

DESIGN DECODED 2021

Proceedings of the 2nd International Conference on Design
Industries & Creative Culture

Kedah, Malaysia
24-25 August 2021

EDITORS

Juaini Jamaludin
Hasnul Azwan Azizan
Neesa Ameera Mohamed Salim
Normaziana Hassan
Azhari Md. Hashim



Proceedings of the 2nd International Conference on Design Industries & Creative Culture

24-25 August 2021, Kedah, Malaysia

DESIGN DECODED 2021

General Chairs

Dr. Wan Noor Faaizah Wan Omar, Universiti Teknologi MARA, Malaysia

Dr. Shafilla Subri, Universiti Teknologi MARA, Malaysia

Technical Programme Chairs

Dr. Neesa Ameera Mohamed Salim, Universiti Teknologi MARA, Malaysia

Juaini Jamaludin, Universiti Teknologi MARA, Malaysia

Assoc. Prof. Ts. Dr. Azhari Md. Hashim, Universiti Teknologi MARA, Malaysia

Dr. Hasnul Azwan Azizan, Universiti Teknologi MARA, Malaysia

Preface

We are delighted to introduce the proceedings of the second edition of THE 2nd INTERNATIONAL CONFERENCE ON DESIGN INDUSTRIES AND CREATIVE CULTURE: “DECRYPT YOUR VISUAL CREATIVITY” (DESIGN DECODED 2021). DESIGN DECODED 2021, is an extension from the previous event (Design Decoded 2019), which it allows participants to present their research, but also, they will be given an opportunity to exhibit their artwork virtually. It is heartening to note that the fraternity of Universiti Teknologi MARA (UiTM) Kedah, particularly the Faculty of Art and Design, have deemed it worthy of their time and resources to host a virtual academic conference to all participants, from home and abroad, to delve and debate with the theme of “Decrypt Your Visual Creativity”.

THE 2nd INTERNATIONAL CONFERENCE ON DESIGN INDUSTRIES AND CREATIVE CULTURE: “DECRYPT YOUR VISUAL CREATIVITY” (DESIGN DECODED 2021), has possibly made available the necessary platform from where ideas and initiatives can be translated into deliverables, with diligence and commitment to attain societal well-being and culturing knowledge, transcending geographical boundaries and ideological differences. Indeed, we all have a role to play in making the 21st century better than the past millennium, whatever our station in life, whichever part of the globe we hail from.

Besides, DESIGN DECODED 2021 is one such avenue from where researchers, academics, practitioners, policymakers, and other stakeholders can make a difference to our communities and nations if we choose to celebrate diversity and rejoice in commonality, whatever our creed of colour. The conference is to be the launching pad for better future performances - ideally in art and design areas such as Sustainable Art and Design, Design Practice, Design Management, Design Education, and many more.

There are a total of 71 presenters for the conference and a total of 175 participants for the virtual art exhibition. The participants are locally and internationally (Indonesia, Pakistan, Philippines, Australia, Cambodia, Indonesia and Malaysia). The conference and virtual art exhibition, will substantially contribute to the universal debut on finding the best, practical and effective ways to embrace the new norms of knowledge and practice especially in art and design backgrounds. This noble effort to share experiences and strengthen linkages, to lend expertise and exchange knowledge, to explore and discover in the name of lifelong academic research for the common good of mankind. This event will be a leading platform in knowledge sharing and building more associations through Memorandum of Understanding (MoU) and Memorandum of Agreement (MoA), pertaining to art and design be it in local or international arena.

Aside from the high-quality technical paper presentations, the technical program also featured four keynote speeches, they were the honourable Emeritus Prof. Dr T.W. Allan Whitfield from Swinburne University of Technology, Australia, the honourable Prof Dr Khairul Aidil Azlin Abdul Rahman from University Putra Malaysia, Malaysia, the honourable Dr Nurul ‘Ayn Ahmad Sayuti from Royal College of Art (RCA), England and the honourable Mr Firdaus Khalid from SAE Institute, United Kingdom, who have shared their thoughts in art and design areas.

The line-up of guest speakers for art exhibition were the honourable Ms. Attieh Mohebbi from Melbourne, Australia, the honourable Mr Syahrulfikri Razin Salleh from Phnom Penh, Cambodia, the honourable Shahar a/l Koyok from Malaysia and the honourable Ms. Izyan Syamimi from Malaysia, who have presented their outstanding artworks.

The effortless contribution from Asst. Prof. Dr. Pibool Waijitragum from Suan Sunandha Rajabhat University, Thailand, Emeritus Prof. Dr. T.W. Allan Whitfield from Swinburne University of Technology Australia, Prof. Dr. Khairul Aidil Azlin Abdul Rahman from Universiti Putra Malaysia, Malaysia, Dr. Harold John Delavin Culala from Far Eastern University, Philippines, Mr. Firdaus Khalid from SAE Institute United Kingdom and Dr. Zahidah Abdul Kadir from Higher Colleges of Technology, Sharjah's Women Campus, United Arab Emirates, as the esteemed steering chairs committees were appreciated. It was also a great pleasure to work with such an excellent organizing committee team for their hard work in organizing and supporting the conference.

We strongly believe that the conference and virtual art exhibition, will substantially contribute to the universal debut on finding the best, practical and effective ways to embrace the new norms of knowledge and practice especially in art and design backgrounds. This noble effort to share experiences and strengthen linkages, to lend expertise and exchange knowledge, to explore and discover in the name of lifelong academic research for the common good of mankind. We also expect that the future DESIGN DECODED conference will be as successful and stimulating, as indicated by the contributions presented in this volume.

Juaini Jamaludin and Normaziana Hassan

Conference Organization

International Advisory

Prof. Dr. Mohamad Abdullah Hemdi
Prof. Ts. Dr. Ruslan Abdul Rahim
Prof. Dr. Amer Shakir Zainol
Prof. Dr. Mohamad Hariri Hj. Abdullah
Assoc. Prof. Dr. Shahriman Zainal Abidin
Assoc. Prof. Dr. Mohd. Nor Shahizan Ali
Prof. Dr. Djatmika
Dr. Zahidah Abdul Kadir

Universiti Teknologi MARA, Malaysia
Universiti Teknologi MARA, Malaysia
Universiti Teknologi MARA, Malaysia
Universiti Teknologi MARA, Malaysia
Universiti Teknologi MARA, Malaysia
Universiti Kebangsaan Malaysia, Malaysia
Universitas Sebelas Maret, Surakarta (UNS), Indonesia
Higher Colleges of Technology, Sharjah's Women Campus,
United Arab Emirates

Steering Committee

Asst. Prof. Dr. Pibool Waijitragum
Emeritus Prof. Dr. T.W. Allan Whitfield
Prof. Dr. Khairul Aidil Azlin Abdul Rahman
Dr. Harold John Delavin Culala
Firdaus Khalid
Dr. Zahidah Abdul Kadir

Suan Sunandha Rajabhat University, Thailand
Swinburne Uni. of Technology Australia
Universiti Putra Malaysia, Malaysia
Far Eastern University, Philippines
SAE Institute United Kingdom
Higher Colleges of Technology, Sharjah's Women Campus,
United Arab Emirates

Organizing Committee

General Chair

Dr. Wan Noor Faaizah Wan Omar
Dr. Shafilla Subri

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Technical Programme Chairs

Juaini Jamaludin
Dr. Neesa Ameera Mohamed Salim
Assoc. Prof. Ts. Dr. Azhari Md. Hashim
Dr. Hasnul Azwan Azizan

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Secretary

Norarifah Ali
Syahrini Shawalludin

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Public Relation

Normaziana Hassan

Universiti Teknologi MARA, Kedah Branch, Malaysia

Treasurer

Izza Syahida Abdul Karim

Universiti Teknologi MARA, Kedah Branch, Malaysia

Content & Design Advisor

Abdullah Kula Ismail
Zawani Badri

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Design Team

Asrol Hassan
Syahrini Shawalludin
Azmir Mamat Nawi

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Publicity & Social Media

Mohd Hamidi Adha Mohd Amin
Muhamad Aiman Afiq Mohd Noor
Zaidi Yusoff
Mohd Syazrul Hafizi Husin
Nurul Atikah Adnan

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Registration DD21 Conference

Abu Hanifa Ab. Hamid
Mohd Zamri Azizan
Fadila Hj Mohd Yusof

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Registration DD21 Art Exhibition

Siti Fairuz Ibrahim
Mohd Taufik Zulkefli

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Head of Reviewer DD21 Art Exhibition

Dr. Faryna Mohd Khalis

Universiti Teknologi MARA, Kedah Branch, Malaysia

Acceptance of Video Conferencing

Ahmad Fazlan Ahmad Zamri

Universiti Teknologi MARA, Kedah Branch, Malaysia

Live Streaming & Knowledge Transfer Program

Mohamad Hazmi Mohamad Shoroin
Suzani Azmin
Mohamat Najib Mat Noor
Nazri Abu Bakar

Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia
Universiti Teknologi MARA, Kedah Branch, Malaysia

Emeritus Prof. Dr. Elivio Bonollo

Dr. Zahidah AbdulKadir
Dr. Harold John Culala
Dr. Janelee I-Chen Li
Dr. Carlos Montana Hoyos
Dr. Carlos Fiorentino
Dr. Aquamila Bulan Prizilla
Dr. Rani Aryani Widjono
Dr. Taufiq Panji Wisesa
Assoc. Prof. Ts. Dr. Hajah Norbayah
Mohd Suki
Assoc. Prof. Ts. Dr. Rajabi Abdul Razak
Assoc. Prof. Dr. Muhammad Firdaus
Abong Abdullah
Assoc. Prof. Dr. Abdul Aziz Zali@Zalay
Assoc. Prof. Dr. Nazlina Shaari
Assoc. Prof. Ts. Dr. Azhari Md. Hashim
Assoc. Prof. Dr. Mumtaz Mokhtar
Assoc. Prof. Dr. Rafeah Legino
Assoc. Prof. Dr. Mohd Syuhaidi Abu Bakar
Assoc. Prof. Dr. Norfadilah Kamarudin
Ts. Dr. Velu a/l Perumal
Ts. Dr. Anuar Mohd Yusof
Ts. Dr. Muhamad Firdaus Ramli
Ts. Dr. Nur Syazana Osman
Dr. Khairul Manami Kamaruddin
Dr. Faizul Nizar Anuar
Dr. Muhammad Jameel Mohamed Kamil
Dr. Shahrul Anuar Shaari
Dr. Mageswaran a/l Sanmugam
Dr. Siti Suhaily Surip
Dr. Sarina Yusuf
Dr. Elis Syuhaila Mokhtar
Dr. Nurul Lina Mohd Nor
Dr. Yip Jinch
Dr. Siek Hwee Ling
Dr. Ruwaidy Mat Rasul
Dr. Siti Yuliandi Ahmad
Dr. Sarah Wahida Hasbullah
Dr. Muhamad Ezran Zainal Abdullah
Dr. Tengku Fauzan Tengku Anuar
Dr. Hana Yazmeen Hapiz
Dr. Azlin Sharina Abd. Latef
Dr. Yuhanis Ibrahim
Ts. Mohd Haidiezul Jamal Ab. Hadi
Ts. Hafeezur Rahman Mohd Yassin
Azlina Mat Saad
Safinaz Mustapha
Dr. Azyyati Anuar
Dr. Azian Tahir
Dr. Daing Maruak Sadek
Dr. Hema Zulaikha Hashim
Dr. Chen Jen Een
Dr. Shafila Subri

Higher Colleges of Technology, United Arab Emirates
Far Eastern University, Philippines
Chung Yuan University, Taiwan
Dubai Institute of Design Innovation, United Arab Emirates
University of Alberta, Canada
Universitas Multimedia Nusantara, Indonesia
Universitas Multimedia Nusantara, Indonesia
Universitas Pembangunan Jaya, Indonesia

University Utara Malaysia, Malaysia
International Islamic University, Malaysia

[illegible]

[illegible]

Contents

Design Thinking, Interior Design

- The Advantage and Disadvantages of Manual and Digital Drawing in Today's Institutions 1

Ernesto Carlos Pujazon Patron, Mumtaz Mohktar

- Contribution of Films in Interior Design Multidisciplinary Approach: A Case Study on Ghost in The Shell 14

Sarah Rahman, Nor Hazirah Hasri, Syazwani Abdul Kadir, Nurul Nabilah Aris

- Electronic Jewellery: The Coalescing of Electronic Devices and Contemporary Jewellery 25

Muhammad Shafiq Muda, Nur Syafinaz Mohd Anuar, Mohd Zamani Daud, Mohd Faiz Jalaludin, Rohazlyn Rosly

- The Impact of Bi-Directional Design Method in Sustainable Fashion Design Thinking and Development: A Case Study of the Fashion Design Process at Hunan Institute of Engineering 37

Shuangxi Zuo, Nazlina Shaari, Noor Azizi Mohd Ali, Sazrinee Zainal Abidin

- Automotive Interior: A study on the Dashboard Touch Screen Panel and Its Impact to the Driver 56

Mohd Taufik Zulkefli, Noor 'Izzati Ahmad Shafiai, Hasnul Azwan Azizan

Art & Design Management. Industrial Design

- Streamlining Augmented and Virtual Experiential Learning in the Industrial Design Education Process 67

Hasnul Azwan Azizan, Zaidi Yusoff, Mohd Taufik Zulkefli, Fadilla Mohd Yusof, Mohd Syazrul Hafizi Husin

- Appreciative of the Biomimicry Design Process for Revolutionary Furniture Development 78

Wan Noor Faaizah Wan Omar, Khairul Aidil Azlin Abd Rahman, Shafilla Subri, Faryna Mohd Khalis, Adibah Yusuf, Hema Zulaika Hashim, Nur Fadilah Mohd Omar

- A Multi-Sensory Teaching Aid Of Malay Language For Dyslexic Children 92

Norarifah Ali

- Incorporating Psychologically Appearance Method for Virtual Classroom Learning Environment 104

Azhari Md Hashim, Abdul Aziz Zalay@Zali, Ahmad Azaini Abdul Manaf

- Securing Crowd Management Over Patients' Behavior in Chinese Public Hospitals 116

Yajie Luo, Rahinah Ibrahim

- Spatial Cognition: A Sign of Successful Communication Representation between Professionals on the AEC's Design Process 126

Mohsen Delfani, Rahinah Ibrahim

Education in Design Creativity & Innovation

- Iceberg© Online: Applying Physical Creativity Integration Tool into Online Studios 137

The 'Action Process' Framework for Strategic Design Approach Among Bumiputera SME Furniture Manufacturers <i>Nur Syazana Osman, Khairul Aidil Azlin Abd Rahman</i>	153
Lifelong Learning (LLL): Terminology in Art & LLL Blueprint in Malaysian Context <i>Adiba Amanina Shaharuddin, Mumtaz Mohktar, Badrul Isa, Yulriawan Dafri</i>	164
Exploring Children Preferred Outdoor Landscape Elements for Education <i>Marina Abdullah, Mohd Zulhaili Teh, Helmi Hamzah, Khalilah Hassan</i>	184
Overcoming Learning Obstacles and Improving Online Distance Learning (ODL) among Art and Design Education Students during Covid-19 <i>Roslaili Anuar, Fathin Nabilah Zulkifli, Wan Zamani Wan Zakaria, Muhammad Faiz Sabri, Muhammad Fadli Zulkapli, Shahrman Zainal Abidin</i>	196
Mirror, Mirror on My Blog <i>Vinod J. Nair, Jinchi Yip</i>	206
Visual Diary: The Self-discovery for Future Designer in Design Learning <i>Siti Nurannisaa P.B., Mariati Mariati, Tri Hadi Wahyudi</i>	225
Cognitive, Psychomotor and Affective Domain Conceptual Framework Validity and Reliability in TVET Fashion Program Curriculum <i>Norulaini Mohd Ramly, Nazlina Shaari</i>	232
Mobile-based Visual Decision Support System for Hybrid Learning in Post-COVID-19 Pandemic <i>Ahmad Faiz Ghazali, Aishah Suhaimi, Rahmawati Mohd Yusoff, Nurkhairany Amyra Mokhtar</i>	238
Art Appreciation Session in Visual Art Education <i>Nur Umairaa Omar, Wan Samiati Andriana Wan Mohamad Daud, Siti Zuraida Binti Maaruf</i>	246
The Effectiveness of the Three-Dimensional (3D) Design Animation Programme in the Institutes of Higher Learning Malaysia <i>Shafilla Subri, Mohd Firdaus Md Shah, Wan Noor Faizah Wan Omar, Syafiq Abdul Samat, Ahmad Fazlan Ahmad Zamri</i>	255
Conducive Learning Space for Design-Based Students in Open and Distance Learning (ODL) Implementation <i>Syazwani Abdul Kadir, Nurul Nabilah Aris, Sarah Rahman, Nor Hazirah Hasri</i>	266
Sustainable Art & Design	
Bamboo: A Batik Block Alternative to Aesthetically Produce Batik Pattern Design <i>Hamdan Lias, Ahmad Rasdan Ismail, Haslinda Abd. Hamid, Sarah Wahidah Hasbullah</i>	275
A Conceptual Paper: Malaysian Consumers' Aptitude on Apparel Purchasing Amid the Covid-19 Pandemic: Overview of Generation Y and Generation Z <i>Normaziana bt Hassan, Basitah Taif, Rosita Tajudin</i>	285

Sustainable Materials in Malaysia: A Systematic Review on Academic Research and Application in Product Design Industry <i>Zati Hazira Ismail, Liew Yong Kian, Fadzli Irwan Bahrudin, Nuraini Daud</i>	300
The Hybrid Knowledge Between Artist and Curator in Developing the Hybrid Art Practices <i>Valerie Anak Michael, Khairul Aidil Azlin Abd Rahman</i>	317
Green Aesthetic Approach for Upcycling Packaging Products <i>Zou Shasha, Rahinah Ibrahim</i>	331
Research on the Persuasive Design of Healthy Living Products <i>Ji Kang, Ruhaizin Sulaiman, Khairul Manami Kamarudin, Rosalam Che Me</i>	341
Product Categories Affected by Odorous Materials <i>Zati Hazira Ismail, Basyarah Hamat</i>	349
Visual Communication, New Media, Graphic and Digital Media	
Rethinking a National Monetary Identity: Does Malaysia Need a Fitter Ringgit Symbol? <i>Mohammad Aaris Amirza, Mohamed Razeef bin Abdul Razak</i>	361
Developing a Significant Visual Identity for Malaysia Through an E-Book <i>Nor Syahidatul Amira Dzulkepli, Nur Aniza Mohd Lazim</i>	375
Interpretation on crime scene photography evidence for Syariah Offences: A conceptual paper <i>Farihan Zahari, Azahar Harun, Nasreen Miza Hilmy Nasrijal</i>	384
An Overview of The Use of Interactive Multimedia Teaching Aid For Deaf Students <i>Aidah Alias, Azahar Harun, Norfadilah Kamaruddin</i>	397
Systematic Review: Interface Design Study in eCommerce for Elder <i>Agatha Maisie Tjandra, Rani Aryani Widjono, Ken Natasha Violeta</i>	409
Social Cohesion Commotion In Malaysia's Public Service Advertisements Between 2018-2021 <i>Dona Lowii Madon, Azahar Harun, Abdul Rauf Ridzuan</i>	419
Therapeutic Photography: Photograph Preferences in Stress Reduction <i>Ellyana Mohd Muslim Tan, Mastura Mohd Jarit, Azlina Wati Nikmat, Ruslan Rahim, Mohd Nagib Mohd Padil</i>	436
Understanding Effects of Interactive Experience in Advertising <i>Deng Ting, Rahinah Ibrahim</i>	445
Measuring Facilities Management Practice and Consumers' Satisfaction: A Case Study of Shopping Malls in Sarawak <i>Adibah Yusuf, Khairul Aidil Azlin Abdul Rahman, Wan Noor Faaizah Wan Omar, Nadzirah Yusuf, Farah Zaini, Nangkula Utaberta, Adam Andani Mohammed</i>	457
Digital Media as an Effective Platform for Zakat Kedah State Information Source <i>Faryna Mohd Khalis, Wan Noor Faaizah Wan Omar, Kartini Kasim, Osman Abd. Hamid, Hafizah Zainal</i>	474

Soundscape Support for People with Dementia: A Systematic Literature Review <i>Zehang Cheng, Kamal Sabran</i>	490
The Value of Digital portfolio on Placing Graphic Design Graduates from Worker-to-Work Matches in Online Advertisement <i>Wan Zamani Wan Zakaria, Sharkawi Che Din, Nurfadilah Kamaruddin, Roslaili Anuar, Nik Nor Azidah Nik Aziz, Khairul Zikri Abdullah, Abdul Hakkam Hafiz Abdain, Mohd Fazli Othman</i>	502
Designing User Interface for People with Dementia: A Systematic Literature Review <i>Minmin Zhou, Kamal Sabran, Zuriawati Ahmad Zahari</i>	514
Screen Addiction: Analysis of Video Game User Motivation and Interface Preference <i>Syahrini Shawalludin, Mageswaran A/L Sanmugam, Siti Nazleen Abdul Rabu</i>	529
The Effects of Social Media Engagement on the Authentic Personal Brand of Students of Far Eastern University, Manila <i>Ryan P. Hontiveros</i>	542
Digital Literacy as the New Dimension in Measuring Advertising Literacy: Towards a “Super Smart Society” <i>Neesa Ameerah Mohamed Salim, Mohd Nor Shahizan Ali, Djatmika Djatmika, Harold John Culala</i>	559
Approach of Ethics Model on Viral Video Advertising in Malaysia <i>Mohd Hanif Mohd Omar, Azahar Harun, Abdul Rauf Hj Ridzuan, Ariff Imran Anuar Yatim, Anwar Farhan Zolkeplay</i>	573
Visual Culture, Design Practice, Art History, Art/Creative Community & Methodology in Design Creativity & Innovation, Art/Creative Community	
Weavers’ Aesthetic Perception on the Visual Complexity of Pua Kumbu Design Motifs: An Exploratory Study <i>Wan Juliana Emeih Wahed, Noorhayati Saad, Saiful Bahari Mohd Yusoff, Patricia Pawa Pitil</i>	588
Visualizing the Aesthetic Movement of Selangkah Guru by Motion Capture Technology <i>Wahyuni Masyidah M. I., Nur Zaidi A., Mohammad Kamal S.</i>	603
Reflections of National Cultural Elements in Young Contemporary Award Artworks <i>Aufa Nabila Jafri, Wan Samiati Andriana WMD</i>	623
Design Structure In Malaysian Islamic Calligraphy Contemporary Paintings <i>Nor Azlin Hamidon, Siti Mastura Md Ishak, Wan Samiati Andriana WMD</i>	633
The influence of children's painting thinking characteristics and visual characteristics on people's happiness <i>Luo Na, Rahinah Ibrahim</i>	650
Arabesque: Intrinsic Characteristics of Foliated Eurasian Ornament <i>Fatima Zahra</i>	664

The Conceptual Framework of Islamic Art in the Establishing Style of Art Illumination in Malay Manuscripts <i>Nurul Huda Mohd Din, Mumtaz Mokhtar, Wan Samiati Andriana Wan Muhammad Daud, Syafril Amir Muhammad, Nabilah Mudzafar</i>	674
Artistic Style Collection and Distribution of Urban Artworks in Malaysia <i>Syafril Amir Muhammad, Mumtaz Mokhtar, Mohd Jamil Mat Isa, Nurul Huda Mohd Din</i>	684
A Study on the Development of Cucuk Sanggul Design in the 15th to 16th Century <i>Aiqa Afiqah Isnin, Arba'iyah Ab Aziz, Mohamad Kamal Abd Aziz</i>	702
Background Study of Chinese Buddhist Grotto Statue Art using SLR <i>Li Xiaoshu, Mohd Johari Mohd Yusof, Ser Wue Hiong, Velu Perumal, Wang Xiufeng</i>	717
A Systematic Review of Assistive Technology Devices to Promote Independent Living in Children with Cerebral Palsy <i>Fatimahwati Hamzah, Saiful Hasley Ramli</i>	729
Pilot Study: Identifying the Suitable Design of Motorcycle Footboard for Children <i>Nor Amalina Mohamed Zaki, Ruwaidy Mat Rasul, Nor Ziratul Aqma Norzaman</i>	744
Mosques as Knowledge Development Centers: Youth Involvement and Perceptions in Kuching, Sarawak <i>Adibah Yusuf, Khairul Aidil Azlin Abd Rahman, Wan Noor Faaizah Wan Omar, Nadzirah Yusuf, Farah Zaini, Nangkula Utaberta, Adam Andani Mohammed</i>	754
The Collective Artistic Identity Of Sebiji Padi Art Group Through Its Artworks <i>Hawari Berahim, Arif Datoem, Nasirin Abdillah</i>	770
Applied Optical Art in the Parang Motif on Classical Javanese Batik <i>Setyo Budi, Tiwi Bina Affanti, Sayid Mataram</i>	788
A Criticism Analysis of Creative Project Made During the Covid-19 Crisis: ASEDAS2020 Virtual Exhibition <i>Juaini Jamaludin, Siti Fairuz Ibrahim</i>	797
An Analytical Study of Design Configurations in Pakistani Paintings <i>Aisha Saddiqa, Nida Ijaz</i>	805
Batik in Visual Art <i>Shazani Shamsuddeen, Wan Samiati Andriana W M D</i>	816

Weavers' Aesthetic Perception on the Visual Complexity of Pua Kumbu Design Motifs: An Exploratory Study

Wan Juliana Emeih Wahed¹, Noorhayati Saad², Saiful Bahari Mohd Yusoff³,
Patricia Pawa Pital⁴
{wanjuliana@uitm.edu.my¹, noorhayati.saad@taylors.edu.my², mysaiful@unimas.my³,
patriciapawa@uitm.edu.my⁴}

College of Creative Arts, Universiti Teknologi MARA, Sarawak Branch, 94300, Kota Samarahan, Sarawak¹, The Design School, Faculty of Innovation & Technology, Taylor's University, 47500 Selangor Darul Ehsan, Malaysia², Institute of Creative Arts and Technology (iCreaTe), Universiti Malaysia Sarawak, 94300 Sarawak, Malaysia³, Universiti Teknologi MARA, Cawangan Sarawak, 94300, Kota Samarahan, Sarawak⁴

Abstract. Visual complexity can offer a unique direction on how perceivers react and shape their aesthetic perceptions, relying on the art's formalistic elements and visual content. This study aims to evaluate the weavers' aesthetic perception of the complexity of the Pua Kumbu design motifs. The complicated art piece was highlighted as the Iban identity, which resembles the Iban's way of life, beliefs, taboos, and surroundings hidden in the textile patterns. The weaver's interpretation is its success in transferring the knowledge to the perceivers as they are the storyteller of this majestic art piece. The complexity of the symbols presented in the design motifs contributes to the lack of interest, especially among the young generation, in understanding these motifs' meaning. Thus, a qualitative approach was used to explore the weavers' perception of the design motifs' complexity using interviews in structured and unstructured questions. The findings contributed to a basic understanding and the sustainability of traditional human values, hoping that the textile as a valuable heritage will survive and remain relevant for the long term.

Keywords: Aesthetic Perception, Design Motifs, Intangible Heritage, Pua Kumbu, Visual Complexity.

1 Introduction

Aesthetic perception is defined as effects, attentions or conceptual interpretive reactions to any visual art [1]. Technically, the effects are obtained from two properties; 1) the visual complexity of many elements to construct an art, and, (2) the cognitive system of processing the visual arts [2]. Analysing a work of art is not just merely looking, but there is a need to appreciate the work intrinsically to obtain some form of understanding. The complexity of an artwork is seen as a collative variable [3], with the various elements of art included in the artwork to become one. Sun and colleagues [4] defined visual complexity as the degree of difficulty in the reconstruction of a description of visual art. It is associated with factors such as colours, texture and edges, curvature, object number, object size, pattern regularity, pattern compositions, and

other related elements [4]. The complexity plays a significant role in the perceiver's aesthetic preferences [5,6]. It suggests that the aesthetic perception is a function of the perceiver's processing dynamics: the more fluently the perceiver can process an image, the more positive is their aesthetic response [4].

Visual complexity can offer a unique direction on how perceivers react and shape their aesthetic perceptions. Perceivers can better understand the visual art's intrinsic or hidden meaning if analysing it entirely instead as separate elements to stimulate the end perception. Redies [7] suggested the evaluation of aesthetics does not only rely on the external or formalistic objects, colour, line, shape, form, texture and more, but also the context or content of the visual art. The response generated from prior experience shapes the justification, judgement, or perception, which later channels the information data as the ultimate result of the process to the perceivers' perception [7].

The phrase, "art for art's sake" is always expressed when it comes to art appreciation, but it does not disregard who and from where they come into their knowledge of art. Practically, when dividing the barriers between imagination and logic, it can be argued that art can be experienced at the same time for its social, moral, and intellectual values, and not only for its own sake [8]. Studies conducted by Fayn and colleagues [9] as well as Wahed and colleagues [10] argued that for those with art knowledge, their aesthetic perception is related to knowledgeable connoisseurship, although beauty appraisal is not solely about beauty [9,10]. Nevertheless, for some other scholars, aesthetic is described as the understanding of the 'underlying process' of the aesthetic perception [11,12]. To some extent, the underlying process of the aesthetics perception is interrelated with science where the process is defined as 'neuroaesthetics' [13-18].

Tinio's model highlighted the relationship between art-making and appreciation, which were related to one another. The artist's aesthetic perception during the early stage of art-making is parallel with the final stage of aesthetic perception [19]. The core of the aesthetic perception begins with the artist who appreciated the artwork first. Then, the perceivers evaluate visual art based on the perceivers' prior knowledge. The process of generating aesthetic perception involves not only perceivers but also includes the artists. The process consists of three essentials conventions; (i) perceivers should realise that visual arts are the interpretations of something; they are not just art, (ii) the process of capturing the art's essences involve the subject matter, and (iii) distribution of intellectual traditions. Successful communication between an artist and a perceiver can be achieved despite the artist's or the perceiver's visual deficits. They can compensate for any abnormalities in their visual systems [20].

2 Literature review

The Ibans' way of life and beliefs are implicated in the local products, such as the Iban's textile embedded with design motifs inspired by flora, fauna, and animism. The Iban ethnic group is very fond of clothing and ornaments, so various attires are designed to fit both genders, male and female [21]. The tangible cultural heritage owned by the Iban people is limitless, which is still implemented to date. One of the sacred and protected tangible cultural heritages that still exist until the present day is Pua Kumbu. Pua Kumbu is the most famous cotton textile among the Iban people in Sarawak and is produced using the weaving technique [21]. The Ibans are

bound by their customs and beliefs and are well-crafted in the Pua Kumbu design motifs. The work or weaving of the Pua Kumbu is related to women, and their respective statuses in the community could be identified from the motifs weaved [1]. Even though the design motifs are difficult to interpret, the motifs and colouring are usually inspired by the surroundings and depict the Ibans' rituals and beliefs. Most design motifs are visual representations of animals, plants, and even daily activities. However, other design motifs are more complex and abstract [25].

Judge and colleagues proposed that human emotions are robust upon connecting to the world embellished with cultural artefacts [22]. It is suggested that visual art exists when it comes into contact with aesthetic stimuli, which in turn evokes emotional reactions [23]. Chatterjee & Vartanian [24] argued that people's aesthetic perceptions are contradicted when dealing with different arts from different cultures. In other words, what seems beautiful to the people of one culture may be perceived otherwise by those of other cultures [24]. Everything can become a motive that triggers the perception when the aesthetics perception process is compromised. The visual complexity of the design motifs applied is based on a combination of several geometrical designs inspired by nature and interpreted according to the weavers' understanding of their meaning and symbols. Although most Iban people have religions that are not tied to the old beliefs of animism, they are still associated with ancient rituals closely linked to mystical elements. The complexity of symbols represented in the design motifs applied on the Pua Kumbu contributes to the lack of interest, especially among the young generation, in understanding the meaning of these motifs [25].

Thus, the knowledge of the intangible cultural heritage lies in the hands of the weaver. If this knowledge is not passed down to others, it will be buried forever and become extinct. The difficulty in understanding the motifs adds to the misunderstanding and led to misinterpretation of the meaning and association with mystical elements, which led to its misuse. This conduct could offend the feelings of the Iban community. Therefore, accurate knowledge of the design motifs on the Pua Kumbu among the weavers is necessary to comprehend the experts' point of view. This study aimed explores the weavers' aesthetic perception of the complexity of the Pua Kumbu design motifs.

3 Methods

This study used the qualitative research method to understand the visual complexity of the Pua Kumbu design motifs based on the weavers' aesthetic perception. The semi-structured interviews were employed, emphasising the combination of both structured and unstructured interview questions. The researchers' list of questions was used as a guideline, and the questions were treated accordingly to meet with participants' conditions, emotions, and locations [26]. Thus, there is freedom and flexibility for the participants and the researcher to change and add questions accordingly to meet the objectives of the study.

Purposive sampling (also known as evaluation, selective or subjective sampling) was employed in this study [27]. Thus, the specific samples, the Pua Kumbu weavers, were selected to justify the visual complexity of the design motifs applied to the Pua Kumbu. Expert is defined as having comprehensive knowledge in a particular area that they are involved in [28]. The Pua

Kumbu weavers as the study experts will better understand the textile, thus contributing to the broader knowledge.

Thematic analysis was used where the interview questions were developed to elicit relevant information regarding the design origins, design characteristics, taboos or rituals and the production of the Pua Kumbu. The interview questions were divided into four sections: (1) design origins, (2) design characteristics, (3) taboos/rituals and (4) production, which need to be explored and answered by the respective participants (Table 1). The images of the Pua Kumbu design motifs printed on an A4-sized paper was disclosed to the weavers to enlighten the findings. It took about 60 minutes to complete the session for each weaver.

Table 1. Themes and questions for interviewing the weavers.

Theme	Questions
Design Origins	1. Can you describe the origins of the design motifs?
	2. Do the design motifs possess any intrinsic/hidden meaning?
Design Characteristics	3. What are the main elements applied as the design motifs of the Pua Kumbu?
	1. What colours can be applied to the textile?
Taboos / Ritual	2. What is the inspiration for these design motifs?
	1. Does the weaver perform any ritual before weaving the textile?
Production	2. Can anyone weave this textile?
	1. How long does it take to complete a Pua Kumbu?
	2. Do you still use the traditional technique of producing the textile?
	3. If you continue with this profession, are there any other types of design motifs that you want to propose or articulate into its production?

Validity is the forte of the qualitative study, which is related closely to the study's findings [29]. The member checking procedure was utilised in this research and incorporated with developing themes, case analysis, cultural perspective and more. This study involved five (5) participants from multiple backgrounds and locations. The in-depth interviews were conducted to obtain the participants' interpretation of the study. The participants' names were not revealed but coded systematically to maintain the participants' confidentiality. Member checking was conducted after the sessions ended, and it took approximately 4–6 weeks for the researcher to analyse the raw data and transcribe it. The research data was emailed to the participants to check on the accuracy of the findings. Table 2 shows the schedule of member checking data for every participant.

Table 2. Member checking schedule and date of interviews.

Participants	Date of Interview	Venue/ Platform	Date of Member checking
W(1)	2 November 2019	Betong, Sarawak	25 November 2019
W(2)	27 November 2020	Song, Sarawak	26 December 2020
W(3)	28 November 2020	Kapit, Sarawak	27 December 2020
W(4)	28 November 2020	Kapit, Sarawak	27 December 2020
W(5)	28 November 2020	Kapit, Sarawak	27 December 2020

4 Results and Findings

This section reflects on the results of the in-depth interviews with the interviewees. It presents the analysis of their verbal responses during the interviews and discussions. Five weavers from different places around Sarawak were interviewed using the unstructured interview questions and delivered differently to the targeted participant. Table 3 shows the interview coding and theme of the Pua Kumbu weavers. The details of the transcription are included in the following section.

Responses: This subsection highlights the responses from the weavers to illustrate their aesthetic perception of the Pua Kumbu design motifs' visual complexity. The responses were categorised into four sections: (1) design origins, (2) design characteristics, (3) taboos/ritual and (4) production.

4.1 Design origins

In the field trip conducted in five different places in Sarawak, most of the weavers have a mutual understanding of the design, which originated from dreams, Iban folklore, nature, flora, and fauna. Furthermore, the Pua Kumbu weavers' inspirations are from Iban culture, nature and their surroundings. Some weavers gathered inspiration from the earlier designs from their ancestors. Most of the weavers understand the meaning of the humanoid design motifs only (Table 3).

Table 3. The interview coding and theme (design origins).

Informant	Origins	Meaning	Inspiration
W(1)	Dreams, folklores	Yes, the humanoid design motifs	Nature and Iban's culture
W(2)	Nature, flora, and fauna, inherited from ancestors	Yes, but the uncertainty of the meaning	Nature and imitation of the earliest design
W(3)	Inherited from ancestors, dreams, flora motifs	Yes, the humanoid design motifs	Ancestor and surroundings.
W(4)	Inherited from ancestors, nature, flora motifs	Yes, the humanoid design motifs	Ancestor and surroundings.
W(5)	Inherited from ancestors	Yes, the humanoid design motifs	Ancestor, surroundings, imitations

4.2 Design characteristics

Table 4 shows all of the Pua Kumbu weavers agreed that the major elements applied to the Pua Kumbu motifs are '*Buah Gelung*' and '*Ara*' design (Figure 1). The complexity of the '*Buah Gelung*' design motifs can be found in the geometrical shapes applied on it, which are based on the size of the textile and the interpretation of the weaver.

Table 4. The interview coding and theme (design characteristics).

Informant	Characteristics	
	Elements	Colour
W(1)	Buah Gelung	Red, black, yellow, white, maroon sometimes purple
W(2)	Buah Gelung	Red, black, maroon, ochre, brown
W(3)	Buah Gelung and Ara	Red, black
W(4)	Buah Gelung and Ara	Red, black, white
W(5)	Buah Gelung and Ara	Red, black, white, sometimes blue.

The '*Buah Gelung*' motifs can be found in many Pua Kumbu designs inspired by the *Paku-pakis* plant shape (Figure 1). This motif can be named *Buah Gelung 5* or *Buah Gelung 8*, depending on the calculation of the curves made by the weaver. Meanwhile, the *Ara* design at the top and bottom of the textile with repetitive colourful lines does not possess any hidden meaning and act as a border to beautify the textile (Figure 1). Most of the narrative delivered by the weavers decorates the centre of the Pua, and is accompanied by branches of floral elements scattered around it.

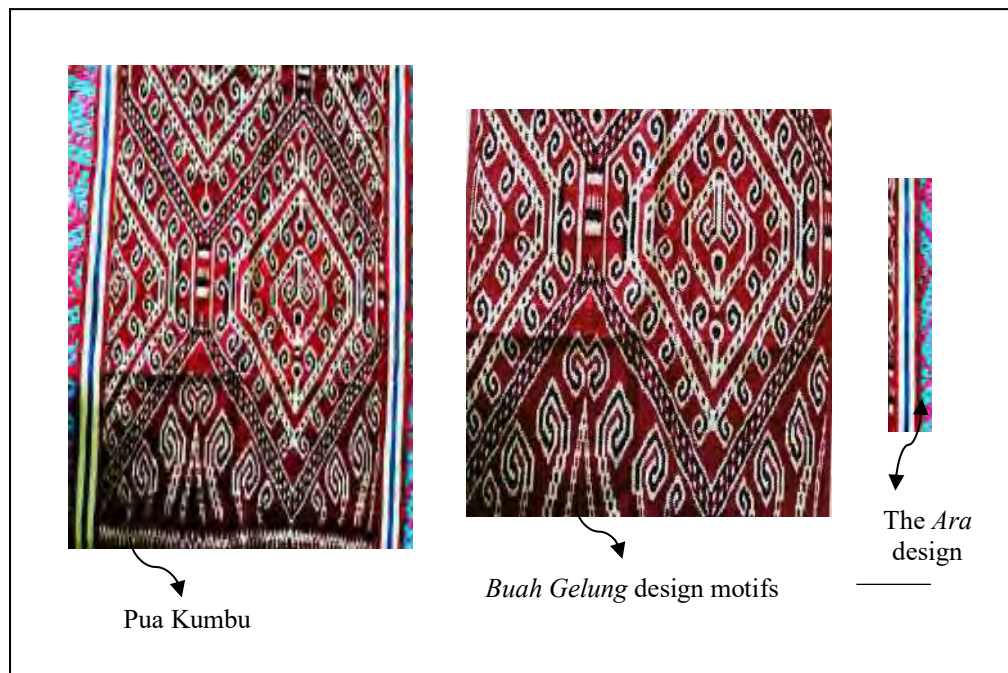


Fig. 1. The full decoration of Pua Kumbu (1), the *Ara* design patterns (2), and, the multiple sizes of *Buah Gelung* design motifs (3).

In terms of colour preferences, most weavers agreed on earth tones and the Sarawak flag colours: red, black, white and maroon. W(1) and W(2) mentioned that different dye colours, such as blue and purple, were included to meet contemporary demand. Weavers still uphold the old tradition and the historical concept of designing the art piece with slight modifications in terms of the colours and selection of the design motifs (Figure 2).

- W(1): *“Colours follow the weaver creativity. Basically, following the colour of the Sarawak flag, such as red, black, yellow, white, dark maroon and sometimes purple. The green colour rarely used in the Pua Kumbu”*
- W(2): *“It doesn’t matter but the base should be in red or maroon because Pua Kumbu is looking great in red colour. During the back days, most of the colour is extracted from the natural sources, which produce the earth colour like red, ochre, brown and black”*
- W(3): *“Red and black are the most privileged colours to be applied on the Pua Kumbu. I used the natural dyed for the red and black colour. I planted the plant to make the red colour and used Ghai to process it. For the black colour, I used the natural dyed from Engkudu fruits”*
- W(4): *“Red, white and black is the most colours to be applied”*
- W(5): *“Mostly is red, black, white and sometimes is the blue colour. But if the contemporary weavers want to used other kinds of colour, it also was permitted. But the colour will not represent the Iban culture”*



Fig. 2. The variety of Pua Kumbu design motifs and colour.

4.3 Taboos /rituals

Table 5 identifies the weavers' with codes W(1), W(3) and W(4) who mutually agreed that the 'miring' ritual should be performed to the humanoid figure and predatory-type of animal design motifs like *Nabau*, *Seru Anga*, *Badan Satu Kepala Dua*, *Mandi Di Sungai Linga Jul*, and *Baya* to seek permission from the Iban goddesses before weaving (Figure 3). However, weavers W(2) and W(5) do not practise the 'miring' ritual anymore.

- W(1): “Will be perform simple ritual like ‘miring’, like biting the charcoal or in Iban is called ‘berketuk besi’ activity”
- W(2): “I learned to weaved since my teenager’s year, inherited from my mother and my grandmother. Which they did not teach me to do any rituals when weaved the Pua. so, when I do the Pua, I apply the same with no inceptions of ritual”
- W(3): “If the motifs are sacred and have the god images, I will perform the Miring in order to get the blessing”
- W(4): “The design with the high-ranking motifs like humanoid design, will performing the Miring, but for the simple motifs like flora, no need to perform the rituals”
- W(5): “I am not performing any ritual like ‘miring’ or else because my grandmother also did not apply ‘miring’ ritual too”



Fig. 3. The humanoid figure and predatory-type of animal design motifs.

Other interesting findings revealed when weavers W(1) and W(5) agreed that the Pua Kumbu textiles can be weaved by anyone, with no gender bias. However, the other two weavers have different opinions (Table 5).

- W(1): *“Anyone can, no matter of their gender. However, in the past, weaving activity was strictly for the woman. But now, after the Pua Kumbu commercialised successfully, the man also was encouraged to weave”*
- W(2): *“Everyone can, but not male. Any religious or ethnic can do the weave, besides male”*
- W(3): *“Anyone can, but not male”*
- W(4): *“Anyone that is keen to weave, they are welcome. But it is rare to see the male weaver, and not any of them can be found in Kapit”*
- W(5): *“Anyone can, including the opposite gender, as long as they are interested in doing the weaving activity”*

Table 5. The interview coding and theme (design taboos).

Informant	Taboos	
	Ritual	Who weaved?
W(1)	Perform <i>miring</i> for the humanoid design motifs only.	Anyone can
W(2)	Not performing the ritual.	Not Male
W(3)	Perform <i>miring</i> for the humanoid design motifs only.	Not Male
W(4)	Perform <i>miring</i> for the humanoid design motifs only.	Anyone can, but not male
W(5)	Not performing the ritual.	Anyone can

4.4 Pua Kumbu production

Table 6 shows the questions on the Pua Kumbu production, which includes the duration, technique and other types of design motifs proposed. Most of the weavers agreed on the duration to complete one Pua Kumbu is in one month and a half. However, W(1) took about three months to complete a Pua Kumbu. The transcripts were recorded as follows:

- W(1): *“For full-time weavers, it takes the fastest period of 3 months to finish Pua, with small size and simplicity of design motif. However, for a bigger size, complex and using the old type of yarn, it can take up to a year”*
- W(2): *“It took about 1 month to do the setting of the design and approximately 2 weeks to complete the 2X4’ size of Pua. The hustled is on the initial step, which the setting of the desired design should be conducted manually”*
- W(3): *“A month to finish one Pua, including to set the design”*
- W(4): *“Depends on the size. But the setting of the design motifs is taking a long time like a month, and the weaving activity is only taking two weeks”*
- W(5): *“It took about 2 weeks to set and complete one Pua Kumbu for the size of 2 x 6 feet”*

All of the Pua Kumbu weavers agreed to continue with the traditional technique. However, W(2) and W(5) discontinued the use of the original dye and the transcripts were recorded as follows:

- W(1): *“For people like me who like the traditional way, the Pua Kumbu value is much more important even though it is expensive. And for me, I prefer to use the traditional method since it also has to do with the Iban cultural values”*
- W(2): *“I still practise the traditional way, but the colour is not the natural dyed colour anymore but the artificial colour”*
- W(3): *“Yes, still. The weaving machine is still the old version of the machine and the colour is from the natural dyed”*
- W(4): *“Yes, still until now”*
- W(5): *“Yes, still. It just on the colour I used the artificial colour due to the limited time to get the resources and I do not have ‘Ghai’- which is the place to process the natural colour of threads!”*

Table 6. The interview coding and theme (production).

Informant	Duration	Production	Propose
		Technique	
W(1)	3 months	Traditional	Original Iban design and modern.
W(2)	1 month and half	Traditional, but the colour is using artificial dye	Original Iban design and modern.
W(3)	1 month	Traditional	Original Iban design
W(4)	1 month and half	Traditional	Original Iban design
W(5)	Less than 1 month	Traditional, but the colour is using artificial dyed	Original Iban design and the MH730 design

To conclude the interview with the final question on whether they want to propose any other design motifs instead of the original Iban design, one informant W(5) reflected with an interesting answer as follows:

- W(5): *“I would like to add the motif of MH730, - the crashed aeroplane, which has a significant story behind it”*

With the above statement, the 76-year-old Pua Kumbu weaver with more than 30 years of experience added a poignant final touch to the interview session. Regardless of whether to uphold Iban cultural values in the art pieces, the need to add and modify certain elements is open to discussion. Even if this trend is not universally popular, the idea could be the stepping stone to preserving the culture and eliminating the knowledge barrier of the Pua Kumbu design motifs. This iconic action suggested that the Pua Kumbu weavers were open to new changes and not bound only to the design motifs of Iban culture (Figure 4).



Fig. 4. The motifs of aeroplanes can be detected at the bottom of Pua Kumbu textile.

5 Discussions

Most of the design motifs applied on the Pua Kumbu textile have significant relations to the Iban culture, encapsulating Iban's customs, ways of thinking, taboos, surroundings, and legends which are slowly forgotten by the more recent generation due to insufficient understanding, knowledge, and exposure. Therefore, with the effort of safeguarding the art pieces for unaging relevance, it is urgently compulsory to understand the weavers' interpretive method on visual complexity of the design motifs. To bridge this gap, this paper offers three sophisticated discussions specifically aimed at safeguarding Malaysia's cultural heritage, and are simultaneously parallel with the study's objective; to explore weavers' aesthetic perception on the visual complexity of Pua Kumbu design motifs.

Pua Kumbu Design Motifs categories

This study identified five (5) different categories of design motifs which have been widely applied on the Pua Kumbu textiles, and segregated based on the choice of the designs applied: (1) Floral, (2) Animal, (3) Humanoid, (4) Abstract, and (5) Contemporary (Table 7).

Table 7. Pua Kumbu design motifs categories.

Categories	Types	Ritual
Flora	<i>Paku-Pakis plant</i> , bamboo shoots and <i>Midin leaves</i>	No ritual
Animal	Predators: snake (<i>Nabau</i>), crocodile (<i>baya</i>)	<i>Miring</i> ritual
	Non-Predators: birds, lizard, spider, crab, fish	No ritual
Humanoid	<i>Dewa Kepala Dua</i> , <i>Petara</i> , and goddesses	<i>Miring</i> ritual
Abstract	Mountain, trees, rivers	No ritual
Contemporary	Airplane, Mosque, Sarawak flag	No ritual

Many floral designs were originally inspired by the plants' motif and centred on floras blooming in the vicinity of their surroundings, such as Paku-Pakis plant, bamboo shoots and Midin leaves. Most floral motifs can be designed by anyone as it does not embody any rituals or taboos such as miring. They are merely yet essentially displayed as supplementary decorations within the central motifs, which are designs of humanoid figures or predatory animals. Most of the narrative delivered by the weavers are decorated at the centre of the Pua, accompanied by the branches of floral elements scattering around it.

The animal or fauna design motifs were generally inspired by Iban myths and legends, which encompassed several types of animals, such as snakes (Nabau), crocodiles (baya), birds, lizards, spiders, crabs, fish and others. It is understood that the design of the animate motifs could not simply be arranged within the textile, but it should consider the complete set of design motifs. The crocodile (baya) motifs should be designed together with those of the house (the square-shaped pattern) that consisted of food such as fish or people, believing that they could calm the baya spirit. Iban people perceived the animated design motifs as sacred and having souls, thus they could not be designed unelaborately without proper understanding. The weavers operated on the belief that if the design motifs incorporated names, the complete set of designs should be presented by the weavers.

"There is one design from my ancestors, a motif of 'Seru Anga, Badan Satu Kepala Dua, Mandi Di Sungai Linga Jul'. If the design motifs have name such as this one, the weaver should include 'food' to 'ease' the design, like putting the image of 'humans or fish'. If not, the weaver will get sick". W(3)

Meanwhile, the design motifs with humanoid figures and predatory animals like the Nabau and Baya were deemed magical and powerful, and they were highly ranked as motifs among the Iban community. These prominent design motifs could only be woven if the weavers were granted permission from the Iban goddesses via dreams. The dreams were signs from the goddesses that the craftsmen could create the design motifs, and it ought to be preceded with the conduct of the miring ritual as to avoid bad omens. In fact, most highly ranked design motifs could only be woven by the eldest weavers with extensive experience.

Some other weavers portrayed the design motifs of Pua Kumbu in different angles and themes, which were approaching a different concept and contemporaneous in presenting the idea on the sacred textile. The 76 years old weaver was representing the humanoid images of the Muslims in praying act, with the elaboration of mosque designed at the bottom centre, and flags decorated on both sides. Surprisingly, the idea was contradictory to the common look of textiles; - antique, mysterious and full of plants.

"I get the inspiration from Muslim's mosque, and I included the three male figures at the bottom, as symbol of Islam. The mosque I described was in the shape of dome, added with two flags on both sides". W(5)

A further observation and in-depth interview revealed that the weaver had three Muslim sons in-law and thus had been accustomed to the Islamic culture since early age. In spite of different religions and cultures practised by them respectively, still, the assimilation was discernible in the incorporation of the mosque as part of her Pua Kumbu design. This act demonstrated that the weaver willingly embraced the integration and assimilation of contemporary design motifs,

rather than clinging to the ordinary look of the Pua Kumbu. The weaver wanted to show her appreciation of her surroundings, and families by weaving her stories into her design.

Weavers are the Masterminds

Aesthetic perception is a function of the perceiver's processing dynamics: the more fluently the perceiver processes an image, the more positive is their aesthetic response[4]. Therefore, it might be expected that the fluency of the perceivers (weavers) in processing the information regarding the Pua Kumbu depends on their artistic knowledge [30]. The interrelation between knowledge and perception significantly impacts a perceiver's aesthetic interest, in such a way that they might develop either a positive or negative aesthetic perception.

In the case of Pua Kumbu, the makers and the perceivers, who belonged to the same group, possessed greater knowledge. This was especially true in the making of Pua Kumbu in terms of its weaving, technique, and history, which contributed to better aesthetic perceptions. This view is supported by a study on painting artwork [31], suggesting that prior knowledge of artwork is relatively influential to perceiver's aesthetic perception.

The Pua Kumbu weavers are the masterminds of the Pua Kumbu creations. The visual complexity of the Pua Kumbu design motifs is very subjective, which not only hinges on to shape, line, form, size, colour and forth, but it also relies on the stories that weavers try to portray in an art piece. Every design motif applied in the Pua Kumbu is connected to one another, and only by having all of the designs, can the weaver's idea be interpreted, not to mention, only a person with the Pua Kumbu art knowledge, can successfully 'read' the weaver's encrypted message. It is believed, the visual complexity of the Pua Kumbu lies in the hand and mind of the weavers, as they are the storytellers of this majestic textile.

Pua Kumbu's Visual Complexity

Weavers are the definite experts in the making of the Pua Kumbu textile. The visual complexity of the design motifs is the material version of imagination or an imitation of the original shape of the motifs, whether floral, animal, humanoid figures, abstract, or contemporary. In other words, It is dependent upon their freedom of choice. As for the complexity of the design motifs such as shape, size, the proportions, rhythms, and forth, they are completely based on the weavers' interpretations. Some weavers, in this study, felt affection for larger-shaped design motifs, while some preferred smaller sizes, which contributed to the great visual complexity for the perceivers. The design motif sizes had no significant meaning, nor did they affect the weavers' interpretation, as long as the central design motifs of the textile were designed in the complete set.

Notwithstanding, some weavers still uphold the old tradition and the antiquated concept in designing and producing the textile with a bit of modification of colours and selection of motifs to meets with the current demands. The use of dissimilar code of earthen colours has been widely used such as blue, purple, and green which allows wider market demand from various populations.

6 Conclusion

The visual complexity of Pua Kumbu is acknowledged due to the textile size and the arrangement of the design motifs in patterns that embody stories and are not purposely made for decoration. This complicated art piece highlights Iban identity as it resembles Iban's way of life, beliefs, and surroundings, which are hidden in every design motif. Most designs were bound to Iban beliefs and taboos and were constructed in the layout patterns of the Pua Kumbu's visual complexity. The weaver's interpretation was elaborated, resulting in the formation of one complete design that carries meaning.

In essence, traditional culture or way of life is passed down from generation to generation through oral traditions, behaviours, and materials. By discovering the authenticity of the Pua Kumbu design motifs visual complexity and the art knowledge hindered in the art piece, it would build the bridge to perceivers' understanding and thus lead to the positive aesthetic perceptions among perceivers, as well as leading to the safeguarding the intangible cultural heritage.

In conclusion, it is recommended that the authentic design motifs of the textile is being integrated with other surface of the product and furniture, in order to enrich the audience acceptance, to minimise the knowledge barriers and to safeguard the art piece from succumb to extinction. The implementation of the Iban's local knowledge of designing the textile through competitions, seminars, workshops, conferences, documentaries, and books writing, will generate and capture the audiences' interest, thus paving the ways of preserving the heritage. Future studies should consider more exploration on the area of the aesthetic perception in a qualitative manner, especially among textile academicians who can investigate it from different angles. This effort would further contribute to art knowledge, which is an important highlight of this study.

References

- [1] Wahed WJ, Saad N, Yusoff SB. Sarawak Pua Kumbu: Aesthetics Lies in the Eye of the Beholder. *Asian Journal of University Education*. 2020 Oct;16(3):183-92.
- [2] Bundgaard, PF, Heath, J, Østergaard, S. Aesthetic perception, attention, and non-genericity: How artists exploit the automatisms of perception to construct meaning in vision. *Cognitive Semiotics*. 2017; 10(2):91-120.
- [3] Berlyne, DE. *Studies in the new experimental aesthetics: Steps toward an objective psychology of aesthetic appreciation*. Washington, DC: Hemisphere, 1974.
- [4] Sun, L, Yamasaki, T, Aizawa, K. In: Agapito L., Bronstein M., Rother C, editors. *Computer Vision - ECCV 2014 Workshops. ECCV 2014. Lecture Notes in Computer Science*; Cham: Springer; 2014. p. 20-34.
- [5] Baughan A, August T, Yamashita N, Reinecke K. Keep it Simple: How Visual Complexity and Preferences Impact Search Efficiency on Websites. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* 2020 Apr 21 (pp. 1-10).
- [6] Gartus A, Leder H. Predicting perceived visual complexity of abstract patterns using computational measures: The influence of mirror symmetry on complexity perception. *PloS one*. 2017 Nov 3;12(11):e0185276.
- [7] Redies, C. Combining universal beauty and cultural context in a unifying model of visual aesthetic experience. *Front Hum Neurosci*. 2015; 9:218.

- [8] Sherman A, Morrissey C. What is art good for? The socio-epistemic value of art. *Frontiers in Human Neuroscience*. 2017 Aug 28;11:411.
- [9] Fayn K, Silvia PJ, Erbas Y, Tiliopoulos N, Kuppens P. Nuanced aesthetic emotions: Emotion differentiation is related to knowledge of the arts and curiosity. *Cognition and Emotion*. 2018 Apr 3;32(3):593-9.
- [10] Wahed WJ, Yusoff SB, Saad N, Pitil PP. One Size Doesn't Fit All: Using Factor Analysis to Gather Validity Evidence When Using Art Reception Survey–Revised (Ars-Revised) On Sarawak Iban Pua Kumbu.
- [11] Wassiliwizky E, Menninghaus W. Why and How Should Cognitive Science Care about Aesthetics? *Trends in Cognitive Sciences*. 2021 Mar 30.
- [12] Leder, H, Nadal, M. Ten years of a model of aesthetic appreciation and aesthetic judgments: The aesthetic episode–Developments and challenges in empirical aesthetics. *Br J Psychol*. 2014; 105(4):443-464.
- [13] Pearce MT, Zaidel DW, Vartanian O, Skov M, Leder H, Chatterjee A, Nadal M. Neuroaesthetics: The cognitive neuroscience of aesthetic experience. *Perspectives on psychological science*. 2016 Mar;11(2):265-79.
- [14] Li R, Zhang J. Review of computational neuroaesthetics: bridging the gap between neuroaesthetics and computer science. *Brain Informatics*. 2020 Dec;7(1):1-7.
- [15] Nadal M, Chatterjee A. Neuroaesthetics and art's diversity and universality. *Wiley Interdisciplinary Reviews: Cognitive Science*. 2019 May;10(3):e1487.
- [16] Chatterjee A, Vartanian O. Neuroaesthetics. *Trends in cognitive sciences*. 2014 Jul 1;18(7):370-5.
- [17] Igaya K, O'Doherty JP, Starr GG. Progress and promise in neuroaesthetics. *Neuron*. 2020 Nov 25;108(4):594-6.
- [18] Skov, M, Vartanian, O, Martindale, C, Berleant, A. *Neuroaesthetics*. New York, Routledge, 2018.
- [19] Tinio, PP. From artistic creation to aesthetic reception: The mirror model of art. *Psychol Aesthet Creat Arts*. 2013; 7(3):265.
- [20] Weir C, Mandes E. *Interpreting visual art: A survey of cognitive research about pictures*. New York: Routledge, 2017.
- [21] Wahed WJ, Pitil PP. Ngepan Indu Iban: The Aesthetic Features of Female Iban Costume in Sarawak. In 2nd Asia International Conference of Arts & Design, Langkawi, Malaysia 2018.
- [22] Judge M, Fernando JW, Paladino A, Kashima Y. Folk theories of artifact creation: How intuitions about human labor influence the value of artifacts. *Personality and Social Psychology Review*. 2020 Aug;24(3):195-211.
- [23] Gerger G, Leder H, Kremer A. Context effects on emotional and aesthetic evaluations of artworks and IAPS pictures. *Acta Psychologica*. 2014 Sep 1;151:174-83.
- [24] Chatterjee A, Vartanian O. Neuroscience of aesthetics. *Annals of the New York Academy of Sciences*. 2016 Apr;1369(1):172-94.
- [25] Magiman, MM, Chelum, A, Durin, A, Nie, CLK, Mohd Yusoff, AN. The Iban's Belief towards the Meaning of Pua Kumbu's Motif. *Sch J Arts Humanit Soc Sci*. 2018; 6(8):1490-1496.
- [26] Creswell, JW. *A concise introduction to mixed methods research*. Los Angeles: SAGE Publications, 2014.
- [27] Saunders MN, Townsend K. Choosing participants. C. Cassel, AL Cunliffe, &. 2018.
- [28] Newman, D. Experts may have influence, but what makes an expert? [Internet]. *Forbes Media LLC*; 2014 [update 2014 April 22; cite 2021 April 26]. Available from: <https://www.forbes.com/sites/danielnewman/2014/04/22/experts-may-have-influence-but-what-makes-an-expert/#7b95cafd12c8>
- [29] Creswell, JW., Miller, DL. Determining validity in qualitative inquiry. *Theory Pract*. 2000; 39(3):124-130.
- [30] Hager, M, Hagemann, D, Danner, D, Schankin, A. Assessing aesthetic appreciation of visual artworks—The construction of the Art Reception Survey (ARS). *Psychol Aesthet Creat Arts*. 2012; 6(4): 320.
Pietras, K, Czernecka, K. Art training and personality traits as predictors of aesthetic experience of different art styles among Polish students. *Polish Psychol Bull*. 2018; 49(4):466-474.

Proceedings of the 2nd International Conference on Design Industries & Creative Culture (DESIGN DECODED 2021)

24-25 August 2021, Kedah, Malaysia

DESIGN DECODED 2021

Copyright © 2022 EAI, European Alliance for Innovation

www.eai.eu

<https://designdecodeduitm.wixsite.com/designdecoded2021>

ISBN: 978-1-63190-345-8

EAI Computing and Communication in Emerging Regions - CCER

The EAI Computing and Communication in Emerging Regions Series have already published proceedings from more than 20 conferences of various scopes. In line with EAI's values of equality and openness, their mission is to give greater visibility to research and innovation from emerging regions and share the knowledge worldwide. The audience for the proceedings consists of researchers, industry professionals, graduate students as well as practitioners in various fields. CCER harnesses the Open Access platform to simultaneously guarantee free exposure and distribution, under the Creative Commons license. In addition to being available in European Union Digital Library, the proceedings are disseminated to an even wider audience by being indexed in ProQuest, CNKI, Google Scholar and EBSCO.

European Alliance for Innovation

EAI is a non-profit organization with free membership and the largest open professional society for advancing research careers through community collaboration and fair recognition. Members benefit from finding feedback and mentorship for their work and they are guaranteed to be evaluated fairly, transparently, and objectively through community.

ISBN: 978-1-63190-345-8

ISSN: 2593-7650

<http://eudl.eu/series/CCER> | www.eai.eu