Dodds & Holmes, 2011; Delannon et al., 2016; Matson et al., 2016).

This paper explores how Canadian organizations are navigating the encounter between sustainable practices and technological advancements to embrace Industry 5.0. As Industry 4.0 set the foundations for a more digitally connected and efficient manufacturing landscape in the last decades, Industry 5.0 presents the new phase of the industrial revolution by providing an

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
 Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



opportunity for organizations to find a balance between the latest technologies and the opportunity to reach financial objectives through sustainable, more human-centered practices (Ben Youssef & Mejri, 2023). Industry 5.0 represents the convergence of technology and human-centered, sustainable practices within organizational settings (Aslam et al., 2020). To better comprehend the relationship between sustainable organizational practices and Industry 5.0, it is necessary to systematically explore the embrace of new technological trends within Canadian organizations.

Literature Review

Industry 5.0

The urgency for environmental concerns in organizations from the beginning of twenty-first century has compelled organizations to reevaluate their operations' quality and adopt sustainable practices (Matson et al., 2016; Gupta, 2012). The analysis and studies of the industrial revolutions have aimed to understand the economic impact of diverse technological advancements on societies and economies (Xu et al., 2018). Where previous revolutions especially Industry 3.0 and Industry 4.0 are responsible for the creation of a more digitally connected world and mechanized business practices (Jiao et al, 2021; Khang et al, 2023), they are often blamed for creating issues such as human job loss (Dregger et al., 2016; Morrar et al., 2017) and environmental concerns (Ghobakhloo, 2020). The concept of Industry 5.0 was firstly introduced by The European Commission in two virtual workshops that focused on the topic "Industry 5.0 - Towards a Sustainable, Human-centric and Resilient European Industry" (European Commission, 2021; Xu et al., 2021). Industry 5.0 envisions a more harmonious coexistence between humans and machines (He & Chand, 2023) emphasizing value creation, sustainability, and social problem-solving (Prasanna, 2019; Xu et al., 2021; Turner, 2022; Yitmen et al., 2023).

According to Demir et al. (2019), Industry 5.0 emphasizes two main aspects; one is related to the "human-technology co-working" atmosphere that organizations will foster, the second vision is related to using resources for industrial purposes, in balance with ecological practices and economic gains for organizations. From Demir's work, while vision number 1 accentuates an outlook on human-technology collaboration. In contrast, Vision Number 2 focuses on sustainability as its primary focus of interest and motivation, including the smart use of renewable resources through a dual perspective (Demir et al., 2019). As the world transitions into Industry 5.0, the significance of sustainability becomes more relevant when the advancements of new technologies like the Internet of Things (IoT), artificial intelligence, and innovations allow a parallel evolution within sustainable practices in organizations (Shaikh et al., 2015).

Defining Sustainability

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



The term sustainability originates from the Brundtland Report of 1987, which addressed, for the first time, concerns regarding the aspiration of society to develop better levels of life and commodity while facing limitations imposed by nature (Kuhlman & Farrington, 2010). Dyllick and Hockert define corporate sustainability as the ability to meet the needs of the direct and indirect stakeholders while protecting, sustaining, and enhancing the human and natural resources currently in the present and the future (Engert, 2016).

There are four well-known pillars of sustainability: Environmental sustainability – the responsible use of natural resources and respecting the planet (Hickel, 2019). Human sustainability – investing in the humans and their basic needs, such as education, justice, and healthcare (Sajjad & Shahbaz, 2020). Social sustainability – the responsibility that organizations have towards the communities, and the respect for human rights (Abdel-Raheem & Ramsbottom, 2016). Economic sustainability – creating long-term value and financial viability for business (Duić et al., 2015).

Sustainability and Industry 5.0

In the context of Industry 5.0, sustainability becomes eminent, as sustainable practices involve the responsible use of technologies while reducing environmental harm, improving societal equity and inclusivity, and fostering resilient, flexible, and socially responsible organizations (Zhanbayev et al., 2023). An "interesting benefit of Industry 5.0 is the provision of greener solutions compared to the existing industrial transformations, neither focusing on protecting the natural environment", as Maddikunta et al. (2021, p. 2) affirmed. The new technological revolution brings new technological advancements in both manufacturing and production, while it will also require organizations to reevaluate how they responsibly respond through ethical, sustainable practices.

The emphasis Industry 5.0 puts on bringing back the value of human beings by empowering the workforce through proper, equitable, and inclusive training and development programs. At the same time, the fast evolution of technology exponentially speeds up its growth and can help organizations realize the potential to meet their sustainability goals in the upcoming years. Industry 5.0, in this sense, can provide, besides technological advancements and innovations for organizations, potential solutions, and strategies to address the sustainability challenges they face, as immediate innovative actions are needed to act on responsible, respectful practices that may provide immediate benefits to internal stakeholders, as well as the community and society organizations operate in (Maddikunta, 2021).

The principles of sustainability -environmental, social, and economic, align with the overall objectives of Industry 5.0, which are based on reducing ecological footprints through advanced technologies, the potential to create equitable workforce opportunities, and offering organizations long-term economic viability through efficiency gains and cost reductions in operations (Demir et al., 2019; Voulgaridis et al., 2022; Rajumesh, 2023).

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



Ghobakhloo et al. (2022) have recently presented sixteen functions in which Industry 5.0 can generate sustainable development value for organizations. These essential functions, like employee technical assistance, intelligent automatization, open, sustainable innovation, and supply chain adaptability, among many others, present a sample of the interconnected scenarios that will provide insight into how Industry 5.0 will play a crucial role in promoting sustainable practices within organizations in the upcoming years (Ghobakhloo et al., 2022).

Research Methodology

Using qualitative research methodologies is considered appropriate when exploring a novel study area to establish a precedent for developing theories about relevant issues. According to Cruz & Tantia (2017), qualitative research methods are used to describe experience processes, to "make meaning of experiences or phenomena by following data as they emerge" (Cruz & Tantia, 2017, p. 81). This study's objective has been to assess and discover the status of sustainability and technology initiatives adopted by organizations based on the opinions and perceptions of collaborators involved in decision-making processes within their organizations.

The Abductive Approach

Abductive analysis encourages researchers to approach qualitative research with a solid theoretical foundation, incorporating existing theories in the research process and using them as a base and framework for developing new insights while offering flexibility and adaptable logic for discovering new phenomena (Timmermans & Tavory, 2012; Janiszewski & Van Osselaer, 2022). Using the abductive approach, researchers can pay attention to unique aspects that may differ from the usual pattern when studying and analyzing a phenomenon. (Van Burg et al., 2022) The researcher using abductive analysis may then suggest new propositions and hypotheses based on the data analyzed (Timmermans & Tavory, 2012).

Data Analyses

Qualitative Thematic analysis is a qualitative method of analysis to identify, analyze, and decode patterns or themes (Clark & Vealé, 2018). Thematic analysis involves observing and recording patterns while offering flexibility, allowing it to be used within most theoretical frameworks and distinguished from other qualitative analysis methodologies (Terry et al., 2017).

The authors used Nvivo to code, classify and analyze the data. Using Nvivo Patterns related to sustainable practices and technological advancements were identified, providing valuable insights into the current state of Canadian organizations.

Data Collection

The authors conducted fourteen semi-structured in-depth interviews between August and September 2023 with mid to senior level managers and directors from British Columbian companies in Canada. All fourteen interviews were conducted in different organizations with interviewees that were involved to a certain degree in decision-making processes within their

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4

Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



organizations. One consultant, three directors, eight managers, and two supervisors/co-ordinators were interviewed. The interviewees worked in varying industries including mining, oil and gas, manufacturing, construction, transportation and warehousing, electricity, water, culture, and information. Of the fourteen organizations analyzed, four belong to the public sector, and ten belong to the private sector. Even though all organizations operate in British Columbia (Canada), two of the private enterprises being studied have been recently acquired, in the past year by multinationals from outside Canada.

Discussion

1) Sustainability as part of Organizational Strategies

79% of the participants affirmed that sustainability is part of their organizational objectives, placing more emphasis on the relevance and importance of this concept mostly in public organizations or in organizations in which, albeit being private, they receive benefits, sponsorships, or financial support from public organizations. 21% of the organizations in which sustainability needs to be started as part of their strategic planning or organizational objectives are private corporations, considered big/medium companies.

2) Sustainability part of Decision-making initiatives and practices

Most of the participants affirmed that sustainability is part of the decision-making process in most areas of their organization; however, four out of ten participants added that the incorporation of these practices was at the surface level only due to the legal compliance requirements established by the government or regulatory organizations in their industry.

3) Sustainability Measures and Targets

Half of the participants expressed that their organization had clear sustainability targets to be met each year. Although sustainability goals for the public sector were well defined such targets were missing in the private sector. The transparency in communication of sustainability targets (and the action steps taken to achieve them) with internal and external stakeholders was also evident in public organizations. Public organizations shared the pre-set targets, measures, and indicators with their stakeholders quarterly and annually. Contrarily, private corporations were more secretive about their sustainability measures and targets being met, even within their internal stakeholders.

4) Sustainability and Technology Training and Development Programs

All participants affirmed that their organizations provide training programs and offer various courses to their employees to work with sustainable technologies for optimal results. Most interviewees also discussed the role of collaborative partnerships between organizations, universities, and open-access educational platforms such as Coursera and LinkedIn to create

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4
Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



awareness of sustainable business practices and technologies via training and development. However, despite having external support and well-structured training and development programs in place, participants expressed the need for more free time to fully participate and learn from these training programs. In public organizations, or those receiving public sponsorship or funding, training programs about sustainable practices were more formal, offered during the employees' working hours, and constituted a significant part of their career plans. These participants confirmed receiving mandatory ongoing training as part of the organizational targets and objectives.

5) Integration and Embracement of New Technologies

All participants confirmed that their organizations had a positive and open attitude to the embracement of new technologies. However, the extent to which these new technologies were adopted was contingent upon the type of industry and the area or department in which some participants work. For example, those working in the manufacturing industry shared examples about automating processes in the production line and using software that could make results more efficient. However, participants from private organizations shared that due to limited financial resources organizations were reluctant to invest in sustainability initiatives and hardware and software technologies. The telecommunication and information technology industries were the ones where more technological advancements were expected and therefore these organizations were willing to adopt sustainable practices to support their operations.

6) The role of sustainability and environmental considerations in shaping organizational future strategies and technological choices

All participants affirmed that they believed sustainability would continue to guide and shape many of the decisions made as part of their organizational objectives and philosophy, permeating from all areas and functions, from strategic planning to everyday operations. All the participants believed there are several opportunities for their organizations to start paying more attention to these relevant topics. From formally incorporating sustainable targets into their organizational objectives and corporate strategies to starting to plan for the incorporation of new technological innovations into all areas of their operations. Participants were of the view that organizations in Canada have a new window of opportunities opened by the incorporation of new technologies to promote more responsible and sustainable practices.

7) Need of Change Mindset to Adapt to Trends in Sustainability and Technology

A topic that was not originally part of the initial questionnaire but that constantly kept appearing in most of the interviews was that of a change mindset in their organizations. Eleven out of the fourteen participants added that they believed organizations had to show resilience, flexibility,

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4

Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



and adaptation to face the new advancements and technology and to incorporate all new practices being developed to be socially, ecologically, and financially sustainable.

Limitations

Limitations of this study are based on the relatively small sample of interviews, which may only partially represent the diverse range of perspectives and practices across all Canadian organizations in British Columbia.

Another limitation is the rapidly evolving nature of technological and sustainable practices. The findings of this study will need timely reflections and revisions to keep pace with rapid technological advancements.

Conclusion and Future Research

Although in its infancy, Industry 5.0 promises to align more effectively with sustainability goals and highlights the importance of human well-being and environmental health. This qualitative research attempted to reveal initial relevant insights and add to the emerging body of knowledge on the conjunction of Sustainability and Industry 5.0. The implications of this research are relevant for academics, industry experts, and policymakers since these results can shed light on the challenges Canadian organizations will face in pursuing sustainable practices and technology integration in the upcoming years. The findings reveal both opportunities and threats facing Canadian organizations in incorporating new technological innovations to respond to the growing necessity of sustainable policies and practices in all industries.

References

- Abdel-Raheem, M., & Ramsbottom, C. (2016). Factors affecting social sustainability in highway projects in Missouri. *Procedia Engineering*, 145, 548-555.
- Aslam, F., Aimin, W., Li, M., & Ur Rehman, K. (2020). Innovation in the era of IoT and industry 5.0: Absolute innovation management (AIM) framework. *Information*, 11(2), 124.
- Ben Youssef, A., & Mejri, I. (2023). Linking Digital Technologies to Sustainability through Industry 5.0: A Bibliometric Analysis. *Sustainability*, 15(9), 7465.
- Clark, K. R., & Vealé, B. L. (2018). Strategies to enhance data collection and analysis in qualitative research. *Radiologic technology*, 89(5), 482CT-485CT.
- Cruz, R. F., & Tantia, J. F. (2017). Reading and understanding qualitative research. *American Journal of Dance Therapy*, 39, 79-92.
- Delannon, N., Raufflet, E., & Baba, S. (2016). Corporate community engagement strategies and organizational arrangements: A multiple case study in Canada. *Journal of Cleaner Production*, 129, 714-723.
- Demir, K. A., Döven, G., & Sezen, B. (2019). Industry 5.0 and Human-Robot Co-working, *Procedia Computer Science*, 158, 688-695. doi:10.1016/j.procs.2019.09.104
- Dodds, R., & Holmes, M. R. (2011). Sustainability in Canadian B&Bs: comparing the east versus west. *International Journal of Tourism Research*, 13(5), 482-495.
- Dregger, J., Niehaus, J., Ittermann, P., Hirsch-Kreinsen, H., & Ten Hompel, M. (2016, May). The digitization of manufacturing and its societal challenges: a framework for the future of industrial labor. In 2016 IEEE international symposium on ethics in engineering, science and technology (ETHICS) (pp. 1-3). IEEE.
- Duić, N., Urbaniec, K., & Huisingh, D. (2015). Components and structures of the pillars of sustainability. *Journal of Cleaner Production*, 88, 1-12.
- Engert, S., Rauter, R., & Baumgartner, R. J. (2016). Exploring the integration of corporate sustainability into strategic management: A literature review. *Journal of cleaner production*, 112, 2833-2850.
- European Commission, Directorate-General for Research, and Innovation, Breque, M., De Nul, L., Petridis, A. (2021). Industry 5.0: towards a sustainable, human-centric, and resilient European industry, Publications Office of the European Union.
<https://data.europa.eu/doi/10.2777/308407>
- Ghobakhloo, M. (2020). Industry 4.0, digitization, and opportunities for sustainability. *Journal of cleaner production*, 252, 119869.
- Gupta, A. (2022). Sustainability in Industry 4.0. *Ushus Journal of Business Management*, 21(3).
- Hickel, J. (2019). The contradiction of the sustainable development goals: Growth versus ecology on a finite planet. *Sustainable Development*, 27(5), 873-884.
- Janiszewski, C., & van Osselaer, S. M. (2022). Abductive theory construction. *Journal of Consumer Psychology*, 32(1), 175-193.
- Jiao, R., Commuri, S., Panchal, J., Milisavljevic-Syed, J., Allen, J. K., Mistree, F., & Schaefer, D. (2021). Design engineering in the age of industry 4.0. *Journal of Mechanical Design*, 143(7), 070801.

Global Conference Alliance Inc.

422 Richards Street, Unit 170, Vancouver, British Columbia, Canada V6B2Z4

Cell: +1 (778) 257-5225 | Email: contact@globalconference.ca | Visit: www.globalconference.ca



- Khang, A., Jadhav, B., & Birajdar, S. (2023). Industry Revolution 4.0: Workforce Competency Models and Designs. In *Designing Workforce Management Systems for Industry 4.0* (pp. 11-34). CRC Press.
- Kuhlman, T., & Farrington, J. (2010). What is sustainability? *Sustainability*, 2(11), 3436-3448.
- Maddikunta, P. K. R., Pham, Q.-V., B, P., Deepa, N., Dev, K., Gadekallu, T. R., ... Liyanage, M. (2021). Industry 5.0: A survey on enabling technologies and potential applications. *Journal of Industrial Information Integration*, 100257. doi:10.1016/j.jii.2021.100257
- Matson, P., Clark, W. C., & Andersson, K. (2016). *Pursuing sustainability: a guide to the science and practice*. Princeton University Press.
- Morrar, R., Arman, H., & Mousa, S. (2017). The fourth industrial revolution (Industry 4.0): A social innovation perspective. *Technology innovation management review*, 7(11), 12-20.
- Prasanna, R. P. I. R., Jayasundara, J. M. S. B., Naradda Gamage, S. K., Ekanayake, E. M. S., Rajapakshe, P. S. K., & Abeyrathne, G. A. K. N. J. (2019). Sustainability of SMEs in the competition: A systemic review on technological challenges and SME performance. *Journal of Open Innovation: Technology, Market, and Complexity*, 5(4), 100.
- Shaikh, F. K., Zeadally, S., & Exposito, E. (2015). Enabling technologies for green internet of things. *IEEE Systems Journal*, 11(2), 983-994.
- Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic analysis. *The SAGE handbook of qualitative research in psychology*, 2, 17-37.
- Timmermans, S., & Tavory, I. (2012). Theory Construction in Qualitative Research. *Sociological Theory*, 30(3), 167–186. doi:10.1177/0735275112457914
- Turner, C., Oyekan, J., Garn, W., Duggan, C., & Abdou, K. (2022). Industry 5.0 and the circular economy: Utilizing LCA with intelligent products. *Sustainability*, 14(22), 14847.
- Van Burg, E., Cornelissen, J., Stam, W., & Jack, S. (2022). Advancing qualitative entrepreneurship research: Leveraging methodological plurality for achieving scholarly impact. *Entrepreneurship Theory and Practice*, 46(1), 3-20.
- Voulgaridis, K., Lagkas, T., & Sarigiannidis, P. (2022, May). Towards industry 5.0 and digital circular economy: Current research and application trends. In *2022 18th International Conference on Distributed Computing in Sensor Systems (DCOSS)* (pp. 153-158). IEEE.
- Xu, X., Lu, Y., Vogel-Heuser, B., & Wang, L. (2021). Industry 4.0 and Industry 5.0—Inception, conception, and perception. *Journal of Manufacturing Systems*, 61, 530-535.
- Yitmen, I., Almusaed, A., & Alizadehsalehi, S. (2023). Investigating the Causal Relationships among Enablers of the Construction 5.0 Paradigm: Integration of Operator 5.0 and Society 5.0 with Human-Centricity, Sustainability, and Resilience. *Sustainability*, 15(11), 9105.
- Zhanbayev, R. A., Irfan, M., Shutaleva, A. V., Maksimov, D. G., Abdykadyrkyzy, R., & Filiz, Ş. (2023). Demoethical Model of Sustainable Development of Society: A Roadmap towards Digital Transformation. *Sustainability*, 15(16), 12478.