**Original Research Article**

# Metaverse Technology and Its Impact on the Evolving Landscape of Communication and Media: A Future Outlook for Lebanese Satellite Channels

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## Abstract

The current research aims to forecast the impact of Metaverse technology on the ever-evolving landscape of communication and media, specifically focusing on Lebanese satellite channels. This study seeks to forecast how Metaverse technology will influence the media industry in Lebanon by envisioning a future where local satellite broadcasting channels incorporate this technology. Utilizing a quantitative, positivist, and deductive research methodology, this study employs a survey to collect insights from 100 professionals and employees belonging to six Satellite channels and classified into five classes. Respondents were selected conveniently based on their willingness to participate and they were equally distributed among the five classes. Data were input on the Statistical Product and Service Solutions (IBM SPSS version 26.0). A descriptive analysis was performed and a T-test analysis was conducted. The findings suggest that, despite varying opinions on the timeline of its widespread adoption, Metaverse technology is poised to play a significant role in communication and media, especially within satellite channels. Results lead to varying degrees of preparation, awareness, and readiness to take advantage of the full benefits of adopting the Metaverse technology. It is expected to introduce dynamic changes, including interactive and immersive content experiences, and offer audiences new ways to engage with media. These findings support the recommendation that Lebanese satellite channels should prepare for this transformative shift by investing in Metaverse technology, focusing on staff and audience education and engagement, and exploring collaborations with technology providers.
**Keywords:** Metaverse technology, Media landscape, Lebanese satellite channels.

## 1. INTRODUCTION

Metaverse technology represents a transformative leap in the evolving landscape of communication and media, ushering in a new era of interconnected virtual spaces that have the potential to reshape how we interact, consume information, and engage with digital content (Henz, 2022). This emerging concept goes beyond the confines of traditional social media, online gaming, and augmented reality (AR), aiming to create a seamless and immersive digital universe where users can work, socialize, and play (Takyar, 2023).

Metaverse promises a more immersive and interactive communication (Dwivedi, Hughes, Baabdullah *et al.*, 2022). It combines augmented reality

(AR) and virtual reality (VR) technologies, creating a rich, sensorial experience that transcends the limitations of text, images, and even traditional video conferencing (Takyar, 2023). Users can have face-to-face interactions with lifelike avatars, attend virtual events, and explore digital landscapes that blur the line between the physical and digital worlds (Fernandez, 2022). This immersive nature of communication makes digital interactions feel more personal and engaging, fostering a sense of presence and connection (van Brakel, Barreda-Ángeles, & Hartmann, 2023).

Traditional forms of media, such as television and newspapers, are already being transformed as content creators and media companies experiment with creating content specifically tailored for virtual environments (WebFX, 2023). In the metaverse, users

access content in new and exciting ways, whether watching a live concert from the front row, exploring 3D art galleries, or attending virtual conferences (Schechter, 2022). This transformation in media democratizes access to experiences and information, transcending geographical boundaries and making high-quality content accessible to a global audience (El Takach, Nassour, & Hejase, 2022).

The metaverse also challenges conventional notions of ownership and authorship. Blockchain technology and non-fungible tokens (NFTs) are integral components of the metaverse, enabling users to have true ownership of digital assets, whether they are virtual real estate, in-game items, or digital art (Banaeian Far and Hosseini Bamakan, 2023). This shift in ownership and provenance can reshape the creative and entertainment industries, allowing content creators to directly monetize their work and providing users with tangible digital assets that hold value (Khader, 2022).

The metaverse is poised to redefine how people communicate, consume media, and engage with the digital world (Dwivedi, Hughes, Baabdullah *et al*., 2022). Its potential impact on society, the economy, and individual experiences is substantial, and as technology continues to develop, it will be essential to navigating the opportunities and challenges its presence while ensuring that it remains a force for positive change in the evolving landscape of communication and media (Dincelli & Yayla, 2022).

Metaverse technology holds the potential to revolutionize the landscape of communication and media for Lebanese satellite channels in profound ways. These channels, already catering to a global Lebanese diaspora, harness the power of the metaverse to create immersive, interactive, and globally accessible content (Kraus *et al*., 2023). By developing virtual studios and environments, they can host virtual talk shows, news broadcasts, and cultural events, offering audiences a richer, more engaging experience (Utilities One, 2023a). The metaverse helps Lebanese satellite channels break free from the constraints of traditional linear broadcasting. They offer on-demand, personalized content, enabling viewers to choose when and how they consume news, entertainment, and cultural programming (Rosenberg, 2022).

Additionally, the metaverse fosters an environment for community building, allowing the Lebanese diaspora and enthusiasts of Lebanese culture to come together in virtual spaces, share experiences, and interact with one another, transcending geographical boundaries. The metaverse presents an exciting opportunity for Lebanese satellite channels to redefine their role in the media landscape, connect with a wider and more diverse audience, and create innovative, interactive content that can shape the way we engage with Lebanese culture and news on a global scale.

## 1.1 Statement of the Problem

The emergence of metaverse technology presents a compelling challenge and opportunity for Lebanese satellite channels operating in the realm of communication and media (Cunningham, 2014). With the metaverse's immersive and interconnected digital environments, there is a pressing need to understand its impact on traditional broadcasting and content distribution. The metaverse has the potential to revolutionize the way audiences engage with content and each other, blurring the lines between physical and digital experiences (Babu & Mohan, 2022). For Lebanese satellite channels, adapting to and harnessing metaverse technology will be crucial to remain relevant, reach wider audiences, and explore innovative forms of content delivery. However, the technology's rapid development and potential regulatory issues raise questions about how Lebanese media professionals adapt to the new digital era. Therefore, the purpose of this study is to forecast the impact of Metaverse technology on the ever-evolving landscape of communication and media, with a specific focus on Lebanese satellite channels.

## 1.2 Contribution of This Research

To the best of the authors' knowledge, no research has yet been done regarding the impact and future potential presented by the Metaverse to Lebanese Satellite channels. Therefore, this paper sheds light on the future outlook that a selected number of Lebanese Satellite channels have manifested and explored by a sample of employees and professionals working within the selected Satellite channels. The findings shall enrich the theoretical as well as the empirical dimensions of this subject in the context of Lebanon. The article offers a thorough conceptual paradigm or framework for the identification of determinants of the current understanding of the new Metaverse and its impact and applications.

## 1.3 Research Questions

1. To what extent the media outlets in Lebanon have digitally transformed?
2. How did the Lebanese media professionals adapt to the new digital era?

This paper is divided into five sections with the first presenting the introduction and background of the study. Section two holds the empirical review of literature applied to Lebanon, followed by the methodology in section three. Section four exposes the results and discussion to end with the conclusion and recommendations in section five.

## 2.0 LITERATURE REVIEW

### 2.1 Metaverse Technology: Redefining Content Consumption

According to Dange (2023), Five technologies power the metaverse including Artificial Intelligence (AI), Virtual and Augmented Reality (VR/AR), Edge Computing, 5G Technology, and Blockchain. Metaverse technology is poised to usher in a paradigm shift in the way content is consumed and experienced, presenting a transformative landscape that is reshaping the media and communication industry at its core. The metaverse, with its immersive, interconnected digital environments, redefines content consumption by offering audiences an unprecedented level of engagement and interactivity (Wijayanto *et al.*, 2023). For Lebanese satellite channels, this evolution in content delivery signifies a dynamic and pivotal moment in their operations. In the metaverse, content consumption transcends the passive watching or reading of typical traditional media. Instead, it becomes an immersive, participatory, and communal experience, where users can navigate virtual worlds, interact with content, and engage with others in real time. This shift in consumption patterns demands a reimagining of content creation and curation, as well as innovative distribution methods to cater to a tech-savvy and digitally connected audience (Benrimoh *et al.*, 2022).

Lebanese satellite channels now have the opportunity to step beyond the boundaries of their traditional linear broadcasts and adopt a multi-dimensional approach to content. They can leverage the metaverse's capabilities to create immersive experiences, harnessing virtual reality, augmented reality, and mixed reality to provide viewers with unique, personalized interactions. Whether it's offering virtual tours of newsrooms or conducting live interviews in virtual auditoriums, the metaverse allows for content to be more engaging and memorable (Al-Qalini & Abu-Al-Qasem, 2022). This, however, necessitates substantial investments in technology infrastructure, talent acquisition, and content production. Lebanese channels must adapt to this new medium, embracing technological advancements while considering the nuances of local culture and preferences.

Furthermore, privacy and security concerns loom large in the metaverse. The increased amount of personal data and identity management within these virtual environments raises ethical and regulatory questions. Striking a balance between creating engaging experiences and ensuring user privacy and data protection will be crucial for the long-term success of metaverse-based content consumption (Riva & Wiederhold, 2022).

### 2.2 Classification of Lebanese Satellite Channels

The distribution of the most well-known Lebanese satellite channels is then shown in five classifications. Several papers, including expert comments and data analytics about their viewers and programs, served as the basis for the classification and subsequent selection (Nielson, IPSOS; 2017; Raidy, 2018; European Union Election Observation Mission, 2022). Worth mentioning that the European Union Election Observation Mission (2022) claims that "Al Jadeed, LBCI, and MTV, are credited with an estimated 75% of the total television audience as shared by media experts" (p. 76).

Class A is represented by Murr Television (MTV) and the Lebanese Broadcasting Corporation International (LBCI) which holds a prominent position in Lebanon's media landscape. MTV is renowned for its comprehensive news coverage, in-depth political analysis, and a variety of engaging talk shows that address critical social and political issues (Rachmadtullah *et al.*, 2023). It has established itself as a go-to channel for viewers seeking informative and thought-provoking content. LBCI, on the other hand, is one of the pioneering broadcasters in Lebanon, offering a diverse range of programs, from news and current affairs to entertainment and cultural content. LBCI's extensive reach and commitment to high-quality programming have solidified its presence as a major player in the country's media scene. Both MTV and LBCI have a crucial role in shaping public opinion, and their adaptation to emerging technologies, including the potential incorporation of metaverse technology, could allow them to redefine how audiences interact with their content. These channels are poised to explore new avenues for audience engagement and immersive experiences as they continue to be leaders in the ever-evolving landscape of communication and media in Lebanon.

Class B+ encompasses Al Jadeed and Orange Tele Vision (OTV), which have also made a significant impact on Lebanon's media landscape. Al Jadeed, often recognized for its incisive news broadcasts, in-depth documentaries, and talk shows that delve into critical political and social issues, has built a dedicated viewership. OTV, owned by the Free Patriotic Movement, offers a unique blend of news, entertainment, and political analysis, targeting a specific audience. These channels, operating within a highly competitive media environment, have carved their niche in the market and have the potential to further enhance their role through the adoption of innovative technologies like the metaverse. As they adapt and innovate, Al Jadeed and OTV can explore opportunities for fostering deeper connections with their audiences, enhancing interactivity, and providing fresh and engaging experiences in the evolving media landscape.

Class B features Al Manar and NBN. It represents another segment of Lebanon's diverse media sector. Al Manar, affiliated with the Islamic party Hezbollah, is known for its news coverage, religious

content, and cultural programs that resonate with a particular demographic. NBN, owned by the Maronite Christian political party, offers a mix of news and entertainment. These channels, while operating with clear political affiliations, have successfully reached their target audiences, contributing to the rich media tapestry of Lebanon. The incorporation of metaverse technology could present opportunities for Al Manar and NBN to expand their engagement strategies and reach a wider demographic (Dheyab *et al*., 2021). By embracing the metaverse, they can diversify their content offerings, enhance viewer participation, and potentially broaden their impact in the Lebanese media landscape.

Class C is represented by Future TV, founded in 1993 by the Future Movement leader Rafik Hariri. It remains a notable player in Lebanese media. Despite facing challenges and changes in ownership, Future TV has historically offered news coverage, cultural programs, and entertainment content. Its legacy and historical significance make it an essential component of the media landscape in Lebanon. With a strategic adaptation to modern technologies like the metaverse, Future TV can rejuvenate its role and relevance. Embracing the metaverse could enable Future TV to expand its reach, connect with new audiences, and offer more interactive and immersive experiences for viewers, thus contributing to the ongoing transformation of the communication and media landscape in Lebanon (Chouikha, 2007).

Class D features Tele Liban (TL), representing a unique aspect of Lebanon's media history. As a state-owned broadcaster, TL has undergone numerous transformations and faced challenges over the years. However, it remains an important part of the country's media landscape. The adoption of metaverse technology could offer TL the opportunity to redefine its role, modernize its programming, and enhance its appeal to a diverse audience. By leveraging the metaverse, TL can explore innovative ways to connect with viewers, offer engaging content, and contribute to the evolving landscape of communication and media in Lebanon (Sakr, 2002).

In this transformative era, Lebanese satellite channels are compelled to pivot from traditional broadcasting methods and embrace the metaverse to stay competitive and relevant (Utilities One, 2023a). The metaverse's potential to redefine content consumption is not just an abstract concept but an imminent reality (Buana, 2023). It offers the opportunity for Lebanese satellite channels to revolutionize their content delivery strategies and engage with their audiences in innovative and exciting ways, providing an entirely new dimension to media consumption and communication that aligns with the demands of the digital age (Allam *et al*., 2022). As they navigate this uncharted territory, the choices they make and the innovations they introduce in metaverse content consumption will shape the future of media and communication in Lebanon.

## 2.3 Challenges and Opportunities for Lebanese Satellite Channels

Lebanese satellite channels find themselves at a critical juncture in the media landscape, where the emergence of metaverse technology brings forth a plethora of challenges and opportunities. The challenges are multifaceted and include adapting to a rapidly evolving digital ecosystem, investing in the necessary technological infrastructure, and staying ahead of the curve in content creation and curation (Bale *et al*., 2022; Utilities One, 2023a, b). These channels grapple with the profound shift from traditional broadcasting to the metaverse, which not only necessitates significant financial investments but also demands a fundamental rethinking of their content delivery mechanisms. Additionally, the metaverse presents regulatory and ethical challenges, particularly in terms of data privacy, security, and user protection, all of which require meticulous attention and compliance to ensure a safe and responsible user experience (Yang & Gu, 2022).

Conversely, the opportunities presented by the metaverse are equally transformative and compelling. Lebanese satellite channels have a unique chance to reinvent their content and engage with audiences in unprecedented ways. The metaverse allows for the creation of immersive, interactive, and personalized experiences that transcend the limitations of traditional media channels (Jiang & Xu, 2022). By embracing this technology, these channels can become early adopters of innovative content formats, such as virtual reality news reports, augmented reality entertainment shows, or mixed-reality cultural events, setting the stage for a new level of viewer engagement (Utilities One, 2023a, b). Furthermore, they can expand their reach to a global audience, breaking free from geographical constraints and reaching a broader and more diverse demographic, which could be especially advantageous in the context of a Lebanese diaspora seeking connections to their homeland (Wider *et al*., 2023).

The metaverse also offers new revenue streams through virtual goods and services, digital advertising, and virtual events. Content monetization in the metaverse is still an evolving concept, but the potential for innovative revenue models is substantial, providing channels with additional financial incentives (Paganopoulos, 2022). Moreover, the metaverse fosters collaboration and partnerships, not only with other media organizations but also with technology companies, content creators, and user communities. These collaborative ventures can lead to creative synergies, expanded content libraries, and new market opportunities (Dwivedi, Hughes, Baabdullah *et al*., 2022).

The challenges and opportunities for Lebanese satellite channels in the metaverse are intrinsically linked. To navigate this transformative landscape successfully, these channels must acknowledge the hurdles and embrace them as catalysts for innovation (Xu, Chen, & Zhou 2022). By proactively addressing regulatory and privacy concerns (Krishnan, 2022), investing in technological advancement (Kark, Briggs, & Tweardy, 2019), and redefining their content strategies (Shi, Ning, Zhang *et al*., 2023), Lebanese satellite channels can position themselves as pioneers in the metaverse, offering their audiences groundbreaking experiences and cementing their relevance in the evolving media landscape.

# 3.0 RESEARCH METHODOLOGY

This study employs a quantitative-deductive research approach, aligned with a positivist philosophy. According to Hejase & Hejase (2013), "Positivism is when the researcher assumes the role of an objective analyst, is independent, and neither affects nor is affected by the subject of the research" (p. 77). This methodology helps to investigate the potential implications of metaverse technology on the ever-changing landscape of communication and media, focusing on the prospects for Lebanese satellite channels.

**Sampling and sample size**

The participants in this research consist of Lebanese media professionals hailing from diverse media organizations. More specifically working in six Lebanese satellite channels representing the five classes discussed earlier. Table 1 summarizes this selection.

**Table 1: Definition of Entity or Lebanese TV Channel(s)**

| Classification | | Frequency of Participants in Each Channel | Percent, % |
|---|---|---|---|
| Valid | Class A: MTV & LBC | 20 | 20.0 |
| | Class B: Al Manar TV | 20 | 20.0 |
| | Class B+: Al Jadid TV | 20 | 20.0 |
| | Class C: Future | 20 | 20.0 |
| | Class D: TL or Tele Liban | 20 | 20.0 |
| | Total | 100 | 100.0 |

A non-probability sampling technique, specifically purposive and convenient sampling, was employed. As a result, a total of 100 professionals and employees working in the six selected channels will be conducted to create a knowledge map and visualize potential future scenarios from their perspective. Worth noting that participants willingly accepted their involvement as respondents and were free to quit at any time of their convenience. Moreover, participants were informed that no specific personal data is required and that their answers will be used for academic research purposes only.

The six Lebanese satellite channels employ about 2,500 employees and media professionals constituting the total population for this study, and as mentioned above the sample size consists of 100 participants. To follow the methods of Hejase *et al*., (2023a, b), Younis *et al*., (2022), and Masoudi & Hejase (2023), the researchers extracted approximation reliability values from Hardwick's (2022) reported data. This gave them a clear understanding of the trustworthiness of the sample size. Table 2 indicates that for a population of 2,500, a 95% confidence level [α = 5%], and an acceptable dependability of 10% ±1%, the sample size would be 100. At the 95% confidence level, the study's 100 sample represents a dependability of around ± 9.5%. This suggests that in 90.5 out of 100 survey repetitions, the findings will not differ by more than 9.5%. This study is exploratory; therefore, the resultant reliability would be appropriate.

**Table 2: Statistical reliability versus sample size at 95% confidence**

| Statistical Reliability at the 95% Confidence Level (50/50% proportion characteristic) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Population | | | | | | |
| Sample Size | 100 | 500 | 1000 | 5000 | 10000 | 100000 | 1 Mill+ |
| 30 | ±14.7% | ±17.1% | ±17.3% | ±17.6% | ±17.7% | ±17.8% | ±17.9% |
| 50 | ±9.7% | ±13.1% | ±13.5% | ±13.8% | ±13.9% | ±14.0% | ±14.1% |
| 75 | ±5.6% | ±10.4% | ±10.9% | ±11.3% | ±11.4% | ±11.5% | ±11.6% |
| 100 | | ±8.8% | ±9.3% | ±9.7% | ±9.8% | ±9.9% | ±10.0% |

Source: Extracted from Hardwick Research, 2022.

## 3.2 Research Instrument

Adopting a deductive approach is usually supported by following a survey strategy. Therefore, this study was based on a survey questionnaire constructed to gather data and answer the central research questions. The created structured questionnaire was distributed via Google Forms and serves as the primary instrument for data collection. The questionnaire was divided into three sections. Section one assessed the respondents' attitudes toward their perceptions and awareness of metaverse technology; section two assessed the respondents' attitudes toward the impact and potential applications of Metaverse Technology; and section three was about the participants' demographics. The questionnaire employed a 5-level Likert scale in sections one and two but used a multiple-choice approach for demographic information. Finally, an open question was added to collect any comments or remarks the participants wanted to add.

## 3.3 Internal Reliability

Table 3 shows a Cronbach Alpha of 0.759 (with 10 items), which is good, statistically significant, and dependable by the thumb rule (Burns and Burns, 2008, p. 481; Hejase and Hejase, 2013, p. 570). Furthermore, while assessing item-total data, Cronbach's Alpha ranges between 0.711 and 0.766 if an item is eliminated. Furthermore, "an appropriate strength of association and supports the suitability and selection of the questions for the survey purpose" (p. 1915) is what Chehimi *et al*., (2019) assert.

### Table 3: Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .759 | .759 | 10 |

# 4.0 RESULTS AND DISCUSSION

## 4.1 Demographics

The findings indicate that 42% of respondents were women and 58% of respondents were men. Three (3) categories make up the age factor. Figure 1 shows that 50% of respondents were under 24, 33% were between 24 and 34, and 17% were 35 years of age or older. In addition, 62% earned their Bachelor's degree, 32% earned their Master's degree, and 6% earned their doctorate. Figure 2 illustrates the respondents' education distribution. Therefore, respondents were about equally distributed in sex, mature community, and well educated which reflects that their responses are serious and professional. On the other hand, these participants were also classified per their satellite channels as shown in Table 4.

### Table 4: Distribution of participant demographics per their satellite channel

| Classification | Sex Distribution | Age Distribution | Educational Level |
|---|---|---|---|
| Class A: MTV/LBC | Males 45%<br>Females 55% | < 24 years 70%<br>24–34 years 25%<br>> 34 Years 05% | BS 60%<br>MA/MS 35%<br>Doctorate 05% |
| Class B+: Al Jadeed | Males 70%<br>Females 30% | < 24 years 65%<br>24–34 years 30%<br>> 34 Years 05% | BS 60%<br>MA/MS 35%<br>Doctorate 05% |
| Class B: Al Manar | Males 35%<br>Females 65% | < 24 years 60%<br>24–34 years 35%<br>> 34 Years 05% | BS 65%<br>MA/MS 35%<br>Doctorate - |
| Class C: Future | Males 55%<br>Females 45% | < 24 years 35%<br>24–34 years 50%<br>> 34 Years 15% | BS 60%<br>MA/MS 35%<br>Doctorate 05% |
| Class D: Tele Liban / TL | Males 85%<br>Females 15% | < 24 years 20%<br>24–34 years 25%<br>> 34 Years 55% | BS 65%<br>MA/MS 20%<br>Doctorate 15% |

Table 4 shows that Classes A (MTV/LBC), B+ (Al Jadeed), and B (Al Manar) employ a young generation as compared with Class C (Future) and Class D (TL) where the participants' age categories are higher. As for education, all classes are about the same, however, the Classes that employ more females than males are Class B (Al Manar) with a high 65% followed by Class A (MTV and LBC) with 55%. On the other hand, the Classes that employ more males are Class D (TL) with a high 85% followed by Class B+ (Al Jadeed) with 70%.
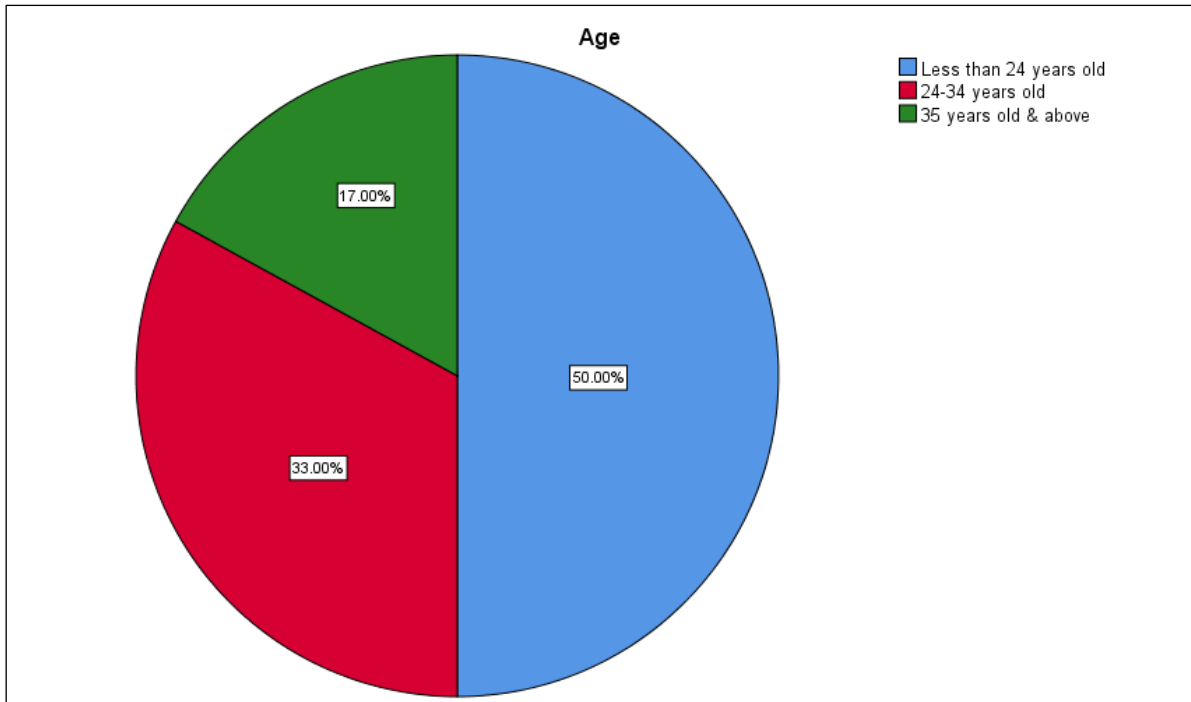
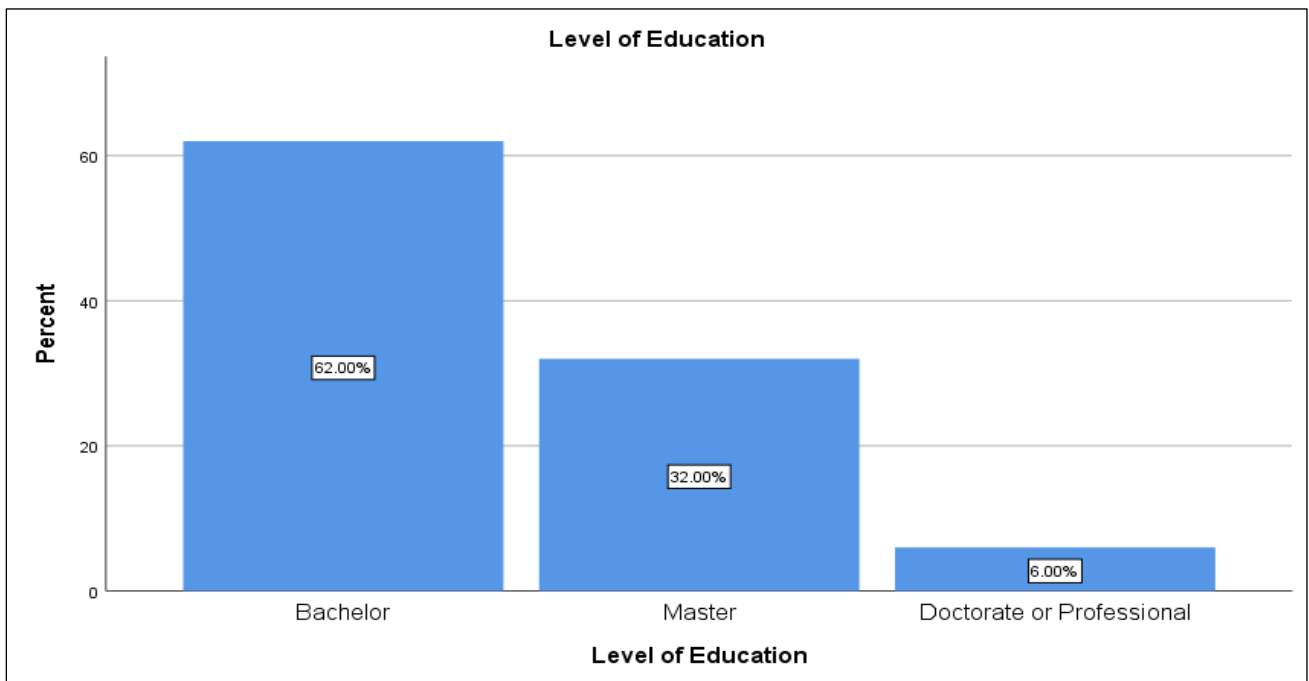**Figure 1: Respondents' Age Distribution**



**Figure 2: Overall Respondents' Education Distribution**

## 4.2 Attitude towards the new metaverse

A condensed 3-level Likert scale (grouped for analysis simplicity) was used to assess the responses to the various survey components. 'Agreement' is the total of "SA: Strongly Agree" and "A: Agree," 'Neutral' for indifference to responses, and 'Disagreement' is the total of "D: Disagree" and "SD: Strongly Disagree." The survey has two (2) sections for attitude analysis that constitute a total of ten statements as illustrated in Tables 5 and 6.

**4.2.1 Perceptions and Awareness of Metaverse Technology**

**Table 5: Respondents' Attitude towards the New Metaverse Technology**

| No. | Statement | A, % | N, % | D, % | Mean | Std. Dev. | Rank |
|-----|-----------|------|------|------|------|-----------|------|
| 1 | My understanding of the metaverse and its potential impact on communication and media is clear | 82 | 13 | 05 | 4.35 | 0.892 | 3 |
| 2 | I believe the metaverse concept could revolutionize media and communication engagement | 78 | 16 | 06 | 4.33 | 0.985 | 4 |
| 3 | I'm well-informed about metaverse technologies like VR, AR, and MR | 60 | 25 | 15 | 3.88 | 1.183 | 5 |
| 4 | I'm aware of metaverse applications and platforms used for media and communication | 85 | 10 | 05 | 4.47 | 0.870 | 2 |
| 5 | I have personal experience using metaverse platforms in media and entertainment | 89 | 08 | 03 | 4.52 | 0.772 | 1 |
| | **Overall Average** | **78.8** | **14.4** | **6.8** | **4.31** | **0.9404** | |

Table 5 presents the respondents' perceptions and awareness of metaverse technology. The results indicate a generally high level of understanding and positive outlook regarding the metaverse. 82% of the respondents expressed a clear understanding of the metaverse's potential impact on communication and media, with a mean score of 4.35 (std. dev. of 0.892). Furthermore, a lower percentage 78% of the respondents held an acceptable level of belief in the revolutionary potential of the metaverse for media and communication engagement, with a mean score of 4.33 (std. dev. of 0.985). While surprisingly 60% of the participants reported a lower level of awareness of metaverse technologies like VR, AR, and MR, (mean = 3.88, std. dev. of 1.183), however, the values remain near the agreement level of 4. The respondents demonstrated a high level of awareness (85%) of metaverse applications and platforms used for media and communication, with a mean score of 4.47 (std. dev. of 0.870), indicating a strong familiarity with these technologies. Additionally, 89% of participants indicated that they had personal experience using metaverse platforms in media and entertainment, with a mean score of 4.52, reflecting a practical understanding of metaverse technologies. The general mean score for this dimension is 4.31 (std. dev. of 0.9404), highlighting an overall positive perception of and familiarity with metaverse technology among the respondents, with a moderate level of variability, as indicated by the standard deviation of about 0.94. These results suggest that the participants are well-informed and optimistic about the potential of metaverse technology in the realm of communication and media.

**4.2.2 Impact and Potential Applications**

**Table 6: Respondents' Attitude towards impact and potential applications of the new metaverse**

| No. | Statement | A, % | N, % | D, % | Mean | Std. Dev. | Rank |
|-----|-----------|------|------|------|------|-----------|------|
| 6 | I think metaverse technology can create more engaging and immersive experiences for media consumers | 69 | 21 | 10 | 4.11 | 1.063 | 4 |
| 7 | I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling | 74 | 19 | 07 | 4.25 | 0.999 | 2 |
| 8 | I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape | 50 | 31 | 19 | 3.65 | 1.14 | 5 |
| 9 | I consider metaverse technology a means to create interactive educational content for viewers | 77 | 16 | 07 | 4.24 | 0.965 | 3 |
| 10 | I think metaverse technology can make historical and cultural documentaries more immersive and captivating | 77 | 16 | 07 | 4.27 | 0.973 | 1 |
| | **Overall Average** | **69.4** | **20.6** | **10.0** | **4.104** | **1.028** | |
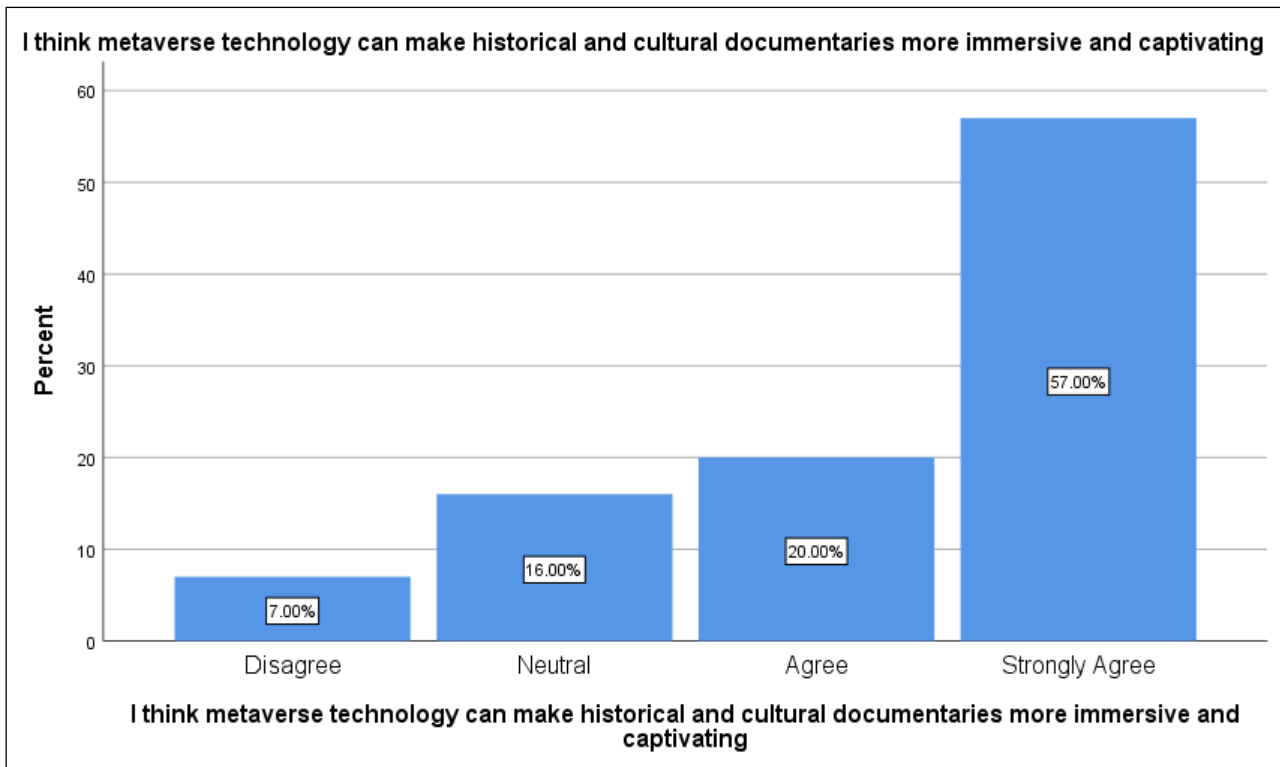
**Figure 3: Respondents' attitudes towards metaverse technology can make historical and cultural documentaries more immersive and captivating**

Table 6 presents the analysis of the participants' perceived impact and potential applications of metaverse technology in the context of Lebanese satellite channels, organized by rank. The results indicate a generally positive perspective on the potential of metaverse technology to enhance media engagement. 69% of the participants ranked their belief in metaverse technology's ability to create more engaging and immersive experiences for media consumers as fourth, with a mean score of 4.11, illustrating a strong conviction in its capacity to enhance audience engagement. 74% of the respondents placed the enhancement of storytelling capabilities through metaverse technology in second place, with a mean score of 4.25, indicating a belief in its potential to make narratives more compelling. While 50% of them ranked fifth in considering metaverse technology as a means for Lebanese satellite channels to stand out in a competitive media landscape, with a mean score of 3.65, participants still recognize its potential in this regard. However, 77% of the participants ranked third in considering metaverse technology to create interactive educational content for viewers mean score of 4.24 and 77% of them ranked first the making of historical and cultural documentaries more immersive and captivating (Figure 3) with a mean score of 4.27, demonstrating their enthusiasm for these applications. The general mean score for this dimension is 4.104, reflecting an overall positive assessment of the potential impact and applications of metaverse technology, with a moderate level of variability indicated by the standard deviation of 1.028. These results suggest that the participants see metaverse technology as a promising avenue for enhancing media content and engagement in the context of Lebanese satellite channels.

**4.3 T-test of Independent Samples Analysis**
The researchers' next question concerns whether the selected Satellite channel respondents have different preferences for attitudes when compared to each other. Consequently, independent observations are taken into consideration, that is, comparative analysis between selected respondents belonging to the different Satellite channels. Running the t-test for independent samples requires first determining whether the group variances are equal (Hejase & Hejase, 2013). Therefore, Levene's test of equality of variances is conducted. The following steps are performed:

1. Test if each pair of populations has the same variances by studying the Null Hypothesis H0 and its Alternative.

H0: The two populations have equal variances
Ha: The two populations have unequal variances.

2. Results will show two sets of data arranged into two rows; the first upper row denotes the result for Equal variances assumed; while the second lower row denotes Equal variances not assumed. Each row presents the next stage of t-test data.

3. According to the results, if P > 5% is shown on the first row, the Null Hypothesis is not ruled out or rejected, this indicates the variability between groups is not significantly different,

i.e., the test indicates variances are equal across the two groups.

4. We proceed to study the t-test, which tests the equality of means, by selecting the results (or output) of the first row.

5. If the output of the t-test shows Signif. $P > 5\%$, we conclude there is no statistical difference between the two groups, and differences are due to chance and not likely due to the concept under testing.

6. If the output of the t-test shows Signif. $P < 5\%$, we conclude that there is a statistical difference likely due to the concept under testing.

7. In the event where the Null hypothesis can be ruled out, i.e., $P < 5\%$, we choose the Alternative hypothesis, that is, the variability between groups is significantly different, i.e., the test indicates variances are unequal across the two groups.

8. We proceed to study the t-test by selecting the results (or output) of the second row.

9. If the output of the t-test shows Signif. $P > 5\%$, we conclude there is no statistical difference between the two groups.

10. If the output of the t-test shows Signif. $P < 5\%$, we conclude that there is a statistical difference likely due to the concept under testing.

The intention is to test all possible pairs of Satellite channels to study if they statistically differ when their claimed attitudes towards the two sets of statements presented in Tables 5 and 6 are tested. The resultant outcomes for each run consist of two tables; the first shows group statistics and the second is the independent samples test including Levene and t-test statistical results. For the sake of brevity and clarity, one sample run is shown next, followed by a comprehensive summary also illustrated in a table. Tables 7 and 8 depict the results of comparing Classes A (MTV/LBC) and B (Al Manar).

**Table 7: Group Statistics for Classes A and B**

| | Definition of Entity or Lebanese TV Channel(s) | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| My understanding of the metaverse and its potential impact on communication and media is clear. | Class A: MTV & LBC | 20 | 4.80 | .523 | .117 |
| | Class B: Al Manar TV | 20 | 4.60 | .681 | .152 |
| I believe the metaverse concept could revolutionize media and communication engagement. | Class A: MTV & LBC | 20 | 4.70 | .801 | .179 |
| | Class B: Al Manar TV | 20 | 4.25 | 1.020 | .228 |
| I'm well-informed about metaverse technologies like VR, AR, and MR. | Class A: MTV & LBC | 20 | 4.60 | .681 | .152 |
| | Class B: Al Manar TV | 20 | 4.15 | 1.040 | .233 |
| I'm aware of metaverse applications and platforms used for media and communication. | Class A: MTV & LBC | 20 | 4.80 | .523 | .117 |
| | Class B: Al Manar TV | 20 | 4.75 | .550 | .123 |
| I have personal experience using metaverse platforms in media and entertainment. | Class A: MTV & LBC | 20 | 4.80 | .410 | .092 |
| | Class B: Al Manar TV | 20 | 4.80 | .410 | .092 |
| I think metaverse technology can create more engaging and immersive experiences for media consumers. | Class A: MTV & LBC | 20 | 4.65 | .587 | .131 |
| | Class B: Al Manar TV | 20 | 4.45 | .887 | .198 |
| I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling. | Class A: MTV & LBC | 20 | 4.80 | .523 | .117 |
| | Class B: Al Manar TV | 20 | 4.55 | .686 | .153 |
| I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape. | Class A: MTV & LBC | 20 | 4.15 | .933 | .209 |
| | Class B: Al Manar TV | 20 | 3.85 | 1.089 | .244 |
| I consider metaverse technology a means to create interactive educational content for viewers. | Class A: MTV & LBC | 20 | 4.50 | .827 | .185 |
| | Class B: Al Manar TV | 20 | 4.45 | .759 | .170 |
| I think metaverse technology can make historical and cultural documentaries more immersive and captivating | Class A: MTV & LBC | 20 | 4.60 | .681 | .152 |
| | Class B: Al Manar TV | 20 | 4.50 | .827 | .185 |

Table 7 shows the descriptive statistics for both Classes A and B. These serve as a comparative reference to visually inspect the means, standard deviations, and standard errors of the mean.

**Table 8: Independent Samples Test for Classes A and B**

| Class A: MTV & LBC<br>Class B: Al Manar TV | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| My understanding of the metaverse and its potential impact on communication and media is clear. | Equal variances assumed | 3.396 | .073 | 1.042 | 38 | .304 | .200 | .192 | -.189 | .589 |
| | Equal variances not assumed | | | 1.042 | 35.643 | .304 | .200 | .192 | -.189 | .589 |
| I believe the metaverse concept could revolutionize media and communication engagement. | Equal variances assumed | 2.871 | .098 | 1.552 | 38 | .129 | .450 | .290 | -.137 | 1.037 |
| | Equal variances not assumed | | | 1.552 | 35.990 | .129 | .450 | .290 | -.138 | 1.038 |
| I'm well-informed about metaverse technologies like VR, AR, and MR. | Equal variances assumed | 9.553 | .004 | 1.619 | 38 | .114 | .450 | .278 | -.113 | 1.013 |
| | Equal variances not assumed | | | 1.619 | 32.751 | .115 | .450 | .278 | -.116 | 1.016 |
| I'm aware of metaverse applications and platforms used for media and communication. | Equal variances assumed | .252 | .619 | .295 | 38 | .770 | .050 | .170 | -.294 | .394 |
| | Equal variances not assumed | | | .295 | 37.904 | .770 | .050 | .170 | -.294 | .394 |
| I have personal experience using metaverse platforms in media and entertainment. | Equal variances assumed | .000 | 1.000 | .000 | 38 | 1.000 | .000 | .130 | -.263 | .263 |
| | Equal variances not assumed | | | .000 | 38.000 | 1.000 | .000 | .130 | -.263 | .263 |
| I think metaverse technology can create more engaging and immersive experiences for media consumers. | Equal variances assumed | 2.972 | .093 | .841 | 38 | .406 | .200 | .238 | -.282 | .682 |
| | Equal variances not assumed | | | .841 | 32.968 | .407 | .200 | .238 | -.284 | .684 |
| I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling. | Equal variances assumed | 4.568 | .039 | 1.296 | 38 | .203 | .250 | .193 | -.141 | .641 |

| Statement | Row | F | Sig. | t | df | Sig. (2-tailed) | Mean Diff | Std. Error Diff | Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|---|
| | Equal variances not assumed | | | 1.296 | 35.506 | .203 | .250 | .193 | -.142 | .642 |
| I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape. | Equal variances assumed | 1.733 | .196 | .935 | 38 | .356 | .300 | .321 | -.349 | .949 |
| | Equal variances not assumed | | | .935 | 37.126 | .356 | .300 | .321 | -.350 | .950 |
| I consider metaverse technology a means to create interactive educational content for viewers. | Equal variances assumed | .006 | .941 | .199 | 38 | .843 | .050 | .251 | -.458 | .558 |
| | Equal variances not assumed | | | .199 | 37.724 | .843 | .050 | .251 | -.458 | .558 |
| I think metaverse technology can make historical and cultural documentaries more immersive and captivating | Equal variances assumed | .435 | .514 | .418 | 38 | .679 | .100 | .240 | -.385 | .585 |
| | Equal variances not assumed | | | .418 | 36.640 | .679 | .100 | .240 | -.385 | .585 |

Table 8 shows that each statement has two rows, the first for equal variances assumed and the second row for equal variances not assumed. The analysis and interpretation of findings follow the steps presented earlier in this section. Upon inspecting the resultant Sig. P for Levene's Test for Equality of Variances for all ten statements, we observe that all the values are larger than a 5% level of significance (for 95% statistical significance), therefore, the test indicates all variances are equal along each statement across Classes A and B, and we proceed to choose the upper row, or row one, to finalize the t-test for Equality of Means. Upon inspecting all the resultant Sig. P (2-tailed), we also observe that the probabilities are larger than the 5% level of significance. Consequently, we conclude that there is no statistically significant difference between Class A and Class B in their attitude toward the ten statements. That means respondents of both Satellite channels agree with their views of the new Metaverse Technology and its impact and applications. Next, Tables 9 and 10 summarize all the findings of running the T-test across all pairs of the sampled Satellite channels.

**Table 9: Concluding statistics for all possible comparative pairs: Metaverse Technology**

| | Class A vs Class B+ | Class A vs Class B | Class A vs Class C | Class A vs Class D |
|---|---|---|---|---|
| My understanding of the metaverse and its potential impact on communication and media is clear. | L: Sig=0.010 Not Eq. Var., 2nd Row T: Sig=0.057 No Stat Sig Diff | L: Sig=0.073 Eq. Var., 1st Row T: Sig=0.304 No Stat Sig Diff | L: Sig=0.005 Not Eq. Var., 2nd Row T: Sig=0.011 Stat Sig Diff | L: Sig=0.003 Not Eq. Var., 2nd Row T: Sig=0.002 Stat Sig Diff |
| I believe the metaverse concept could revolutionize media and communication engagement. | L: Sig=0.191 Eq. Var., 1st Row T: Sig=0.315 No Stat Sig Diff | L: Sig=0.098 Eq. Var., 1st Row T: Sig=0.115 No Stat Sig Diff | L: Sig=0.034 Not Eq. Var., 2nd Row T: Sig=0.090 No Stat Sig Diff | L: Sig=0.025 Not Eq. Var., 2nd Row T: Sig=0.046 Stat Sig Diff |
| I'm well-informed about metaverse technologies like VR, AR, and MR. | L: Sig=0.049 Not Eq. Var., 2nd Row T: Sig=0.027 Stat Sig Diff | L: Sig=0.004 Not Eq. Var., 2nd Row T: Sig=0.304 No Stat Sig Diff | L: Sig=0.004 Not Eq. Var., 2nd Row T: Sig=0.000 Stat Sig Diff | L: Sig=0.000 Not Eq. Var., 2nd Row T: Sig=0.001 Stat Sig Diff |
| I'm aware of metaverse applications and platforms used for media and communication. | L: Sig=0.090 Eq. Var., 1st Row T: Sig=0.364 No Stat Sig Diff | L: Sig=0.619 Eq. Var., 1st Row T: Sig=0.770 No Stat Sig Diff | L: Sig=0.002 Not Eq. Var., 2nd Row T: Sig=0.019 Stat Sig Diff | L: Sig=0.002 Not Eq. Var., 2nd Row T: Sig=0.008 Stat Sig Diff |

| | Class A vs Class B+ | Class A vs Class B | Class A vs Class C | Class A vs Class D |
|---|---|---|---|---|
| I have personal experience using metaverse platforms in media and entertainment. | L: Sig=0.423 Eq. Var., 1st Row T: Sig=0.747 No Stat Sig Diff | L: Sig=1.000 Eq. Var., 1st Row T: Sig=1.000 No Stat Sig Diff | L: Sig=0.001 Not Eq. Var., 2nd Row T: Sig=0.008 Stat Sig Diff | L: Sig=0.002 Not Eq. Var., 2nd Row T: Sig=0.009 Stat Sig Diff |

**Table 10: Concluding statistics for all possible comparative pairs: Impact & Applications**

| | Class A vs Class B+ | Class A vs Class B | Class A vs Class C | Class A vs Class D |
|---|---|---|---|---|
| I think metaverse technology can create more engaging and immersive experiences for media consumers. | L: Sig=0.000 Not Eq. Var., 2nd Row T: Sig=0.014 Stat Sig Diff | L: Sig=0.093 Eq. Var., 1st Row T: Sig=0.406 No Stat Sig Diff | L: Sig=0.000 Not Eq. Var., 2nd Row T: Sig=0.051 No Stat Sig Diff | L: Sig=0.000 Not Eq. Var., 2nd Row T: Sig=0.002 Stat Sig Diff |
| I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling. | L: Sig=0.003 Not Eq. Var., 2nd Row T: Sig=0.044 Stat Sig Diff | L: Sig=0.039 Not Eq. Var., 2nd Row T: Sig=0.203 No Stat Sig Diff | L: Sig=0.000 Not Eq. Var., 2nd Row T: Sig=0.007 Stat Sig Diff | L: Sig=0.000 Not Eq. Var., 2nd Row T: Sig=0.000 Stat Sig Diff |
| I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape. | L: Sig=0.136 Eq. Var., 1st Row T: Sig=0.177 No Stat Sig Diff | L: Sig=0.196 Eq. Var., 1st Row T: Sig=0.356 No Stat Sig Diff | L: Sig=0.047 Not Eq. Var., 2nd Row T: Sig=0.051 No Stat Sig Diff | L: Sig=0.663 Not Eq. Var., 2nd Row T: Sig=0.003 Stat Sig Diff |
| I consider metaverse technology a means to create interactive educational content for viewers. | L: Sig=0.438 Eq. Var., 1st Row T: Sig=0.475 No Stat Sig Diff | L: Sig=0.941 Eq. Var., 1st Row T: Sig=0.843 No Stat Sig Diff | L: Sig=0.233 Eq. Var., 1st Row T: Sig=0.140 No Stat Sig Diff | L: Sig=0.025 Not Eq. Var., 2nd Row T: Sig=0.069 No Stat Sig Diff |
| I think metaverse technology can make historical and cultural documentaries more immersive and captivating | L: Sig=0.244 Eq. Var., 1st Row T: Sig=0.427 No Stat Sig Diff | L: Sig=0.514 Eq. Var., 1st Row T: Sig=0.679 No Stat Sig Diff | L: Sig=0.006 Not Eq. Var., 2nd Row T: Sig=0.032 Stat Sig Diff | L: Sig=0.002 Not Eq. Var., 2nd Row T: Sig=0.027 Stat Sig Diff |

Tables 9 and 10 illustrate the results and findings for three more pairs namely, Class A versus Classes B+, C, and D. Results show that for Class A (MTV/LBC) versus Class B+ (Al Jadeed), we conclude that there is no statistically significant difference between their attitude toward the ten statements except for the statement "I'm well-informed about metaverse technologies like VR, AR, and MR" within the Metaverse technology and the statements "I think metaverse technology can create more engaging and immersive experiences for media consumers" and "I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling" within the impact and applications. That means respondents of Class A (MTV/LBC) Satellite channels are more prepared than Class B+ (Al Jadeed) in dealing with the three statements' concepts above which showed statistically significant differences. Such an outcome is supported by comparing the means of each of the three statements for both channels. For statement 1, Class A mean =4.60 versus Class B+ mean of 3.95, for statements 2 and 3, Class A means = 4.65 and 4.80 versus Class B+ mean of 3.65 and 4.30, respectively.

A similar analysis is performed by comparing Class A with Classes C and D showing that Class A and Class C have statistically significant differences with four out of five statements in the Metaverse technology except "I believe the metaverse concept could revolutionize media and communication engagement" where both classes have no significant differences, and two out of five in the impact and applications concept (Table 10). Moreover, results show that Class A has nine out of ten statistically significant differences with Class D except with the statement "I consider metaverse technology a means to create interactive educational content for viewers" where they meet in attitude and agreement.

The outcome is that Class A (MTV/LBC) are more prepared to adopt and manage the new Metaverse technology in their Satellite channels and that all other

Classes B+, C, and D have to seek further training and development activities within their respective channels.

**Table 11: Concluding statistics for all possible comparative pairs: Metaverse Technology**

| | Class B+ vs Class B | Class B+ vs Class C | Class B+ vs Class D |
|---|---|---|---|
| My understanding of the metaverse and its potential impact on communication and media is clear. | L: Sig=0.256 Eq. Var., 1st Row T: Sig=0.320 No Stat Sig Diff | L: Sig=0.580 Eq. Var., 1st Row T: Sig=0.411 No Stat Sig Diff | L: Sig=0.490 Eq. Var., 1st Row T: Sig=0.143 No Stat Sig Diff |
| I believe the metaverse concept could revolutionize media and communication engagement. | L: Sig=0.821 Eq. Var., 1st Row T: Sig=0.649 No Stat Sig Diff | L: Sig=0.582 Eq. Var., 1st Row T: Sig=0.541 No Stat Sig Diff | L: Sig=0.508 Eq. Var., 1st Row T: Sig=0.365 No Stat Sig Diff |
| I'm well-informed about metaverse technologies like VR, AR, and MR. | L: Sig=0.653 Not Eq. Var., 1st Row T: Sig=0.549 No Stat Sig Diff | L: Sig=0.311 Not Eq. Var., 1st Row T: Sig=0.085 No Stat Sig Diff | L: Sig=0.096 Eq. Var., 1st Row T: Sig=0.159 No Stat Sig Diff |
| I'm aware of metaverse applications and platforms used for media and communication. | L: Sig=0.180 Eq. Var., 1st Row T: Sig=0.501 No Stat Sig Diff | L: Sig=0.225 Eq. Var., 1st Row T: Sig=0.163 No Stat Sig Diff | L: Sig=0.118 Eq. Var., 1st Row T: Sig=0.061 No Stat Sig Diff |
| I have personal experience using metaverse platforms in media and entertainment. | L: Sig=0.423 Eq. Var., 1st Row T: Sig=0.746 No Stat Sig Diff | L: Sig=0.013 Not Eq. Var., 2nd Row T: Sig=0.019 Stat Sig Diff | L: Sig=0.012 Not Eq. Var., 2nd Row T: Sig=0.018 Stat Sig Diff |

**Table 12: Concluding statistics for all possible comparative pairs: Impact & Applications**

| | Class B+ vs Class B | Class B+ vs Class C | Class B+ vs Class D |
|---|---|---|---|
| I think metaverse technology can create more engaging and immersive experiences for media consumers. | L: Sig=0.094 Eq. Var., 1st Row T: Sig=0.112 No Stat Sig Diff | L: Sig=0.651 Eq. Var., 1st Row T: Sig=0.887 No Stat Sig Diff | L: Sig=0.302 Eq. Var., 1st Row T: Sig=0.340 No Stat Sig Diff |
| I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling. | L: Sig=0.164 Not Eq. Var., 1st Row T: Sig=0.337 No Stat Sig Diff | L: Sig=0.065 Not Eq. Var., 1st Row T: Sig=0.306 No Stat Sig Diff | L: Sig=0.105 Eq. Var., 1st Row T: Sig=0.054 No Stat Sig Diff |
| I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape. | L: Sig=0.812 Eq. Var., 1st Row T: Sig=0.671 No Stat Sig Diff | L: Sig=0.544 Eq. Var., 1st Row T: Sig=0.508 No Stat Sig Diff | L: Sig=0.432 Eq. Var., 1st Row T: Sig=0.600 No Stat Sig Diff |
| I consider metaverse technology a means to create interactive educational content for viewers. | L: Sig=0.408 Eq. Var., 1st Row T: Sig=0.578 No Stat Sig Diff | L: Sig=0.615 Eq. Var., 1st Row T: Sig=0.429 No Stat Sig Diff | L: Sig=0.119 Eq. Var., 1st Row T: Sig=0.236 No Stat Sig Diff |
| I think metaverse technology can make historical and cultural documentaries more immersive and captivating | L: Sig=0.651 Eq. Var., 1st Row T: Sig=0.714 No Stat Sig Diff | L: Sig=0.126 Eq. Var., 1st Row T: Sig=0.162 No Stat Sig Diff | L: Sig=0.064 Eq. Var., 1st Row T: Sig=0.134 No Stat Sig Diff |

Tables 11 and 12 show that upon comparing Class B+ (Al Jadeed) with Classes B (Al Manar), C (Future), and D (TL), there are no statically significant differences with Class B in all ten statements, however, the same outcome is valid for Classes C and D except in one statement for both namely, "I have personal experience using metaverse platforms in media and entertainment." Class B+ has a mean of 4.75 versus Class C's mean of 4.15 and Class D's mean of 4.10. This result signifies the participants from Class B+ (Al Jadeed) are more experienced than the other participants from Class C (Future) and Class D (TL). For the record, Class C and Class D lag behind other Satellite channels as well because the first has stopped its full operation after losing financial support from the Hariri family and the second is highly influenced by the government politics and deficient budgeting attached to it. Results also show that Class B+ (Al Jadeed) has similar professional exposure to the new Metaverse technology as Class B (Al Manar).

**Table 13: Concluding statistics for all possible comparative pairs: Metaverse Technology**

|  | Class B vs Class C | Class B vs Class D | Class C vs Class D |
|---|---|---|---|
| My understanding of the metaverse and its potential impact on communication and media is clear. | L: Sig=0.117 Eq. Var., 1st Row T: Sig=0.075 No Stat Sig Diff | L: Sig=0.08 Eq. Var., 1st Row T: Sig=0.016 Stat Sig Diff | L: Sig=0.913 Eq. Var., 1st Row T: Sig=0.539 No Stat Sig Diff |
| I believe the metaverse concept could revolutionize media and communication engagement. | L: Sig=0.735 Eq. Var., 1st Row T: Sig=0.877 No Stat Sig Diff | L: Sig=0.642 Eq. Var., 1st Row T: Sig=0.645 No Stat Sig Diff | L: Sig=0.886 Eq. Var., 1st Row T: Sig=0.757 No Stat Sig Diff |
| I'm well-informed about metaverse technologies like VR, AR, and MR. | L: Sig=0.463 Not Eq. Var., 1st Row T: Sig=0.025 Stat Sig Diff | L: Sig=0.140 Not Eq. Var., 1st Row T: Sig=0.057 No Stat Sig Diff | L: Sig=0.545 Eq. Var., 1st Row T: Sig=0.810 No Stat Sig Diff |
| I'm aware of metaverse applications and platforms used for media and communication. | L: Sig=0.005 Eq. Var., 2nd Row T: Sig=0.033 Stat Sig Diff | L: Sig=0.004 Eq. Var., 2nd Row T: Sig=0.012 Stat Sig Diff | L: Sig=0.580 Eq. Var., 1st Row T: Sig=0.547 No Stat Sig Diff |
| I have personal experience using metaverse platforms in media and entertainment. | L: Sig=0.001 Eq. Var., 2nd Row T: Sig=0.008 Stat Sig Diff | L: Sig=0.013 Not Eq. Var., 2nd Row T: Sig=0.019 Stat Sig Diff | L: Sig=0.797 Eq. Var., 1st Row T: Sig=0.872 No Stat Sig Diff |

**Table 14: Concluding statistics for all possible comparative pairs: Impact & Applications**

|  | Class B vs Class C | Class B vs Class D | Class C vs Class D |
|---|---|---|---|
| I think metaverse technology can create more engaging and immersive experiences for media consumers. | L: Sig=0.064 Eq. Var., 1st Row T: Sig=0.102 No Stat Sig Diff | L: Sig=0.019 Eq. Var., 2nd Row T: Sig=0.017 Stat Sig Diff | L: Sig=0.617 Eq. Var., 1st Row T: Sig=0.434 No Stat Sig Diff |
| I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling. | L: Sig=0.001 Not Eq. Var., 2nd Row T: Sig=0.060 No Stat Sig Diff | L: Sig=0.002 Not Eq. Var., 2nd Row T: Sig=0.005 Stat Sig Diff | L: Sig=0.764 Eq. Var., 1st Row T: Sig=0.420 No Stat Sig Diff |
| I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape. | L: Sig=0.401 Eq. Var., 1st Row T: Sig=0.284 No Stat Sig Diff | L: Sig=0.542 Eq. Var., 1st Row T: Sig=0.038 Stat Sig Diff | L: Sig=0.215 Eq. Var., 1st Row T: Sig=0.353 No Stat Sig Diff |
|  | L: Sig=0.202 | L: Sig=0.013 | L: Sig=0.345 |

| | Class B vs Class C | Class B vs Class D | Class C vs Class D |
|---|---|---|---|
| I consider metaverse technology a means to create interactive educational content for viewers. | Eq. Var., 1st Row T: Sig=0.176 No Stat Sig Diff | Eq. Var., 2nd Row T: Sig=0.086 No Stat Sig Diff | Eq. Var., 1st Row T: Sig=0.671 No Stat Sig Diff |
| I think metaverse technology can make historical and cultural documentaries more immersive and captivating | L: Sig=0.052 Eq. Var., 1st Row T: Sig=0.082 No Stat Sig Diff | L: Sig=0.025 Eq. Var., 2nd Row T: Sig=0.060 No Stat Sig Diff | L: Sig=0.707 Eq. Var., 1st Row T: Sig=0.890 No Stat Sig Diff |

Tables 13 and 14 show that upon comparing Class B (Al Manar) with Class C (Future), there are no statically significant differences with Class C except in three statements (shown in Bold in Table 13), with means as follows: Statement 3 [Mean(B)=4.15 versus Mean(C)=3.30], statement 4 [Mean(B)=4.75 versus Mean(C)=4.20], and statement 5 [Mean (B)=4.80 versus Mean(C)=4.15]. Also, the T-test results show that Class B compared with Class D results in three statements out of five in the Metaverse technology (Table 13) and another three statements out of five in the impact and applications (Table 14) show statistically significant differences. More results support the abovementioned findings as follows: Statement 1 [Mean(B)=4.60 versus Mean(D)=3.90], statement 4 [Mean(B)=4.75 versus Mean(D)=4.00], and statement 5 [Mean (B)=4.80 versus Mean(D)=4.10]. The second set of results are: Statement 6 [Mean(B)=4.45 versus Mean(D)=3.60], statement 7 [Mean(B)=4.55 versus Mean(D)=3.65], and statement 8 [Mean (B)=3.85 versus Mean(D)=3.10].

Those results, i.e., having six statements with statistically significant differences, signify the participants from Class B (Al Manar) are more exposed and experienced than the other participants from Class C (Future).

Similarly, upon running the T-test on the pair Class C (Future) and Class D (TL), we find that none of the statements show significant differences illustrating that Class C and Class D share similar awareness and experience with the new Metaverse technology and its impact and applications. As mentioned earlier, these Satellite channels lag behind other Satellite channels due to inefficient budgeting (Aw Staff, 2019; Kabboul, 2019), interference of politics in their strategies (Melki, 2008), and lower investments in technology (Arab News, 2023; Abou Al Joud, 2023).

**Regression Analysis**

The title of this research provided a guideline for the work performed. An important expectation is to assess what determinants may be identified that will direct the future outlook in the context of the "Metaverse Technology and Its Impact on the Evolving Landscape of Communication and Media" for the Lebanese Satellite channels. To support the abovementioned expectation regression analysis was carried out. Next, the results are presented. Worth noting that regression results correspond to the 4th cycle of calculations reaching satisfactory outcomes.

The results shown in Table 15 demonstrated a strong correlation between the independent variables and the dependent variable, with a Pearson's correlation of R = 0.633, a coefficient of determination ($R^2$) of 0.401, and an Adj $R^2$ of 0.376, which, in Field's words, is "the measure of how much of the variability in the outcome is accounted for by the variability of the predictors" (p. 154). In other words, the three independent variables explained 37.6% of the variation in the dependent variable "I have a clear understanding of the metaverse and how it could affect media and communication." Hejase *et al*., (2014) state that the reduction in $R^2$ indicates that "the model would have accounted for approximately 4.2% less variance in the outcome if it was derived from the population rather than a sample" (p. 1578).

Additionally, the model's 37.6% variation fits the data. Furthermore, ANOVA reveals F = 15.905, p =.000, indicating a substantial improvement in the model's predictive power of the outcome variable. Also, the Durbin-Watson statistic is 1.882 (about 2.0) indicating no autocorrelation (Younis *et al*., 2022). Based on the influence of the three explanatory variables, the suggested model is approved and the participants' clarity in grasping the potential of Metaverse technology is explained. As seen in Tables 15, 16, and 17, the model's output thus contributes to the resolution of three queries concerning the explanatory variables.

**Table 15: Model Summary**[e]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 4 | .633[d] | .401 | .376 | .705 | .042 | 6.661 | 1 | 95 | .011 | 1.882 |

d. Predictors: (Constant),
I'm well-informed about metaverse technologies like VR, AR, and MR., I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape., I have personal experience using metaverse platforms in media and entertainment, I think metaverse technology can make historical and cultural documentaries more immersive and captivating.

e. Dependent Variable: My understanding of the metaverse and its potential impact on communication and media is clear.

**Table 16: ANOVA**[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 4 | Regression | 31.586 | 4 | 7.896 | 15.905 | .000[e] |
| | Residual | 47.164 | 95 | .496 | | |
| | Total | 78.750 | 99 | | | |

a. Dependent Variable: My understanding of the metaverse and its potential impact on communication and media is clear.

e. Predictors: (Constant),
I'm well-informed about metaverse technologies like VR, AR, and MR., I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape., I have personal experience using metaverse platforms in media and entertainment., I think metaverse technology can make historical and cultural documentaries more immersive and captivating.

Table 17 shows the resultant standardized Betas constituting the coefficients of the explanatory variables. Furthermore, as per Hashem *et al*., (2019), the Variance Inflation Factors (VIFs) indicate the absence of multicollinearity in cases when all VIFs are less than 4.

This means that all the explanatory variables can be used to establish a causal association through regression.

Furthermore, the normality of the model is appropriate (see Figures 5 and 6).

**Table 17: Coefficients**[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 4 | (Constant) | 1.739 | .502 | | 3.463 | .001 | | |
| | I'm well-informed about metaverse technologies like VR, AR, and MR. | .290 | .063 | .384 | 4.573 | .000 | .893 | 1.120 |
| | I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape. | .313 | .067 | .401 | 4.649 | .000 | .849 | 1.178 |
| | I have personal experience using metaverse platforms in media and entertainment. | .273 | .097 | .236 | 2.824 | .006 | .904 | 1.107 |
| | I think metaverse technology can make historical and cultural documentaries more immersive and captivating | -.208 | .081 | -.227 | -2.581 | .011 | .815 | 1.226 |

a. Dependent Variable: My understanding of the metaverse and its potential impact on communication and media is clear.
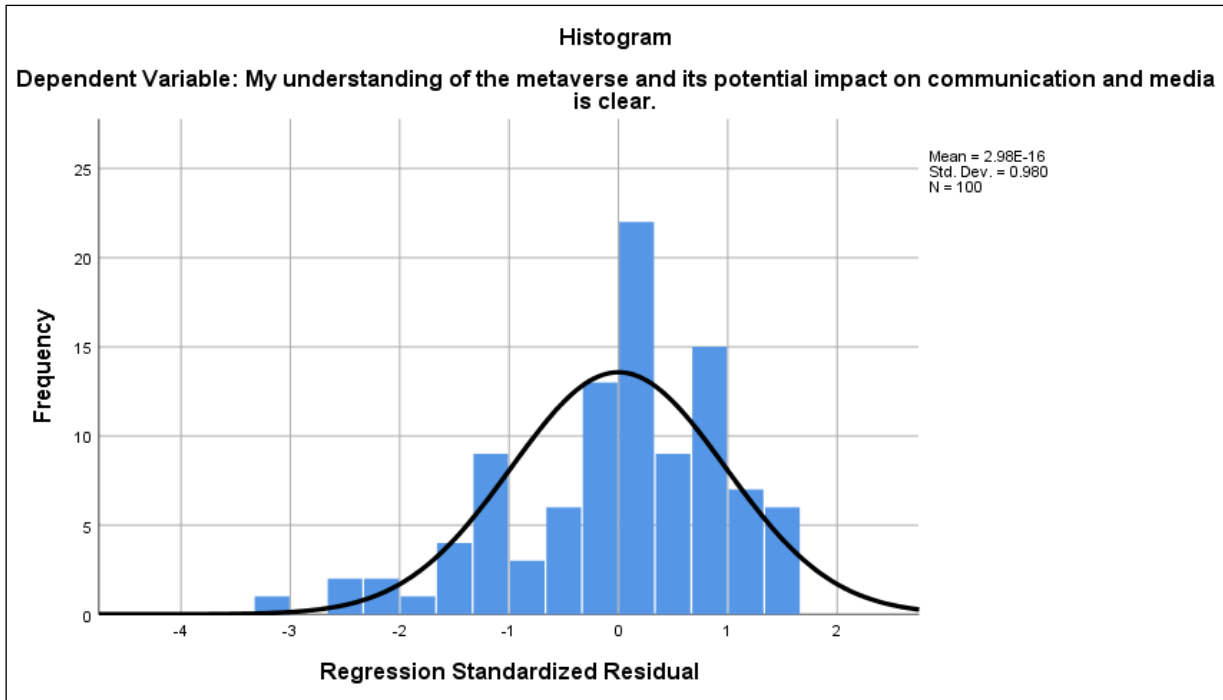
**Figure 5: Model's Histogram**
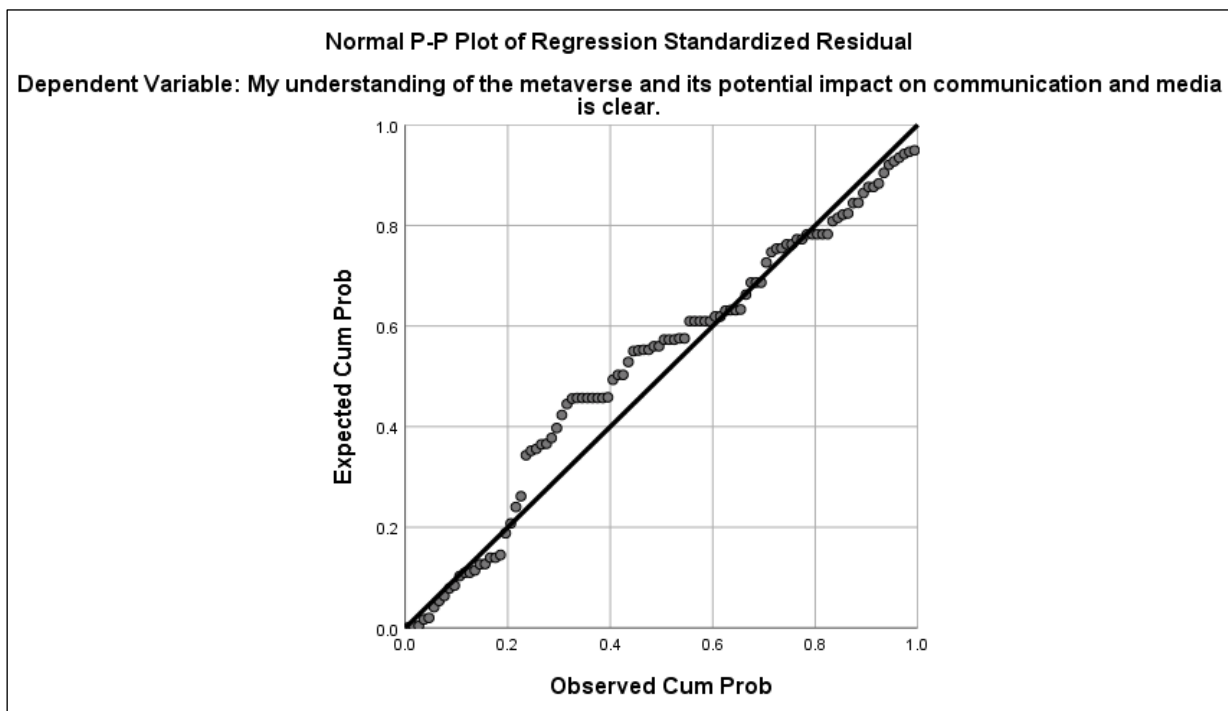


**Figure 6: Normal P-P Plot of Regression Standardized Residuals**

Based on Table 17, the resultant regression model is defined as follows,

[My understanding of the metaverse and its potential impact on = 0.384*[I'm well-informed about communication and media is clear] metaverse technologies like VR, AR, and MR]
+ 0.236*[I have personal experience using metaverse platforms in media and entertainment]

- 0.227*[I think metaverse technology can make historical and cultural documentaries more immersive and captivating]
+ 0.401*[I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape]

This model is statistically significant with all Beta values having Sig. P < 5%. Figure 8 illustrates the resultant regression model.
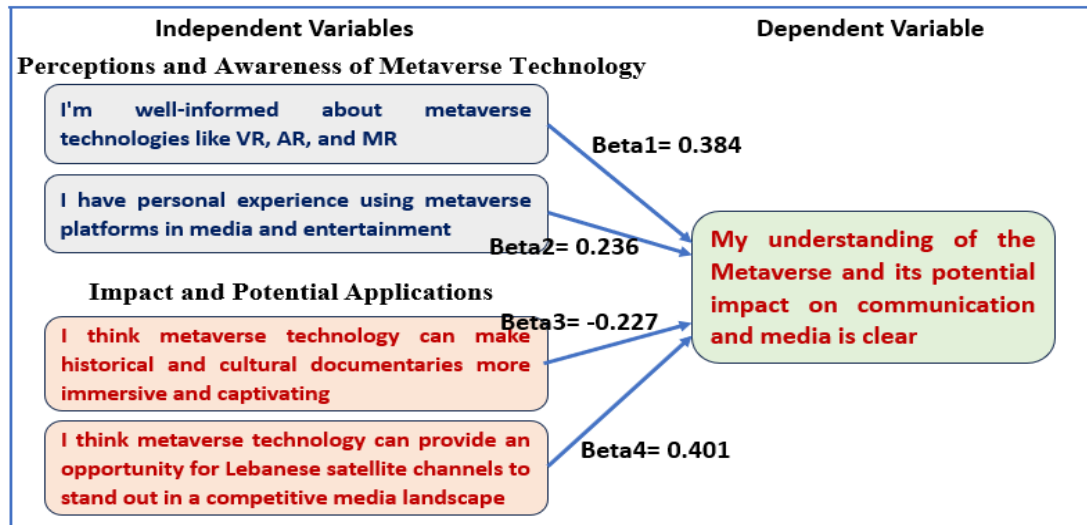


**Figure 8: Regression Model**

The participants' understanding of the Metaverse and its potential impact on communication and media is clear whenever four issues exist; the first being informed (theoretically and technically) about the Metaverse technologies including VR, AR, and MR, the second is having personal experience using Metaverse platforms in media and entertainment, third is being open to the expectation that metaverse technology can make historical and cultural documentaries more immersive and captivating, and fourth accepting the future potential of the Metaverse such that the Metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape.

**Research Limitations**

The selection of several Satellite channels among the existing institutions is a limiting factor, nevertheless, results could be generalized since the sample of participants belongs to a cross-sectional selection of entities representing the Lebanese mosaic communities. However, it is recommended to increase and involve the number of employees and professionals to enhance the validity of the outcomes of this research.

**Conclusion and Future Outlook**

This study attempted to explore, investigate, and assess two research questions. Concluding remarks will address each question individually for clarity, relevancy, and accuracy.

*Research question 1*
*To what extent the media outlets in Lebanon have digitally transformed?*

Looking at the different results that represent the participant employees and professionals (from the sample of the Lebanese Satellite channels) perceptions and attitudes toward the Metaverse technology and its impact on the current and future operations lead to the following findings:

As for the Metaverse technology concept, an overall average of 78.8% of the participants (see Table 5) have a clear understanding of the Metaverse and its potential impact on communication and media, recognize that the Metaverse concept could revolutionize media and communication engagement, are well-informed about metaverse technologies like VR, AR, and MR, have knowledge of the possible applications and platforms used for media and communication, and declaring having personal experience using metaverse platforms in media and entertainment. Even though this percentage is considered good in preparation for the new concept, however, there is one concern which is about the low percentage (60% as shown in Table 5) in the participants' knowledge about the specific digital tools of the Metaverse namely, VR, AR, and MR. Therefore, this specific dimension that touches the technical knowledge shows an average digital transformation in the context of the Metaverse but probably not in the implementation of other tools like social media platforms, artificial intelligence in terms of data analytics (Zebib, 2022), and adopting newer Satellite connectivity.

On the other side, findings related to the impact and application of the Metaverse technology, an overall average of 69.40% (see Table 6) illustrated an above-the-average agreement with items related to the Metaverse technology capacity to create more engaging and immersive experiences for media consumers; the enhancement of storytelling capabilities of media, making narratives more compelling; the creation of opportunities for Lebanese satellite channels to stand out

in a competitive media landscape; capitalizing on the Metaverse to create interactive educational content for viewers; and making historical and cultural documentaries more immersive and captivating. As observed, these are the potential applications necessitating advanced technology support and well-prepared personnel for such advanced transformation of the current habits, practices, and functionalities (Dwivedi, Hughes, Baabdullah, 2022). A low 50% (Table 6) agreement was obtained for accepting that there are opportunities for Lebanese satellite channels to stand out in a competitive media landscape. Most possibly based on a comparison with Arab Satellite channels that are supported financially, and technologically, and have the appropriate talents.

Based on the abovementioned findings, Lebanon still has a long way to achieve full digital transformation and what makes things more difficult is the current economic and financial crises (A. Rkein *et al.*, 2022; El Takach *et al.*, 2022; H. Rkein *et al.*, 2022).

An overall finding then is that Lebanese outlets are not yet ready for the requirements of a full digital transformation, especially in the context of the new Metaverse technology. However, Lebanese institutions including Satellite channels may benefit from the aggressive Metaverse adoption efforts in the Mena region, especially in the United Arab Emirates and the Kingdom of Saudi Arabia (Moates, 2023a) by capitalizing on collaboration and cooperation agreements among Lebanese and these countries. Moates (2023b) posits, "The adoption of AR and VR is expected to increase significantly in the GCC (Gulf Cooperation Council) region. A MarkNtel analysis estimates that the market would expand at a compound annual growth rate (CAGR) of 39% between 2023 and 2028" (para 7).

### Research Question 2
### *How did the Lebanese media professionals adapt to the new digital era?*

El Takach *et al.*, (2022) in their research about the status of the digital transformation of media companies in Lebanon suggested that, among other things, Lebanese media organizations need to be supported and maintained, and that "young journalists and today's practicing journalists and media

professionals should be trained and equipped with multitasking skills to enhance new functional roles and duties" (p. 169). This requires them to possess all the necessary knowledge and cultivate the necessary mindset (Dmitriev and Hejase, 2023) to be prepared to learn digital tools and to instill the value of digital abilities to perform digital journalism duties and be able to deal with alternative media applications.

In addition, the Telecommunications Regulatory Authority (TRA) in Lebanon (2022) recently discussed "TV Broadcasting to have a separate entity to implement and maintain this broadcast infrastructure for all television stations," and added to that discussed "The main digital television services are delivered via satellite and DVB-MS operators." Therefore, skilled employees in this domain were required. However, moving to the Metaverse realm necessitates more advanced competencies and special mindsets able to adapt to the opportunities that this concept requires. As for the current study's findings, employees and professionals representing the well-known Satellite channels are trained in basic digital skills and only 60% of the 100 participants are knowledgeable about the new Metaverse technology applications like VR, AR, and MR. And few participants (50%) declared that this new concept shall help Lebanese Satellite channels to stand out in the competition. However, they have an acceptable awareness level of requirements and possible applications of the same. A very recent paper by the main author and colleagues found that the aforementioned knowledge is a statistically significant requirement to have a realistic understanding of the Metaverse and its potential impact on the communication and media landscapes (Rammal *et al.*, 2023). Therefore, more is needed to adequately prepare the next generation of communication and media workers at all fronts of the required competencies. More on that will be exposed in the recommendations.

### Summary
Based on the overall findings of this research, Table 18 is constructed to illustrate the rankings of the sampled Satellite channels based on the responses and perceptions of their employees and professionals. The results discussed in Tables 7 to 14 are condensed where the resultant means of the ten statements are generated and an overall mean is calculated.

**Table 18: Satellite channels' rankings**

| Statements | Class A MTC/LBCI | Class B+ Al Jadeed | Class B Al Manar | Class C Future | Class D TL |
|---|---|---|---|---|---|
| **The Metaverse Technology Concept** | | | | | |
| 1. My understanding of the metaverse and its potential impact on communication and media is clear | 4.80 | 4.35 | 4.60 | 4.10 | 3.90 |
| 2. I believe the metaverse concept could revolutionize media and communication engagement | 4.70 | 4.40 | 4.25 | 4.20 | 4.10 |
| 3. I'm well-informed about metaverse technologies like VR, AR, and MR | 4.60 | 3.95 | 4.15 | 3.30 | 3.40 |

| Statements | Class A MTC/LBCI | Class B+ Al Jadeed | Class B Al Manar | Class C Future | Class D TL |
|---|---|---|---|---|---|
| 4. I'm aware of metaverse applications and platforms used for media and communication | 4.80 | 4.60 | 4.75 | 4.20 | 4.00 |
| 5. I have personal experience using metaverse platforms in media and entertainment | 4.80 | 4.75 | 4.80 | 4.15 | 4.10 |
| **Average Mean** | **4.74** | **4.41** | **4.51** | **3.99** | **3.90** |
| **The Metaverse Technology Impact & Applications** | | | | | |
| 6. I think metaverse technology can create more engaging and immersive experiences for media consumers | 4.65 | 3.95 | 4,45 | 3.90 | 3.60 |
| 7. I believe metaverse technology can enhance the storytelling capabilities of media, making narratives more compelling | 4.80 | 4.30 | 4.55 | 3.95 | 3.65 |
| 8. I think metaverse technology can provide an opportunity for Lebanese satellite channels to stand out in a competitive media landscape | 4.15 | 3.70 | 3.85 | 3.45 | 3.10 |
| 9. I consider metaverse technology a means to create interactive educational content for viewers | 4.50 | 4.30 | 4.45 | 4.05 | 3.90 |
| 10. I think metaverse technology can make historical and cultural documentaries more immersive and captivating | 4.60 | 4.40 | 4.50 | 3.95 | 3.90 |
| **Average Mean** | **4.54** | **4.13** | **4.36** | **3.86** | **3.63** |
| **Overall Mean Average** | **4.64** | **4.27** | **4.435** | **3.925** | **3.765** |
| **Rank** | **1** | **3** | **2** | **4** | **5** |

Table 18 shows that the Class A Satellite channels, MTV/LBCI, rank first; Class B (Al Manar) ranks second, then Class B+ (Al Jadeed) is third, Class C (Future TV) ranks fourth, and Class D (Tele Liban or TL) ranks fifth. Worth mentioning that such ranks represent the overall opinions and perceptions of the respective employees and professionals.

**A Future Outlook**

At a crossroads, Lebanon's media landscape, like in other countries, has to undergo a dramatic shift as it adopts emerging metaverse technologies. Lebanese satellite channels need to redefine how viewers interact with information, communication, and content as they adjust to this new paradigm (Prisco, 2010; Benedetto and Pavanetto, n.d.). A fascinating look into a future where media involvement crosses conventional boundaries is provided by the Metaverse. Lebanese satellite stations may produce immersive and interactive experiences that seamlessly integrate with their audience's daily lives by utilizing virtual reality, augmented reality, and mixed reality technologies (Badr, 2008; Benedetto and Pavanetto, n.d.). For example, "geolocation technology, currently available, enables a VR journey into the real world, i.e., to embark and immerse on VR adventures in the actual world" (Utilities One, 2023b).

A completely new genre of storytelling is made possible by the Metaverse. Reports on news events could become virtual tours, giving viewers the impression that they are there. Augmented reality (AR) components could be used in historical films to bring the past to life and make learning interesting and memorable (Challenor

and Ma, 2019; Khazaal, 2020). Entertainment programs are now interactive experiences in which viewers participate in the plot, have a say in how it develops, or communicate with hosts virtually (Benedetto and Pavanetto, n.d.). In addition to grabbing viewers' attention, this revolutionary change will motivate them to actively engage with the material, building a feeling of community and connection. Youssef (2004) contends as adopters enter the metaverse, the geographical boundaries that have historically kept their audience in Lebanon are vanishing. Through their material, Lebanese expats and aficionados worldwide can interact in previously unfeasible ways, reinforcing the bonds that bind the diaspora to their native country and culture. This future of media engagement also presents intricate challenges. Ensuring data privacy and security in the metaverse is paramount, with the need for robust safeguards against potential threats and ethical concerns (Khan, 2023). The regulatory framework surrounding this emerging technology needs to be developed and adhered to diligently (Dwivedi, Hughes, Baabdullah *et al*., 2022). Khan posits, "The very noble features of the Metaverse – that it's a persistent, live, synchronous, and borderless environment could make it very difficult to operationalize our current consent management systems" (para 34). Moreover, Wirtz, Kunz, Hartley, & Tarbit (2023) discussed in their work corporate digital responsibility (CDR), where they examined "the new impact of digital risks and their mitigation in service firms showing that CDR is critical in the services contexts because the vast streams of customer data involved and digital service technology's omnipresence, opacity, and complexity." Consequently, content

creators must adapt to the metaverse's dynamic landscape, invest in the necessary technology and talent, and be prepared for continuous change and innovation. Nevertheless, Lebanese Satellite channels, if decide to adopt the Metaverse, then they hold the responsibility to constantly follow up and be ready for the uncertainty and more unfolding aspects of the integrated real and virtual worlds. Dwivedi, Hughes, Wang *et al*., (2023) conclude in their research that "There is currently no agreement on how the metaverse will develop, so scholars are left to describe their ideas on how it might function and discuss the ramifications for different people, companies, and society as a whole" (p. 751).

This paper adds new insight into the Metaverse technology and how Lebanese Satellite channels are prepared. The findings illustrated have not been addressed before making this work unique and rich to add to the already research on conventional digital transformation steps. Channels' managers, policymakers, researchers, and professionals could benefit from defining the current platform of preparations for the new Metaverse.

## RECOMMENDATIONS

Web3 innovations like the metaverse and non-fungible tokens (NFTs) are causing quite a stir in the tech community. Businesses and artists alike are attempting to comprehend how to handle these emerging technologies. Businesses were questioned whether they believe these technologies are relevant to their businesses and—above all—how they will be applicable (Cutten, Ortiz, & Gold, 2022). A study by Cutten *et al*., (2022) found that "Just 27% of creators surveyed indicated yes. Even among this 27% who feel the metaverse will be meaningful to them, our qualitative findings reveal uncertainty surrounding how or why they'll participate with the metaverse. Possibilities include organizing virtual events, developing a metaverse "community," producing content tailored to the metaverse, and digitally exhibiting goods and content" (p. 14). Moreover, since immersive environments offer a place to play games, view movies and concerts, shop, hang out, and create and invest in digital properties, the metaverse is poised to create its economy. Nastic (2022) contends that "Although the idea is still vague, it has already drawn significant corporate investment and supporters" (p. 8). Consequently, numerous businesses appear to be excited about the Metaverse's possibilities and eager to get involved. But the advice "is to pause to think things out before acting quickly. Making a fresh Internet experience is a significant step because it gives the people concerned a chance to reflect on the past and identify what needs to be changed or enhanced" (Betti, 2022, p. 13). Hence, the next question will be, how long do businesses have to wait? Betti (2022) posits, "The true innovation will appear when a platform either gains

market dominance or a global virtual standard is established. They don't appear to be near" (p. 13).

Based on the participants of this research skepticism and capitalizing on the above scenario, the following recommendations are advisable:

The following are suggestions made within the best practices that researchers in the field of study (Nastic, 2022; Veras, Labbé, Furlano, *et al*., 2023; Simplilearn, 2023; Shi, Ning, Zhang, *et al*., 2023; Ramanunni, 2023, among others) have recommended.

1. A 3D native strategy that incorporates gaming engines, virtual and augmented reality, and cloud-based live streaming is necessary for success in place of 2D design. The development of compelling use cases for content consumption will be crucial, according to Tim Mulligan, research director and chief video analyst at MIDiA Research.

2. It is anticipated that the Metaverse would bridge the gap between abstract concepts and actual experiences for professionals and laborers. For this reason, training and development programs need to address both the theoretical and practical aspects of the metaverse.

3. The institution needs to select carefully the digital tools like virtual reality and the Metaverse in media and communication that fit the institution's current information and communications technology infrastructure.

4. The next significant step is reviewing and adopting a new commensurate culture whereby managers break down organizational walls and work cooperatively with other sectors in a common space, where joint projects will address the recognized shortcomings in VR and AR that worsen the digital divide.

5. Managers must take into account the opinions of knowledge consumers and experts from a variety of professions, including the media, education, and technology sectors.

6. Organizations may start something akin to a "Satellite Channels Metaverse" on their own or in partnership with other organizations. This would be useful for professionals and staff both inside and outside the communication and media sectors. Grey literature from sources like blogs, computer science internet forums, and video lectures is included because it offers a distinct viewpoint on the topics being discussed about the Metaverse.

7. For several decades, one of the biggest commercial challenges facing the world has been cyber threats. Without a doubt, considering privacy and ethics inside the ecosystem is necessary before conceiving the metaverse's architectural design.

8. Constantly tackle the following issues that confront organizations, workers, and professionals:
   a) Using complex technological equipment. Metaverses require several prerequisites and elements, such as blockchain, VR headsets, and haptics.
   b) Continue to have a fast and stable internet connection.
   c) Possessing modern technology at one's disposal, like fast internet or the metaverse.
9. Policymakers overseeing satellite channels should be aware that while the real world will persist, public relations (PR) professionals will have greater access to a greater variety of channels and resources due to the metaverse. As a result, fresh PR plans must be developed and included in the offline and online presence of the businesses.

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