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مدیر تحصیلات تکمیلی

**English Abstract Worksheet for Doctoral Thesis**

**IN THE NAME OF GOD**

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<b>Title of thesis: Daylight design strategies to enhance happiness in residential district</b>		
<b>Abstract:</b>		
<p>The linkage between build environments and space-users is mutual .In such a way that the environmental conditions could affect buildings Conditions and characteristics of the building are also heavily influenced by space-users. Daylight with visual and non-visual effect is an important environmental effective component when considering human health. Among the built environment based on Health-approach, improve the quality of residential space as a space that the physical and mental health of residents should support and protect them against the risks of social environment in this space, can help to improve physical and mental health of residents.Architecture as mediator between these effects can have important consequences on physical-mental health and synchronization of circadian rhythms. While current lighting strategy has generally been to provide illumination for task or energy efficiency or Most of the studies focused on light, or windows in laboratory settings.</p> <p>The aim of this study is to recognize the health-orientation criteria in daylight design development and daylight design recommendation based on optimal zone. This analytical research is causal-comparative descriptive based on a survey method and seeking an answers to whether the different daylight illuminance in internal space in residential complex may generate various happiness effect on people living indoors according to indoor conditions. It was further hypothesized that the quality and nature of the internal daylight environment based on different sDA values can develop based on living space configuration.</p> <p>These studies therefore use human-oriented design approach in daylight design in</p>		

residential complex. The study population included residents of residential units in low-rise buildings in Isfahan, Iran. In this study, low-rise buildings are considered to be residential buildings with three to eight stories and between 860 ft<sup>2</sup> and 2100 ft<sup>2</sup> in size. 286 units were selected by two-stage random cluster sampling. Data were collected with Oxford Happiness Inventory and researcher-made questionnaire. The Radiance modeling software and STADIC plugin for Radiance was used to generate a parametric models of the living spaces .the simulation was automated by linking Python with Radiances, in this article we identified and interpreted unobserved heterogeneity in partial least squares structural equation modeling (PLS-SEM) by using the FIMIX-PLS module in the SmartPLS 3.2.3 software.

This study introduced the concept of an optimal zone, which addresses the joint influence of the physical features mentioned above, as a gauge to evaluate a living space environment. Data analyses indicated that the assumption of relatively homogeneous data characteristics or heterogeneity had different output. Since homogeneous data assumption indicate no relationship between daylight illuminance and happiness, in heterogeneity data assumption there was negative-positive relationship between different SDA and Happiness dimension . A statistical analysis of regression in SPSS indicated some daylight design recommendations based on living space configuration, window features and site plan which prepare a possibility of assessment of happiness dimension and illuminatance fraction of living space. This approach brings together the physiological and psychological impacts of daylighting and illuminates their potentially pivotal roles in ordering and enriching architectural experience.

SIGNITURE OF SUPERVISOR