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Utilising AI to inform Ethical Decision-making in Architecture

"Yo soy y mi circunstancia" ("I am me and my circumstance") Jose Ortega y Gasset in Meditaciones del Quijote (1914).

The practical implementation, understanding and incorporation of values of the communities & stakeholders commissioning architects may differ from those designing the built environment. An understanding of the values, perception and judgement on development intent and anticipated outcomes supports creation in architecture, however the latent impact of the values influencing the design outcome, are often only manifested and revealed to communities after the design process is close to completion.

As Jose Ortega y Gasset suggested, analysis of ethical conduct may be informed by understanding the circumstantial impact of the decision-making environment. In architecture this includes the physical, social & economic environments, and also the organisational decision level of those designing, the impact of time-pressure and time-restoration, and the possible alternate ethical pathways that may lead to a design decision.

Primary data generated by architects revealed in this research illustrates how advanced analytical techniques can challenge perceptions of skill, intuition & experience when determining the causes, ethical pathway and consequential accountability of decision choice in designing the built environment. The accelerated integration of data in the application of descriptive, predictive, and prescriptive algorithms influencing design decision-making, raises questions on practitioners' expertise and agency in responding to ethical dilemmas. This research approach addresses contemporary ethical dilemmas such as: Who is accountable for AI generated design decisions in architecture? How do ethical considerations differ between work settings and project experience, such as when implementing sustainability-focused solutions? How do ethical considerations differ between the personal social, economic, and professional backgrounds of architects?

The research employed algorithmic ethical pathways in decision-making based on Throughput Model (TPM) theory (Rodgers, 1997., Rodgers, Murray et al., 2023). The TPM consists of four constructs: (1) perception (framing situational conditions), (2) information, (3) judgment (analysing information), and (4) decision choice. Drawing on insights from cognitive and social psychology, the TPM approach illustrates ethical decision pathways unfolding in a parallel, rather than serial process.

The research methodology measured design decisions by deconstructing the architectural design process into scalable value components, considering perception of expertise, inspiration, function, feeling and performance, with judgements in sustainability, aesthetics, quality, cost, etc. Indicator variables from architectural design and property valuation professional guidance were incorporated with the personal and professional background of architects into the TPM constructs (Perception, Information, Judgement, Decision). Using Partial Least Squares Structural Equation Modelling (PLS-SEM) techniques, this innovative approach penetrates into the labyrinthian relationships between observed and latent variables influencing decision-making in architecture. For those concerned with epistemology in architecture in our digital age, this research generates timely insights for ethical decision-making.

References:

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