
Costs in a Film's Production Process

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Abstract:

Purpose: Film production is associated with incurring costs. This article aims to analyze the production process of a feature film through the prism of incurred production costs. The indirect aim is to answer the question: What is the structure of the set of costs in the production process of an audiovisual work?

Design/Methodology/Approach: The study concerns the production costs of film work based on the cost philosophy of the Polish Film Institute and American solutions. The study uses the descriptive and comparative analysis method of various aspects of film production; the deductive-inductive reasoning method; the costing method; the logical analysis method based on the literature on film production organization and accounting; the qualitative method in the form of unstructured face-to-face interviews with film producers conducted at production courses at the L. Schiller National Higher School of Film, Television, and Theatre in Łódź.

Findings: The amount of cost of a film project is determined by the film script. The structure of the set of costs in the different stages of the film production process in the world is similar. The fees are an essential item in the cost of a feature film. The production organization criterion and the time criterion shape the film production costs.

Practical Implications: Efficient organization of the film production process affects the cost of ownership of film work.

Originality/Value: There is a need to explore further the research issue of cost in film production, especially in terms of quantitative research.

Keywords: Film production, costs, cinematography, cost accounting.

JEL Codes: D24, M11, M41.

Paper type: Research article.

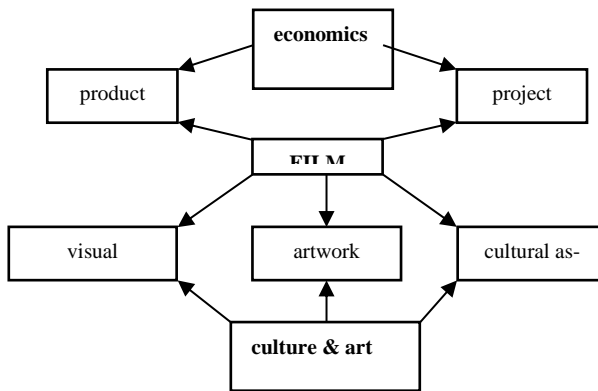
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1. Introduction

The film is a unique product because it cannot be touched; it can only be watched. The film is a project. The Polish Cinematography Act defines a *film* as "a work of any length, including documentary or animated works, consisting of a series of consecutive images with or without sound, recorded on any medium capable of repeated reproduction, giving the impression of movement and constituting an original whole, expressing the action (content) in a particular form, and except for documentary and animated works, intended to be shown in the cinema as the first field of exploitation within the meaning of the provisions on copyright and related rights. A film is also a work that has not been shown in a cinema due to circumstances not caused by fault" (Law Article 4, 2021). Figure 1 shows the essence of the film in the concepts of near terms in the economics of film production and culture and art.

Figure 1. The essence of film in near terms in economics and culture and the arts



Source: Own elaboration.

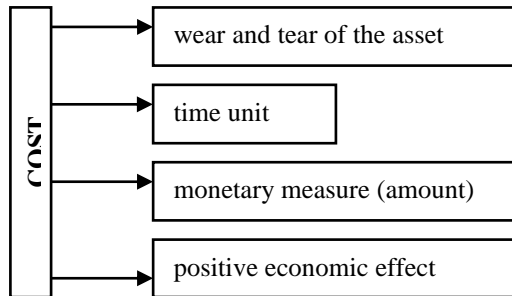
In the study, I focus on the product aspect. Film production is a set of creative, organizational, economic, legal, and technical activities leading to producing a film in the form of a master copy (Law Article 5, 2021).

Film production, like any activity, is associated with incurring costs. In the author's opinion, cost, i.e., the consumption of assets in each unit of time, expressed in value, in order to achieve economic benefits, is the most critical economic category because it is universal, applies not only to economic activity but also to man, who otherwise also wears himself out physically, incurring expenses for health consumption in life. The sine qua nonelements of cost is illustrated in Figure 2.

This article aims to analyze the production process of a feature film through the prism of incurred production costs. The intermediate goal is to answer the question: What is the structure of the set of film costs, including costs of project development and preliminary work, production (preparation and shooting), and post-production (editing

and sound recording time and final work)? Preparing the study is the author's interest in film production and being an active spectator of the cinema.

Figure 2. *The sine qua non elements of cost*

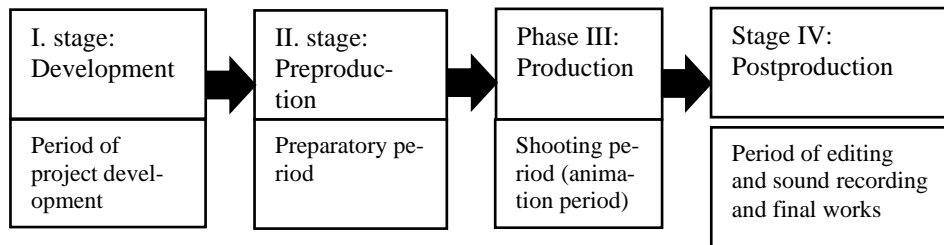


Source: Own elaboration.

2. Literature Review

Producing a film is a process consisting of stages. The stages are the same for every production - feature film, documentary, and animated film - in the world, including American cinematography (including Hollywood), Asian cinematography, European cinematography, Polish cinematography. The structured flow of film production originates from American cinematography and has been practically unchanged since the beginning of the 20th century. This process is characterized by a strong correlation with the time - schedule - of the set of activities, which result in a work product: a film. Figure 3 presents the flow of film production.

Figure 3. *The film production process*



Source: Own elaboration based on Clevè (2006: 9-22); Goodell (2018: 68-243); Zabłocki (2018: 130); (Geuens, 2000: 4-23).

The following discussion will focus on the production of a feature film. The plot refers to everything visually and auditorily present in work and includes all the story elements presented directly to the viewer (Bordwell and Thomson, 2020). At the same time, the core of the plot is the content as an intangible product that fills the spiritual and intellectual needs of the audience and is original and unique (Rogowski, 2020).

The film production process is the responsibility of the film producer, which is an individual, legal entity, or unincorporated entity that takes the initiative, organizes, conducts, and is responsible for the creative, organizational, and financial process of film production (Law Article 5). Given the limited scope of the paper, the different stages of production will be briefly characterized.

The first stage in producing a film is developed to provide the best possible version of the script and ensure that the film project is fully funded (Kožuchowski and Morozow, 2019). The film script or the literary description of the film (Schütte, 2015) is a tool for the work of the producer, director, and film crew. The script text is the artistic and economic basis of the entire production process. Based on the script, the film's budget is calculated, the shooting calendar is developed, the cost estimate is created, and the stage design is built. The correct writing of the script is crucial for the success of the entire production. The world's standard is that one page of adequately formatted script corresponds to one minute of the film (e.g., 90 pages of the script equal 90 minutes of the film; 120 pages of the script equal 120 minutes of the film). The second stage, called preproduction, begins with the referral of the film to production and includes a preparatory period, and its purpose is to prepare the film crew for shooting as well as possible. The basis of action during this period is to determine how much time is needed for each task (Kožuchowski and Morozow, 2019).

The third stage is the shooting period (in animated films, the animation period). This period is the production of the film *sensu stricto*, which is the sum of the so-called shooting days. A shooting day is when the action on the film set is played out in front of a switched-on camera, where the actors and the shooting crew are involved (Zabłocki, 2018). Interviews with Polish film producers show that in a drama, moral, romantic comedy film of about 110 minutes in length, about six weeks of shooting are planned with about 27-34 shooting days.

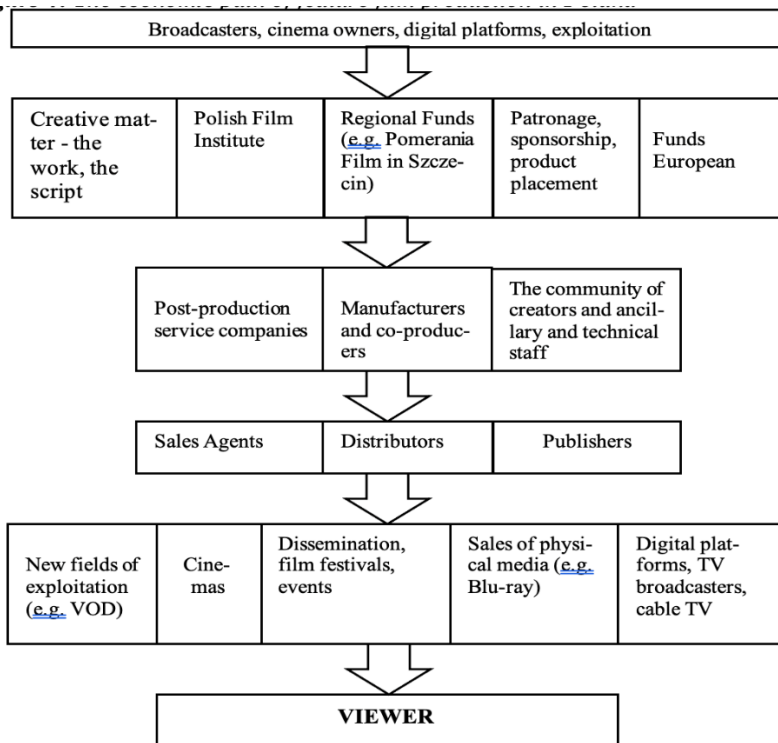
After shooting the footage, stage IV comes, which is picture editing, sound recording, and final work resulting in creating a product, a master copy of the film. The postproduction of a feature film takes on average 6 - 7 months. Assuming a smoothly run feature production, the film production process takes an average of 10 to 12 months. As producer J. Kaczmarek rightly states, *"a film is an added value of the production process in a specific technology. The source of this "added value" is the creative work of the film crew, i.e., filmmakers, such as a screenwriter, director, cinematographer, set and costume designer, composer, and sometimes also make-up artist, as well as actors, musicians, episodes, and extras. All of them, by adding their creative and re-creative work, contribute to the creation of a new product, a commodity, which from the point of view of economics is a film"* (Kaczmarek, 2019).

The term "film production" relates to the term "film production technology," which is used interchangeably in practice and didactics at the Department of Film Production of the L. Schiller National Higher School of Film, Television, and Theatre in Łódź. In a broader sense, production technology is a sequence of processes, activities, and

events leading to the production of a film. On the other hand, in narrower terms, production technology is a set of organizational, production, and technical tools necessary in the process of filmmaking at different stages of its creation (Kaczmariski, 2019). The result of the production process is a manufactured product - a film in the master copy. After this, the distribution process of the film begins, the purpose of which is to sell the product by way of showing the film to the viewer in the cinema. Due to the COVID-19 pandemic in 2020 and 2021, there has been an expansion of the distribution field towards online streaming.

It is important to note that film production and film distribution are two different sectors of cinematography (Adamczak and Klejsa, 2019). The economic success of a film is defined when the producer recovers the expenses incurred in the production and distribution of the film and when he or she starts making money from the film. Polish cinematography follows the so-called economic path that leads to the final buyer of the product - the viewer, as shown in Figure 4.

Figure 4. *The economic path of feature film production in Poland*



Source: Wróblewska (2019, 176).

3. Research Methodology

The following research methods were selected in this study:

- a method of descriptive and comparative analysis of various aspects of film production;
- the deductive-inductive reasoning method;
- costing method.
- logical analysis method on the basis of literature on film production organization and cost accounting and materials from the Polish Film Institute.
- a qualitative method in the form of unstructured face-to-face interviews with film producers, conducted during production courses at the Film Production Department of the L. Schiller National Higher School of Film, Television and Theatre in Łódź.
- The paper is written from an accountant's point of view.

4. Findings and Discussion

Film production is closely correlated with incurring costs. According to K. Sawicki, "costs are the consumption of fixed and current assets, third-party services, labor, and some expenses that do not reflect the consumption, related to the activity of the business unit (company) in a certain time unit, expressed in money" (Sawicki, 2000). On the other hand, film production costs - are the direct costs of producing a film plus overheads (i.e., part of the producer's fixed costs allocated to the film in the proportion resulting from its accounting policy, duly recorded) and the assessed value of in-kind contributions of co-producers and investors, unencumbered by deductible VAT (PISF Operational Programme 2018). From an accounting system perspective, the cost of a product includes the direct costs of the product and a reasonable portion of the indirect production costs attributable to the product (Communication, 2019).

Direct product costs are the value of consumed resources that can be directly associated with a given final cost object - the object of calculation. From the perspective of film production technology, the cost objects are activities (functions) in the stages of the film production process. A simplified calculation system of film production costs according to formula (1) looks as follows:

1. *Direct costs of the cost object*
 2. *Indirect cost charge*
 3. *Cost of producing a product - film (1 + 2)*
- (1)

The structure of the film project cost set refers to the direct costs separated in the production process and related to the cost objects, as shown in Table 1.

Table 1. Segregation of costs in film production

Lp.	Segregated costs
I.	Cost Object: Project development and preliminary work
1.	Salary costs for those involved in preparation for production, including copyright acquisition costs.
2.	Permit costs for shooting.
3.	Costs of preparing visual materials and documentation of objects for film production (in particular, photographs, printed and multimedia presentations, printing of materials, artwork).

	Rental costs for equipment used to prepare visual materials.
4.	Translation costs for documents and materials related to the search for an audiovisual production location.
5.	
6.	Costs associated with travel, lodging, food.
II.	Cost Object: Production - preparation and shooting
1.	<p>Costs of fees, gross salaries and wages including surcharges (social security contributions) for:</p> <ul style="list-style-type: none"> • actors, including principal cast, supporting cast, episodists, stuntmen, doubles, extras; • a screenwriter or screenwriters; • director, second director, assistant director, casting director, clapper; • executive producer, production assistant, production manager, production manager II, assistant production manager, post-production manager, set manager, assistant set manager, set secretary, set duty officer, administrator, and persons performing bookkeeping services, if applicable to a film production; • persons involved in the stage design unit, including those involved in the execution of works related to design, production, stage design construction, rental or production of props, studio services: including stage designer, 2nd stage designer, assistant stage designers, set construction manager, interior decorator, chief props officer, props officer, assistant props officers, special effects coordinator, pyrotechnicians, stage manager on duty, set designer on duty; • people involved in making the costumes; • people involved in the characterization division; • people involved in the operator division; • people involved in the sound division, including a sound director, a sound operator, an assistant sound operator, as well as people involved in post-production of sound, including dialogue editors, sound effects artists, synchronization effects artists, post-synchronization artists, sound mixing artists; • people involved in preparing special effects on set; • persons involved in the preparation of visual effects; • persons involved in the preparation of music for the film, including the composer, • performers, performing artists, lyricists of spoken word and musical works, people involved in music production; • persons involved in editing of photos, sound, music, including editor, assistant editor; • people involved in performing the craft services needed for production; • individuals involved in the delivery of specialized services on the plan, particularly doctors, nurses, veterinarians; • consultants, especially historical, musical, medical, script doctor, technologist; • people involved in adapting the script, dialogue; • individuals involved in stunt activities.
2.	<p>Cost of stage design and costumes, including costs of:</p> <ul style="list-style-type: none"> • creation, adaptation or rental of tage design; • creation, maintenance, rental of props, or purchase of props that were used in the course of the production; • the creation, maintenance, rental of costumes or purchase of costumes that have been consumed in the course of the production; • the lease of a film studio or a shooting hall; • rental of film locations (shooting facilities); • outdoor preparations; • animal rentals; • vehicle rentals; • gun lease; • rental of on-set or in-studio equipment, such as crew trailers, mobile kitchens, and power generators; • lease of scenery rooms, including prop rooms, storage rooms, warehouses;

	<ul style="list-style-type: none"> • Plan security, including the cost of emergency response vehicles, ambulances, and fire department vehicles; • related to visual effects, character modeling, creation of sets and backgrounds in animation, including costs of services and costs of renting or purchasing consumables for audiovisual works; • on-set special effects, consumables, film weapons; • make-up, make-up, hairdressing; • technical issues related to archiving footage; • related to on-set film editing; • related to color correction of the image.
3.	<p>Acquisition costs for technical equipment used for film production, including:</p> <ul style="list-style-type: none"> • rental of lighting equipment including lifts, towers and rental or purchase of consumables; • rental of generators and purchase of fuel for generators; • camera rental, camera equipment, other audiovisual recording equipment, and rental or purchase of supplies; • rental of camera equipment (grip) and rental or purchase of consumables; • rental of sound equipment and rental or purchase of supplies; • purchase of video and audio media.
4.	<p>Other film production costs, including:</p> <ul style="list-style-type: none"> • acquisition of rights to the screenplay and rights to adaptations enabling production; • literary and artistic works related to the development and realization of an audiovisual work, including the costs of acquiring copyrights; • office and administrative expenses incurred at a production site other than a permanent location or at another film producer's place of business, such as a film set or locations; • personal accident and liability insurance for all team members; • communications on the plan; • film set security and medical security; • customs; • translation of documents and materials necessary for the production; • legal services and other consulting and auditing services, accounting services, performed in connection with the realization of audiovisual production; • Banking services related to the maintenance of an escrow account associated with the award of financial support.
5.	Costs associated with travel, lodging, food.
III. Cost Object: Postproduction	
1.	<p>Costs of fees, gross salaries and wages including surcharges (social security contributions), including:</p> <ul style="list-style-type: none"> • editors; • colorists; • image quality specialists; • composers; • performers; • sound directors; • lecturers; • specialists in sound recording, synchronization and editing; • sound engineers; • specialists in reconstructing archival materials.
2.	Cost of developing the footage.
3.	Cost of editing video, sound, music, synchronizing sound to video.
4.	Image quality service costs.
5.	The cost of sound design, sound recording or music.

6.	The cost of dubbing, subtitling, postsynchronization and automatic dubbing of dialogue and sound effects.
7.	Costs of renting equipment for picture editing and sound postproduction, rental of editing room picture and sound.
8.	Equipment rental costs for animation creation, compositing and rendering.
9.	Costs of acquiring copyrights and licenses to works used in audiovisual production, including: <ul style="list-style-type: none"> • music by Polish authors and performers; • archival materials; • literary works; • spoken word and musical works.
10.	Film tape preparation costs.
11.	Costs of fixed-term civil contracts authorizing the use of computer software necessary to perform post-production, including editing, visual or sound effects, or animation, for a given project for a specified period of time as scheduled.
12.	Recording studio rental costs.
13.	Digital media purchase costs.
14.	Post-production audit costs.
15.	Costs of preparing background materials.
16.	Cost of preparing archival materials and copies.
17.	Production costs for formats that make an audiovisual work accessible to people with disabilities, including costs: <ul style="list-style-type: none"> • audiodescription; • subtitles for the deaf; • sign language interpretation.
18.	The cost of making a master copy.
19.	Film Ripping Costs.

Source: Own elaboration based on: <https://pisf.pl/produkcja-filmowa>. Sadowska (2017: 54-60); Gierusz (2005: 49-52); Kiziukiewicz (2019: 14-19).

The basis for cost segregation is the film script. On the other hand, the identified production costs are included in a numerical statement - cost estimate. The cost estimate answers the question: how much money is needed to produce the film? The planned amount of incurred costs should be sufficient to produce an audiovisual work so that it will bring the intended purpose (Kotapski, 2005). An experienced producer, after reading the script, knows how much the film will cost. The average cost of film production in Poland oscillates around the amount of 7,000,000 PLN in 2020 (data from a producer interview) for a dramatic feature film with an uncomplicated set design. The most expensive Polish film is "Quo Vadis" (Kawalerowicz, 2001), which cost 76,140,000 PLN (producer data).

The costing procedure follows formula (2):

planned daily rate * unit * planned number of units = cost in the estimate (2)
A basic unit is a unit of time, usually a shooting day or a lump sum.
The cost estimate template prepared by the Polish Film Institute is presented in Table 2.

Table 2. Cost estimate for a feature film in Poland

Film Details				
Film title		Director's Name		
Manufacturer - company name		Lead producer - name		
Movie length (minutes)		The technology of shooting		
Master copy medium		Number of shooting days		
Locations (outdoor / indoor)		Budget date		
Summary Costing Sheet				
Cost item	Quantity	Unit.	Rate	Total
I. Project development and preliminary work				
01 Rights and Literary Works				
02 Remuneration				
03. Casting/documentation/projects				
04 Business Travel				
05 Transportation				
06 Administrative - Office expenses				
07 Other costs				
II. Production - preparation and shooting				
08. Salaries - shooting crew				
09. Salaries and wages - staffing				
10. Equipment/photography services/carriers				
11. Stage design and interior decoration				
12 Costumes and Characterization				
13 Special effects on set - SFX				
14 Shooting Facilities/Hall				
15. Shooting maintenance				
16 Business Travel				
17 Transportation				
18. Administrative - production office costs				
19 Insurance				
III. Postproduction				
20. Picture editing				
21 Picture post-production				
22. Audio post-production				
23 Music				
24 Output materials and archiving				
25 Business Travel				
26 Transportation				
27. Post-production office administrative costs				
IV. Other direct costs				
28. legal and financial services				
29. promotion at the production stage				
30 Other direct costs				
V. Total direct costs (I. + II. + III. + IV.)				
VI. Producer overhead (up to 7 % * point V.)				
VII. Total film production costs (V. + VI.)				

VIII. Distribution costs (<i>Prints & Advertisement</i>) (up to 5 % * point V.)				
IX. Total film production and distribution costs (VII. + VIII.)				

Source: Own compilation based on: <https://pisf.pl/produkcja-filmowa>.

The interviews with producers show that the essential item in the film production cost is the fees, which, depending on the film project, range from 37 to 45% of the total film production cost. Therefore, with the average cost of film production in Poland, the filmmakers' salaries alone cost between PLN 2,590,000 and PLN 3,150,000.

5. Conclusion

The considerations carried out lead the author to the following conclusions:

- The film script determines the cost modeling in each phase of the film production process.
- The structure of the set of costs in each stage of the film production process is similar across films.
- Fees are a significant item in the cost estimate of a feature film.
- The production organization criterion and the time criterion shape the film's own production costs.
- The terms "film production technology" and "film production" are used interchangeably.
- The process of film production is similar in every country's cinematography and consists of the same steps.
- The cost of producing a film product is divided into direct costs and indirect costs.
- The film production process has the characteristics of a production schedule that takes a minimum of 10 months in total.
- There is a rule of thumb that 1 page of script corresponds to 1 minute of film on screen.
- Costs are usually measured by economic arithmetic, by multiplying a rate and a unit of time or a lump sum.
- Film production and film distribution are two separate sectors of the film industry.
- A producer is a person who initiates a project and is responsible for the organizational and cost process of producing a film.
- There is a need to further explore the research issue of cost in film production, especially in the area of quantitative research.

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