

What Makes a Film ‘Intellectual’? A Quantitative Analysis of European Films Using the UN SDGs Framework

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The film industry has been identified as a key driver within the cultural and creative industries (CCIs), significantly contributing to the economic vitality of cultural sectors (Stachowiak, 2020). Furthermore, the film industry fosters creativity and innovation within CCIs, generating knowledge and technological spillovers (Skilton, 2009; Simon et al., 2015). Beyond its economic impact, film production is recognised as an important political and socio-economic driver, representing a de facto source of soft power that reinforces national and social values (Su, 2010; Vlassis, 2016; Guan et al., 2023). Existing literature has analysed the social effects of the film and audiovisual industry, exploring its linkages with social learning in teenage audiences (Moretti, 2011), shared consumption values and experiences (Cabral & Natividad, 2016; Gilchrist & Sands, 2016), gender disparities (Wühr et al., 2017), and the association between violent films and antisocial spillover effects (Dahl & DellaVigna, 2009). Therefore, films and cinematic products often serve as vehicles for conveying messages embedded within their narratives, promoting themes with significant societal resonance. However, little research has been conducted on the factors that influence film producers in selecting specific themes, particularly those with socio-economic relevance (McKenzie, 2023).

Research Objectives and Methodology

Building on this framework, we hypothesise that film characteristics, combined with local socio-economic contexts, influence the type of content and themes represented in a film’s narrative, particularly in film d’essai. Beyond economic factors (e.g., film budget, regional GDP), social aspects—both internal (e.g., the demographic composition of the cast) and external (e.g., social and human capital in the region)—may shape the selection of film topics. On the one hand, specific production characteristics, such as social and human capital, may influence the likelihood of producing films with more intellectually engaging plots. On the other hand, themes like environmental preservation, equality, and freedom of speech are often embedded in films, with their inclusion potentially correlating to the cast’s internal awareness and the cultural vibrancy of production locations. Major film production hubs—such as *Cinecittà* in Italy, *Babelsberg* in Germany, and *Cité du Cinéma* in France—function as incubators of ideas and values. These hubs are often concentrated in regions that serve as political and economic centres, facilitating access to human capital and creative resources and the diffusion of social and cultural values due to proximity effects (Florida, 2003; Florida, 2017). While both production-specific characteristics and regional context might affect the likelihood of a film being classified as “intellectual” or d’essai, no empirical evidence have assessed and quantified their impacts and potential interaction. This study aims to fill this gap following a three-step approach:

1. *Dataset Compilation:* We compiled a dataset leveraging publicly available information from online film databases and repositories such as IMDb and Wikipedia. Data were retrieved using automated text-mining techniques applied to open-access film databases. The dataset comprises approximately 1,400 European productions and co-productions released between 2012 and 2022¹.

¹ Sample selected in the context of Horizon 2020- REBOOT Project (Reviving, Boosting, Optimising and Transforming European Film Competitiveness). It included to EU production and co-production with popularity rank up to 25000.

2. *Content Analysis:*

- We conduct text analysis using Latent Dirichlet Allocation (LDA) (Lu et al., 2011)² to identify dominant narrative themes.
- We associate these themes with the UN Sustainable Development Goals (SDGs) using the SDG dictionary (Brugmann et al., 2019, revised by the University of Toronto) and further refine it through synonym expansion via ChatGPT³.
- We map film content trends within the well-established SDG classification, which consists of 17 interconnected objectives grouped into thematic domains.

3. *Regression Analysis:*

- We analyse the main factors associated with a higher probability of a film being classified as intellectual or d'essai.
- To do so, we employ non-linear regression models, specifically probit and logit models, incorporating location dummies to account for geographical variations.
- Additionally, we geo-localise major film production hubs and companies at the regional level and incorporate socio-economic indicators such as human and social capital, GDP, the presence of CCIs agglomerations, and regional SDG achievements over the analysed period.

While this study primarily applies the SDG framework for thematic classification, additional narrative aspects are also considered to provide a comprehensive analysis of European film production. By implementing a systematic content trend analysis based on SDG classification, this research enhances the analytical perspective of previous studies, which have been primarily limited to topic- and genre-based classifications. This approach allows for a deeper understanding of films as cultural drivers engaged in contemporary social and political debates. Furthermore, this study contributes to the field of cultural economics by providing additional evidence on the role of culture in fostering social inclusion and development at both national and regional levels.

The expected results suggest that regional socio-economic contexts and production-specific characteristics influence the thematic composition of films, particularly in d'essai cinema. Films produced in regions with higher human and social capital are more likely to address intellectual and socially relevant themes, such as sustainability, equality, and human rights. The analysis may reveal correlations between film characteristics (e.g., cast diversity, budget) and narrative content, aligning with the UN SDGs. Additionally, major European film hubs could act as incubators for cultural and ideological trends. These findings contribute to understanding cinema as a driver of social reflection and cultural discourse.

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² The validity of LDA is conducted with different parameters of topic and selection of words, testing also with calculation of perplexity.

³ Moreover, ChatGPT has also been employed to assist and revise the Python codes, as found to be efficient and performative in this type of task in previous works (Maibaum et al., 2024).

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