SPACE SYNTAX SIMULATION

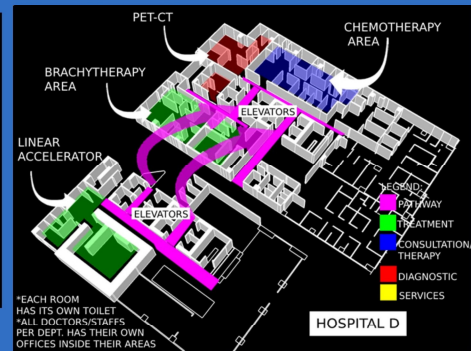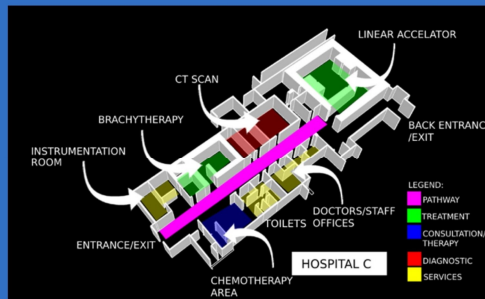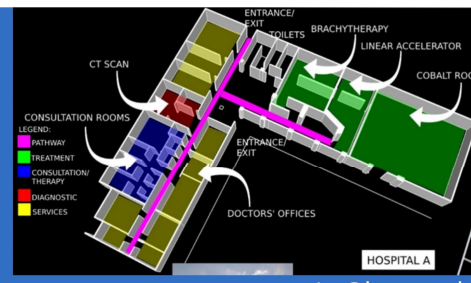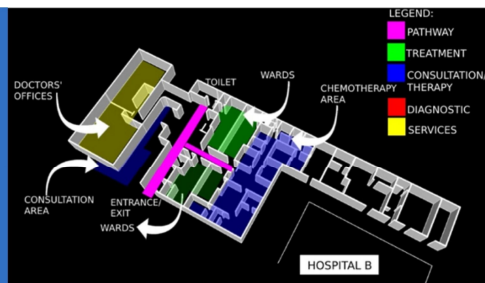# USING ASPECT AND AEDET EVALUATION TOOLKIT AND DEPTHMAP SIMULATION IN THE ASSESSMENT OF SPATIAL CONNECTIVITY LAYOUT FOR CANCER TREATMENT CENTERS

ABSTRACT

Cancer treatment has been changing over time. The adoptive measures of hospitals about these treatments are responsive based on architectural solutions. The paper conducted comparative benchmarking to six cancer treatment facilities. Five Key indicators from Evidence-Based Design Theory were used as basis. These indicators are positive distraction, accessibility, privacy, noise, safety, and security. The methodology of the study was derived from a foreign study that used Evaluation toolkits as independent variable and depthmap simulations dependent variable. The ASPECT and AEDET Evaluation tool by UK National Health Service (2020) was used in evaluating cancer treatment facilities. Depthmap software was used to simulate spatial connectivity of each space and analyze its correlation with the evaluation toolkit. It was found out that there is a relationship in the visibility of each space through axial map and convex map. On the other hand, visual connectivity through visual graph analysis (VGA) has no relationship with the different key indicators. For the conclusion, the study formulated a cross-evaluation table that identified the effect of all key indicators with the connectivity of each cancer treatment plan through its layout shape. It was concluded that H-shape is the most efficient layout for cancer treatment facility.
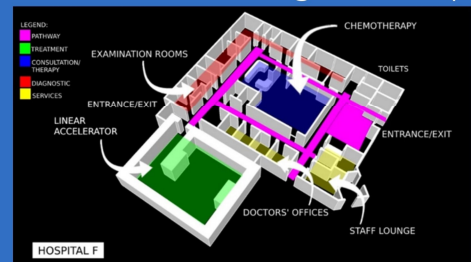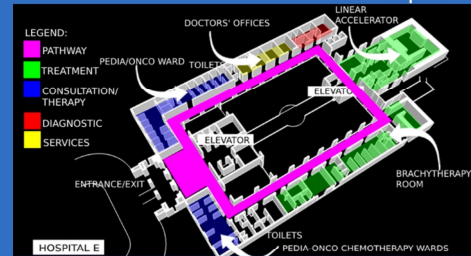
Staggered

HOSPITAL B

LEGEND:
PATHWAY
TREATMENT
CONSULTATION/THERAPY
DIAGNOSTIC
SERVICES

L-Shaped

HOSPITAL A

Linear

HOSPITAL C

H-Shaped

HOSPITAL D

*EACH ROOM HAS ITS OWN TOILET
*ALL DOCTORS/STAFFS PER DEPT. HAS THEIR OWN OFFICES INSIDE THEIR AREAS

Elongated Loop

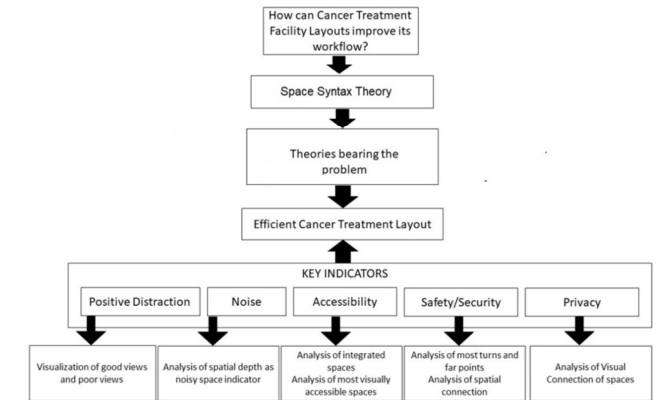HOSPITAL E

Looped

HOSPITAL F

AEDET

ASPECT

1. Privacy, Company, Dignity
2. Views
3. Nature & Outdoors
4. Comfort & control
5. Legibility of Place
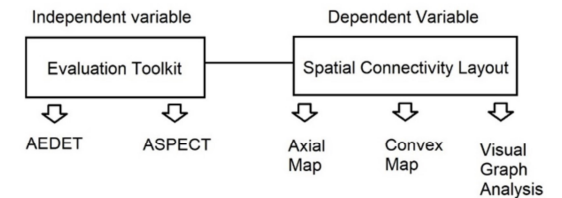6. Interior Appearance
7. Facilities
8. Staff

Theoretical Framework

Conceptual Framework

Independent variable — Evaluation Toolkit — AEDET, ASPECT
Dependent Variable — Spatial Connectivity Layout — Axial Map, Convex Map, Visual Graph Analysis
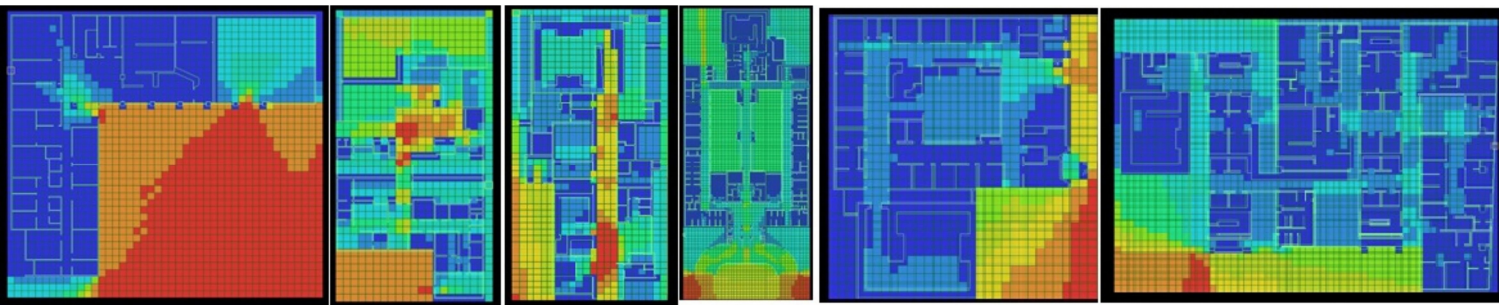
Objectives

1. To analyze the characteristics of the established healing environment design key indicators for six selected cancer treatment centers in the Philippines
2. To compare cancer treatment facilities in selected hospitals in the Philippines using an evidence-based design evaluation toolkit and correlate it with Space syntax simulation.
3. To assess the relationship of key indicators to existing cancer treatment facilities

Emmarie Rose C. Josue

VISUAL GRAPH ANALYSIS
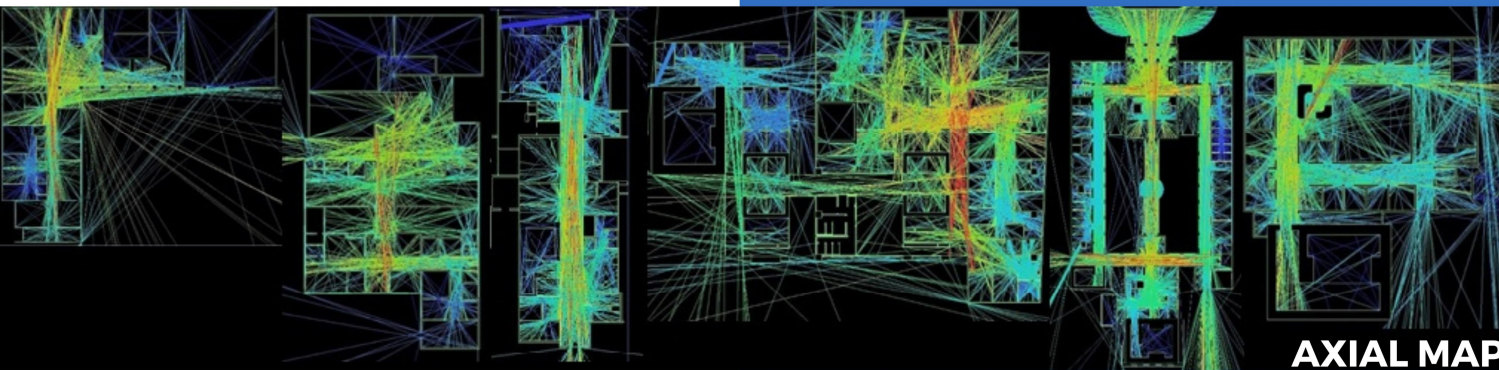

AXIAL MAP

CONVEX MAP

CONCLUSION

Six different cancer treatment layout typologies were selected as a case study. The results from this study were described, correlated, and interpreted qualitatively and quantitatively. In the synthesis, it shows bias on H-shape typology compared to other typologies (L-shaped, Staggered, Linear, Looped, Elongated-Loop) due to the high values it presented in most parameters especially the key indicators. Key Indicators that are associated with healing environment are influenced by the layout typology of the case studies both quantitatively and qualitatively.

It can be concluded that there is a significant relationship between cancer treatment plan typologies and healing environment through the five key indicators. As observed, the typologies with the highest values in the evaluation toolkit were also the ones with the highest results in space syntax. Significant relationship levels of all hospitals with the five key indicators are also seen in the results. This means that existing plans as dependent variables has a significant relationship towards the five key indicators and this relationship is also evident with its correlation to most of space syntax maps (VGA, Axial and Convex). With that, designers and architects can benchmark from the results supported by this study in designing future cancer treatment facilities and hospitals.
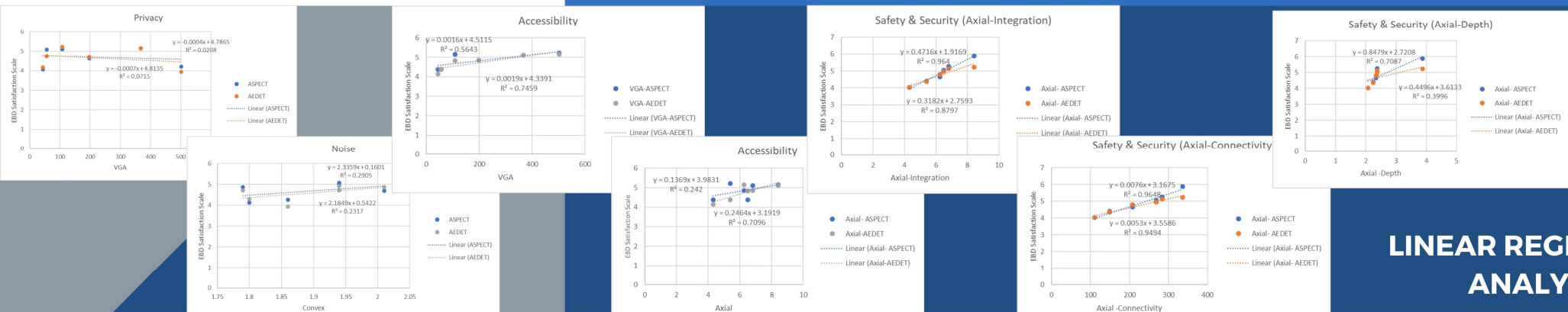

LINEAR REGRESSION ANALYSIS