Empirical Study Assessing Standards of Inter-Cultural Competence Aligning Global Workforce Fit of Students W.R.T. Regional University in Southern India

Kundhavai Santharam¹, K. Sumathi² and S.B. Inayath Ahamed¹

¹Department of Business Administration, Kalasalingam Academy of Research and Education, Kollam, Krishnan Koil – 626126, Virudhunagar, Tamil Nadu, India; s.kirane2017@gmail.com, inayathahamed@gmail.com
²Department of Computer Science and Information Technology, Kalasalingam Academy of Research and Education, Kollam, Krishnan Koil – 626126, Virudhunagar, Tamil Nadu, India; sumathirajkmar2006@gmail.com

Abstract

Objectives: Student competence of today’s era should be in all spheres the main objective of this study aims in investigating if a relationship exists between the student’s global fit and existence of intercultural competence among them which can be validated with various factors. Methods/Statistical Analysis: The study involves simple random sampling method among those students undergoing higher education with special reference to a southern regional university. Internationalization process model is kept as the basis and the constituents help in analysing and to formulate prepositions to investigate if the relationship among dependant and independent variables exist in line with the inter-cultural competence. While analysing the data, basic statistical tools are evolved and data set is generated based on the respondent’s view on the inter-cultural competency’s existence and its impact on the fit in global workforce. The results drawn from the Wega tool indicated with an output of 1 or 0 deems either fit or unfit of the hypothesis. Findings: The output generated with the J48 algorithm in this study are grouped and factored into few attributes that is relevant to intercultural competence. The decision tree used to perform the classification of the data through various levels that indicates ‘0 or 1’ decisions helped the researcher in arriving at a final decision. Hence, considering the hypothesis 1 and 2, the results drawn through the Weka tool helps the researchers in this study to take a pre-decision that those students whose results indicate 1 are positively correlated. Receiver Operating Characteristic (ROC) curve plays an important role in examining classification model performance. An ROC curve is a graph that can show the performance of any classification model at different classification thresholds. This curve plots using two main parameters such as True Positive Rate and False Positive Rate. The study would enable the future researchers to conduct study based on the prepositions postulated so as to be beneficial on the International management grounds. Application: The importance of Intercultural competence needs to be felt at this era by all higher education institutions as its impact on after campus performance is efficient. The cognitive, behavioural and affective component becomes the basis for intercultural competence and hence these components in turn become evident in shaping tomorrow’s youth when they face the corporate world. The corporate world is surrounded by varied environmental factors and in order to overcome the challenges it is evident for tomorrow’s youth to develop intercultural competence along with other competence as well. The tool used and based on the findings drawn the same can be applied to various institutions are a higher education level at the outset and in the longer run it may be applied to the school grade students as well. Since international language learning experience contribute towards effective performance among the workforce it is important to feed the students at an early stage itself. Through the application of this tool the higher education institutes can gauge

*Author for correspondence
Empirical Study Assessing Standards of Inter-Cultural Competence Aligning Global Workforce Fit of Students W.R.T. Regional University in Southern India

Indian Journal of Science and Technology Vol 12 (12) | March 2019 | www.indjst.org

the level of their student's intercultural competence and shape them accordingly to suit the international arena and its work expectations. Further, researchers in future can use this tool for the same and put forth initiatives beyond intercultural competence like international competency building, international and intercultural empowerment.

**Keywords:** Attribute of Intercultural Competence, Intercultural Competence Standards, International Management Factors, Internationalization Process, Students’ Global Workforce

1. **Introduction**

The context of 'competence' may be defined as an inclusion of economic, technological, technical, and methodological competencies; social competencies; creativity and innovation skills; and mobility and flexibility combined with persistence, reliability, and precision. The meanings in many variety given to the concept of competence is seen from two perspectives namely – as in its many uses and also in the terminology construction to express competence, such as media competence, business competence, traffic competence, age competence and also cognitive, social, motivational, personal, another competencies. Further, for each student the most prominent way to show their presence in global competition is still an issue as they become invisible among most of the companies. This study focuses on the students' inclination towards fitting into global workforce and what is the stance of the institution. Finally, with the study conducted among the students the results drawn would contribute to those researchers who focuses on the students' fit to global workforce, keeping the inter-cultural competence constituents as basis in the institution at a higher education level. The constituents of intercultural competencies derived from the study based on intercultural competence.

In recognizing the need for internationalization, many universities and colleges in the United States are making great efforts towards internationalization to prepare their students to live and work in the global society of the twenty-first century. Similarly, in this study 240 student responses are included with the view to access the need for internationalization and the extent of their internationalization efforts that the institution takes. However, the current status of internationalization varies from institution to institution.

Despite problems and obstacles, American colleges and universities are making efforts in internationalizing through their programs in many ways. Many of them include internationalization in their agendas and develop strategic planning for a successful internationalization effort. Another study determines a definition and appropriate assessment methods of inter-cultural competence as agreed on by a panel of internationally known intercultural scholars. This information is validated by a sample of higher education administrators and can be used by administrators in identifying and assessing intercultural competence as a student outcome of internationalization efforts. It is evidenced since the groups accepts of the possibility of assessing the degrees of intercultural competence and in doing so, that it is best way to evolve a mix of both quantitative and qualitative methods in assessing intercultural competence, including interviews, observation, and judgment by self and others. As an end result, two models have been presented as a part of the findings of the study. In addition, another paper presents an agenda for “internationalizing” the university and discusses the operationalization of such an endeavour through efforts in the following areas: administration; faculty and curriculum; foreign study and international exchanges; foreign students and scholars; technical cooperation and international development; and public service. Each area is detailed in terms of actions necessary to internationalize the university as well as the inherent difficulties that each action possesses. Success factor in “internationalizing” efforts depend on various aspects relating to service of the institution, coordination and cooperation among staff, and small-scale change, and their reasons also need to be probed as well simultaneously. Finally, examples are provided where methods used by various universities in handling internationalization to make it a success in their campuses, including the strategies to be employed; the organizational structures that aligns the goal; and innovative plans and curriculum recommendations involving all stakes with initiatives of study abroad and exchange efforts.

2. **Importance and Types of Inter-Cultural Competence**

A common factor for the ideologies of internationalization is highlighted to be the skill identification and on
that basis Intercultural competence has been divided into competencies that are either relevant to content or processual. Colleges and universities give due importance towards internationalizing either curricular or co-curricular efforts within campuses as indicated in a different study; subsequently, it is a necessity to gauge through comparison the relationship between internationalization at home activities with the students’ self-reported development of competencies that are based on GII - global, international, and intercultural competencies. This study highlights of undergraduate students’ participation in study abroad and on-campus global/international activities within nine large public research universities in the United States. International learning experiences have a transit from an added-value side effect to an all-persuasive motive in a market-driven and globalised educational sector. However, the limitation of unfolding the value and that being lead to vagueness is also highlighted in the paper especially when it comes to the time beyond the mission statements of internationalization. There is a positive correlation between diverse student enrolments at institutions of higher education and impact teaching and learning. These include research on the basis of learning styles that is diverse, increased emphasis on improving scientific and quantitative literacy of undergraduates, and research findings supporting “student-centered” campuses. Content-competencies are characterized to be single-dimensional one or static in character and refer to the knowledge about both the ‘other’ and the ‘home’ culture. They include knowledge that is of relevance to history, world-views, language, non-verbal behaviour, values, ‘do’s and don’ts, norms, habits, customs, taboos, symbols, behavioural patterns, traditions, etc. The typical relevance is that most of the cases the cultural ‘reductions’ or stereotypes and attributes positive or negative value and emotional colour become the root for ‘knowledge’. Content-competence does not ensure full culture functionality. The term processual competencies consider the dynamic character of intercultural competence and its interactional context. Such competencies are relevant to certain peculiar cultural aspects, situational aspects and those who act upon them. This aspect of understanding in intercultural competence, involves either intrapersonal which is within or interpersonal that is between competencies. Intrapersonal competencies are those which are within oneself related to cognitive skills, that is to say, where the person places oneself in other’s position and acts (perspective-alteration), viewing oneself ‘from the outside’ (self-reflection), alternate between and acting according to two roles as an ‘insider’ and ‘outsider’ (role-taking), dealing with problem handling originating in intercultural encounters (problem solving) and keeping an open, receptive mind and noticing cultural peculiarities (culture-detection), without valuing them on an automatic basis and without criticality (axiological distance). Intrapersonal competencies also is related skills that pertain to emotions, i.e., understanding about the reasons behind the feelings coping with diverse feelings (e.g., xenophobia, uneasiness, uncertainty, ambiguity, frustration, anger, ethnocentrism,) triggered by cultural settings that is unknown and preventing them from automatically determining one’s actions or behaviour or event that is interpreted. Interpersonal competencies are related to interactive skills, which means, it enables one to figure out variations in non-verbal cues, subtle signals and emotional responses (interpersonal sensitivity), mastering verbal and non-verbal language and turn taking, cultural codes surrounding conversations and being aware of one’s own interaction style (communication competence) and adequately responding to contextual meanings (situational sensitivity).

3. Conceptual Framework

The internationalization process is kept as the basis and the conceptual framework that evinces of those aspects dealt in this study relates to the work of internationalization process. The study is basically drawn on the cross-cultural training base and its evaluation but those aspects which become necessary before-hand are dealt in the study which is of great importance to intercultural competence. The literary review highlights of the varied researches conducted and the framework that are the basis of intercultural studies, the inner and outer turn taking in roles, etc. Each of those aspects relate with either the selection or training or evaluation aspect of the framework shown below in the exhibit.

The Figure 1 indicates those aspects that are crucial for training design and evaluation with respect to intercultural component as retrieved from the study conducted. Those students who are to be fit for the global workforce needs to possess certain traits and further they need to undergo training. For the purpose of undergoing training the preparedness is of prime importance as the
Empirical Study Assessing Standards of Inter-Cultural Competence Aligning Global Workforce Fit of Students W.R.T. Regional University in Southern India

4. Institutions Role and Intercultural Competence

Researchers have highlighted of institution’s efforts made towards inter-cultural competence, especially either in the form of incorporating initiatives such as inter-cultural training, intercultural communication, foreign languages, etc. Similarly, in this study a regional southern Indian based deemed to be university is included. The university engages in developing rural based students who are either first generation under graduate takers or from a very lower level family income level. The institute runs engineering, non-engineering programmes. Hence, the subject of this study are those under graduate level student participants who are from different streams like mechanical, bio-tech, commerce, computer science, etc.

Sampling methodology was based on systematic random sampling wherein a questionnaire was administered among the students covering 317 numbers.

5. Constituents of Inter-Cultural Competence

As per the study conducted the intercultural competence components included twenty to items such that.

- Understanding others’ worldwide
- Cultural self awareness
- Adaptability to new culture
- Listening and observation skills
- Openness
- Adaptability to inter-cultural communication in line with learning styles
- Flexibility
- Skills to analyse, interpret ad relate
- In depth knowledge about others’ culture
- Respect for others’ culture
- Cross cultural empathy
- Understanding cultural diversity
- Understanding impact of culture
- Cognitive flexibility
- Socio-linguistic competence
- Mindfulness
- Curiosity and discovery
- Learning through interaction
- Ethno relative view and
- Culture specific knowledge of host traditions
- Based on the above constituents, the questionnaire was designed and its validity test also had been made.

The above constituents all together are kept as the basis of the study and in turn the organization’s culture, leadership depends on these constituents either directly or indirectly.

6. Theoretical Development and Hypothesis

The internationalization process model is kept as the basis and the constituents were taken for analyzing and to formulate prepositions and for drawing decisions based on the result.

Since this study concentrates mainly on the constituents that gauge if the student is competent enough to fit the global workforce, the hypotheses set is drawn based on the existence of intercultural competencies and its impact for the fit.
Hypothesis 1: Existence of Intercultural competencies influences the student’s global workforce fit.

In case the students possess the intercultural competence and have postulated their responses towards the existence based on the types of competencies envisaged in the study then the hypothesis 1 would be deemed fit and we would accept it and reject the null hypothesis i.e hypothesis 2 since it postulates of non-existence of the inter-cultural competence and hence there would not be an impact over the student’s fit in a global environment.

Hypothesis 2: Existence of Intercultural competencies and student’s global workforce fit has impact in international environment.

Similarly, another hypothesis set is that which pertains to the existence of intercultural competence and student’s fit in global environment which would have possible impact in an international arena. When the hypothesis satisfies the condition based on the degrees of freedom, the null hypothesis is rejected.

7. Result and Implications

The decision tree was used to perform the classification of the data through various levels of decisions to help us reach final decision. The decision tree as implemented in Weka (J48) is used in evaluating the prepositions formulated in this study.

The dataset includes 22 attributes that are categorical in nature. There were totally 317 participants who were included in the study out of which 245 were valid and remaining was rejected as it did not coincide with the data sufficiency.

Hence, considering the hypothesis 1 and 2, the results drawn through the Weka tool helps the researchers in this study to take a pre-decision that those students whose results indicate 1 are positively correlated. The intercultural constituent wise analysis is shown in Figure 2. The sample dataset which is feed to Weka Tool in implementation is shown in Figure 3 and 4 shows the final classification results of J48 Algorithm.

training dataset (all)
--- Run information ---
Scheme:  weka.classifiers.trees.J48 -C 0.25 -M 2
Relation: ICC dataset
Instances: 245
Attributes: 22
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, TC

Test mode: evaluate on training data
--- Classifier model (full training set) ---
J48 pruned tree
-------------
Q11 = 0: 0 (3.0)
Q11 = 1: 0 (20.0)
Q11 = 2: 0 (65.0/2.0)

| Q7 = 0: 0 (2.0)
| Q7 = 1: 0 (13.0/2.0)
| Q7 = 2: 0 (31.0/3.0)
| Q7 = 3
| Q14 = 0: 0 (1.0)
| Q14 = 1: 0 (1.0)
| Q14 = 2: 0 (6.0)
| Q14 = 3: 1 (22.0/7.0)
| Q14 = 4
| Q17 = 0: 1 (0.0)
| Q17 = 1: 1 (0.0)
| Q17 = 2: 1 (0.0)
| Q17 = 3: 0 (3.0)
| Q17 = 4: 1 (12.0/1.0)

| Q7 = 4
| Q3 = 0: 0 (0.0)
| Q3 = 1: 0 (1.0)
| Q3 = 2: 0 (1.0)
| Q3 = 3: 0 (4.0)
| Q3 = 4: 1 (11.0/3.0)

| Q11 = 4
| Q7 = 0: 0 (1.0)
| Q7 = 1: 0 (5.0)
| Q7 = 2: 0 (10.0/1.0)
| Q7 = 3
| Q15 = 0: 1 (0.0)
| Q15 = 1: 0 (1.0)
| Q15 = 2: 0 (2.0)
| Q15 = 3: 1 (5.0)
| Q15 = 4: 1 (10.0/1.0)
| Q7 = 4
| Q17 = 0: 1 (0.0)
| Q17 = 1: 1 (0.0)
| Q17 = 2: 1 (0.0)
| Q17 = 3: 0 (3.0/1.0)
| Q17 = 4: 1 (12.0/2.0)

Number of Leaves: 33
Size of the tree: 41
Time taken to build model: 0.07 seconds
--- Evaluation on training set ---
Time taken to test model on training data: 0.02 seconds

=== Summary ===
Correctly Classified Instances 222 90.6122 %
Incorrectly Classified Instances 23 9.3878 %
Kappa statistic 0.7691
Mean absolute error 0.1498
Root mean squared error 0.2736
Relative absolute error 37.6081 %
Root relative squared error 61.389 %
Total Number of Instances 245

=== Detailed Accuracy By Class ===

| MCC  | ROC Area | PRC Area | Class |
|------|----------|----------|-------|
| 0.921 0.134 0.948 0.921 0.934 0.770 | 0.943 0.971 | 0.866 0.079 0.806 0.866 0.835 0.770 | 0.943 0.845 1 |
| Weighted Avg. 0.906 0.119 0.909 0.906 | 0.907 0.770 0.943 0.936 |

 === Confusion Matrix ===

| a   | b  | classified as |
|-----|----|---------------|
| 164 | 14 | a = 0         |
| 9   | 58 | b = 1         |

The hypothesis set is based on the respondent's view on the inter-cultural competency's existence and its impact on the fit in global workforce. Since the results drawn from the Weka tool indicates an output is 1. Hence we can accept the hypothesis 1 and reject the null hypothesis.
Performance evaluation is an important task in machine learning. Using ROC curve, we can visualize the performance of a classification model. ROC curve plays an important role in examining classification model performance. An ROC curve is a graph that can show the performance of any classification model at different classification thresholds. This curve plots using two main parameters such as True Positive Rate and False Positive Rate. ROC curve results for positive class is shown in Figure 5 and ROC curve results for negative class is shown in Figure 6.

The ROC curve plot shows two different things. The proposed classification model is not a perceptive one, when model’s ROC curve looks like the diagonal line. If the ROC curve of the classification model is the further the curve is from the diagonal line, the classification model is a perspective one and is at discriminating between positives and negatives.

8. Conclusion

The study intended to include the student participants of a particular regional institute and is limited to certain threats of drawing concrete decisions though many validity tests were conducted. The research on the positive grounds contributes in providing insights to the institutes that concentrate on internationalization; develop the students to suit the global workforce and to realize an outcome based on the organizational facets especially in terms of the skills or attitudes or behaviour. On another perspective, it is notable that the study would enable the future researchers to conduct study based on the prepositions postulated so as to be beneficial on the International management grounds.

9. References

1. Weinert FE. Concept of competence: A conceptual clarification. In: D.S. Rychen & L.H. Salganik (Eds.), Defining and selecting key competencies. Ashland, OH, US: Hogrefe & Huber Publishers; 2001. p. 46–65.
2. Chapter 1: The Core competence of the corporation. Date accessed: 05/1990. http://nts2.ximb.ac.in/users/fac/Amar/AmarNayak.nsf/dd5cab6801f1723585256474005327c8/456e5a8383adc0f7652576a0004d9ba5/$FILE/CoreCompetence.pdf.
3. Deardorff DK. The identification and assessment of intercultural competence as a student outcome of internationalization at institutions of higher education in the United States, Journal of Studies in International Education. 2006; 10(3):241−66. https://doi.org/10.1177/1028315306287002.
4. Garbe JN, Richter NF. Causal analysis of the internationalization and performance relationship based on neural networks: Advocating the transnational structure, Journal of International Management. 2009; 15(4):413−31. https://doi.org/10.1016/j.intman.2008.10.002.
5. Hser, May P. Campus internationalization: A study of American Universities’ internationalization efforts, International Education. 2005; 35(1):35−48.
6. Internationalizing the University: Making It Work. Date accessed: 1992. https://eric.ed.gov/?id=ED342316.
7. Stier J. Internationalisation, intercultural communication and intercultural competence, Journal of Intercultural Communication. 2006; 11:1−12.
8. Internationalization at Home Alternatives to Study Abroad—Implications for Students’ Development of Global, International, and Intercultural Competencies. Date accessed: 06/2013. https://www.researchgate.net/publication/260750389_Internationalization_at_Home_Alternatives_to_Study_Abroad_Implications_for_Students_Development_of_Global_International_and_Intercultural_Competencies.

9. Matthias O. Intercultural learning and diversity in higher education, Journal of Studies in International Education. 2003; 7(1):12–26.

10. House RJ, Javidan M. Overview of Globe. In R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman & V. Gupta (Eds.), Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies. Thousand Oaks et al.: Sage Publications; 2004. p. 9–28.

11. Jan-Erik V, Kjell AN. The internationalization process: Impact of competition and experience, The International Trade Journal. 1993; 7(5):529–48. https://doi.org/10.1080/08853909308523778.

12. Johnson JP, Lenartowicz T, Apud S. Cross-cultural competence in international business: Toward a definition and a model, Journal of International Business Studies. 2006; 37(4):525–43. https://doi.org/10.1057/palgrave.jibs.8400205.

13. Smrha JA. D&I and Effective Global Citizenship. In: Aquino C., Robertson R. (eds) Diversity and Inclusion in the Global Workplace. Palgrave Macmillan; 2018. p. 171–84. https://doi.org/10.1007/978-3-319-54993-4_10.

14. Hurtado S. How diversity affects teaching and learning, Educational Record. 1996; 66(4):27–29.

15. Andersen O. Internationalization and market entry mode: A review of theories and conceptual frameworks, MIR: Management International Review. 1997; 37:27–42.

16. Evaluation of cross-cultural training programs for international students from east Europe. Date accessed: 10/2010. https://wp2.aws.coh.arizona.edu/cercll/wp-content/uploads/sites/2/2017/07/kovacova_eckert.pdf.