

# Integrating Traditional Photography and Computer-Generated Imagery in Advertising Design: A Case Study of Kabale Municipality, Uganda

Mugisha Ian<sup>1</sup>; Dr. Mike Nandala<sup>2</sup>; Dr. William Kayamba<sup>3</sup>; Mashemererwa Mike<sup>4</sup>

<sup>1</sup>Master Student, Department of Applied Design and Fine Art, Kabale University, Uganda

<sup>2</sup>Senior Lecturer, Department of Applied Design and Fine Art, Kabale University, Uganda

<sup>3</sup>Senior Lecturer, Department of Applied Design and Fine Art, Kabale University, Uganda

<sup>4</sup>Teaching Assistant, Department of Applied Design and Fine Art, Kabale University, Uganda

Publication Date: 2026/09/18

**Abstract:** Content that is visually rich and can capture attention, convey product value and aid in brand differentiation is increasingly essential to advertising. Camera-based photography is still at the heart of the poster, banners, billboards, flyers and digital advertising in Kabale Municipality. While photography provides realism and familiarity, it can be limited by the need to physically set up the shot, lighting, reshooting expenses, limited angles, and the inability to capture products or environments that haven't yet been created. Computer-Generated Imagery (CGI) provides complementary capabilities with 3D modelling, texturing, virtual lighting, photorealistic rendering, background construction and digital compositing. This article builds a context of how traditional photography and CGI can be integrated in the advertising design in Kabale Municipality. It is based on a qualitative, exploratory case-study proposal that included 23 purposively selected graphic designers, commercial photographers, advertising professionals, small-business owners, design educators, and design students. Suggested evidence sources include semi-structured interviews, visual analysis of local advertising materials, field observation and practice-based production of hybrid advertising prototypes. The article states that a hybrid workflow can maintain the authenticity of photography and provide greater creative control, flexibility, asset reuse, and visual consistency. But, the success of adoption depends on skills development, appropriate hardware and software, practical production planning, ethical image manipulation and sensitivity to local cultural aesthetics. A six-stage process is suggested, from the advertising brief and the capture of the photograph through to the creation of a 3D model, the rendering, compositing and evaluation. The framework serves as a foundation for empirical research in the field, curriculum building, professional training, and local innovation in advertising practice.

**Keywords:** *Traditional Photography; Computer-Generated Imagery (CGI); Advertising Design; Visual Communication; Photorealistic Rendering; Digital Compositing; Hybrid Advertising; Kabale Municipality.*

**How to Cite:** Mugisha Ian; Dr. Mike Nandala; Dr. William Kayamba; Mashemererwa Mike (2026) Integrating Traditional Photography and Computer-Generated Imagery in Advertising Design: A Case Study of Kabale Municipality, Uganda.

*International Journal of Innovative Science and Research Technology*, 11(8), 3830-3837.

<https://doi.org/10.38124/ijisrt/26aug279>

## I. INTRODUCTION

In today's advertising landscape, visuals are a pivotal component, as viewers frequently first encounter brands visually, and then through words. The photograph has been one of the most popular advertising media because of the apparent reality of the product, the people, the place, and the event being captured. In commercial communication, this relationship with visible reality assigns a persuasive value to photography: the consumer can examine the image of the product, identify familiar contexts, and link the message to reality. But the camera is not the only thing that makes visual

communication. In addition to meaning, composition, colour, lighting, perspective, typography, scale, texture and the relationship between the depicted object and its surrounding environment (Kress & van Leeuwen, 2006) all influence meaning.

The production of advertising has shifted from a purely photographic process to a hybrid digital process. Computer-Generated Imagery is the term used for visual material that has been produced or significantly altered with the help of computer-based processes such as 3D modelling, texturing, lighting simulation, rendering and compositing. Modern

rendering software can render materials, reflections, shadows, depth, and lighting to a degree that can be used to incorporate digital objects into photographs. CGI is not always the solution to replace photography. It can be used as a supplement to the process of photography production, adding objects, settings, variations and viewpoints that would be difficult, expensive, dangerous or impossible to create in the real world (Mustafa, 2019; Tokuda et al., 2013).

The article under discussion is focused on Kabale Municipality which is the administrative and commercial hub of Kabale District in the southwestern part of Uganda. The municipality has photography studios, printing companies, freelance graphic designers, advertising and branding practitioners, educational institutions, and small businesses which rely on visual promotion. The source proposal indicates high reliance on camera-based imagery and traditional digital editing methods, with less experience in 3D modelling and photorealistic rendering. This raises the question of whether a locally-tuned hybrid process might enhance advertising quality without compromising the practical advantages of photography.

#### ➤ *Problem Statement*

The main issue isn't that photography is no longer relevant, it's that photography alone might not be relevant to all the needs of today's advertising. A traditional photo shoot relies on the availability of the product, location, props, lighting equipment, models, transport, time and post production. If a client asks for a new colour, a different background, a different configuration of the product or a different camera angle after the shoot, the designer may need to recreate the set or re-shoot the product. The limits are particularly relevant in the case of smaller firms or regional design studios with smaller budgets and equipment.

CGI can help overcome some of these limitations but it is not a given. Photorealistic output demands technical knowledge, competent computers, appropriate software, and self-discipline in asset management, as well as an understanding of the principles of photography. Moreover, digitally enhanced advertising can be spectacular, but not necessarily understandable, not necessarily real, or not necessarily natural when designers focus on spectacle over understanding, authenticity, or naturalness. The key question is then how to integrate photography and CGI in a technically viable, visually effective, ethically responsible and appropriate way for the advertising environment of Kabale Municipality.

#### ➤ *Purpose and Objectives*

The purpose of the study is to examine how the integration of traditional photography and Computer-Generated Imagery can enhance advertising content production in Kabale Municipality.

#### • *The Specific Objectives are to:*

- ✓ Examine the visual and technical characteristics of photography-based advertising content produced in Kabale Municipality;

- ✓ Explore appropriate techniques for integrating traditional photography and Computer-Generated Imagery in advertising design; and
- ✓ Develop and assess advertising designs produced through the integration of traditional photography and Computer-Generated Imagery.

#### ➤ *Research Questions*

- What visual and technical characteristics define photography-based advertising content produced in Kabale Municipality?
- Which CGI techniques and workflows are appropriate for integrating digital rendering with traditional photography in the local advertising context?
- How can hybrid advertising designs be developed and assessed in relation to visual appeal, creativity, realism, adaptability, and communicative effectiveness?

## II. THEORETICAL AND CONCEPTUAL FOUNDATION

#### ➤ *Visual Communication Theory*

Visual communication theory treats images as structured systems of meaning rather than neutral records of reality. A viewer interprets not only the depicted subject but also the arrangement of elements, camera position, colour relationships, lighting direction, visual hierarchy, scale, and cultural symbols. Kress and van Leeuwen (2006) describe visual grammar as a set of representational and compositional choices through which images organise meaning. In advertising, these choices influence whether a message appears credible, desirable, modern, affordable, exclusive, local, or aspirational.

Photography and CGI contribute different but overlapping communicative qualities. Photography is strongly associated with indexical realism because light reflected from a physical scene is captured through a camera. CGI constructs visual reality through mathematical geometry, simulated materials, and virtual illumination. When carefully produced, rendered images can communicate material form and spatial depth with photographic plausibility (Tokuda et al., 2013). The integration of the two media therefore allows advertising designers to combine the credibility of photographed elements with the controlled imagination of digitally constructed scenes.

#### ➤ *Technological Adoption and Workflow Transition*

Adopting CGI can also be seen as a technological shift in an existing creative process. Rogers' (2003) diffusion of innovations perspective is appropriate because practitioners consider the new technology based on its perceived advantage, compatibility with current practice, complexity, opportunity for experimentation, and visibility of results. CGI is more likely to be embraced when local designers can envision the benefits, start with simple techniques and slowly incorporate them into their existing workflows of photography and graphic design.

Industry's shift from photography to digital visualisation shows that aesthetics is not enough to sell. Organisations also take into account the speed of production, repeatability, asset reuse, consistency and cost of producing several product variations. A gradual approach toward a hybrid model would be more feasible for Kabale Municipality than an immediate replacement of photography. The emphasis should be on practical aspects of techniques that address production problems that can be identified, such as background replacement, product visualisation, lighting correction, environmental construction, and the production of multiple versions of a campaign using reusable digital assets.

#### ➤ Conceptual Framework

The conceptual model places traditional photography and CGI as complementary inputs. Photography adds realism, familiarity, local recognisability and documentary credibility. CGI provides flexibility, creativity, virtual staging, modification and asset reuse. They are anticipated to impact on advertising quality in terms of enhanced visual appeal, communication value, adaptability and consistency of production. Contextual factors, such as skills, hardware and software, cost, client expectations, ethical standards, and cultural relevance, moderate the relationship.

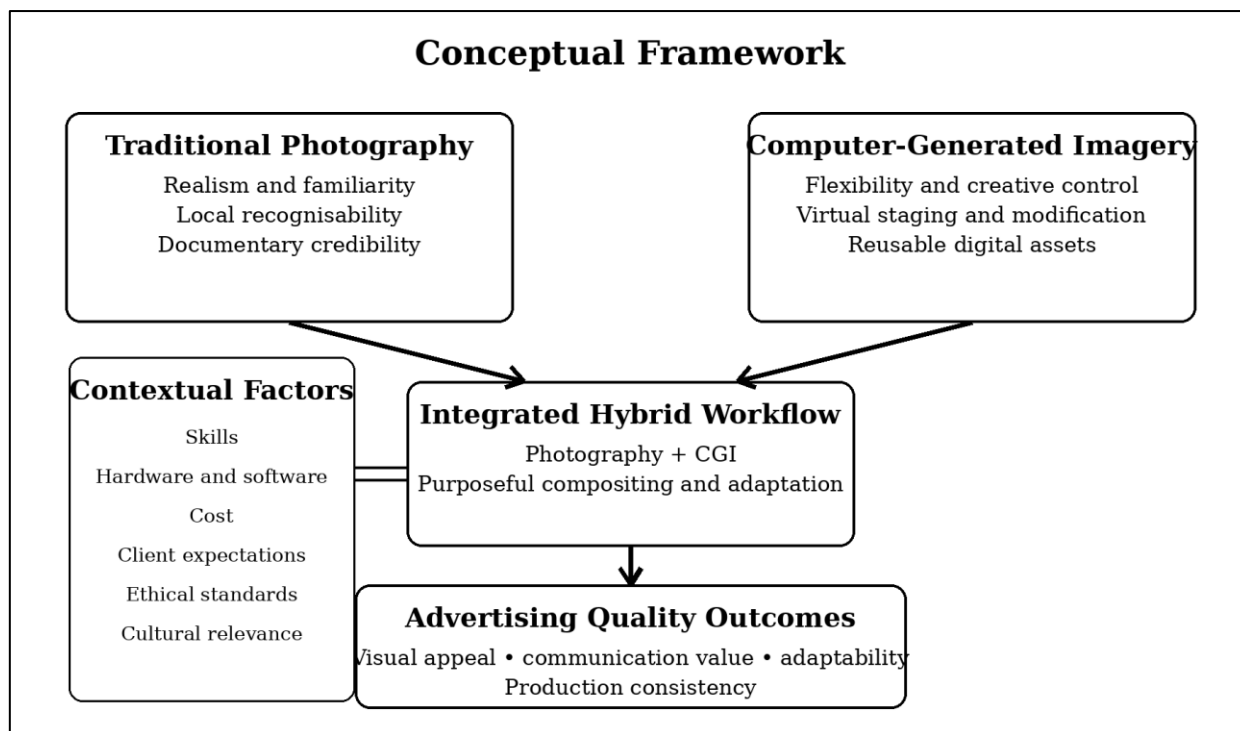


Fig 1 Conceptual Framework for Integrating Traditional Photography and CGI in Advertising Design.

### III. REVIEW OF RELATED LITERATURE

#### ➤ Photography in Advertising

Photography was now part of advertising, as it could display products and services with a level of descriptive detail that illustration sometimes failed to convey. The camera captures colour, surface, scale, form and context in product promotion, and the photographer can create mood and desire in the advert. Digital cameras and smartphones are also able to produce usable images rapidly, and many designers are already comfortable with the basic editing software, making it accessible to local studios.

Don't mistake its apparent realism for neutrality. Photographs for advertising are chosen, posed, lit, cropped, retouched and set up with text. They are effective when planned and executed well. Not enough lighting can mask characteristics of the material; the wrong background can diminish contrast; the wrong angle can diminish a campaign; and too much retouching can diminish trust. Physical availability is still a factor in photography. If a product isn't

made yet, a building isn't built yet, or an environment isn't imagined yet, it can't be photographed in its finished state.

#### ➤ Computer-Generated Imagery and Photorealistic Rendering

Typical CGI production includes modelling a three dimensional object, assigning materials and textures, placing virtual lights and cameras and rendering the scene to a two dimensional image. Modelling and scene construction are done using software like Autodesk 3ds Max, and the interaction of light with surfaces is computed by render engines. The final render can be used stand-alone or be composited over a photo in image-editing software (Autodesk, 2018; Corona Renderer, 2018).

Control is the main advantage of CGI. A designer can even change the colour of a product, alter the material, move the camera, adjust the time of day, replace the setting, or create several variations of a campaign without physically rebuilding a set. CGI can also be used to visualise prior to manufacturing and can show internal structures or views that would not be possible to see in the real world. It has been

embraced in product design presentation, architecture, film, car promotion and digital advertising (Mustafa, 2019; Yao, 2021).

The medium also has its drawbacks. Creating high quality models and textures can be time consuming, and realistic rendering may need high-performance hardware. The inexperienced user can create a wrong scale, fake material, unrealistic reflection or lighting that is not the same as the one in the photo. CGI thus requires software skills and visual literacy. A complicated picture does not necessarily make for an effective ad.

#### ➤ *The Case for Hybrid Integration*

Hybrid workflow means that a combination of photographed and digitally created elements are used in the same workflow. It can be straightforward, like adding a photo of a product to a digitally rendered background, or complicated, like creating a rendered product and adding it to a photo of a scene with matching perspective, light direction, colour temperature, shadow density and depth of field. The hybrid approach is useful, because it keeps the recognisable photographic elements, but lets the designer control some parts of the scene that may be too expensive or impractical to produce physically.

Studies on CGI advertising suggest that besides technical realism, novelty, attention, congruence with the brand, and the credibility of the message are also important factors in audience reactions to the advertisements (Kagitci Candan et al., 2025; Ozkok, 2025; Sevinç & İyici, 2025). This implies that communication goals should be used to guide integration. For instance, a locally produced food advertisement could be enhanced with a real image of the product and its packaging, whereas CGI could be used to create a cleaner environment, manage condensation, add dynamic ingredients, or provide a repeatable backdrop for a campaign.

#### ➤ *Skills, Education and Regional Adoption*

According to the literature, the adoption of digital art and computer graphics education relies not only on the availability of software, but also on the development of structured skills (Osadcha & Baluta, 2021). The designer should be proficient in modelling, materials, lights, camera matching, compositing and visual assessment. They must also be aware of copyright and truthful representation and the ethical boundaries of image manipulation.

The study of CGI in film, animation and television advertising has been explored in Africa, specifically on the issues of meaning, perception and communicative effectiveness (Ajiwe & Eze, 2021; Chimezie et al., 2022; Ebenezer et al., 2016). But little focus has been placed on the

hybrid photography-CGI production in smaller regional advertising markets. Kabale Municipality is an interesting case as it has an active local business environment, training institutions and creative practitioners, and also shares general limitations in hardware, specialised training, software access, and client budgets.

#### ➤ *Research Gap*

The literature already exists which shows the visual and operational potential of the CGI, but most of it is in technologically advanced commercial environments or entertainment industries. Little context-specific evidence exists regarding the understanding and knowledge of the local users, including photographers, graphic designers, advertisers, business owners and design educators, of CGI and what resources are available, what integration methods are feasible and how local users might interpret hybrid images. The proposed study will fill this geographical, professional and methodological gap, with a mixed method of practitioner perspectives, visual analysis, field observation and practice-based design production.

## IV. METHODOLOGY

#### ➤ *Research Approach and Design*

The research proposed is qualitative research with interpretivist approach. This method is suitable because the study aims to gain insight into the experiences of the professionals, their creative decisions, perception of technology, and the social and economic factors that affect the production of advertising. Kabale Municipality is considered as a bounded case, and the use of photography and CGI is explored in its actual context.

The case study is both descriptive and exploratory. It is descriptive because it describes what is being done with advertising, what tools are being used, what workflows are being followed, and what visual attributes are being used. It is exploratory since the integration of CGI-photography is not yet widely known or experienced in the local context, and it aims to define the potential techniques, obstacles and capacity building needs. A practice-based part is also incorporated to enable the researcher to create and record hybrid advertising prototypes instead of just relying on the participants' opinions.

#### ➤ *Study Area and Participants*

The study will be carried out in Kabale Municipality. Participants will include anyone directly involved in the production, commission, teaching or use of advertising design. The participants will be selected using purposive sampling method, which will select those with relevant recent experience. Proposed sample = 23 participants, across 5 categories.

Table 1 Proposed Participant Distribution.

| Participant category     | Proposed number | Relevant contribution                                                    |
|--------------------------|-----------------|--------------------------------------------------------------------------|
| Graphic designers        | 6               | Knowledge of layout, image editing, software, and advertising production |
| Commercial photographers | 5               | Experience in product, promotional, and studio photography               |

|                                     |           |                                                                               |
|-------------------------------------|-----------|-------------------------------------------------------------------------------|
| Advertising/marketing professionals | 4         | Campaign planning, client expectations, budgets, and media use                |
| Small-business owners/managers      | 5         | Commissioning decisions, perceived quality, affordability, and business needs |
| Design educators/students           | 3         | Curriculum, emerging skills, training needs, and future professional practice |
| <b>Total</b>                        | <b>23</b> |                                                                               |

#### ➤ Data Collection

Four complementary approaches will be followed. The interviews will be semi-structured, lasting about 45 to 60 minutes, and will focus on the following areas: current photographic practice, awareness of CGI, perceived advantages/disadvantages, software knowledge, training needs, and attitudes towards hybrid imagery. Interviews will be audio-recorded and transcribed verbatim, if participant consent is given.

Second, the visual content analysis will be carried out on a sample of posters, flyers, banners, billboards, brochures and digital ads created and/or utilized in Kabale Municipality. The imagery type, imagery composition, colour, typography, hierarchy, technical quality, cultural relevance, message clarity, evidence of digital manipulation and contribution of CGI will be analysed.

Third, non-participant observation will take place in the design studios, photography spaces and printing or

advertising spaces that are accessible. Equipment, software, workflow sequences, collaboration, file management, lighting practices, editing procedures, and decision making will be documented in field notes.

Fourth, the researcher will undertake practice-based CGI design production. Photographs of selected local products/services and 3D models will be created using virtual materials, lighting, rendering and compositing. Technical settings, time demands, constraints, revisions, and reasoning for design decisions will be documented.

#### ➤ Prototype Development and Assessment

The practical component will produce hybrid designs for advertising that can be contrasted with designs using only photography. The beauty of the presentation will not be the only criteria used for assessment. The criteria proposed are: clarity of the message, realism, technical integration, cultural relevance, creative originality, adaptability, production efficiency, and ethical accuracy.

Table 2 Proposed Criteria for Assessing Hybrid Advertising Designs.

| Criterion               | Guiding question                                                                                         | Evidence                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Message clarity         | Does the design communicate the intended product or service quickly and accurately?                      | Participant feedback and visual analysis    |
| Realism and integration | Do photographed and rendered elements share believable perspective, light, scale, and texture?           | Researcher analysis and practitioner review |
| Visual appeal           | Does the design attract attention while maintaining hierarchy and balance?                               | Comparative review of design alternatives   |
| Cultural relevance      | Does the imagery suit local audiences, settings, values, and market expectations?                        | Stakeholder interpretation                  |
| Adaptability            | Can colours, settings, formats, and product versions be changed without repeating the entire production? | Process documentation                       |
| Efficiency              | What time, hardware, software, and skill demands are involved?                                           | Production log                              |
| Ethical accuracy        | Does enhancement avoid misleading claims or false product representation?                                | Design review and disclosure decisions      |

#### ➤ Data Analysis

Transcripts of interviews, observation notes, visual analysis records and production documentation will be thematically analysed. This will include familiarisation with the data, initial coding, grouping codes into themes, reviewing and defining themes, and creating an analytical narrative. Thematic analysis is appropriate as it will be able to capture patterns within the various types of qualitative evidence and will also accommodate the emergence of new issues (Braun & Clarke, 2006).

Visual materials will also be analysed comparatively. Photography only and hybrid designs will be compared to the criteria listed in Table 2. The process will be documented as reflective evidence of decision making, failures, technical

restrictions and successful adjustments to the process and will be considered research evidence because it is practice based. The triangulation of findings from interviews, observation, visual analysis and design practice will be carried out.

#### ➤ Trustworthiness and Ethics

The credibility will be enhanced by the use of methodological triangulation, member checking with selected participants, peer de-briefing and detailed contextual description. Audits trails of interview guides, coding decisions, visual-analysis forms and production logs will be maintained to support dependability. Reflexivity of the researcher will be employed to identify the researcher's own experience and preferences that could affect interpretation.

Participation will be voluntary and informed consent will be obtained. Participants will be told what the study is about, how it will be conducted, how long it will take, what they can gain from it and that they can withdraw at any time. The research report will be anonymized of names and identifying details unless explicit permission is given. Audio files, transcripts, photographs and design materials will be kept safely and only accessed for approved academic purposes. Reproduction of advertising materials of businesses and creators will require permission.

## V. PROPOSED CGI-PHOTOGRAPHY INTEGRATION WORKFLOW

The main idea of this conceptual paper is a six-step workflow that can be implemented step by step in a regional advertising setting. It starts with traditional photography and only adds CGI when it is needed to address a specific communication or production need.

### ➤ *Stage One: Advertising Brief and Feasibility Audit*

The designer needs to start by establishing the audience, message, product attributes, media format, budget, deadline, and needed variations in the campaign. The short should specify those elements that are essential to be photographed due to their authenticity, and those elements that can be digitally created. The feasibility audit should take into account available hardware, software, skills, rendering time, image rights and risk of misleading the audience.

### ➤ *Stage Two: Photographic Capture*

The planning of photography should be done with the idea of integration in mind. The following parameters should be noted: camera angle, focal length, light direction, colour temperature, background separation, resolution, and reference measurements. Neutral or controlled lighting facilitates extraction and compositing. The photographer is also encouraged to take reference photographs of materials, shadows, reflections and the environment.

### ➤ *Stage Three: 3D Modelling and Asset Preparation*

The chosen object or environmental element is realistically modelled at realistic scale. The key to efficient modelling is not to include unnecessary detail in the geometry. Common items like packaging, furniture, display stands, architecture or campaign props should be kept as reusable items. When appropriate, textures can be made from photographs of the surfaces to maintain the character of the local materials.

### ➤ *Stage Four: Materials, Lighting, Camera Matching, and Rendering*

The surface behavior of the object to be reproduced should be represented by virtual materials, not just colors. Adjustment of reflection, roughness, transparency, bump and texture scale. The virtual camera should be the same as the perspective of the photo; lighting should be in the same direction, softness, intensity and colour as the photographed scene. Test renders should be done at a low resolution before final rendering.

### ➤ *Stage Five: Compositing, Typography, and Output Adaptation*

The rendered and photographed elements are then composited using masking, colour correction, shadow construction, atmosphere manipulation and depth of field matching. Typography and branding is then incorporated based on visual hierarchy. The final design will be created in a variety of formats (posters, social media graphics, banners, billboards, flyers, etc.) and remain legible and without distortion of the message.

### ➤ *Stage Six: Evaluation and Revision*

The design should be checked by the designer, client, practitioners and representatives of the selected audience. Evaluation should focus on whether CGI has added to the message or decoration. Revisions should focus on realism, hierarchy, relevance to the local area, technical quality and ethical accuracy. The process log should document the resources and time it takes to complete the process to determine the economic feasibility of the workflow.

## VI. DISCUSSIONS

### ➤ *Authenticity and Creative Control*

The best argument for integration is that it is a complementary relationship between photographic authenticity and CGI control. Photography can place an advert in a familiar reality and CGI can continue a scene beyond the constraints of location, weather, product and physical staging. This relationship reinforces the argument of the visual communication that effectiveness is achieved by the purposeful arrangement of signs and not just one medium.

However, photorealism should not be the sole aim. The stylised or imaginative CGI might be useful for some campaigns. The standard is congruence between the visual treatment, the brand identity, the product category and the audience expectation. If the technical effect detracts from the message being promoted, then the hybrid image is unsuccessful.

### ➤ *Cost, Time, and Reusability*

It is said that CGI is cost effective, but only under certain circumstances. The first model might take longer than a picture, especially for the designer who is new to the design field. Efficiency comes when digital assets are reused, revised, rendered from multiple perspectives or adapted to various campaigns. For small businesses in Kabale, therefore, the most viable option could be the repeated product categories and campaign systems, rather than one-off complex scenes.

### ➤ *Skills and Infrastructure*

Proposed framework specifies the skills as the most critical enabling condition. Knowledge of modelling, lighting, photography, composition, colour, and typography are all important to the effective generation of images, hardware and software are not. Training should be from basic compositing and camera matching to product modelling and virtual environments. The shift can be facilitated by educational institutions offering short courses, studio demonstrations,

joint computer labs, and joint projects between graphic design and photography and product design.

#### 6.4 Cultural Relevance and Ethical Representation

Local adoption should not reproduce global advertising styles without considering the Kigezi context. Relevant landscapes, architecture, clothing, products, materials, and social settings can strengthen recognition and trust. CGI should support this contextual specificity rather than replace it with generic virtual environments. Designers should also distinguish legitimate enhancement from deception. Changes that clarify a product or construct an imaginative campaign may be acceptable, whereas alterations that falsely represent size, quality, availability, or performance require caution and disclosure.

#### ➤ *Implications for Advertising Practice and Education:*

For producers, hybrid production could broaden the product mix and minimize the need for repeated in-person shoots. It can help businesses maintain a cohesive visual identity and make campaign changes easily. The study can contribute to curriculum development in 3D Modelling and Rendering, Digital Photography, Compositing, Motion Graphics and Ethical Visual Communication for Kabale University and other training institutions. The benefit of the CGI training will be maximized in relation to real local products, clients and communication issues.

### VII. CONCLUSION AND RECOMMENDATIONS

Realism, accessibility and familiarity are the reasons traditional photography is still valuable in advertising. It is limited when advertising demands a lot of control of the scene, product variations, environments that are not built, repeated revisions, or visually ambitious environments. These can be overcome by using modelling, virtual lighting, rendering and compositing from CGI. Kabale Municipality's strategy should thus not be to replace photography, but to use it in a meaningful way alongside CGI.

The proposed research is an exploratory case study and practice-based design production. It will analyse existing advertising products, collect views from practitioners and client, and explore production contexts and create hybrid prototypes. This article outlines a six-step workflow that can serve as a foundation for that process.

#### ➤ *The Article Recommends that:*

- Local designers start off with simple integration methods like background construction, product visualisation, camera matching and compositing before working with virtual scenes;
- Training institutions launch practical CGI courses which link modelling and rendering to the fields of photography, typography, branding and advertising strategy;
- Studios build digital asset libraries that can be reused for the long term to ensure efficiency and consistency; and
- Businesses consider hybrid designs based on the value of the communication and adaptability, not just looks; and

- Designers uphold ethical principles by ensuring that the products are not misrepresented and that the use of photographs, brands and advertising artefacts is approved; and

Future empirical studies will measure responses from the audience, production costs and workflow efficiency from a completed local ad campaign.

### LIMITATIONS OF THE PROPOSED STUDY

The proposed sample is a purposeful sample and findings will not be statistically representative of all advertisers in Uganda. Studio and commercial materials may be limited and participant accounts may exhibit self-report bias. The prototype visual quality will be dependent upon the researcher's skill, available hardware and software, electricity and prototype production time. Finally, the technologies that can be used for CGI are constantly evolving, and it is possible that the specific software recommendations may become obsolete even if the principles of CGI integration are still applicable.

### ACKNOWLEDGEMENTS

The author acknowledges the academic guidance of Dr. Mike Nandala and Dr. William Kayamba, as well as the contribution of colleagues and practitioners whose future participation will support the study.

### REFERENCES

- [1]. Ajiwe, U., & Eze, C. (2021). The semiotics of computer-generated images (CGI): A reading of selected Nollywood films. *Journal of Communication and Media Research*, 2(1), 27–46.
- [2]. Autodesk. (2018). 3D modelling. Autodesk.
- [3]. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- [4]. Chimezie, U., Nwofor, S., & Ajiwe, U. (2022). Perception of computer-generated images in Nigerian-made animated films: A cognitive-semiotic view. *Journal of Communication*, 3, 1–19. <https://doi.org/10.47941/jcomm.860>
- [5]. Corona Renderer. (2018). About Corona and rendering quality. Chaos.
- [6]. Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE.
- [7]. Daifang, Z. (2021). Research on circular promotions of graphic advertising design and computer. *Journal of Physics: Conference Series*, 1961, 012014. <https://doi.org/10.1088/1742-6596/1961/1/012014>
- [8]. Ebenezer, O., Oladumiye, E., & Adelabu, O. (2016). The recall and communicative effectiveness of computer-generated imagery in television advertisements: A case study of Lagos, Nigeria. <https://doi.org/10.5281/zenodo.3952546>

- [9]. Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- [10]. Kagitci Candan, S., Özdemir, H., & Akagün, E. (2025). The rapid rise of CGI advertising: Bringing the impossible to life. *Market-Tržište*, 37, 265–278. <https://doi.org/10.22598/mt/2025.37.2.265>
- [11]. Kress, G., & van Leeuwen, T. (2006). *Reading images: The grammar of visual design* (2nd ed.). Routledge.
- [12]. Mustafa, M. (2019). Presenting a product design from computer-generated imagery (CGI) [Bachelor's thesis, University for Business and Technology].
- [13]. Osadcha, K., & Baluta, V. (2021). The influence of modern trends in digital art on the content of training in computer graphics and digital design. *Ukrainian Journal of Educational Studies and Information Technology*, 9, 1–12. <https://doi.org/10.32919/uesit.2021.01.01>
- [14]. Ozkok, O. (2025). Analysing advertising acceptance through diffusion of innovations theory: An investigation into CGI advertising. *Erciyes İletişim Dergisi*, 2, 529–549.
- [15]. Rackwitz, A., & Sterner, M. (2007). *Photorealistic rendering with V-Ray*. Chalmers University of Technology.
- [16]. Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- [17]. Sevinç, M., & İyici, A. (2025). Virtual versus real: A comparative study on CGI ads and guerrilla ads. *Uluslararası Halkla İlişkiler ve Reklam Çalışmaları Dergisi*, 8, 10–40. <https://doi.org/10.61766/hire.1596828>
- [18]. Tokuda, E., Pedrini, H., & Rocha, A. (2013). Computer-generated images versus digital photographs: A synergetic feature and classifier combination approach. *Journal of Visual Communication and Image Representation*, 24, 1276–1292. <https://doi.org/10.1016/j.jvcir.2013.08.009>
- [19]. Yao, Y. (2021). Research on the application of computer graphics software in graphic advertisement design. *Journal of Physics: Conference Series*, 1992, 022024. <https://doi.org/10.1088/1742-6596/1992/2/022024>.