Vol. 01, No. 01: 2023

Impact of Multiple Intelligences on Architectural Ability and Success: A Case Study of Pritzker Price Laureates (1979-2022)

D. W. K. Gayantha

Department of Architecture,
Faculty of Built Environment and Spatial Sciences,
General Sir John Kotelawala Defence University, Sri Lanka.

<gayanthak@kdu.ac.lk>

Abstract

The concept of Multiple Intelligences (MI) has been a popular area within the field of psychology and education since its introduction in 1983. MI is comprised of 09 autonomous intelligence types. As suggested by MI concepts, the making of an Architect involves a great deal of Visual-spatial Intelligence (VSI) out of the aforesaid ensemble.

This research seeks to identify the impact of other intelligences types apart from VSI – also referred to as Non Visual-spatial Intelligence (NVSI) – associated with the aforesaid phenomenon. The study adopts a qualitative research method and relies on multiple case studies as the strategy, using compiled data extant in literature. The biographies of the entire population of prestigious Pritzker Prize Laureate Architects (PPLAs) up to year 2022 is considered from the award's inception in 1979, to study their subject abilities other than Architectural; marked by Extra Architectural Abilities (EAA). Further, an additional literature survey facilitates the mapping of EAA data, in order to assess NVSI traits possessed by each of the architects under review. The compiled data is analyzed (using tables initially, and subsequently MS Excel after being turned into numerical values) to test the hypothesis that a significant level of EAA backed by NVSI is possessed by high standard architectural practitioners. Therefore, this research opens up new trails for further studies to seek the relationship between MI and architectural abilities/success, which could be beneficial to the sphere of architectural education as well as the profession as a whole.

Keywords: *Multiple Intelligences, Architects, Pritzker Prize, Extra Architectural Abilities, Visual-Special Intelligence*

Introduction

The Harvard psychologist Howard Gardner (2011) is commonly credited for proposing the concept of MI. This theory since its inception has drawn considerable attention, primarily from psychologists and educators (Davis et al in Sternberg and Kaufman, 2011). On the other hand, it is one of the four main theories pertaining to intelligence commonly considered in the

sphere of psychology (Cherry, 2022).[1] As explained in Gardner's (2011) polemic book entitled *Frames of Mind: the Theory of Multiple Intelligences*, he suggested nine types of intelligences. Namely they are Visual-Spatial intelligence (VSI), Linguistic-Verbal intelligence (LVI), Logical-Mathematical intelligence (LMI), Bodily-Kinetic Intelligence (BKI), Musical Intelligence (MuI), Interpersonal Intelligence (IPI1), Intra Personal Intelligence (IPI2), Naturalistic Intelligence (NI) and Existential Intelligence (EI). As Davis et al (2011) explains, each of the aforesaid Multiple Inelegances are autonomous in their own right.

Over the years, certain studies have highlighted the significance of EAA and NVSI in terms of architectural practice and education. According to Maina and Daful (in Spiridonidis, 2007: 10), in the contemporary times, "*[the] generic competencies of graduate architects in principle, concern the broader academic and higher education profile, and are to a great extent subject independent"*. Furthermore, they reiterate that *"[the aforementioned] most significant competencies are not considered as very well covered by the educational system, creating this way a gap between profession and education"*.

Intelligence	Ability
Visual-Spatial Intelligence (VSI)	Ability to recognize and manipulate large-scale and fine-grained spatial images
Linguistic-Verbal Intelligence(LVI)	Ability to analyze information as well as to create products involving oral/written language such as speeches, books and memos
Logical-Mathematical Intelligence(LMI)	Ability to develop equations and proofs, make calculations, and solve abstract problems
Bodily-Kinetic Intelligence(BKI)	Ability to use one's own body to create products or solve problems
Musical Intelligence(MuI)	Ability to produce, remember, and make meaning of different patterns of sound
Interpersonal Intelligence(IPI)	Ability to recognize and understand other people's moods, desires, motivations and intentions
Intrapersonal Intelligence(ITPI)	Ability to recognize and understand one's own moods, desires, motivations and intentions
Naturalistic Intelligence(NI)	Ability to identify and distinguish among different types of plants, animals, and weather formations that are found in the natural world
Existential Intelligence(EI)	Ability to consider big questions about existence

Table. 01: Gardner's Multiple Intelligences.
Source: Davis et al in Sternberg and Kaufman (2011).

Moreover, the renowned 30-20 B.C. book *De architectura* – published in English as *Ten Books on Architecture* – by Vitruvius (in D'souza, 2009: 55-65) illustrates that *"[an] architect should be a good writer, a skillful draftsman, versed in geometry and optics, expert at figures, acquainted with history, informed on the principles of natural and moral philosophy, somewhat of a musician, not ignorant of the law and of physics, nor of the motions, laws, and relations to each other, of the heavenly bodies […]".* This declaration emphasizes on the great value of possessing a multiple skill-set for architectural education, for making of a good professional architect. The statement also refers to Gardner's framework of MI indeed, as well as the interwoven notions of EAA and NVSI.

In this backdrop, it is fair to claim that the impact of other intelligences on architectural abilities has not yet been properly explored, and constitutes a gap in literature. Hence, the first objective here is to ascertain EAA of PPLAs pertaining to the duration of the award scheme. The

[1] General intelligence, Primary mental abilities and the Diarchic approach to intelligence are the other theories of intelligence that will not be considered for this study.

second is to assess the MI traits – the NVSI outside of VSI – underpinning each EAA of PPLAs. The final objective is to evaluate the most common NVSI trait/s amongst PPLAs. In this context, the paper aims to establish the most prolific EAA backed by NVSI for making of a successful professional architectural practitioner.

Methodology

The study begins by narrating theory pertaining to MI, and then ventures into in-depth exploration of the relationship between MI and professional occupations. Then, the relationship between VSI and Architecture is established, before assessing implications of possessing EAA by architects. This research employs a qualitative method, and relies on multiple case studies as the strategy. It delves on the hypothesis that Architects with EAA prompted by MI traits in addition to VSI (which are in fact NVSI) has a greater potential of becoming outstanding practitioners, which is to be tested here. The biographical information pertaining to EAA, MI, VSI and NVSI of the 51 cases of individual PPLA considered were obtained from the only form it is plausible – the extant literature. Two very reliable web sources in the form of pritzkerprize.com (2023) – the official database of Pritzker prize laureates – and britannica.com (2023) – the web version of Britannica encyclopedia – are instrumental for this exercise. By resorting to the biographic data of PPLAs, their EAA is to be identified first. Then, EAA of each PPLA is to be placed against the associated NVSI by analyzing accumulated data presented in *Tables 01* and *02* to map the results in *Table 03*. Finally, the matrix in *Table 03* is converted into numerical figures to be analyzed using MS Excel to derive conclusions.

Multiple Intelligences And Potential Occupations			
	According to: (Bajoulvand, 2015)	According to: (Marenus, 2020)	According to: (Gouws, 2011)
VSI	*The people who benefit from this type of intelligence are busy in **design works**, **architecture**, photography, painting, interior decoration and other affairs that largely deal with decoration works*	*Pilot, Surgeon, **architect**, Graphic artist, Interior decorator*	*Engineer ,Surveyor, **Architect**, Photographer, Tracer, Joiner, Pilot, Painter, Brick Layer, Plumber, Hunter, Carpenter, Decorator, Dentist, Furniture Restorer, Hairstylist, Surgeon, Technicians*
LVI	*Poet, reporter, writer, teacher, lawyer, politician, interpreter, religious propagandist and any other occupation that requires convincing*	*Lawyer, Speaker, Host, Author, Journalist, Curator*	*Lawyer, Librarian, Writer, Radio/TV Announcer, Journalist, Foreman, Detective, Secretary, Supervisor, Teacher, Call Center Operator, Librarian, Tour Guide, Politician, Translator*
LMI	*Computer Programmer, Engineer, Lawyer, Researcher, Science And The Job holders With Mathematical Potentials*	*Mathematician, Accountant Statistician, Scientist, Computer Analyst*	*Auditor , Accountant, Mathematician, Scientist, Technician, Teller, Accounts Clerk, Economist, Travel Agent, Statistician, Astronomer, Mathematics And Science Teacher, Computer Programmer, Engineer, Tax Accountant*
BKI	*Athlete, firefighter, handcrafter and industry worker*	*Dancer, Athlete, Surgeon, Mechanic, Carpenter, Physical*	*Dancer, Actor, Mechanic, Carpenter, Surgeon, Sculptor, Plumber, Fire-Fighter, Artisan,*

		Therapist	*Manual Laborer, Welder, Construction Worker*
MuI	*Singing, Whistling, Identifying Musical Models, Composing, Remembering Melodies, Understanding Rhythmic Structures.*	*Singer, Composer, DJ, Musician*	*Musician, Piano Tuner, Conductor, Disc Jockey, Sound Engineer, Music teacher, Composer*
ITPI	*Occupational trends include research, being a theorist, philosophy*	*Therapist, Psychologist, Counselor, Entrepreneur Clergy*	*Psychologist, Therapist, Counsellor, Entrepreneur, Day Care Worker, Nurse, Researcher, Writer*
IPI	*The jobs in this regard are consultation, selling, politics and business*	*Teacher, Psychologist, Manager, Salespeople, Public Relations*	*Administrator, Manager, Personnel Worker, Social Worker, Policeman, Teacher, Foreman, Waiter, Nurse, Salesperson*
NI	*The appropriate occupations for these individuals are agriculture, gardening, plant physiology, biology and zoology.*	*Therapist, Psychologist Counsellor, Entrepreneur Clergy*	*Botanist, Astronomer, Landscape Architect, Gardener, Chef, Veterinarian, Biologist*
EI	*Appropriate jobs for them include astronomy and philosophy*	*Botanist, Biologist, Astronomer, Meteorologist Geologist*	*Artist, Pastor, Rabbi, Sangoma, Scientist, Traditional healer*

Table. 02: MI related to potential occupations.
Source: Author (2023).

Discussion

MI & Occupations

As Gardner (2011) elaborates, every Single intelligence type is defined by a set of specific abilities as illustrated by *Table 01*. In addition to the 08 Intelligence types originally proposed by Gardner, several other intelligences types have been derived by researchers ever since – especially during the last 25 years. Some of them are humor intelligence, cooking intelligence and existential intelligence etc. While illustrating the aforesaid, Davis et al (in Sternberg and Kaufman, 2011) further posited that the notion of existential intelligence was proposed by Gardner himself originally. It reflects an individual's capacity for considering 'big questions' about life, death, love and being. Hence, for the purpose of this study, EI is considered as the 9th item of MI.

On the other hand, although the assessment and defining boundaries of personal MI is a complex task, the MI associated with certain occupations are generally established. For instance, one could infer that an individual who demonstrates an excellent level of performance in the domains of architecture, sculpture or geometry possesses a high degree of VSI. Likewise, excellence in the domains of ballet or orthopedic surgery suggests of one's possession of high BKI (Davis et al in Sternberg and Kaufman, 2011). In this light, a number of recent studies have established the relationship between certain occupations and possession of abilities pertaining to the 09 types of MI. This correlation that is ascertained by Gouws (2011), Bajoulvand (2015) and Marenus (2020) – as individual exercises – is illustrated in *Table 02* as a comparison.

VSI and Architecture

Architecture is one of the significant branches in the field of design, and is signified by the process of designing spaces. The Master architect Louis I. Kahn (in Berkowitx et al., 2021) once famously stated that *"[architecture] is the thoughtful making of space"*. According to the concept of MI, it could be argued that VSI is the most impactful among other intelligence types that pertain to spatial design. Although designing in architecture requires a multitude of skills, mentally visualizing spatial transformations is considered as integral to it (Berkowitz et al., 2021). Architects design as well as organize spaces, and without space, there is no architecture. Consequently, it is generally considered that VSI is of high importance to architects (Zilliacus, 2017). Other than design production, the reading of technical drawings is an essential ability that architects need to possess. A research conducted by Rochmadi (in Yani et al., 2018) showed that there was a positive and significant correlation between VSI, and the ability to read technical drawings – with a coefficient of 0.371 (Yani et al., 2018). Further, Schaik (2008) also highlighted the significance of VSI, not only for architecture, but also for architectural education as well.

Implications of EAA on Architects

Although it is evident that VSI is a must for spatial design, the possession of other types of intelligences too is vital for architects. This statement gains currency since successful architectural solutions are not merely delimited to spatial design. They require talents which go beyond the abilities of architecture; manifesting other Intelligence traits outside of/in addition to VSI. For the purpose of this study, the aforesaid talents will be termed 'Extra Architectural Abilities' (EAA), and intelligence traits outside of Visual and Spatial Intelligence as 'Non Visual and Spatial Multiple Intelligence' (NVSI) traits respectively. Historically,[2] there exist examples of architects who had exhibited EAA associated with NVSI. For instance, some examples for politician/politically-charged architects are namely, Thomas Jefferson (1743-1826), James Goold Cutler (1848-1927), Margarete Schütte-Lihotzky (1897-2000), Albert Speer (1905-1981), Harvey Gantt (1943-present), Hisila Yami (1959-present) and Fleur Agema (1976 -present) etc. They are arguably the most well-known architect-politicians to date (Brady, 2023). Similarly, Claude Perrault (1613-1688) was a French physician turned architect who had a formative training in mathematics. Subsequently, he learned medicine and started working as a physician. Years later, he shifted his profession to become an architect, and collaborated to execute a number of landmark projects in Paris (britannica.com, 2023a). So many such examples could be adduced from around the world to support this point.

Considering Pritzker Price Laureate Architects (PPLAs)

All architects who are Pritzker Architecture Price laureates between years 1979 to 2022 were selected for this study. The 'Pritzker' is a highly acclaimed annual prize offered to outstanding architects from around the world. As britannica.com (2023b) describes, *"[it] has often been called the Nobel Prize of architecture"*. The prize was established in the year 1979, not only to encourage and stimulate a greater public awareness on architecture, but also to acclaim talent, vision, and commitment of outstanding architects from around the world

[2] In modern history of the world and early modern period of architecture

(pritzkerprice.com, 2023). The list of laureates from year 1979 to 2022 contains an assortment of 51 international master architects belonging to various nationalities. The biographies of PPLAs available online have been utilized for this research. Their Biographic data was collected through two authentic data bases aforementioned. Such sources have specifically mentioned reliable and accurate facts about the skills manifested by the PPLAs other than their Architectural accomplishments. For instance, pertaining to the famous Japanese Architect Tadao Ando, the website britannica.com (2023) claims that*, "[he has] had various careers, including [being a] professional boxer, before he became a self-taught architect and opened his own practice in Osaka in 1969"* (Zukowsky, 2022). Accordingly, with reference to these biographic data aforementioned, EAA of PPLA were identified fist. Consequently, EAA of each PPLAs was placed against the associated NVSI by analyzing the data in *Tables 01* and *02, to* map the results in *Table 03*. Finally, the matrix in *Table 03* was converted into numerical figures, and was analyzed using MS Excel.

Name of the Pritzker Price Laureate (PL)	Nationality	Year	Extra Architectural Abilities (EAA)	Non Visual and Spatial Intelligence (NVSI) Traits								No Clear NVSI Traits (NCN)
				Existential Intelligence (EI)	Linguistic-Verbal Intelligence (LVI)	Logical-Math Intelligence (LMI)	Bodily-Kinetic Intelligence (BKI)	Music Intelligence (MuI)	Intra Personal Intelligence (ITPI)	Inter Personal Intelligence (IPI)	Naturalistic Intelligence (NI)	
01. Philip Johnson	American	1979	Critic		●	●						
			Writer		●				●			
			Historian	●					●			
			Director							●		
02. Luis Barragán	Mexican	1980	Engineer			●						
03. James Stirling	British	1981	-									●
04. Kevin Roche	Irish-American	1982	-									●
05. Ieoh Ming Pei (IM Pei)	Chinese-American	1983	Defense Researcher			●			●			
			Teacher		●					●		
06. Richard Meier	American	1984	-									●
07. Hans Hollein	Austrian	1985	Teacher		●					●		
			Writer		●				●			
			Artist	●								
			Furniture Designer			●						
08. Gottfried Böhm	German	1986	Sculpture				●					
09. Kenzō Tange	Japanese	1987	Teacher		●					●		
			Writer		●				●			
10. Gordon Bunshaft	American	1888	-									●
11. Oscar Niemeyer	Brazilian	1988	-									●
12. Frank Gehry	Canadian-American	1989	Musician					●				
			Soldier				●					
13. Aldo Rossi6	Italian	1990	Teacher		●					●		

			Theorist	●		●			●			
14. Robert Venturi	*American*	*1991*	*Writer*		●				●			
			Teacher									
			Artist	●								
			Philosopher	●					●			
15. Álvaro Siza Vieira	*Portuguese*	*1992*	*Teacher*		●					●		
16. Fumihiko Maki	*Japanese*	*1993*	*Teacher*		●					●		
17. Christian de Portzamparc	*French*	*1994*	*Teacher*		●					●		
			Writer		●				●			
			Artist	●								
18. Tadao Ando	*Japanese*	*1995*	*Carpenter*				●					
			professional boxer				●					
19. Rafael Moneo	*Spanish*	*1996*	*Philosopher*	●					●			
			Teacher		●					●		
20. Sverre Fehn	*Norwegian*	*1997*	*Teacher*		●					●		
21. Renzo Piano	*Italian*	*1998*	*-*									●
22. Norman Foster	*British*	*1999*	*Pilot*				●					
			Solider				●					
23. Rem Koolhaas	*Dutch*	*2000*	*Writer*		●				●			
			Journalist		●					●		
24. Jacques Herzog	*Swiss*	*2001*	*-*									●
25. Pierre de Meuron	*Swiss*	*2001*	*-*									●
26. Glenn Murcutt	*Australian*	*2002*	*-*									●
27. Jørn Utzon	*Danish*	*2003*	*Sculpture*				●					
28. Zaha Hadid	*Iraqi-British*	*2004*	*Mathematician*			●						
			Teacher		●					●		
29. Thom Mayne	*American*	*2005*	*Theorist*	●		●			●			
			Writer		●				●			
			Teacher		●					●		
30. Paulo M. da Rocha	*Brazilian*	*2006*	*-*									●
31. Richard Rogers	*British*	*2007*	*Solider*				●					
32. Jean Nouvel	*French*	*2008*	*-*									●
33. Peter Zumthor	*Swiss*	*2009*	*Carpenter*				●					
			Teacher		●					●		
34. Ryue Nishizawa	*Japanese*	*2010*	*Teacher*		●					●		
35. Kazuyo Sejima	*Japanese*	*2010*	*Teacher*		●					●		
36. Eduardo S. de Moura	*Portuguese*	*2012*	*sculpture*				●					
37. Wang Shu	*Chinese*	*2011*	*-*									●
38. Toyo Ito	*Japanese*	*2013*	*-*									●
39. Shigeru Ban	*Japanese*	*2014*	*Artist*	●								
			Craftsman				●					
			Rugger player				●					
			Professor		●					●		
40. Frei Otto	*German*	*2015*	*Stonemasonry craftsman*				●		`			
			Pilot				●					
			Solider				●					
41. Alejandro Aravena	*Chilean*	*2016*	*-*									●
42. Rafael Aranda	*Spanish*	*2017*	*Political perception**							●		
43. Carme Pigem	*Spanish*	*2017*	*Political perception**							●		
44. Ramon Vilalta	*Spanish*	*2017*	*Political perception**							●		
45. B. V. Doshi	*Indian*	*2018*	*-*									●

46. A. Isozaki	*Japanese*	*2019*	*-*									●
47. Yvonne Farrell	*Irish*	*2020*	*Teacher*		●					●		●
48. Shelley McNamara	*Irish*	*2020*	*Teacher*		●					●		
49. Anne Lacaton	*French*	*2021*	*Professor*		●					●		
50. Jean Philippe	*Belgian-British*	*2021*	*Professor*		●					●		
51. Diébédo Francis Kéré	*Burkina Faso*	*2022*	*Carpenter*				●					
			Professor		●					●		

Table. 03: EAA and Associated NVSI Traits of PPLAs.
Source: Author (2023).

Note:
Political perception*: It has been established that Aranda, Pigem and Vilalta had a subtle political perception in addition to architectural skills. The chairman of the Hyatt Foundation – the awarding body of the Pritzker architecture prize – once stated that *"Aranda, Pigem and Vilalta have had an impact on the discipline far beyond their immediate area", w*hich meant the architects' political intensions were rewarded too. In fact, there seems to be a consensus on the jury's decision to venture further into politics and away from their traditional interest in celebrity architects. As clearly stated in the jury's citation that reads, "*In this day and age, there is an important question that people all over the world are asking, and it is not just about architecture; it is about law, politics, and government as well"* (The Pritzker Architecture Price, 2023). This notion corresponds with the idea propagated by Wijetunge (2012, 2018, 2021a, 2021b) that there exists a correlation between elitism and architects' backgrounds, architecture profession and clienteles of architects.

Analysis

A total of fifty one (n=51) International architects received the Pritzker price from year 1979 to 2022 who will be considered as the sample here. Both NVSI and Non Clear NVSI (NCNVSI) are included in the sample *Chart 01*. Some PPLAs possess only 01 type of NVSI, whilst some carry many types of NVSI as per *Chart 02*. The percentages of every NVSI possessed by PPLAs are illustrated in *Chart 03*.

<u>According to chart 01:</u>

- 66 % (n=33) of PL architects show at least 01 type of NVSI. The balance 34% (n=17) have no clear NVSI traits (NCN).

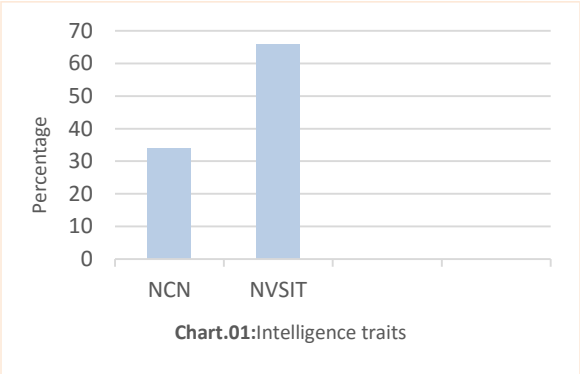


Chart.01: Intelligence traits

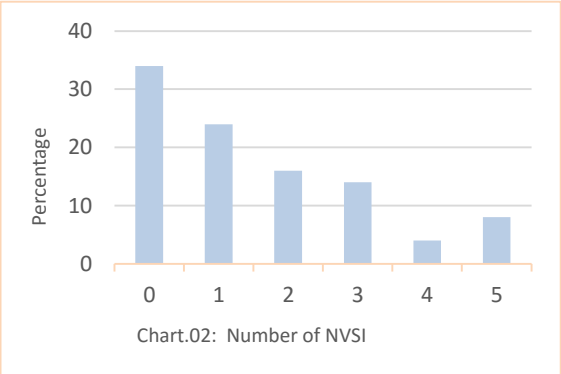
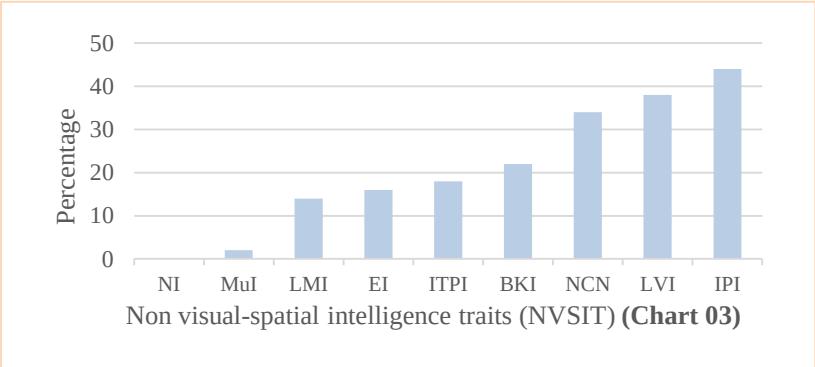


Chart.02: Number of NVSI

<u>According to the chart 02:</u>

- 34% (n=17) PL do not possess clear NVSI.
- 24 %(n=12) PL show 01 type of NVSI.
- 16% (n=8) PL show 02 types of NVSI.
- 14% (n=7) PL show 03 types of NVSI.
- 4% of PL show 04 types of NVSI.
- 8% of PL show 05 types of NVSI
- All together 42% of PL show more than a single NVSI
- Any PL does not show all the types of NVSI.



Non visual-spatial intelligence traits (NVSIT) **(Chart 03)**

According to the chart 03:

- The second largest share in the sample with 34 %(n=17) of PL show no clear NCNVSI
- 0 %(n=0) of the Pl have shown traits NI traits.
- 2%(n=1) PL possess MuI traits
- 7%(n=14) Pl shows LMI traits
- 8%(n=16) Pl shows EI traits
- 18 %(n=9) of PL possessed ITPI traits
- 22 %(n=11) of PL possessed BKI traits
- The second highest intelligence trait processed by PL is LVI which is 38% (n=19).
- The highest intelligence trait possessed by PL is IPI which is 44 %(n=22)

Conclusion

The study found different EAA among PPLAs, linked with a wide spectrum of professional capacities – doubling as musicians, engineers, teachers, critiques, pilots, soldiers, administrators, politicians, artists, writers, professional fighters, sportspersons, carpenters and philosophers etc. The assessment of EAA against MI traits revealed that a conspicuous degree of NVSI was prevalent amongst PPLAs. Since a majority of them (66%) possessed NVSI, a possible association with NVSI and Architectural abilities could be deducted.

Further, multi talents among PPLAs are noticeable here as 42% of them possessed more than one single Intelligence trait, where 8% in fact achieved the maximum by demonstrating 05 NVSI traits. Moreover, IPI traits (44%) and LVI traits (38%) were the most common NVSI among them. This observation indicates that the ability to clearly convey design ideas is most important to become a successful architect. In contrast, although MI seems to be highly linked to the factor of creativity, (2%) of PPLAs did not share any NVSI at all.

On the other hand, BKI traits (22%) account for the third highest NVSI among PPLA. Deductively, this shows that manual skills are required to become an outstanding architect. Then, ITPI traits (10%), EI traits (8%) and LMI traits (7%) all seem to be less impactful than IPI, LVII and BKI traits among them. Further, the NI traits (0%) are not evident among PPLA at all. This result is contrary as natural environment is one of the significant aspects in architecture not only in terms of sustainability, but also as an important generator of design concepts such as Biophilia, biosynthesis and biomorphic design. Finally, a figure of 34% of PPLAs were found without clear degree of NVSI traits. They either possess pure VSI, or their EAA data is unavailable/insufficient in online data bases. This study marked two limitations; the limited availability biographic data about PPLAs, and the absence of a recognized methodology to identify MI traits of a given occupation. This classification of MI against different occupations is a potential area for future research. Further, this particular study fosters the need for future in-depth research on the Impact of MI on Architectural skills, which will be vital for Architectural education as well as professional practice/development in a global context.

References

Bajoulvand, O., 2015. Multiple-Intelligence and Its Application in Human Resources. *Cumhuriyet University Faculty of Science-Science Journal*, 36(03), pp. 730-745.

Berkowitz, M., Gerber, A., Thurn, C. M., Emo, B., Hoelscher, C. and Stern, E., 2021. Spatial Abilities for Architecture: Cross Sectional and Longitudinal Assessment with Novel and Existing Spatial Ability Tests, *Frontiers in Psychology*, 11(01), pp. 01-15.

Brady, R., 2023. In Design We Trust: 8 Architect-Politicians from Modern History, *Architizer*, [online] Available at:<https://architizer.com/blog/inspiration/collections/architect-politicians/> [Accessed 18 April 2023].

Britannica, 2023a. *Claude Perrault French physician and Architect*. [online] Available at: <https://www.britannica.com/biography/Claude-Perrault/additional-info#history> [Accessed 22 June 2023].

Britannica, 2023b. *Pritzker Prize*. [online] Available at: https://www.britannica.com/topic/Pritzker-Prize [Accessed 22 June 2023].

Cherry, K., 2022. Theories of Intelligence in Psychology. *Verywellmind*. [online] Available at :< https://www.verywellmind.com/theories-of-intelligence-2795035> [Accessed 10 April 2023].

D'Souza, N., 2009. Revisiting a Vitruvian Preface: the Value of Multiple Skills in Contemporary Architectural Pedagogy, *Architectural Research Quarterly*, 13(2), pp.173-182.

Gardner, H. (2011) *Frames of Mind: The Theory of Multiple Intelligences*, New York: Basic Books.

Gouws, F., 2011. Career Choice: A Literature Review on the Role of Gardner's Multiple Intelligences Theory, *Journal of Educational Studies*, 10(2), pp.31-38.

Maina, J. J. and Daful, C. K., 2017. Do They Measure Up? Architecture Graduates' Perception of Acquired Skills, Employers' Expectations and What is Obtained, *Jorind*, 15(01), pp.153-161.

Marenus, M., 2023. Gardner's Theory of Multiple Intelligences. *Simplypsychology.* [online] Available at:<https://www.simplypsychology.org/multiple-intelligences.html> [Accessed 21 June 2023].

Schaik, L. V., 2008. Spatial Intelligence: New Futures for Architecture. *Wiley*. [online] Available at:<https://www.wiley.com/en-us/Spatial+Intelligence%3A+New+Futures+for+Architecture-p-9780470723234 > [Accessed 14 June 2023].

Spiridonidis, C., 2007. Towards a Competency Based Architectural Education in Europe, Report On the Validation Panel on Tuning in Architecture, Brussels. *Unideusto* [online] Available at:<at:http://www.unideusto.org/tuningeu/images/stories/Summary_of_outcomes_TN/Toward_a_Competencies_Based_Architectural_Education_in_Europe.doc> [Accessed 11 December 2015].

Sternburg, R. J. and Kaufman, S. B. (eds.) (2011), The *Cambridge Handbook of Intelligence,* New York: Cambridge University Press.

The Pritzker Architecture Price, 2023. *Laureates*. [online] Available at :< https://www.pritzkerprize.com/laureates> [Accessed 25 February 2023].

Wijetunge, M. N. R. (2012) 'Domestic Architecture of the Sinhalese Elite in the Age of Nationalism', PhD Thesis, Nottingham Trent University.

Wiejtunge, M. N. R. (2018) *Architectural Modernism in Sri Lanka: Geoffrey Bawa and Valentine Gunasekara Exhibition Catalogue*, Gwangju: Asia Culture Centre.

Wijetunge, M. N. R. (2021a) *Age of Passion: The Architecture of Valentine Gunasekara Exhibition Catalogue*, Colombo: Board of Architectural Publications of Sri Lanka Institute of Architects and ARCHIAM of University of Liverpool.

Wijetunge, M. N. R. (2021b) *The Archaeologist-architect of Sri Lanka: Roland Silva*, Colombo: Sri Lanka Institute of Architects.

Yani, A., Mulyadi, A. and Ruhimat, M., 2018. Contextualization of Spatial Intelligence: Correlation between Spatial Intelligence, Spatial Ability and Geography Skills, *Journal of Baltic Science Education*, 17(4), pp. 564-575.

Zilliacus, A., 2017. *9* Everyday Activities to Increase Your Spatial Intelligence. *Archdaily.* [online] Available at:<Available at: www.Archdaily.com: https://www.archdaily.com/806402/9-everyday-activities-to-increase-your-spatial-intelligence> [Accessed 22 May 2023].

Zukowsky, J., 2022. Tadao Ando. *Britannica.* [online] Available at:<at:https://www.britannica.com/biography/Ando-Tadao> [Accessed 25 May 2023].