

Received: December 2023 Accepted: January 2024

DOI: <https://doi.org/10.58262/ks.v12i2.034>

## Evaluation and Adaptation of Social Intelligence Inventory: Assessment of Students' Social Intelligence

Dr. Saba Farooq<sup>1</sup>, Dr. Muhammad Haroon<sup>2</sup>, Saeed Khan<sup>3</sup>, Dr. Sahrish Saba<sup>4</sup>, Nazia Khizar<sup>5</sup>

### Abstract

The research was carried out to estimate the psychometric properties of the social intelligence inventory (SII), developed by Lacanlale in 2013. Researchers adapted SII comprised of six subscales: Social Sensitivity, Social Communication, Social Influence, Social Efficacy, Social Catalyst, and Social Advancement. It encompassed of 15 items in each subscale and three three-point Likert scale which was converted to 5 point Likert scale. The number of items was also reduced. After incorporating the changes suggested by the experts SII was administered to the 450 prospective teachers selected from the pool of population to run the CFA on the adapter version of the inventory. For the confirmation of the structure of the SII in the Pakistani scenario, Confirmatory Factor Analysis (CFA) was run. In the light of the results of factor loading against each item twelve items SS1, SS2, SS8, SC2, SC9, SI4, SI5, SI6, SE7, SE8, SE9, and SE10 were excluded as their loading value < .05. After deleting items with poor loading, 43 items were remained in the overall inventory. All items are uni-dimensional and have no negative items. CV of SII was assured by calculating AVE and CR after factor loading estimate. Both AVE and CR values of each factor lie in the accepted range. The internal consistency of SII was calculated with the help of Cronbach Alpha. Its value against each factor of SII as well as its overall value are in the range of accepted value (0.70 to 0.95).

**Keywords:** Social intelligence, Social Sensitivity, Social Communication, Social Influence, Social Efficacy.

### Introduction

A research instrument encompasses the various tools employed by researchers to gather data for a research investigation such as surveys, questionnaires, interviews, observations, and other similar methods (Wilkinson & Dokter, 2023). The collection of data is a crucial aspect of research, requiring the use of research instruments to ensure a systematic and structured approach. Researchers can get pertinent data from participants or sources, a critical component in addressing research inquiries or hypotheses (Pandey & Pandey, 2021). Research instruments offer a consistent and uniform platform for gathering data. This implies that they contribute to maintaining consistency and regularity in the data-gathering process, hence mitigating the likelihood of bias and inaccuracies (Efstathiou, 2019). The validity and reliability of collected data can be enhanced by utilizing a meticulously developed research instrument (Surucu & Maslakci, 2020). The utilization of research instruments has the potential to optimize the data

<sup>1</sup> Creative Writer and Data Analyst, Creative Business & Social Research (CBSR), Pakistan, Email: sabafarooq9999@gmail.com

<sup>2</sup> Assistant Professor, Department of Management Sciences, National University of Modern Languages, Islamabad, Pakistan  
Email: mharoon@numl.edu.pk

<sup>3</sup> Lecturer, National University of Modern Languages, Islamabad, Pakistan, Email: saeedkhan@numl.edu.pk

<sup>4</sup> Assistant Professor, Department of Management Sciences, Shifa Tameer e Milat University Islamabad, Pakistan, Email: sahrish.dms@stmu.edu.pk

<sup>5</sup> Managing Director, Creative Business & Social Research (CBSR), Pakistan, Email: blue.cyprus@yahoo.com

collection process, resulting in enhanced efficiency and cost-effectiveness. Researchers are allowed to efficiently gather data from a substantial number of individuals within a very little period (GHR & Aithal, 2022; Birmingham & Wilkinson, 2016). Several factors warrant consideration before the adoption of a standardized research instrument.



**Figure 1:** Factors that Affect the Adaptation of the Research Instrument.

In the contemporary context, the dynamic nature of our world necessitates the reliance on research as a fundamental pillar for advancement and growth in diverse domains. Research serves as the fundamental basis for making well-informed decisions, including scientific advances, technological advancements, and enhancements in public proactivity. Nevertheless, to guarantee the precision and pertinence of research, it is important to modify research instruments to align with the specific context (Lew & Combrink, 2023). The current paper was carried out to reduce the length of the social intelligence inventory developed by Lacanlale (2013). The first inventory consisted of six subscales, each of which included 15 entries. This made the list excessively large. As a direct consequence of this, the responder spent a significant amount of time responding to each of the 90 items.

The concept of social intelligence is a complex and varied construct that holds significant importance in our everyday interactions and interpersonal connections. It covers a diverse array of aptitudes and competencies that empower individuals to adeptly navigate the intricate and ever-changing social world. It can be defined as the ability to understand, adjust to, and excel in diverse social contexts. This characteristic not only enhances our individual lives but also carries substantial ramifications for our professional achievements (Ling, Singh, & Arumugam, 2020; Mohadesi, 2021; Orosova & Gajdosova, 2009; Rezaei & Jeddi, 2020).

Zulmi and Tentama (2024), refers it as an individual's capacity to effectively engage in communication, encompassing a range of learned skills such as situational awareness, comprehension of societal dynamics, and self-awareness. According to Atre (2016), this suggests that individuals possess the capacity to exhibit prudent behavior in interpersonal interactions and effectively accomplish tasks within a collective setting. One can acquire knowledge regarding the emotions, cognition, and conduct of individuals, afterwards adapting one's own behavior accordingly.

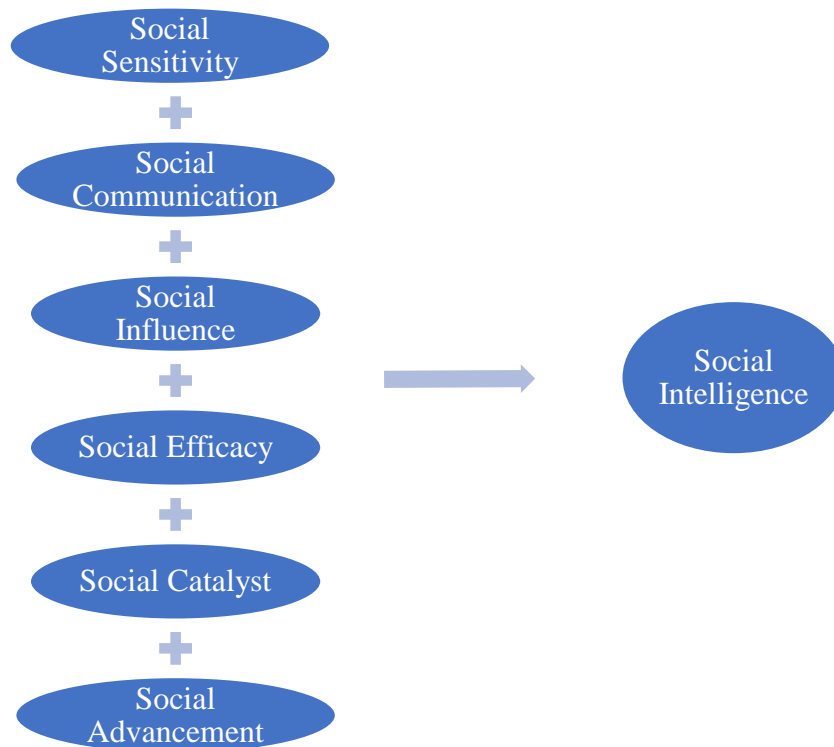
Social intelligence is a multifaceted construct that covers various cognitive and behavioral talents. These abilities include but are not limited to empathy, effective communication, self-knowledge, and social awareness (Muniyappa, 2022). The process entails the identification of emotions in individuals, comprehension of their viewpoints, and the subsequent implementation of suitable reactions (Garg & Gera, 2020). Effective communication plays a pivotal role in the establishment of meaningful interpersonal connections, the resolution of conflicts, and the attainment of success within the realm of professional endeavors (Yalcinyigit & Aktas, 2023). Individuals that possess a high level of social intelligence demonstrate enhanced abilities in areas such as collaboration, leadership, and adaptability to various circumstances. The acquisition of this skill is attainable. While many individuals may possess an inherent predisposition towards acquiring such abilities, others have the potential to cultivate these skills through formal instruction and deliberate application.

Educators assume a crucial function in fostering the development of pupils' social intelligence. Educators have the ability to cultivate social intelligence through the establishment of an atmosphere that is conducive to learning and the implementation of targeted tactics. Educators have the ability to integrate instructional strategies that foster students' comprehension and facilitation of empathy towards their peers (Farooq, Khalil, & Gul, 2022). Discourses pertaining to emotions, exercises aimed at fostering empathy, and literary works that delve into a range of perspectives can prove to be crucial. The promotion of efficient communication is of utmost importance. Educators ought to foster an environment that promotes the exchange of ideas, attentive listening, and the provision of constructive criticism. This educational tool facilitates the development of effective communication skills among students, enabling them to articulate their thoughts and comprehend the perspectives of their classmates.

By engaging in self-reflection exercises, students have the opportunity to enhance their emotional intelligence and gain a deeper understanding of their own attributes, including their emotional states, areas of proficiency, and areas for improvement. Self-awareness serves as the fundamental basis for the development of social intelligence. It is recommended that educators incorporate subject matter pertaining to social issues and diversity into their curriculum. This educational approach enhances pupils' social consciousness, fostering a heightened sensitivity to their surrounding global context.

Group activities and projects provide students the chance to engage in collaboration, negotiation, and relationship-building. These experiences contribute to the development and

improvement of individuals' interpersonal abilities. Establishing a secure and all-encompassing educational setting is of utmost importance. The development of social intelligence is more likely to occur when kids have a sense of comfort and respect. Practical, real-world situations give pupils with the opportunity to employ their social intelligence abilities. Role-playing, dialogues, and case studies are considered to be highly beneficial instructional techniques. Educators possess the ability to stimulate students' critical thinking skills by prompting them to analyze social interactions, ethical considerations, and the subsequent outcomes. This enhances their capacity to make well-informed decisions in diverse circumstances. Inclusive pedagogical approaches aim to foster an environment in which all students experience a sense of worth and belonging. Teachers can foster an environment conducive to the cultivation of social intelligence by demonstrating tolerance for diversity and actively appreciating differences.



**Figure 2** Components of Social Intelligence Inventory.

The adaptation of the Social Intelligence Inventory (SII) in the context of prospective teachers enrolled in the universities of major cities from Pakistan, is a significant endeavor. While the original research was conducted by university students in the Philippines, it is imperative to understand that social intelligence is not a static trait that remains consistent across diverse cultural, social, and demographic backgrounds. Hence, the justification for adapting this inventory in the local context is multifaceted. First and foremost, cultural and social norms in Pakistan, particularly in major cities, may differ significantly from those in the Philippines. The expectations, values, and social dynamics within the two countries can be distinct. Therefore, it is essential to ensure that the Social Intelligence Inventory accurately captures the nuances of social intelligence as it manifests in the Pakistani context. Moreover, prospective teachers have a unique role in society. Their interactions and influence extend not only to their peers

but also to the next generation of students. Adapting the inventory for this specific demographic is vital because the demands and expectations placed on teachers in Pakistan may differ from those in other professions. Their social intelligence needs could be distinct. Therefore the rationale to adapt the SII for prospective teachers of major cities from Pakistan.

## **Research Objectives**

The following objectives were formulated keeping in mind the aforementioned literature gap:

1. To measure the association among the factors of SII in a local scenario.
2. To validate the SII in the Pakistani educational context scale through statistical methods.

## **Research Design**

The research paradigm encompasses a meticulously designed framework for the execution of the research methodology (Fraenkel & Wallen, 2009). The present investigation employed a quantitative approach and was carried out within the framework of the positivist paradigm. The data gathering process utilized a cross-sectional survey design in a non-contrived context.

## **Sample**

A sample consisting of 450 students enrolled in Education programs at public and private universities located in major cities was selected to validate the structure of the SII within the local educational context. The sample was chosen using a two-stage sampling process. In the initial phase, a purposive sampling technique was employed to pick institutions that have an education department. During the second stage, students pursuing B.Ed., B.Ed. Hons. and M.A. Education were also chosen using purposive sampling. The details of these participants is given below:

## **Instrument and Procedure of the Study**

In order to assess alterations in social intelligence, researcher utilized the Social Intelligence Inventory (SII) developed by Lacanlale in 2013. The researcher obtained authorization from the author before making modifications to the SII. Initially, the Social Intelligence Inventory (SII) consisted of six subscales, namely Social Sensitivity, Social Communication, Social Influence, Social Efficacy, Social Catalyst, and Social Advancement. Each subscale contained 15 items, resulting in a total of 90 items. The response format for the SII was a three-point Likert scale. The numerical values assigned to "always," "sometimes," and "never" are as follows: "always" is represented by the number 3, "sometimes" is represented by the number 2, and "never" is represented by the number 1. Following consultation with specialists, the Likert scale was transformed into a 5-point scale, with values ranging from 1 (representing "never") to 5 (representing "always"). The quantity of items was also decreased and modified in accordance with the study's objectives. The constructs examined in this study include Social Sensitivity, Social Communication, Social Influence, Social Efficacy, Social Catalyst, and Social Advancement. These constructs are measured using a total of 55 items, with 10 items for Social Sensitivity, 9 items for Social Communication, 11 items for Social Influence, 11 things for Social Efficacy, 8 pieces for Social Catalyst, and 6 items for Social Advancement.

### Confirmatory Factor Analysis

A Confirmatory Factor Analysis (CFA) was conducted to examine the factor loadings of each item in the adapted Inventory of Social Intelligence (SII). In order to perform the CFA on the adapted version of the inventory, the revised SII was sent to 450 participants drawn from the population. Pallant's (2016) recommendation of five responders against each statement indicated that the quantity of respondents was sufficient.

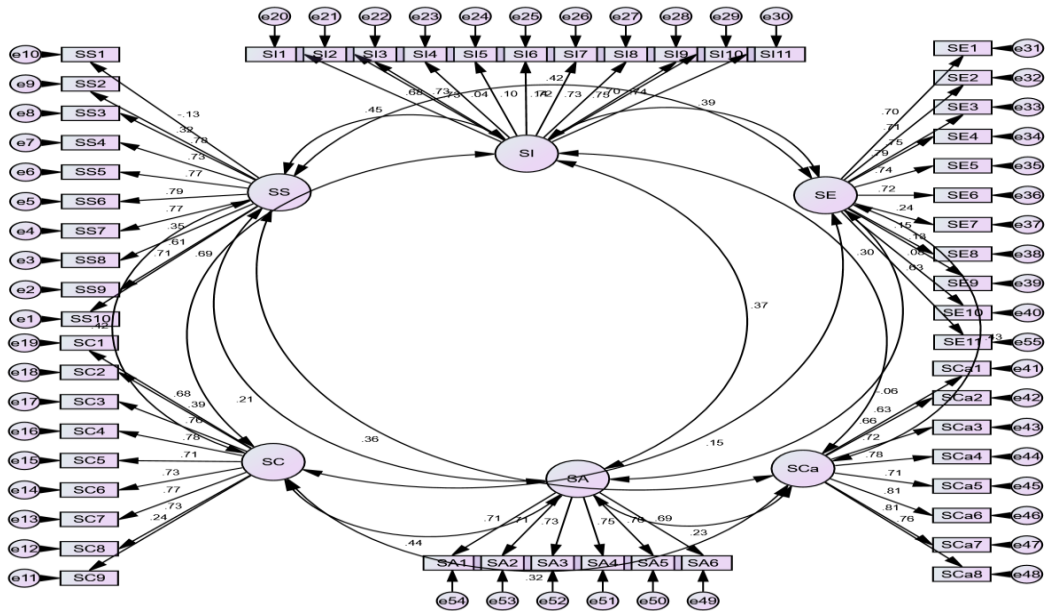


Figure 3 Psychometric Properties of SII.

Table 1: Factor Loading, AVE and CR of SII.

Factor	Item Coding	Factor Loading	Decision	AVE	CR
Social Sensitivity	SS1	-.13	Deleted	0.54	0.89
	SS2	.31	Deleted		
	SS3	.78	Included		
	SS4	.72	Included		
	SS5	.77	Included		
	SS6	.79	Included		
	SS7	.76	Included		
	SS8	.34	Deleted		
	SS9	.61	Included		
	SS10	.71	Included		
Social Communication	SC1	.68	Included	0.54	0.89
	SC2	.39	Deleted		
	SC3	.76	Included		
	SC4	.78	Included		
	SC5	.71	Included		
	SC6	.73	Included		
	SC7	.77	Included		
	SC8	.73	Included		
	SC9	.23	Deleted		
Social Influence	SI1	.67	Included	0.52	0.89
	SI2	.72	Included		

Factor	Item Coding	Factor Loading	Decision	AVE	CR	
	SI3	.72	Included	0.51	0.88	
	SI4	.04	Deleted			
	SI5	.09	Deleted			
	SI6	.13	Deleted			
	SI7	.71	Included			
	SI8	.73	Included			
	SI9	.75	Included			
	SI10	.70	Included			
	SI11	.73	Included			
	Social Efficacy	SE1	.69			Included
		SE2	.70			Included
SE3		.75	Included			
SE4		.78	Included			
SE5		.74	Included			
SE6		.71	Included			
SE7		.24	Deleted			
SE8		.15	Deleted			
SE9		.13	Deleted			
SE10		.07	Deleted			
SE11		.63	Included			
Social Catalyst	SCa1	.62	Included	0.54	0.90	
	SCa2	.66	Included			
	SCa3	.71	Included			
	SCa4	.77	Included			
	SCa5	.70	Included			
	SCa6	.81	Included			
	SCa7	.81	Included			
	SCa8	.76	Included			
Social Advancement	SA1	.71	Included	0.52	0.83	
	SA2	.71	Included			
	SA3	.72	Included			
	SA4	.75	Included			
	SA5	.76	Included			
	SA6	.68	Included			

Table 1 show the results of factor loading against each items of SII. Twelve items SS1, SS2, SS8, SC2, SC9, SI4, SI5, SI6, SE7, SE8, SE9 and SE10 were excluded as their loading value < .05. Hair et al. (2013) recommended that factor loading estimate should be higher than 0.50. After deleting items with poor loading, 43 items were remained in the overall inventory. All items are uni-dimensional and having no negative item. CV of SII was assured by calculating *AVE* and *CR* after factor loading estimate. Cut-off value for *AVE* suggested by (Hair et al., 2013) is 0.50 and for *CR* is 0.70 (Brunner & Heinz-Martin, 2005; Peterson & Kim, 2013). Both *AVE* and *CR* values of each factor are laying in the accepted range.

**Table 2:** Reliability of Each Factor of SII.

Factor	Items	Cronbach Alpha Value
Social Sensitivity	07	0.89
Social Communication	07	0.89
Social Influence	08	0.90
Social Efficacy	07	0.88
Social Catalyst	08	0.91
Social Advancement	06	0.87
Total	43	0.93

The number of items in SII (after deleting items having lower loading value) are 43, there were seven items in first factor (social sensitivity), seven items in second factor (social communication), eight items in third factor (social influence), seven items in fourth factor (social efficacy), eight items in (social catalyst) and six items in last factor (social advancement). Internal consistency of SII was calculated with the help of Cronbach alpha (Bonett & Wright, 2015). Its values against each factor of SII as well as its overall value is presented in above mentioned table, all these are in the range of accepted value (0.70 to 0.95) (Taber, 2018).

## **Discussion**

The Social Intelligence Inventory (SII) was transformed with the intention not only to enhance instrument effectiveness but also its relevance to the objectives of the current paper. Initial revisions were incorporated as per suggestions of experts to convert the inventory from three-point Likert scale to five-point Likert scale, which was comprising of six subscales with 15 items each. That shift in scale and reduction in number of items were made by keeping in mind the needs of participants that allow them to give their responses by having deeper understanding of SI constructs, which might be neglected in restricted response options. Simultaneously, the constructs retained in this study include a total of 55 items as social sensitivity (10), Social Communication (9), Social Influence (11), Social Efficacy (11), Social Catalyst (8), and Social Advancement (6). The inventory was shortened with the aim to make it comprehensive and in order to enable more precise responses from participants by reducing their burden. This refinement process played an important role to customize the SII to the unique sociocultural context of our study with Pakistani participants. Both changes, transformation of scale and items reduction were made instrument psychometrically sound and culturally relevant, which guarantee the SII's usability and usefulness in varied cultural and demographic situations, which is consistent with the changing environment of social intelligence research.

Considering the paper's objective and parameters of SII concerning to the research with Pakistani context the construct and items of current instrument were selected. All six constructs were included in the final inventory, just the number of items were reduced because these were relevant to the sociocultural dynamics of studies population. Similarly, these were essential to capture the different aspects of social intelligence. Social sensitivity helps to understand the interpersonal dynamics within the culture as it highlights an individual's awareness and responsiveness towards his own society (Fitria & Suminah, 2020; Tola & Akbar, 2020; Sanwal & Sareen, 2023), social communication helps to have effective interaction (Yalcinyigit & Aktas, 2023). Likewise, social influence associated with the ability that give shape to the individual personality in a positive way along with guiding the thoughts, behavior and decisions within the social contexts (Farooq, Khalil, & Gul, 2022) .

An individual can effectively navigate the social situation by having confidence is the beauty of social efficacy (Wang, Teng, & Liu, 2023). Whereas, a socially catalyst individual have the capability to not only instigate change but also provoke constructive interaction within social groups. However, leveraging of social skills to progress in personal and professional context facilitated due to social advancement. Therefore, all six constructs were retained due to their relevance, as they considered necessary for capturing specific aspects of social intelligence that were in line with our study inquiries and goals. But, twelve items SS1, SS2, SS8, SC2, SC9, SI4, SI5, SI6, SE7, SE8, SE9 and SE10 were excluded as their loading value < .05.



Final inventory contained 43 items, all were uni-dimensional. Moreover, these final items were retained because of their comprehensiveness and manageable length for the participants. There can be multiple reasons behind the poor loading of values. As, the life of contemporary era become so busy and everybody is spending a mechanical life. Resultantly they have no leisure time to spend on extra things. Similarly, there can be contextual difference behind this poor loading. Because the inventory was developed for the Philippines university students and the current paper was carried out with Pakistani participants. As far as the concern of validity and reliability of final SII reflected in above table showed the acceptable range. Considering all these facts it is recommended for the future researcher to carried out the psychometric analysis of SII in other context and with other students of different discipline.

## Conclusion

Keeping in mind the objectives and aforementioned findings of the paper it was concluded that there was an association among all six factors of SII and it was validated in the Pakistani educational context. The final inventory comprised of 43 item and six constructs, reflected significant psychometric properties. The structural validity of SII was asserted through CFA, where 12 items were excluded due to the poor loading values. Similarly, construct validity for each factor was confirmed with the help of AVE and CR. While, Cronbach Alpha highlighted the internal consistency of the all factors and also overall inventory. On the bases of these findings it was recommended to utilize the adapted SII to measure social intelligence of prospective teachers across Pakistan as valid and reliable instrument.

The implications of this paper are concerning to research and practical domains. The adapted and validated SII provide culturally relevant instrument which is also psychometrically significant. Which gives the opportunity for the researchers to use a reliable instrument in their studies that can measure social intelligence of participants. Similarly, educators can utilize it to improve the social intelligence of prospective teachers after assessing it that may improve interpersonal skills and teaching effectiveness. Additionally, the current paper adds to the existing literature related to the social intelligence, which may facilitate policy makers to consider the addition of social intelligence tests into the curriculum that may have practical benefits in the field of education.

For further research, longitudinal effects of SI can be measured to notice the improvement in students' performance. Moreover, interventions with the intention of improvement in SI in different educational institutes may offer insight into customized teacher training programs. Lastly, the adaptation of SII in more cultures enhances its suitability and broadens its usefulness by allowing a comprehensive understanding of SI in various educational settings.

## References

- Atre, S. (2016). *Observing nonverbal behavior: An exhaustive guide to the essential skill of social intelligence*. Education Publishing.
- Birmingham, P., & Wilkinson, D. (2023). *Using research instruments: A guide for researchers*. Routledge.
- Efstathiou, G. (2019). Translation, adaptation and validation process of research instruments. *Individualized Care: Theory, Measurement, Research and Practice*, 65-78.
- Farooq, S., Khalil, S., & Gul, M. (2022). Peer tutoring and social intelligence: An experimental investigation. *Annals of Human and Social Sciences*, 3(2), 841-848.

- Fitria, H., & Suminah, S. (2020). Role of teachers in digital instructional era. *Journal of Social Work and Science Education*, 1(1), 70-77.
- Garg, N., & Gera, S. (2020). Gratitude and leadership in higher education institutions: Exploring the mediating role of social intelligence among teachers. *Journal of Applied Research in Higher Education*, 12(5), 915-926.
- GHR, G., & Aithal, P. S. (2022). Choosing an appropriate data collection instrument and checking for the calibration, validity, and reliability of data collection instrument before collecting the data during Ph. D. program in India. *International Journal of Management, Technology, and Social Sciences (IJMTS)*, 7(2), 497-513.
- Lacanalale, E. P. (2013). Development and validation of a social intelligence inventory. *International Journal of Information and Education Technology*, 3(2), 263-267.
- Lew, C., & Combrink, S. (2023). *How to Select and Adapt Research Instruments: A Risk Propensity and Decision Bias Example*. SAGE Publications Ltd.
- Ling, F. C., Singh, J. S., & Arumugam, T. (2020). Employee contextual performance, social intelligence, spiritual intelligence: A quantitative study in Malaysia. *International Journal of Psychosocial Rehabilitation*, 24(2), 968-981.
- Liu, B., Zhai, Y., Li, Y., Li, L., Wu, G., & Chen, S. (2023). Effects of social influence on relationships among citizens' expectation confirmation, satisfaction and acceptance under different urban renewal compensation modes. *Public Performance & Management Review*, 46(6), 1413-1441. doi:10.1080/15309576.2023.2209851
- Mohadesi, E. (2021). An examination of the relationship between social intelligence and organisational commitment among the school managers of Kashmar and Khalilabad. *Global Journal of Guidance and Counseling in Schools: Current Perspectives*, 11(2), 98-109.
- Muniyappa, B. (2022). Job satisfaction, emotional intelligence and social intelligence on working professionals. *International Research Journal of Commerce Arts and Science*, 13(6), 209-2016.
- Orosova, O., & Gajdosova, B. (2009). The association of social intelligence factors, normative expectations, and perceived accessibility with legal drug. *Adiktologie*, 4, 204-211.
- Pandey, P., & Pandey, M. M. (2021). *Research methodology tools and techniques*. Bridge Center.
- Rezaei, A., & Jeddi, E. M. (2020). Relationship between wisdom, perceived control of internal states, perceived stress, social intelligence, information processing styles and life satisfaction among college students. *Current Psychology*, 3, 927-933.
- Sanwal, T., & Sareen, P. (2023). Higher employee engagement through social intelligence: a perspective of Indian scenario. *Employee Responsibilities and Rights Journal*, 35(1), 111-126.
- Sharma, N. K. (2022). Instruments used in the collection of data in research. *Poonam Shodh Rachna*, 1(1), 1-8.
- Surucu, L., & Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, 8(3), 2694-2726.
- Tola, B., & Akbar, M. (2020). A effect of the students' learning independence, social intelligence, and english reading skills on their writing skills of english recount texts. *IJER- Indonesian Journal Of Educational Review*, 7(1), 39-49.
- Wang, C., Teng, M. F., & Liu, S. (2023). Psychosocial profiles of university students' emotional adjustment, perceived social support, self-efficacy belief, and foreign language anxiety during COVID-19. *Educational and Developmental Psychologist*, 40(1), 51-62.
- Wilkinson, D., & Dokter, D. (2023). *The researcher's toolkit: the complete guide to practitioner research* (2nd ed.). Taylor & Francis.
- Yalcinyigit, S., & Aktas, H. (2023). A research on the relationship of social intelligence and cultural intelligence with leadership styles. *Istanbul Business Research*, 52(1), 107-132.

Zulmi, N., & Tentama, F. (2024). The effect of entrepreneurial readiness, adversity quotient, and social intelligence on employability students. *Journal of Education and Learning (EduLearn)*, 18(1), 26-36.