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An Evaluation Of The Societal Relevance Of Industrial Art Programmes At Dr. Hilla Limann Technical University, Wa- Ghana: A Public Perspective.

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Abstract

Industrial Art Programmes in Ghanaian technical universities are expected to address societal needs through skills development, cultural preservation, employment creation, and industrial growth. However, concerns remain regarding their alignment with public expectations and local socio-economic realities. This study evaluated the societal relevance of Industrial Art Programmes at Dr. Hilla Limann Technical University (DHLTU), Wa, Ghana, from a public perspective. The study assessed public awareness, perceived graduate competencies, and the alignment of programme outcomes with societal and industrial needs. A descriptive survey design using a mixed-methods approach was adopted. From a population of 300 stakeholders, a sample of 200 respondents was selected in line with recommendations for small populations (Krejcie & Morgan, 1970). The sample included lecturers, administrators, students, local community members, and art practitioners and industry players. Data were collected through structured questionnaires and semi-structured interviews. Quantitative data were analysed using descriptive statistics, while qualitative data were thematically analysed. Findings indicate that Industrial Art Programmes at DHLTU are generally perceived as culturally significant and relevant to local development, particularly in craftsmanship, entrepreneurship, and creative industry promotion. However, limited public awareness, weak industry collaboration, and gaps in practical training were identified. The study concludes that although the programmes demonstrate strong societal relevance, their impact can be enhanced through improved stakeholder engagement, curriculum updates, and strengthened industry linkages to better meet societal and industrial expectations.

Keywords: Industrial Art; Public Perception; Technical University; Art Education; Societal Relevance

1. LITERATURE REVIEW

1.1 Overview of Industrial Art Programmes Globally, in Ghana, and Locally

Industrial Art education has its roots in the manual training and industrial arts movements of the late nineteenth and early twentieth centuries, which emerged in response to industrialisation and the need for

practical, skill-based education (Maley, 1973; DeVore, 1976). Early programmes emphasised craftsmanship, material manipulation, tool use, and basic design principles to prepare learners for manufacturing and artisanal production. These foundations positioned Industrial Art as a bridge between creativity and technical competence.

Over time, Industrial Art education evolved into a multidisciplinary field that integrates aesthetics, technology, material science, and industrial production. Pulos (1983) notes that the convergence of artistic expression and industrial functionality transformed Industrial Art into a discipline capable of contributing to both cultural development and economic growth. Contemporary programmes therefore extend beyond manual skills to include design thinking, product development, digital fabrication, and entrepreneurship.

Globally, particularly in Europe, North America, and parts of Asia, Industrial Art and design-related programmes are firmly embedded within higher education systems. These programmes are typically studio-based, practice-oriented, and closely linked to industry through internships, collaborative projects, and applied research (UNESCO, 2013; McGrath et al., 2020). The rise of the creative economy has further strengthened the relevance of Industrial Art education, with graduates contributing to manufacturing, creative industries, design consultancy, and cultural enterprises.

In developing economies, Industrial Art education plays a strategic role in skills development, value addition to local materials, and the preservation of indigenous knowledge systems. UNESCO (2021) emphasises that arts-based technical education supports youth employment, entrepreneurship, and cultural sustainability, especially in contexts where formal industrial employment is limited. By transforming local resources into marketable products, Industrial Art programmes contribute to inclusive and sustainable development.

In Ghana, Industrial Art education operates within the broader Technical and Vocational Education and Training (TVET) framework and tertiary art education. Universities and technical universities, including Kwame Nkrumah University of Science and Technology (KNUST), offer programmes in textiles, ceramics, metals, leather, graphic design, and related fields. These programmes aim to produce skilled graduates for the creative and manufacturing sectors while promoting cultural identity and indigenous art forms (Okae-Adjei, 2017). The conversion of polytechnics into technical universities was intended to strengthen practical training, innovation, and graduate employability.

Despite these reforms, public perception of TVET and Industrial Art programmes in Ghana remains mixed. Adams et al. (2023) report that technical education is often perceived as less prestigious than traditional academic pathways. Industrial Art programmes are sometimes narrowly viewed as craft-based rather than innovation-driven and economically viable. Such perceptions affect enrolment, industry engagement, and societal support.

At the local level, Dr. Hilla Limann Technical University (DHLTU) offers Industrial Art programmes designed to support regional development through hands-on training, entrepreneurship, and design innovation. However, empirical evidence on how the public perceives the relevance and impact of these

programmes is limited. This gap underscores the need for institution-specific studies that examine societal relevance from the perspective of local stakeholders.

1.2 Theoretical Framework

This study is guided by two complementary theories: the Technology Acceptance Model (TAM) and Educational Relevance Theory (ERT). Together, these frameworks explain how public perception and societal relevance of Industrial Art programmes are formed.

The Technology Acceptance Model, developed by Davis, posits that acceptance of a system is determined by perceived usefulness and perceived ease of use. Although originally applied to information systems, TAM has been widely used in educational research to examine acceptance of curricula and educational innovations (Venkatesh & Davis, 2000). In this context, perceived usefulness refers to the extent to which the public believes Industrial Art programmes contribute to employability, entrepreneurship, cultural preservation, and industrial development. Perceived ease of use relates to how accessible, understandable, and transparent the programmes are to the public.

Applied to Industrial Art education, TAM suggests that positive public attitudes emerge when programmes are seen as economically viable, socially beneficial, and responsive to societal needs. When stakeholders perceive programmes as useful and understandable, public trust, support, and acceptance are strengthened.

Educational Relevance Theory complements TAM by focusing on the alignment between education and societal needs. ERT argues that education is relevant when its content, processes, and outcomes resonate with learners, employers, communities, and policymakers. Relevance is therefore socially constructed and shaped by labour market demands, cultural values, and stakeholder expectations. In Industrial Art education, relevance is reflected in graduates' ability to address community challenges, industry requirements, and broader socio-economic development goals.

By integrating TAM and ERT, this study conceptualises societal relevance as a function of both public acceptance and perceived alignment with societal needs. Public perception serves as a mediating mechanism through which programme characteristics influence societal relevance. This integrated framework is appropriate for analysing how external stakeholders perceive Industrial Art programmes at DHLTU.

Conceptual Framework for the Study

The conceptual framework developed for this study illustrates the relationships among perceived usefulness and perceived ease of use (independent variables), public perception (mediating variable), and perceived societal relevance of Industrial Art programmes at DHLTU (dependent variable). Perceived usefulness captures public beliefs about contributions to skills development, employment creation, entrepreneurship, cultural preservation, and industrial growth. Perceived ease of use reflects the clarity and accessibility of programme objectives, content, and career pathways.

Public perception represents collective attitudes formed from these assessments and directly influences perceived societal relevance, consistent with Educational Relevance Theory. The framework further links societal relevance to outcomes such as public support, student enrolment, industry–university collaboration, graduate employability, and community development. Moderating factors—including public awareness, cultural values, industry linkages, policy support, and graduate visibility—are recognised as influencing the strength of these relationships. Fig. 2.1 elucidates the concen

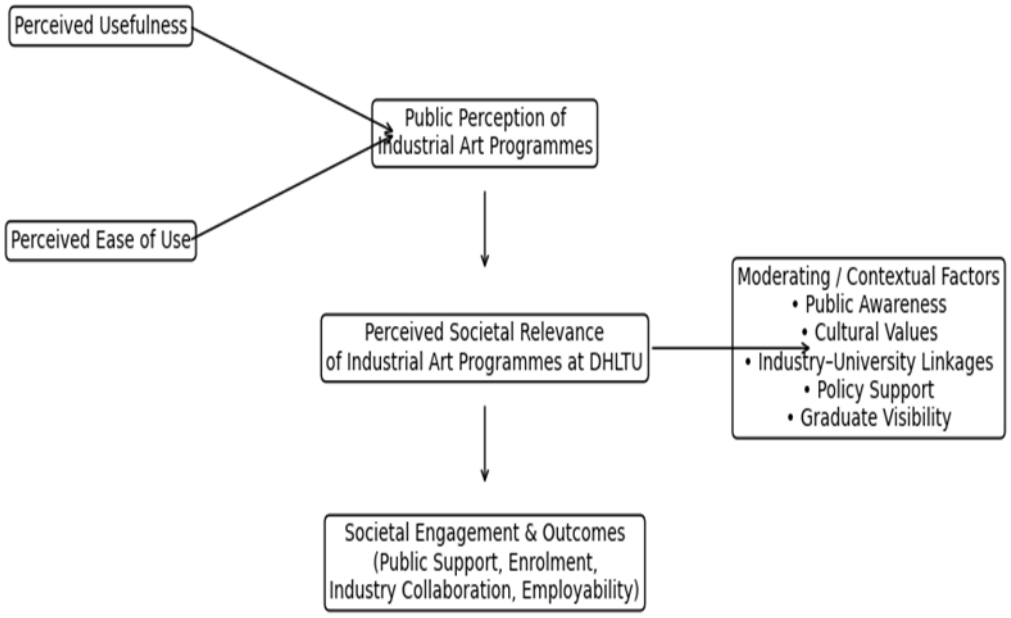

Figure 1.1: Conceptual framework showing the relationship between public perception and the societal relevance of DHLTU based on TAM and ERT

1.3 Empirical Studies on Public Perception of Art and Technical Education

Empirical studies consistently show that public perception significantly influences the success of technical and vocational education. In Ghana, research indicates that TVET is often undervalued relative to academic education. Okae-Adjei (2017) found that technical education is perceived as less prestigious, contributing to low enrolment and weak societal support.

Adams et al. (2023) identified substantial gaps in public knowledge of TVET objectives and benefits. Many community members associate TVET with low academic ability and limited career prospects, misconceptions that negatively affect public engagement and policy prioritisation. These perceptions also influence students' educational choices. Adams et al. (2024) reported that concerns about social status, job security, and remuneration discourage enrolment in technical programmes, despite evidence of strong employability outcomes.

From an institutional perspective, Owusu-Agyeman et al. (2025) highlighted public attitude, industry collaboration, and infrastructure as key determinants of TVET's reputation in Ghana. Weak public confidence limits investment, partnerships, and programme growth.

However, most existing studies focus broadly on TVET, with limited attention to Industrial Art programmes. Given that Industrial Art straddles creative arts and technical education, it faces unique challenges related to public understanding and valuation. The lack of targeted empirical research constrains institutions' ability to respond effectively to societal expectations.

1.4 Gap in Literature

The literature confirms that public perception is central to the relevance and sustainability of technical and vocational education. While several studies examine public attitudes toward TVET in Ghana, there is a notable lack of research focusing specifically on Industrial Art programmes at individual technical universities.

In particular, no known empirical study has examined the societal relevance of Industrial Art programmes at Dr. Hilla Limann Technical University from a public perspective. Existing research largely addresses national-level perceptions, student experiences, or institutional challenges, with limited focus on local communities, employers, artisans, and industry players.

This gap is significant because public perception directly affects enrolment, industry collaboration, graduate employability, and policy support. This study therefore seeks to fill the gap by evaluating the societal relevance of Industrial Art programmes at DHLTU from the public's perspective, providing context-specific evidence to inform curriculum development, stakeholder engagement, and policy formulation within Ghana's technical university system.

2. METHODOLOGY

2.1 Introduction

This chapter outlines the methodological procedures adopted for the study. It describes the research design, population, sampling techniques, sample size determination, data collection instruments, data collection procedures, and methods of data analysis. The methodology is structured to ensure rigor, validity, and reliability in addressing the research objectives relating to the relevance, effectiveness, and stakeholder perceptions of industrial art practices within the university and its surrounding community.

2.2 Research Design

The study adopted a mixed-methods research design, combining descriptive survey and qualitative approaches. Mixed-methods research allows the integration of quantitative and qualitative data to provide a more comprehensive understanding of the research problem (Creswell & Plano Clark, 2018). The descriptive survey design was used to collect quantitative data on stakeholders' perceptions, participation, and assessment of industrial art relevance, while qualitative methods provided in-depth insights into experiences, opinions, and contextual realities.

The descriptive survey design is appropriate because it enables the researcher to systematically collect data from a large population and describe existing conditions without manipulating variables (Kothari, 2014). The qualitative component, involving interviews and focus group discussions, complemented the survey by exploring meanings and interpretations that cannot be fully captured through numerical data alone (Bryman, 2016). The integration of these approaches enhanced the credibility and triangulation of findings.

2.3 Population of the Study

The target population for the study consisted of 300 respondents, drawn from university stakeholders, the local community, and relevant art practitioners and industry players. These groups were considered appropriate due to their direct or indirect involvement in industrial art education, production, utilization, and community engagement.

The population was distributed as follows:

- Lecturers: 20
- Administrators: 10
- Students: 100
- Local community members: 50
- Relevant art practitioners and industry players: 20

The inclusion of diverse stakeholder groups aligns with participatory and stakeholder-based research approaches, which emphasize the importance of multiple perspectives in educational and community-based studies (Freeman, 2010). This broad population ensured that academic, administrative, practical, and community viewpoints were adequately represented.

2.4 Sampling Technique

The study employed a combination of stratified sampling, purposive sampling, and simple random sampling techniques.

Stratified sampling was used to divide the population into homogeneous subgroups (lecturers, administrators, students, community members, and art practitioners). This technique ensured proportional representation of each category, thereby enhancing the generalizability of the findings (Cohen, Manion, & Morrison, 2018).

Within each stratum, simple random sampling was applied, particularly for students and local community members, to minimize selection bias and give all individuals an equal chance of participation (Neuman, 2014).

Purposive sampling was used to select administrators, lecturers, and relevant art practitioners and industry players due to their specialized knowledge, experience, and strategic roles in policy formulation,

curriculum delivery, and industrial art practice. Purposive sampling is appropriate where participants possess specific characteristics relevant to the study objectives (Etikan, Musa, & Alkassim, 2016).

2.5 Sample Size

From the total population of 300, a sample size of 200 respondents was selected for the study. The sample size was deemed adequate based on recommendations that a sample representing at least 60–70% of a small population is sufficient for descriptive and mixed-methods studies (Krejcie & Morgan, 1970).

The sample distribution was as follows:

- Lecturers: 15
- Administrators: 8
- Students: 100
- Local community members: 57
- Art practitioners and industry players: 20

This distribution ensured proportional and functional representation while allowing for effective data management and analysis. The relatively larger number of students was justified, as students constitute the primary beneficiaries of industrial art education and are central to evaluating its relevance and effectiveness.

2.6 Data Collection Instruments

Three main instruments were used for data collection:

2.6.1 Questionnaire

A structured questionnaire was used to collect quantitative data from students, lecturers, and community members. The questionnaire consisted of both closed-ended and Likert-scale items, focusing on awareness, participation, relevance, effectiveness, and challenges associated with industrial art practices. Questionnaires are suitable for collecting data from large samples efficiently and objectively (Oso & Onen, 2009).

2.6.2 Interview Guide

A semi-structured interview guide was used to collect qualitative data from administrators, lecturers, and industry practitioners. This instrument allowed flexibility and probing, enabling respondents to express their views in detail (Kvale & Brinkmann, 2015). Interviews focused on policy implementation, curriculum relevance, institutional support, and industry–academia collaboration.

2.6.3 Focus Group Discussion Guide

Focus group discussions were conducted with selected students and local community members. The focus group guide facilitated interactive discussions, enabling participants to share collective experiences and perceptions regarding industrial art engagement and community impact. Focus groups are effective for exploring shared meanings and social dynamics (Krueger & Casey, 2015).

2.7 Data Collection Procedures

Prior to data collection, ethical clearance was obtained from the relevant institutional authorities. Participants were informed about the purpose of the study, and their consent was sought. Confidentiality and anonymity were assured.

Questionnaires were administered in person to ensure a high response rate. Interviews and focus group discussions were conducted at convenient times and locations for participants, and responses were audio-recorded with permission. Field notes were also taken to capture non-verbal cues and contextual information.

2.8 Data Analysis Methods

2.8.1 Quantitative Data Analysis

Quantitative data from questionnaires were coded and analysed using descriptive statistics such as frequencies, percentages, means, and standard deviations to summarise demographic characteristics and identify response patterns (Field, 2018). Inferential statistics, including chi-square tests, were applied where necessary to examine relationships between key variables.

2.8.2 Qualitative Data Analysis

Qualitative data from interviews and focus group discussions were analysed using thematic analysis. Audio recordings were transcribed, followed by familiarisation, coding, and the identification of themes and sub-themes (Braun & Clarke, 2006). This method enabled systematic and flexible interpretation of participants' views.

2.8.3 Integration of Findings

Quantitative and qualitative findings were integrated through triangulation to enhance validity and provide a comprehensive understanding of the research problem. This approach strengthened credibility by corroborating evidence from multiple data sources (Denzin, 2012).

2.9 Validity and Reliability

Validity was ensured through expert review of instruments and a pilot study to refine items. Reliability was achieved through clear wording and consistent data collection procedures. The mixed-methods design further enhanced trustworthiness.

2.10 Ethical Considerations

Ethical principles of voluntary participation, informed consent, confidentiality, and participants' right to withdraw without penalty were strictly observed throughout the study.

3. RESULTS AND FINDINGS

3.1 Introduction

This chapter presents the study's results based on data from 200 respondents, including lecturers, administrators, students, community members, and art practitioners within and around the technical university. Findings are structured around the study objectives and cover demographic characteristics, public perceptions, and the perceived relevance and societal impact of industrial art. Quantitative results are presented using tables, charts, and descriptive statistics, supported by inferential analysis and qualitative insights to enhance interpretation, in line with mixed-methods reporting standards. This approach is consistent with recommendations for mixed-methods result presentation (Creswell & Plano Clark, 2018; Field, 2018).

3.2 Demographic Characteristics of Respondents

3.2.1 Distribution by Stakeholder Category

Table 3.1: Distribution of Respondents by Category

Category	Frequency	Percentage (%)
Lecturers	15	7.5
Administrators	8	4.0
Students	100	50.0
Local Community Members	57	28.5
Art Practitioners / Industry Players	20	10.0
Total	**200**	**100.0**

Students constituted half of the respondents, reflecting their central role in technical university programmes. The inclusion of community members and industry practitioners ensured that both academic

and external stakeholder perspectives were represented. Such diversity is essential in applied and vocational-oriented research (Freeman, 2010).

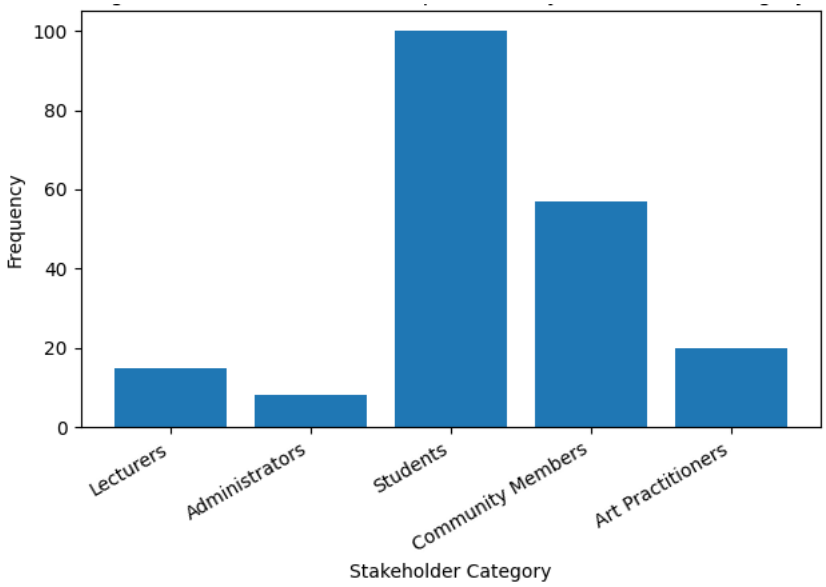

Figure 3.1 illustrates the proportional dominance of students, followed by community members and practitioners.

Figure 4.1 illustrates the distribution of respondents across the various stakeholder categories involved in the study. The bar chart shows that students form the largest proportion of respondents (n = 100)**,** followed by local community members (n = 57) and art practitioners/industry players (n = 20)**.** Lecturers (n = 15) and administrators (n = 8) constitute smaller proportions of the sample. This distribution reflects the central role of students as primary beneficiaries of industrial art programmes, while ensuring adequate representation of community and industry perspectives.

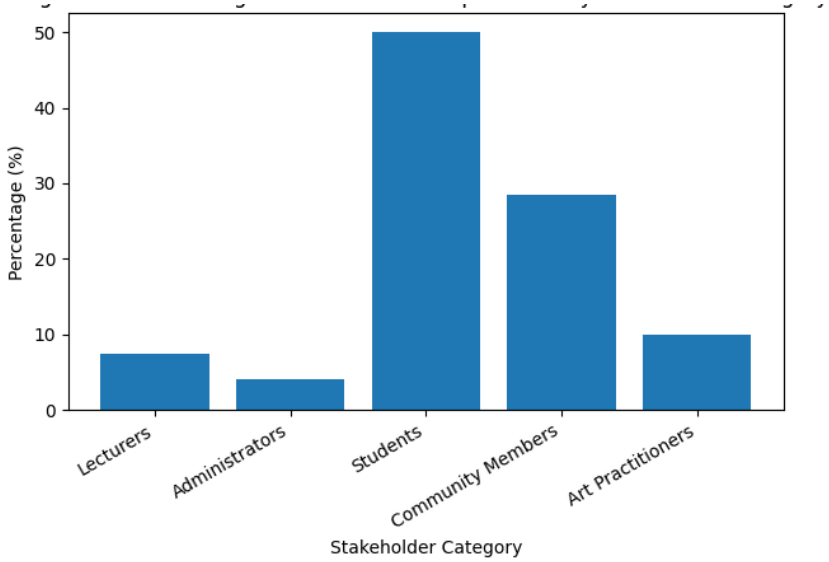

Figure 3.2 presents the percentage distribution of respondents by stakeholder category.

The chart indicates that students constitute 50.0% of the total respondents, representing the largest proportion of the sample. This is followed by local community members (28.5%) and art practitioners/industry players (10.0%). Lecturers account for **7.5%**, while administrators form the smallest group at **4.**0%**.** The distribution reflects the study's emphasis on capturing the views of primary beneficiaries of industrial art education while maintaining adequate representation of institutional and industry stakeholders.

3.2.2 Gender Distribution

Table 3.2: Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	122	61.0
Female	78	39.0
Total	200	100.0

In Table 4.2, the higher proportion of male respondents reflects gender imbalances commonly observed in technical and industrial disciplines within Ghanaian tertiary institutions (UNESCO, 2021). However, the significant female participation suggests increasing inclusivity within industrial art programmes.

3.2.3 Educational Background

Most lecturers and administrators possessed postgraduate qualifications, while students were predominantly enrolled in diploma and degree programmes. Art practitioners largely held technical or vocational certifications. This educational diversity supports the reliability of the data, as respondents possessed adequate knowledge of industrial art education and practice.

3.3 Analysis of Public Perception Responses

Public perception of industrial art was examined using Likert-scale questionnaire items supported by interview and focus group data.

3.3.1 Awareness of Industrial Art in the Technical University

Table 3.3: Level of Awareness of Industrial Art Activities

Response	Frequency	Percentage (%)
Very Aware	72	36.0
Aware	88	44.0
Not Sure	22	11.0
Not Aware	18	9.0
Total	**200**	**100.0**

The results show that 80% of respondents were aware or very aware of industrial art activities within the technical university. This high level of awareness suggests that industrial art maintains strong visibility through studio projects, exhibitions, campus beautification works, and community-based productions. According to Rogers (2003), awareness is a critical determinant of acceptance and perceived relevance. Fig, 4.3 below shows vivid percentages of level of awareness of Industrial Art activities

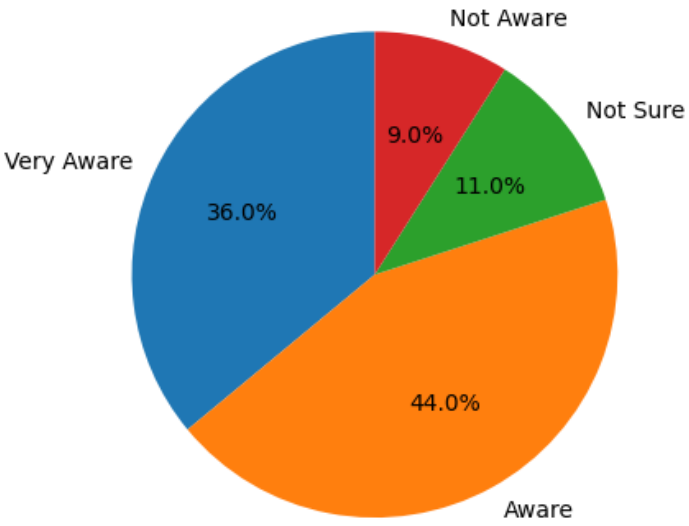

Figure 3.3: Showing percentages of Level of Awareness of Industrial Art Activities

3.3.2 Attitudes toward Industrial Art

Descriptive analysis revealed a generally positive attitude toward industrial art, with an overall mean score of 3.94 (SD = 0.61**)** on a 5-point scale. Respondents largely agreed that industrial art contributes meaningfully to skills training, creativity, and problem-solving across disciplines. These findings are consistent with Bamford (2019), who emphasized the role of art-based learning in fostering innovation.

3.4 Findings on Perceived Relevance of Industrial Art

3.4.1 Industrial Art as the Central Discipline in Technical Universities

One of the core findings of the study is the perception that industrial art serves as the central or integrating discipline within technical university programmes. Respondents indicated that industrial art underpins design, fabrication, aesthetics, ergonomics, and product development across engineering, fashion, architecture, hospitality, and technology-related programmes.

Table 3.4: Perceived Interdisciplinary Relevance of Industrial Art

Statement	Mean	SD
Supports product design across disciplines	4.32	0.55
Enhances creativity in technical and engineering programmes	4.21	0.60
Links aesthetics with functionality	4.38	0.52
Serves as foundation for applied and vocational skills	4.29	0.58

The high mean scores in Table 4.4 indicate strong agreement that industrial art plays a foundational role in technical education. Interviewed lecturers explained that industrial art concepts such as design thinking, material exploration, and aesthetics are embedded in nearly all technical programmes. This supports interdisciplinary education theories which emphasize integration of art and technology (STEAM) for holistic learning (Yakman, 2008). Fig. 4.4 gives the perceived interdisciplinary relevance of Industrial Art.

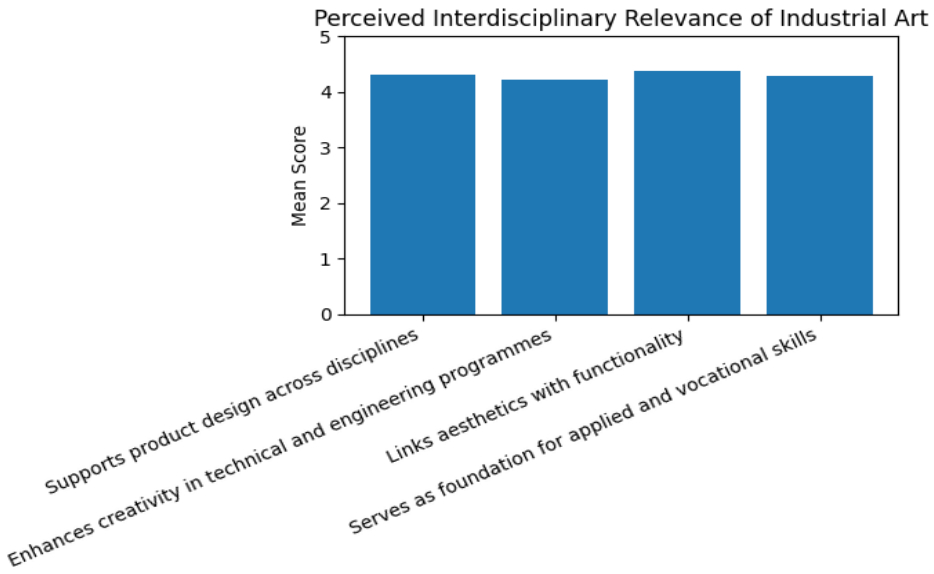

Fig. 3.4 The perceived interdisciplinary relevance of Industrial Art.

Fig.3.5 is a broader Illustrative Diagram taking inference from Fig. 3.4: indicating Industrial Art as the pedagogical and practical hub within technical universities.

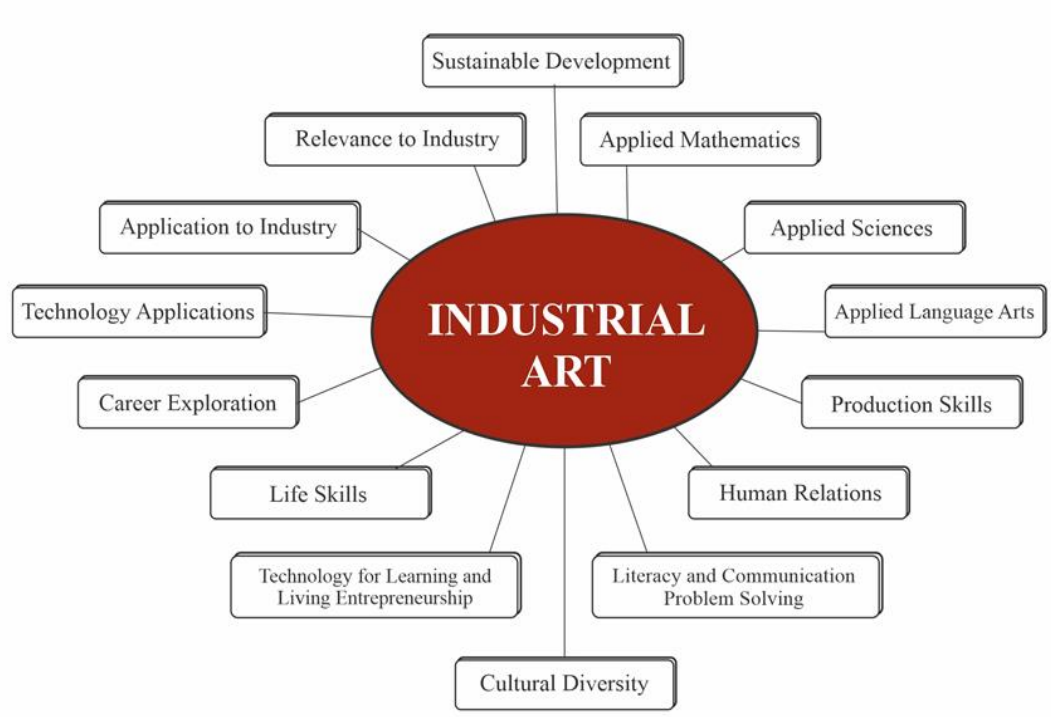

Figure 3.5: Conceptual illustration showing Industrial Art as the central discipline connecting and supporting multiple programmes in the technical university.

This diagram as in Fig. 3.5 reflects respondents' views that industrial art provides the aesthetic, creative, and functional foundation upon which other technical disciplines operate. Figure 3.5 underscores the argument that industrial art is not an isolated discipline but a pedagogical and practical hub within technical universities. By integrating artistic creativity with technical competence, industrial art facilitates holistic skills development, supports industry-relevant training, and contributes to societal and economic development. This conceptualization aligns with interdisciplinary and STEAM education frameworks that advocate the integration of art into science, technology, engineering, and mathematics to foster innovation and applied learning (Yakman, 2008; Bamford, 2019).

3.4.2 Inferential Analysis of Relevance Perceptions.

A chi-square test of independence showed a statistically significant association between respondent category and perceptions of the relevance of industrial art ($\chi^2 = 13.62$, $p = .05$). This suggests that professional or social affiliation influenced how respondents viewed the importance of industrial art. Art practitioners and lecturers demonstrated higher levels of agreement on its relevance, reflecting their deeper understanding of its interdisciplinary character and practical applications. Conversely, students and community members recorded lower levels of agreement, likely due to limited professional exposure and reduced engagement with industrial art practices. Overall, the findings indicate that sustained involvement and experiential familiarity with industrial art foster more informed and positive perceptions, particularly regarding its integration of creativity, technical skills, and industrial processes.

3.5 Findings on Societal Impact of Industrial Art

3.5.1 Cultural and Social Impact

Qualitative findings revealed that industrial art contributes to cultural identity, heritage preservation, and social cohesion. Community respondents highlighted murals, sculptures, leatherworks, textiles, and metal artifacts as symbols of indigenous knowledge and local pride. This finding aligns with Hall (2013), who argued that art functions as a medium for cultural representation and social meaning.

3.5.2 Economic and Environmental Impact

Table 3.5: Perceived Societal Impact of Industrial Art

Impact Area	High (%)	Moderate (%)	Low (%)
Job creation	71.0	19.5	9.5
Entrepreneurship	74.5	16.0	9.5
Environmental aesthetics	73.5	16.5	10.0

The results indicate that more than 70% of respondents perceived high societal impact, particularly in job creation, entrepreneurship, and environmental beautification. These findings support Miles' (2015) assertion that applied arts play a critical role in urban and community development.

3.5.3 Constraints Affecting Societal Impact

Despite positive outcomes, respondents identified challenges such as inadequate funding, limited industry partnerships, and insufficient exhibition platforms. These constraints limit the full realization of industrial art's societal potential, echoing concerns raised in vocational education literature (UNESCO, 2021).

3.6 Summary of Key Findings

The results demonstrate that industrial art is widely perceived as a central and integrative discipline within technical universities, supporting multiple programmes and contributing significantly to educational quality, societal development, and economic empowerment. High awareness levels, positive public perceptions, and statistically significant differences across stakeholder groups underscore the strategic importance of industrial art in technical education

4. DISCUSSION

4.1 Introduction

This chapter discusses the findings presented in Chapter Four in relation to the study's research objectives. The discussion interprets the results, situates them within existing literature, and examines their

implications for policy, curriculum design, and professional practice in Industrial Art within technical universities. The chapter concludes by outlining the study's limitations, which provide context for interpreting the findings and inform directions for future research.

4.2 Interpretation of Results in Relation to Research Objectives

The first objective of the study examined stakeholders' awareness and perceptions of Industrial Art within the technical university and its surrounding community. Findings revealed a high level of awareness, with over 80% of respondents indicating that they were aware or very aware of Industrial Art activities. This suggests strong institutional and societal visibility, reflected through exhibitions, studio outputs, campus beautification initiatives, and community engagements.

Perceptions of Industrial Art were largely positive among students, lecturers, practitioners, and community members. The discipline was not viewed merely as decorative or leisure-oriented but recognised as a functional and developmental field that supports skills acquisition, creativity, and innovation. This perception is particularly important in technical universities, where programmes are expected to demonstrate practical relevance and tangible societal impact. The findings therefore indicate that Industrial Art is well positioned as a meaningful contributor to applied education and community development.

The second objective assessed the perceived relevance of Industrial Art to academic programmes within the technical university. Results showed strong agreement that Industrial Art functions as a foundational and integrative discipline supporting fields such as engineering, fashion, architecture, manufacturing, and hospitality. High mean scores related to creativity, functionality, and interdisciplinary application indicate that respondents regard Industrial Art as central to applied learning and problem-solving. This aligns with experiential and constructivist learning theories, which emphasise learning through practice, reflection, and creative engagement (Kolb, 1984). Through studio-based learning and material exploration, Industrial Art enables students to translate theoretical knowledge into tangible outcomes, thereby strengthening interdisciplinary collaboration and the practical orientation of technical education.

The third objective examined the societal impact of Industrial Art. Findings indicate that the discipline contributes significantly to cultural identity, job creation, entrepreneurship, and environmental aesthetics. Respondents highlighted its role in supporting small-scale industries, promoting indigenous design traditions, and enhancing the visual quality of public and institutional spaces. High ratings for economic and environmental impact demonstrate that Industrial Art extends beyond the classroom to support community development and local industry.

Overall, the findings confirm the dual educational and societal role of Industrial Art within technical university systems. Beyond training students, Industrial Art serves as a catalyst for cultural preservation, creative enterprise development, and community engagement, reinforcing its relevance to local socio-economic development.

4.3 Comparison with Previous Studies

The findings of this study are consistent with earlier research emphasising the interdisciplinary and developmental role of art in technical and vocational education. Bamford (2019) reported that art-based education enhances creativity, innovation, and employability, particularly when integrated into technical and vocational curricula. This supports the current findings that Industrial Art contributes meaningfully to applied learning and skill development across disciplines.

Similarly, Yakman's (2008) STEAM framework argues that integrating art into science, technology, engineering, and mathematics strengthens design thinking and problem-solving skills. The recognition of Industrial Art as an integrative discipline in this study aligns with the STEAM perspective, particularly within technical universities where innovation and functional design are central learning outcomes.

The high level of public awareness observed in this study also aligns with Rogers' (2003) diffusion of innovations theory, which posits that visibility, communication channels, and social interaction are essential for adoption and acceptance. The presence of Industrial Art through exhibitions, public artworks, and community-based projects likely contributed to increased awareness and positive perception among stakeholders.

In terms of societal impact, the findings corroborate Miles' (2015) assertion that applied and public art plays a crucial role in urban development, cultural expression, and social well-being. Respondents' recognition of Industrial Art's contribution to environmental aesthetics and community identity reflects this broader social function of art. Additionally, the perceived economic benefits support UNESCO's (2021) position that creative industries are key drivers of sustainable development, particularly in developing economies where arts-based enterprises offer alternative livelihood opportunities.

However, the study also identified challenges such as limited funding and inadequate industry collaboration. These challenges echo concerns raised in previous studies on technical and vocational education in sub-Saharan Africa (McGrath et al., 2020; UNESCO, 2021). The persistence of these challenges suggests systemic constraints related to policy prioritisation, resource allocation, and weak industry–academia linkages. Their recurrence across contexts indicates the need for coordinated policy and institutional responses.

4.4 Implications for Policy, Curriculum Design, and Practice

4.4.1 Policy Implications

The findings highlight the need for institutional and national policies that recognise Industrial Art as a strategic discipline in technical universities. Policymakers should prioritise funding for studios, workshops, and exhibition spaces to support effective studio-based learning and professional production. Additionally, policies that strengthen industry–academia collaboration would enhance practical training, entrepreneurship, and graduate employability. Partnerships with creative industries, artisans, and manufacturing firms can expose students to real-world practices and market demands, while alignment with national development and creative economy agendas would boost economic growth and innovation.

4.4.2 Curriculum Design Implications

Recognising Industrial Art as an integrative discipline has significant implications for curriculum design. Curricula should promote interdisciplinary collaboration between Industrial Art and other technical programmes by embedding design thinking, material exploration, and aesthetics across engineering, construction, and technology courses. This supports holistic skill development and creativity, consistent with competency-based education models that emphasise practical relevance and adaptability (Mulder, 2017). Furthermore, community-based and industry-linked projects should be incorporated to provide authentic learning contexts, strengthen theory–practice connections, and better prepare graduates for professional practice and societal engagement.

4.4.3 Implications for Professional Practice

For educators and practitioners, the findings highlight the importance of positioning Industrial Art as both a creative and problem-solving discipline. Lecturers should adopt learner-centred and studio-based pedagogies that encourage experimentation, collaboration, and innovation. Emphasis on critique sessions, prototyping, and reflective practice can further strengthen learning outcomes.

Practitioners and industry players should also be engaged as mentors, guest lecturers, and collaborators. Their involvement can bridge the gap between academic training and professional practice, ensuring that skills taught remain relevant to industry needs. This collaborative approach enhances skill transfer, programme relevance, and the sustainability of Industrial Art education within technical universities.

4.5 Limitations of the Study

Despite its contributions, the study has several limitations. First, the research was confined to a single technical university and its surrounding community, which may limit the generalisability of the findings to other institutions or regions. Second, the study relied partly on self-reported data, which may be influenced by social desirability bias.

Third, although the mixed-methods approach provided rich data, time and resource constraints limited the depth of qualitative engagement with some stakeholder groups, particularly industry players. Additionally, the cross-sectional nature of the data means that changes in perception and impact over time could not be assessed. Future studies could adopt longitudinal designs or comparative multi-institutional approaches to address these limitations and provide a broader understanding of Industrial Art's role in technical education.

4.6 Summary

This discussion has shown that Industrial Art is widely perceived as a central and impactful discipline within technical universities. It contributes significantly to interdisciplinary learning, societal development, and economic empowerment. While the findings align strongly with existing literature, they also highlight persistent contextual challenges related to funding, industry collaboration, and policy

support. Addressing these issues would enhance the effectiveness, relevance, and sustainability of Industrial Art education within technical university systems.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study explored the relevance, interdisciplinary role, and societal impact of Industrial Art within a technical university, drawing insights from lecturers, administrators, students, community members, and art practitioners. Findings indicate that Industrial Art is widely perceived as a central and integrative discipline, supporting multiple academic programmes and contributing to both educational quality and societal development.

Respondents demonstrated high awareness and positive perception of Industrial Art activities. They viewed the discipline as bridging theory and practice through studio-based learning, material exploration, and design thinking, highlighting its functional, technological, and problem-solving contributions beyond aesthetics. Industrial Art was also recognized for enhancing employability, entrepreneurship, and creativity among students, contributing to job creation, small-scale industry development, and environmental aesthetics through applied works such as murals, product designs, textiles, and metal crafts. These outcomes affirm its societal relevance in promoting cultural identity, economic empowerment, and community development.

However, challenges such as inadequate funding, limited industry collaboration, insufficient studio infrastructure, and lack of structured policy support were identified as barriers to maximizing Industrial Art's potential. Addressing these challenges is essential for strengthening programme impact and sustainability.

5.2 Recommendations

Policymakers should formally recognize Industrial Art as a strategic discipline, providing dedicated funding for studios, workshops, and exhibitions, while promoting university–industry partnerships to support internships, mentorships, and collaborative projects. Aligning Industrial Art education with national creative economy and industrialization policies will enhance its developmental contribution.

Curriculum designers should adopt interdisciplinary, competency-based approaches, integrating design thinking, aesthetics, and material studies into technical programmes such as engineering, construction, fashion, and manufacturing. Emphasis should be placed on experiential, project-based learning that addresses real-world and community needs.

Community engagement should be strengthened through exhibitions, public art projects, and workshops, while practitioners participate in teaching, curriculum review, and mentorship. Future research could explore comparative implementation across institutions, longitudinal changes in perception and impact,

and integration of digital technologies and sustainable maIndustrial Art has significant potential as a transformative discipline in technical universities. Addressing challenges and implementing recommended policy, curriculum, and practice reforms can strengthen its role in education, industry, and societal development. The author sincerely acknowledges the contributions of respondents—including lecturers, practitioners, students, administrators, and community members—as well as academic colleagues who provided guidance and feedback. Technical support during data collection and analysis is also appreciated. The author declares no competing interests and confirms sole responsibility for the study's design, data collection, analysis, literature review, and manuscript preparation, with final approval of the submitted work materials to ensure continued relevance in evolving socio-economic contexts.

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APPENDICES

APPENDIX A: Survey Questionnaire

Title:
Questionnaire on the Relevance and Societal Impact of Industrial Art in a Technical University

Instruction:
This questionnaire is designed for academic purposes only. All responses will be treated with strict confidentiality. Please tick (✓) or circle the option that best represents your opinion.

Section A: Demographic Information

1. Category of respondent
   ☐ Lecturer
   ☐ Administrator
   ☐ Student
   ☐ Local Community Member
   ☐ Art Practitioner / Industry Player
2. Gender
   ☐ Male
   ☐ Female
3. Highest educational qualification
   ☐ SHS/Technical Certificate
   ☐ Diploma

☐ Bachelor's Degree
☐ Postgraduate Degree

4. Years of experience (if applicable)
   ☐ Below 5 years
   ☐ 5–10 years
   ☐ Above 10 years

Section B: Awareness and Perception of Industrial Art

Indicate your level of agreement using the scale below:
1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

5. I am aware of Industrial Art programmes and activities in the technical university.
   1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
6. Industrial Art is visible and well-recognized within the university community.
   1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
7. Industrial Art contributes positively to the image of the technical university.
   1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Section C: Perceived Relevance of Industrial Art

8. Industrial Art enhances practical and vocational skills.
   1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
9. Industrial Art supports creativity and innovation across other disciplines.
   1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
10. Industrial Art serves as a foundation for applied learning in technical education.
    1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
11. Industrial Art should be considered central to all programmes in a technical university.
    1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Section D: Societal Impact of Industrial Art

12. Industrial Art contributes to job creation and entrepreneurship.
    1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
13. Industrial Art promotes cultural identity and heritage preservation.
    1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
14. Industrial Art improves environmental aesthetics through public artworks.
    1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
15. Industrial Art positively impacts community development.
    1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

Section E: Challenges and Suggestions

16. What challenges limit the effectiveness of Industrial Art programmes?
    .....
17. What suggestions do you have for improving Industrial Art education and practice?
    .....

APPENDIX B: Interview Guide (Lecturers, Administrators, Industry Practitioners)

Purpose: To obtain in-depth qualitative insights on Industrial Art relevance, policy, and practice.

1. How would you describe the role of Industrial Art in the technical university?
2. In what ways does Industrial Art support other academic programmes?
3. What policies exist to support Industrial Art education and practice?
4. What challenges affect the effective delivery of Industrial Art programmes?
5. How can collaboration between the university and industry be improved?
6. What recommendations would you propose to enhance the societal impact of Industrial Art?

APPENDIX C: Focus Group Discussion Guide (Students and Community Members)

1. What comes to mind when you hear the term "Industrial Art"?
2. How visible are Industrial Art activities within your community or institution?
3. In what ways does Industrial Art benefit students and the local community?
4. What challenges affect community participation in Industrial Art activities?
5. How can Industrial Art programmes be improved to serve society better?

APPENDIX D: Sample Additional Data Table

Table D1: Summary of Mean Scores on Perceived Relevance of Industrial Art

Item Description	Mean	SD
Enhances employability	4.25	0.60
Supports interdisciplinary learning	4.32	0.55
Promotes creativity and innovation	4.38	0.52
Contributes to societal development	4.21	0.58

APPENDIX E: Ethical Consent Statement

Participants were informed of the purpose of the study and assured that their participation was voluntary. Confidentiality and anonymity were guaranteed, and respondents were free to withdraw from the study at any time without any consequences.