Architects in Professional Practice and their Perception about Academic Curricula

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Abstract:- **This paper intends to validate the results of a survey conducted among the architects in Professional practice across the country. We are attempting to understand the scenario of architectural practice and organizational structure of design/construction businesses. This Paper also attempts to comprehend the practical view of the practicing architects regarding the academic curricula and skills required for a smooth transition of graduate into professional practice. This survey is part of the Doctoral research on the Topic "Rational of Architectural Theory in Processional Practice".**

Keywords:- Architectural Academic Curricula, Design Studio Process, Professional Practice, Services Offered, Organizational Structure

I. INTRODUCTION

As of 2019 there are 90,796 registered architects in India. (As per Council of Architecture-India records). The Target population for the survey is taken as about 90,800 architects. confidence level being 95% and margin of Error being 8% calculated sample Size accounts to 150 responses. The survey conducted through google forms Platform recorded 150 responses. India has been categorised into 5 Zones for simpler understanding and functioning of the research process. The five Zone are Namely North, South, East, West and Central. This survey is conducted as part of doctoral research on "Rationale of Application of Theory Inputs in Architectural Practice" under the guidance of Prof. Dr. D. Vijay Kishore, Vice Chancellor, Dr.YSR Architecture and Fine arts University, Cadapa, Andhra Pradesh, India.

II. RESPONSES FROM DIFFERENT REGIONS

Higher number of responses were recorded from the south zone followed by North zone then western Zone, Eastern zone, and Central zone, respectively. As a General trend Ahmedabad, Bangalore, Bombay, and Delhi were Noted to be Major Established Design Hubs in India. Sothern Zone of India is witnessing more Startup Design and Construction Businesses in the recent decade. Increase in Architecture Schools and extended job opportunities in this field, in this Zone has also influenced the Growth of Professional Organisations here. Following is the Percentage of responses recorded in Each Zone. (figure1)

- Northern region – 18.7%
- Southern Region – 43.3%
- Eastern region – 8.7%
- Western Region –18%
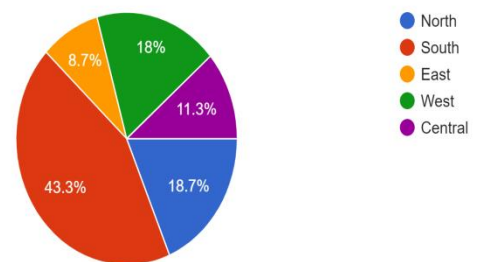- Central region – 11.3%

Figure 1:response from different regions of the country, Source: research question aid survey, December2019-January2020, Google Forms.

III. SERVICES OFFERED, ORGANISATION DETAILS AND BUSINESS STRUCTURE

Age of the organisation is a key area to understand the trend in establishment of architectural service companies across decades.it shows the years of growth in this sector.
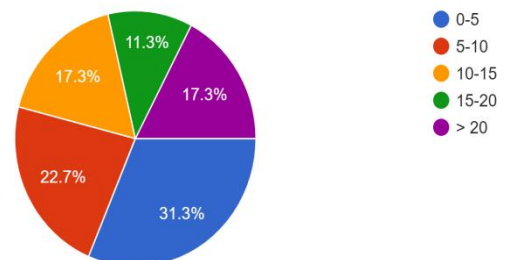

Figure 2:age of the organization, Source: research question aid survey, December2019-January2020, Google Forms.

It is noted that greater percentage of organizations were formed in the last decade with 31.3% of organization set up in span of 0-5 years and a 22.7% of organizations formed in span of 5-10 years(figure 2) .An equal percentage choose 10-15 years span and greater than 20 years with a slight decline in

establishments in the span of 15-20 years (figure 2). There has been a steady growth of companies in this sector apart from a slight fall in span between 15-20 years ago.

There are different business structures that can be adopted based on the size, scale, ownership, and services provided by the company. The different structures are:

- Sole trader – independent business structure that is owned by an individual. It is the simple kind of business structure.
- Partnership – A partnership in business is a formal agreement made by two or more parties to jointly manage and operate a company.
- Limited liability company – Owners and Investors have limited Liabilities and they exhibit the elements of both Corporations and partnerships.
- Private limited Liability – Here a Private Ownership is used and has a limited Liability.
- Professional Corporation – Corporate Entities who provide professional services such as consultants, doctors, lawyers, architects etc. In a professional Corporation, owners perform services for the business as employees.

According to the survey most followed structures for architecture as service are Partnership (34%), Sole Tradership (23.3%) Private limited liability company (20.7%), Professional corporation (18%).(figure 3)
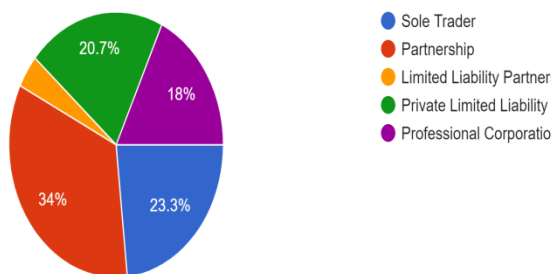

Figure 3:business structure of the organization, Source: research question aid survey, December2019-January2020, Google Forms.

It can be noticed that about 40.7% (figure 4) of the organizations provide architecture, interior design and landscape design services. Whereas there are not many firms that provide design and structural consultancy services (12%) (figure 4). Architecture and planning services combination is second highest form of services provided by firms with about 18.7% of them providing them. Design and structural consultancy in combination with project management services is also on a slightly higher percentage of choice with about 16% (figure 4) of the companies providing it.
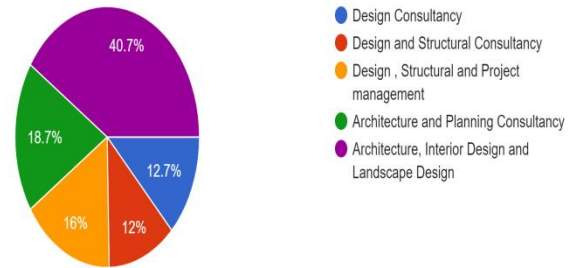

Figure 4:services provided by the organizations, Source: research question aid survey, December2019-January2020, Google Forms.

IV. PROFESSIONAL EXPERIENCE

It was always discussed that professionals in practice have little time towards teaching or participating in academic development programs for students. But looks like trend is changing with about a 54.7% of them stating an academic experience anywhere between 1-5 years. There is a considerable sector of professionals (19.3%) with 6-10 years of experience into academic world (figure 5). There are about 18% of professionals who state their career experience into practice and academic environment. There are very few who have academic experience for more than 11 years and still in practice.
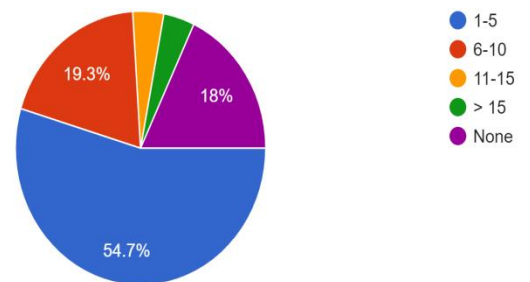

Figure 5:Academic experience of the professionals(in yrs) ,Source: research question aid survey, December2019-January2020, Google Forms.

We have high number of young professionals with their professional experience spanning between 0-5 years (40.7%) and 5-10 years (26%) (figure 6). About a 10.7% of the architects claim to have an experience between 10-15 years and a 10% of them state to have experience of 15-20 years. But a slightly higher number state an experience of more than 20 years in the professional Practice (12.7%) (figure 6). Probably the trend between 10-20 years ago was shifting towards teaching and research with opening of new

architecture schools across country and emergence of various other offshoot subjects of architecture into teaching and learning process that required the presence of architects.

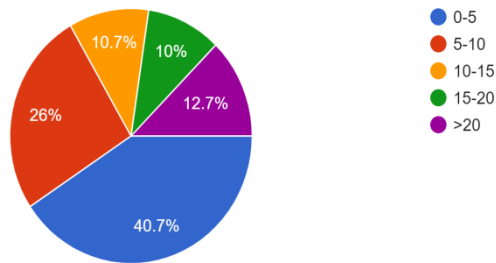State your experience in professional practice (in years)
150 responses

Figure 6:Experience in Professional practice Source: research question aid survey, December2019-January2020, Google Forms.

The robustness of a professional career in the field of construction and architecture can be determined using different factors of measurements such as years of experience, scale of projects Handled, built up area designed or constructed ad project budgets etc.. As part of survey we collected information about the built-up area designed or constructed by a professional so far in their career. As result about 48.7% of the architects claim to have worked on a built-up area ranging between 0-10 lakhs Square Feet. Only about a 6% of them have handled Built up are greater than 10 million Square feet in their carrier span (figure7).Next commonly achievable area to work on is between 10-50 lakhs Square feet which has been achieved by about 21.3% of the professionals in their Career. This is followed by a 12.7% of them working on about 50 lakhs to 1 million square feet built up area and about a 11.3 % of them designing an area anywhere between 1Million Square feet to 10 Million square feet.

Projects designed/constructed by you (built up area in Sq. ft).
150 responses

Figure 7: area designed/constructed by the professional (in Sq.ft.) Source: research question aid survey, December2019-January2020, Google Forms.

V. SUBJECT EXPERTISE

Expertise can be gained through gaining experience in a particular direction over the years, pursuing higher studies and research in a chosen subject or discipline. Sometimes the specialisation is acquired by the professional on his individual interest or through following or working an organisation specialised in the subject.

Post graduation is not opted by all architecture graduates, many of them enter the professional practice and continue in that direction. But recent trends suggest that many the young Architects are preferring to pursue higher education to horn their skills and establish a career in emerging new fields of micro specialisations. We recorded about 120 responses of postgraduates in the total count of 150 responses. Out of which 31.7% of them choose other specialisations such as product design, landscape design, interior design, digital architecture, urban design etc. about a 27.5% of them picked fields related to architecture,22.5 % of them preferred planning related studies and a 9.2% of them each selected project management studies and environmental/sustainable design options (figure 8).

Are you a Postgraduate? If yes, what is your field of specialization.
120 responses
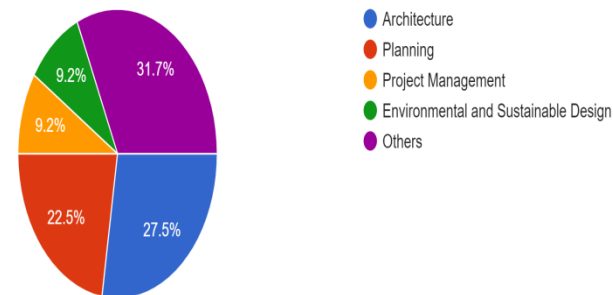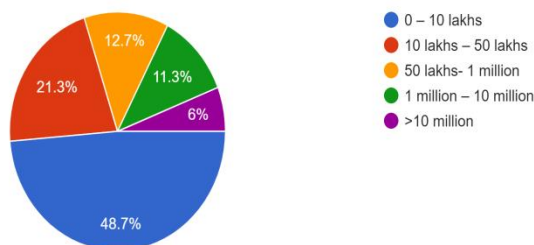

Figure 8:choice of specialization in postgraduation, Source: research question aid survey, December2019-January2020, Google Forms.

Individual choice in theme of projects that they opt to work on indirectly suggests the scope for architects in different categories of projects under design and construction. Maximum demand is always noted in residential projects next highest is in commercial sector followed by institutional then other type of projects. The least scope area is the recreational type of projects. This trend is well established with the survey results presented in figure 9 with same hierarchy of project category scope and choice made. About 58.7% opting for residential projects i.e more than half of them work on residential projects and less than 8% of them work on recreational projects with an 8% and 8.7% of them work on institutional and other type of projects respectively(figure 9).

Majority of your projects are of which category?
150 responses

- Residential
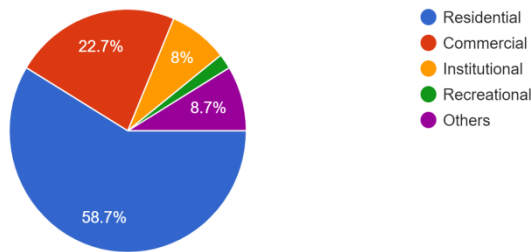- Commercial
- Institutional
- Recreational
- Others

Figure 9: category of projects majorly worked on, Source: research question aid survey, December2019-January2020, Google Forms.

Every organization follows a specific set of techniques unique to their ideology and institution. Some specialize in design and construction of high-rise structures, some in achieving sustainable solutions, few prefer working with advanced technology etc. Survey shows that there are three major specialized services that companies adopt. These account to sustainable solutions (28%) advanced technology-based structures (26.7%), Low cost construction (21.3%) (figure 10). The other two less followed mandates are high rise structures (13.3%) and vernacular architecture (figure 10). These two are noticed to be region specific in many cases across India for instance high rise buildings notion is not accepted by people in every state or city of India like it is accepted in Mumbai and Delhi. Though it is a considerably efficient solution for densely populated regions it has its own limitations such as facilities and utilities expenses, spatial Phycology, market demand etc.. World movement towards sustainable technology and solutions is also witnessed here.

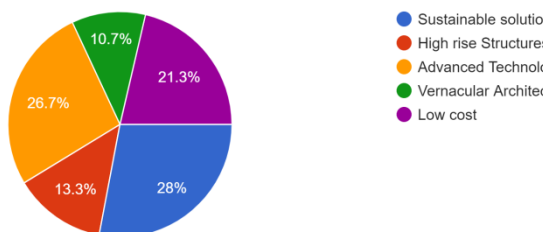Your organisation often works on projects that involve
150 responses

- Sustainable solutio
- High rise Structures
- Advanced Technolo
- Vernacular Architec
- Low cost

Figure 10: specialized techniques followed in organization, Source: research question aid survey, December2019-January2020, Google Forms.

VI. USE OF DIFFERENT SOFTWARE

World is moving towards Building Information Modelling; it has made the calculations of various requirements and facets of design /construction more accurate. Apart from other BIM software's, Autodesk Revit is a major software used for designing, Visual Presentation and drawings along with its efficient use in other processes of construction planning. Google sketch up is another major 3D visualisation software used widely across the globe. The survey result on usage of software's by the professionals aligns in similar direction except for less usage noticed for BIM software(24%)

such as BIM 360 and Revit(50%) (figure 11). There is a need to improvise our skills in this direction to catch up with the global market.

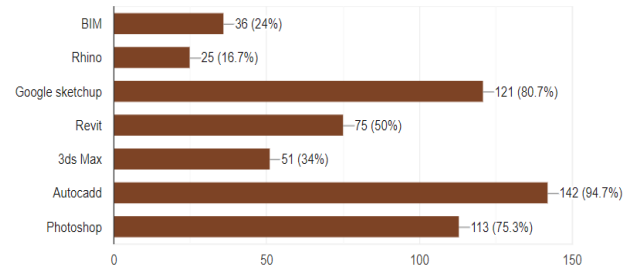Software's that you use often (multiple answer question)
150 responses

Figure 11:often used Software's, Source: research question aid survey, December2019-January2020, Google Forms.

VII. PERCEPTION ON ACADEMIC CURRICULA

There has always been a debate between professional architects and academicians regarding the shortcomings in the academic curricula to ensure a smooth transition of a graduate into the world of practice. It has always been said that there is no real time setting followed in academic design studios that enhance the design solving skills of the students from various other important perceptions such as socio-economic and financial aspects, advanced technology and construction, environmental friendly solutions etc. This argument is well established from the survey result obtained in regard of finding out what aspect more emphasis in architectural academic curricula. Socio-economic and financial aspects (33.3%), environmental/sustainable design solutions(30%),advanced technology and construction details(28%) are the three major subjects that require emphasis in the curricula (figure 12).

In your opinion which of these disciplines require more emphasis in architectural Curricula?
150 responses

- Advanced Technology and Construction
- Environmental/Sustainable Design
- Research Methodology
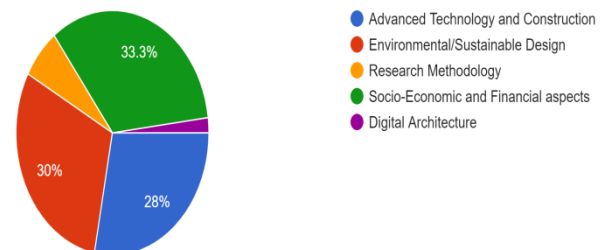- Socio-Economic and Financial aspects
- Digital Architecture

Figure 12:discipline that requires more emphasis in architectural curricula Source: research question aid survey, December2019-January2020, Google Forms.

Architects always discussed about the difficulties that young architects face after graduation. Major statements are herd about the lack of updated technical knowledge, less awareness of socio-economic implications in a project, not able to understand or estimate current trends and demands in the market, digital skills and arriving at creative solutions using all these aspects. It is observed to be true as the survey result also points in the same direction. About 76.7% of them

(figure 13) complain about the lack of updated technical knowledge such as advanced structures and technology usage in construction. Secondly a 73.3% (figure 13) of them point towards the lack of awareness in socio-economic implications of a Project. Thirdly, lack of awareness in current trends and demands of the market makes it even tougher for the graduates to cope with work pressure. This is noted by about 60 % of them(figure 13).
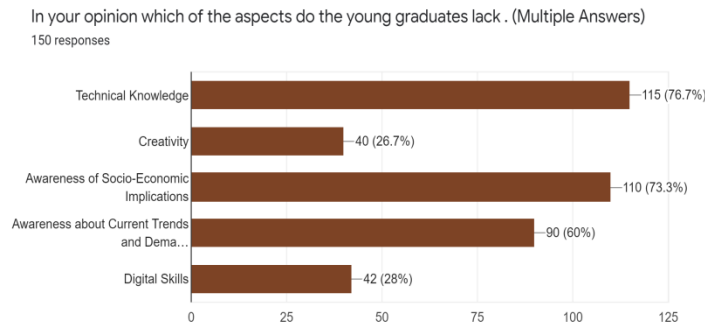

In your opinion which of the aspects do the young graduates lack . (Multiple Answers)
150 responses

Figure 13:aspects that require improvement in young graduates, Source: research question aid survey, December2019-January2020, Google Forms.

VIII. PROCEDURE FOR PROFESSIONAL LICENCE

Every country has its own licencing procedure and legal bodies such as Council of Architecture in India. Here Licence is obtained after registering with Council of Architecture on graduation from the School. Many other countries follow procedures such as achieving a certain period of experience upon graduation to gain eligibility of obtaining License. Some Countries conduct an eligibility test before granting licence and it requires a pass percentage in the test conducted. Across discussion platforms various opinions on an ideal licencing procedure for Indian context has been discussed. Major opinion that was herd was providing licence for individual practice after attaining certain experience upon graduation. This is well established in the survey result also as we notice a grand majority of 58% (figure 14) of them opting for the above-mentioned procedure. Where as only a 13.3% (figure 14) of them opt for the existing procedure of obtaining licence upon graduation.
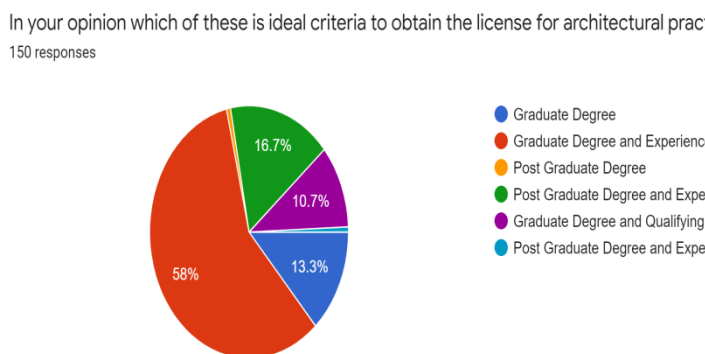

In your opinion which of these is ideal criteria to obtain the license for architectural prac
150 responses

Figure 14:Ideal criteria for obtaining professional license, Source: research question aid survey, December2019-January2020, Google Forms.

IX. IDEOLOGY OF AN ARCHITECT

Every architect and designer develop, follow an ideology of design. This includes variety of approaches such as utopian, scientific, humanist, bureaucratic, activist and an artistic approach. Whereas majority of the clients and common people perceive architects to follow artistic approach alone. On an enquiry with the professionals it is found that all the above-mentioned approaches are in use except the Bureaucratic approach, with certain number of them making a specific approach as their ideology. Most followed ideology is noted to be the humanist approach (34%), secondly the artist approach (20%), followed by activist and Utopian approaches with 17.3% of them choosing it each respectively. A 10.7% (figure 15) of them follow a scientist approach which is well suited for research and development field of the profession.

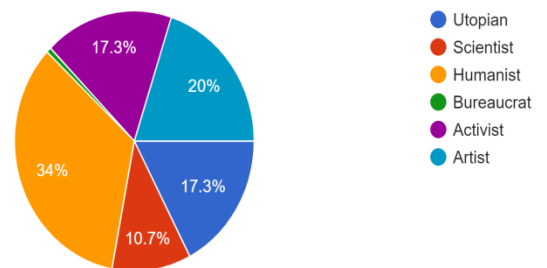What is your basic ideology as an architect?
150 responses

Figure 15:Architect Ideology, Source: research question aid survey, December2019-January2020, Google Forms.

X. KEY OBSERVATIONS MADE

- Higher responses have been recorded from Southern region(figure1).
- Many new firms have emerged in past decade with a most common business structure of sole trader or partnership.(figure 2,3).Majority of them provide a combination of architectural design, interior design and landscape design services.(figure 4).
- Increase in academic institutions in the last 2 decades has shown an increase young talent with majority of them having an experience between 1-10 years of span. (figure 5,6).
- Demand for post graduation has increased in past decade with emergence of new micro and macro specialised streams related to building technology and construction. (figure 8). Although new fields are emerging the scope of projects are largely limited to residential sector with improved technology and environmental approach in that project area.
- Building information Modelling is the new rapidly expanding well of opportunities across the world but we require more efforts in acquiring and polishing these skills to match up the global market (figure 11).
- Advanced technology and construction details, sustainable solutions including the socio-economic and financial aspects of project require emphasis in curricula as there has been a rift noticed in the proficiency these skills and knowledge acquired in college and its application in real

time projects. Necessity for advanced digital skills is another challenge faced by young graduates in practice. Understanding the Market dynamics also seem to be a major concern for the young recruits as real market demands seem to be very different from requirements and settings followed in academic design studio process. (Figures 10,11,12,13).

- Procedure for Professional licence draws attention as majority of them (58%) asking for a procedure which includes attaining a certain experience after graduation before obtaining licence for individual practice. (figure 14)

XI. CONCLUSION

Aspects of curricula that require reworking and improvement can be well understood in the observations made above. From this we can also state that the chances to bridge the gap between education and practice can be largely reduced by approaching elements of learning process from the professional's perspective. More involvement of the architects in professional Practice in academia is required as they can give an additional guidance towards the real time setting of projects and current market scenario. Their mentorship combined with the expertise of Academicians help them overcome the challenges of the field work. More emphasis is required in subjects such as Advanced technology and construction details, sustainable solutions including the socio-economic and financial aspects of projects. Gaining prominence of digital architecture in global scenario demands more encouragement in that direction as part of learning process.

ACKNOWLEDGEMENTS

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