

## **Painting Art and Sustainability: Theoretical, Practical and Empirical Relationship**

<sup>1,\*</sup>EL Kadiri Boutchich D., <sup>2</sup> Chbabi Y.

<sup>1</sup>Department of Economics, Higher School of Technology, Mohammed First University,  
Morocco

<sup>2</sup> Official Decoration and Painting Arts graduated from UNESCO, Morocco

### **Abstract**

The relationship between the art of painting and sustainability is underexplored both in terms of literature review and statistical analysis. Therefore, this research intends to fill this gap. Thus, this work aims to establish the relationship between the art of painting and sustainable development. Painting art is measured by a composite index aggregating the quantity produced and sold and quality represented by the price (it is judged that a quality work is appreciated by its price). As for sustainable development, it is represented by a composite index comprising three variables which are climate change performance index (ecological dimension), wage index (social dimension) and GDP (economic dimension). The two composite indexes were determined using Adjusted Data Envelopment Analysis, which we developed from standard DEA. The method is applied on data from 2007-2021 across the world. Data linked to art painting is extracted from Statista website, while the other data comes from the websites related to the indicators in question.

Results of this work are obtained through two methods: correlation analysis and neural network with radial function. Correlation method highlighted perfect correlation between painting art and sustainability (p-value equals 0 with bilateral Pearson test). As for the neural network, it showed the absence of over-fitting that could affect its results; also, it gives good predictions, given that holdout sample value is high. Furthermore, the neural network showed that quality of painting has the higher impact on sustainability with a normalized importance of 100%. It moreover revealed, via the pseudo-probabilities, that the most positively impacted variable of sustainability by painting art is the social variable (0.90). It is followed by the ecological variable (0.58). At this level, it should be indicated that quantitative data are converted into qualitative data in terms of two modalities (positive evolution from one year to the next year; negative evolution from one year to the next year) in order to compute the pseudo-probabilities for the dependent variables.

# 5th World Conference on Social Sciences and Humanities

28 - 30 October 2022

Milan, Italy



Finally, as practical work, the professional painter will highlight the relationship between painting art and sustainability palpably through his various artistic works in this area.

**Keywords:** Painting Art; Sustainability; Adjusted Data Envelopment Analysis; Neural Network; Painting Works Symbolizing Sustainability