

Exploring the Uses and Gratifications of Metaverse Technology Among Egyptian Youth

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ABSTRACT

The study explores awareness, use, gratification, perceived risk, and adoption barriers of metaverse technology among Egyptian youth. This study was based on the Uses and Gratifications 2.0 perspective, which illustrates the way in which media characteristics shape user needs and generate specific motivations for use. The study involved 200 Egyptian youth between the ages of 18 and 40 years, all of whom were familiar with the concept of the metaverse. The information was collected through a questionnaire and demonstrated great exposure and awareness, particularly among female and young respondents. Virtual reality headsets and smartphones were the most embraced metaverse experiences. Respondents enumerated a list of gratifications including speed of media coverage, access to new contents, product previews on the web in electronic commerce, and web visits in education. Safety issues regarding user isolation, health hazards, and privacy of information were also mentioned. Among the prevailing challenges mentioned included inadequate technology infrastructure and public unawareness. Statistical tests revealed low but statistically significant positive correlations between media and technology awareness and satisfaction with commerce. There was no statistically significant correlation for awareness with perceived risk. Socioeconomic status and gender also significantly split opinions on the metaverse. The results reveal high enthusiasm with metaverse applications among Egyptian youth, who need improved infrastructure, enhanced safety standards, and outreach training in safe and inclusive usage.

Keywords: Metaverse, Uses and Gratifications 2.0, Virtual reality (VR), Immersive technology

INTRODUCTION

Evolution in new media technology has continued to redefine human communication, prompting a corresponding shift in media research. The traditional Uses and Gratifications (U&G) theory expects active searching for media due to existing needs and desires. Above all, the Uses and Gratifications 2.0 (U&G 2.0)

conceptual model proposes that technological "affordances" can itself actively shape user needs, forming new, novel gratifications. The theoretical shift is crucial for the explanation of user engagement with new platforms like Metaverse.(Chemnad et al., 2023; Kelley, 2021)

Metaverse, the new virtual world, offers new advantages such as immersive graphics, user-generated content, and direct interaction. All around the globe, individuals are drawn to it for communication, virtual travel, self-expression, economic prospects, social connections, and experiential learning. Its use areas in education and e-commerce, for instance, have the potential for interactive learning and new consumer experiences. Hedonic needs and symbolic satisfaction motivate youth participation very often. Though direct research on Egyptian youth is scarce, regional analysis indicates increasing digital literacy and openness, and by extension, the same benefits to them, driven by culture.(Patil et al., 2025; Zarouali, 2024)

However, widespread adoption of Metaverse is problematic. Privacy, online well-being, and disinformation are key new risks. Technical infrastructure, access, and digital capability are significant hurdles to implementation.(Natarajan et al., 2024)

This study aims to fill this gap by inquiring about Egyptian youth's awareness, exposure, use patterns, gratifications obtained in particular ways, and perceived danger and difficulties in the Metaverse. Relying on the U&G 2.0 Model and the MAIN Model, which categorize gratifications according to technological affordances (Modality, Agency, Interactivity, Navigability), this study will uncover tacit, technology-specific "achievements realized" in mass media, commerce, and schooling. This understanding of the popularity of the Metaverse among Egyptian youth is significant to its proper development.

LITERATURE REVIEW

Though more direct research specifically targeting Egyptian youth and metaverse gratifications is in its earliest stages, broader sets of literature analyzing technology adoption, uses and gratifications theory, and youth behavior within online environments establish the foundation for knowledge. The initial U&G theory assumes that individuals intentionally seek media that satisfy specific needs and desires (Katz et al., 1973).

More recently, the model of Uses and Gratifications 2.0 has appeared that argues against the view that all gratifications are universal and suggests that new media technology affordances can actively construct user needs and motivations (Sundar & Limperos, 2013; Yu, 2024)

Emerging research identifies varying metaverse use motivations. Evidence indicates users are drawn to the metaverse for communication, visiting new worlds, self-expression, and financial gain (Jo et al., 2025; Sharma et al., 2025). These gratifications transcend mere entertainment, encompassing social interaction, immersion, and virtual commerce as well as learning experiences (Patil et al., 2025). A case in point is the potential for education in the metaverse, which is increasingly regarded as a source of interactive and immersive learning environments (Onu et al., 2024; Prakash et al., 2023). Similarly, its applications in e-commerce are being sought after, with virtual shopping environments creating novel consumer experiences (Büchel & Spinler, 2024; Song et al., 2024)

Research on youth engagement with the metaverse more routinely invokes hedonic needs and symbolic satisfaction as motivating their adoption activities (Huang et al., 2025; Rovers, 2024). While direct research on Egyptian youth is limited, regional studies of technology adoption among MENA young people suggest growing digital literacy and openness to new technology paradigms.(Methlouthi, 2025; Youssef et al., 2024) This background implies that Egyptian youth will be equally driven and derive equal benefits from metaverse usage as young people in other parts of the globe, even as unique cultural contingencies influence their specific uses and perceived effects.(Riyaz, 2022; Taha, 2024)

New threats with metaverse technology, such as privacy, digital well-being, and the dissemination of false information, are new research areas too (Buana, 2023; Saracoglu, 2023). There is a need to comprehend them to facilitate a healthy and secure metaverse experience, particularly for kids (Liu, 2024; Reed & Joseff, 2023). Technical infrastructure, accessibility, and digital capability barriers to the large-scale adoption of the metaverse are also the main determinants of the extent of its utilization and the satisfaction derived.(Chen et al., 2024; Gupta et al., 2024)

Based on the above, the study aims to fill the gap in research by surveying Egyptian youth to completely understand their awareness of the metaverse, exposure, usage patterns, gratifications, as well as perceived threats and challenges.

THEORETICAL BACKGROUND

The study is based on "Uses and Grats 2.0 Model".(Sundar & Limperos, 2013) The core idea of (U&G) 2.0 posits that media technology's "affordances" can actively shape user needs and generate new, distinctive gratifications, challenging the notion that all satisfactions stem from innate needs.(Rathnayake & Winter, 2018)

Motives for use thus extend to include needs cultivated during interaction with specific technological features, fostering novel rituals and instrumental activities. (Chen et al., 2022) Important gratifications are categorized by the MAIN Model's four affordance classes: Modality (e.g., Realism, Being There), Agency (e.g., Agency-Enhancement, Community-Building), Interactivity (e.g., Activity, Dynamic Control), and Navigability (e.g., Browsing, Play/Fun) (Mateus et al., 2023)

The current study aims to investigate how the Metaverse's unique affordances, including immersive visuals, user-generated content capabilities, and real-time interaction features, foster specific gratifications among Egyptian youth. For instance, questions in the survey about "visiting places and historical landmarks through virtual tours" directly map to the "Being There" gratification (modality-based) The theory benefits the study by facilitating the identification of nuanced, technology-specific "achievements realized" in areas like mass media, E-marketing, and education, rather than relying on broad, traditional categories. This aligns with the study hypothesis, which examines differences in gratifications based on reliance on various technologies, offering a precise understanding of the Metaverse's appeal.

Research Hypotheses

RH (1): There is a significant positive correlation between the level of technological awareness and the level of achievements realized in mass media, e-commerce, and education.

RH (2): There is a significant positive correlation between the level of technological awareness and the level of perceived risks arising from the Metaverse.

RH (3): There are statistically significant differences between researchers relying on different technologies and the achievements realized in the fields of mass media, e-commerce, and education.

RH (4): The direction of researchers' perceptions of barriers to implementing the Metaverse varies according to demographic variables.

RH (5): The direction of researchers' attitudes toward using Metaverse varies depending on demographic characteristics.

METHODOLOGY

This study adopted a quantitative research approach to explore the uses of Metaverse technology among Egyptian youth and to measure the extent of gratifications they derive from it. This approach provided a suitable framework for collecting quantitative data amenable to statistical analysis and contributed to identifying usage patterns and general trends among youth regarding their interaction with Metaverse environments.

Data was collected using a structured questionnaire developed to cover several dimensions related to the study topic. These included awareness of the Metaverse concept, exposure to its technologies, the means used to experience the Metaverse, knowledge of applied fields previously encountered, and levels of agreement regarding the future integration of the Metaverse across all domains of life. The questionnaire also addressed youth attitudes toward Metaverse technologies, as well as the gratifications anticipated in the fields of media, e-commerce, and education, in addition to perceived risks and implementation challenges in the Egyptian context.

The study sample consisted of youth from the Egyptian community and was selected using a purposive sampling method. It included 200 male and female participants aged between 18 and 40 years, provided they had an acceptable level of awareness and familiarity with Metaverse technology. This sampling approach was chosen based on the researchers' intention to target individuals who are actively engaged with Metaverse environments to ensure data relevance and accuracy. The questionnaire was distributed electronically using a convenience sampling technique via social media platforms and digital communities where Metaverse users are typically present.

The questionnaire also included demographic items that helped accurately describe the sample, such as gender, age group, educational specialization (mass media, non-mass media, postgraduate), and socio-economic level (low, moderate, high).

The internal consistency of the questionnaire was evaluated using Cronbach's Alpha, with values ranging between 0.701 and 0.878, indicating a high level of reliability across all items. In addition, a correlation matrix was computed to assess inter-item consistency, where correlations between each item and the total score ranged from 0.48 to 0.82, reflecting acceptable to high internal coherence of the instrument.

The following section presents the results of the demographic distribution of the study sample, along with the reliability and internal consistency coefficients of the questionnaire.

Table 1: Distribution of the study sample according to demographic data

Demographic data		No.	%
Gender	Male	58	29
	Female	142	71
Age	18 : 25	119	59.5

	26 : 30	29	14.5
	31 : 35	30	15
	36 : 40	22	11
Education level	Mass media	95	47.5
	Not mass media	43	21.5
	Postgraduate	62	31
Socio-economic level	Low	37	18.5
	Moderate	127	63.5
	High	36	18

Table 1 shows the distribution of the sample according to demographic data.

Gender: The population of males who participated in the study is 58, representing 29% of the sample size, while that of females is 142, representing 71%.

Age: The age group 18-25 years is the most represented age group in the study sample, with a count of 119 and a percentage of 59.5%. On the other hand, the age group 36-40 years is the least represented, with a count of 22 and a percentage of 11%.

Education Level: Mass media specialists form the largest education group in the study sample, with 95 and a percentage of 47.5%. However, non-specialists in mass media are 43, with a percentage of 21.5%. Postgraduate degree holders are 62, with a percentage of 31%.

Socio-economic Level: The moderate socio-economic level is the most represented in the study sample, with 127 subjects and a percentage of 63.5%. The low and high socio-economic levels have 37 and 36 subjects, respectively, and percentages of 18.5% and 18%.

Table 2: Validity and Reliability

#	Items	Cronbach's Alpha Coefficient
1	Awareness about the concept of the Metaverse	0.743
2	Exposed to Metaverse technologies	0.794
3	Means use to experience the Metaverse	0.811
4	Applied fields hear about before	0.766
5	To what extent do you agree that the concept of the Metaverse will become a part of all fields in the future	0.842
6	Stances on dealing with Metaverse technologies	0.793
7	Gratifications that can be achieved in the field of Mass media	0.701
	Gratifications that can be achieved in the field of digital E-commerce	0.736
	Gratifications that can be achieved in the field of education	0.755
8	Potential risks of the metaverse	0.878
9	Obstacles to implementing metaverse technologies in Egypt	0.779

Table 2 gives the reliability coefficients of all the items from the questionnaire. The Cronbach's Alpha values of the items range between 0.701 for the item "Gratifications that can be achieved in the area of mass media" and 0.878 for the item "Potential risks of the Metaverse." All the Cronbach's Alpha values are greater than 0.7, indicating the reliability of all the questionnaire items.

Table 3: Internal Consistency of all Items of the Questionnaire

	1	2	3	4	5	6	7			8	9	r
1	1											0.74
2	0.324	1										0.69
3	0.441	0.123	1									0.64
4	0.454	0.221	0.117	1								0.57
5	0.152	0.351	0.213	0.311	1							0.48
6	0.334	0.441	0.269	0.205	0.338	1						0.73
7	0.221	0.337	0.043	0.426	0.412	0.332	1					0.81
	0.261	0.301	0.372	0.266	0.114	0.261	0.113	1				0.79
	0.283	-0.08	0.166	0.413	0.241	0.444	.0211	0.474	1			0.51

8	0.313	0.355	0.256	0.169	0.036	0.233	0.103	0.371	0.266	1		0.77
9	0.391	0.119	0.228	0.141	0.202	0.344	0.012	0.226	0.465	0.355	1	0.82

Table 3 shows the internal consistency of all the items in the questionnaire. It shows the correlation between each item and other items and the correlation matrix between each item and the overall score. The correlations between each item and the overall score of the questionnaire are 0.48 to 0.82, indicating that the questionnaire is consistent.

RESULTS OF THE STUDY

Table 4: The Level of Metaverse Technological Awareness and the Demographic Data among the Study Sample

Demographic data		Not awareness		awareness		Total	
		No	%	No	%	No	%
Gender	Male	28	48.28	30	51.72	58	100
	Female	42	29.58	100	70.42	142	100
Age	18 : 25	30	25.21	89	74.79	119	100
	26 : 30	12	41.38	17	58.62	29	100
	31 : 35	16	53.33	14	46.67	30	100
	36 : 40	12	54.55	10	45.45	22	100
Education level	Mass media	12	27.91	31	72.09	43	100
	Not mass media	26	72.37	69	72.63	95	100
	Postgraduate	32	51.61	30	48.39	62	100
Socio-economic level	Low	6	16.22	31	83.78	37	100
	Moderate	54	42.52	73	57.48	127	100
	High	10	27.78	26	72.22	36	100

Table 4 gives an indication of the awareness of Metaverse technology among this study's sample based on demographic data.

Gender: Male awareness of Metaverse technology is 51.72% and that of females is 70.42%.

Age: The proportion of different age groups with awareness of Metaverse technology ranges from 45.45% for the age group 36-40 years to 74.79% for the age group 18-25 years.

Education Level: 72.09% of those specialized in mass media have awareness about Metaverse technology, whereas 72.63% of those not specialized in mass media have awareness about it. Awareness percentage among postgraduate degree holders is 48.39%.

Socio-economic Level: Metaverse technology awareness percentages range from 57.48% for the moderate socio-economic level to 83.78% for the low socio-economic level. The high socio-economic level awareness percentage is 72.22%.

Table 5: The level of exposed to Metaverse technology and the demographic data of the study sample.

Demographic data		Exposed		Heard only		Not exposed or heard		Total	
		No	%	No	%	No	%	No	%
Gender	Male	37	63.79	13	22.41	8	13.79	58	100
	Female	88	61.97	32	22.54	22	15.49	142	100
Age	18 : 25	83	69.75	24	20.17	12	10.08	119	100
	26 : 30	19	65.52	7	24.14	3	10.34	29	100
	31 : 35	13	43.33	11	36.67	6	20.00	30	100
	36 : 40	10	45.45	8	36.36	4	18.18	22	100
Education level	Mass media	28	65.12	9	20.93	6	13.95	43	100
	Not mass media	56	58.95	29	30.53	10	10.53	95	100
	Postgraduate	41	66.13	12	19.35	9	14.52	62	100
Socio-economic level	Low	16	43.24	14	37.84	7	18.92	37	100
	Moderate	86	67.72	26	20.47	15	11.81	127	100
	High	23	63.89	9	25.00	4	11.11	36	100

Table 5 presents the exposure to Metaverse technology and demographic information of the research sample.

Gender: 63.79% of males in the study sample have utilized Metaverse technology while 61.97% females have. These statistics are brought down to 22.41% of males and 22.54% of females who have heard but have not utilized Metaverse technology. Only 13.79% of males and 15.49% of females in the study sample have never heard of and utilized Metaverse technology.

Age: 69.75% of the age group 18-25 years have ever heard of Metaverse technology compared to 43.33% of the age group 31-35 years. Additionally, 36.67% of the age group 31-35 years have ever heard of but never used the

technology compared to 20.17% of the age group 18-25 years. Also, 20% of the age group 31-35 years have never heard of nor used Metaverse technology, while this reduces to 10.08% among the age group 18-25 years.

Education Level: 66.13% of postgraduate degree holders have applied the Metaverse technology compared to 65.12% of mass media specialization holders and 58.95% of non-specialization holders in mass media. On the other hand, 30.53% of non-specialization holders in mass media have heard of the technology but never used it compared to 19.35% of postgraduate degree holders. Just 10.53% of non-professional people in mass media don't know and haven't used Metaverse technology, while this percentage is as much as 14.52% for individuals with a postgraduate degree.

Socio-economic Level: 67.72% of moderate socio-economic users have used Metaverse technology, while just 43.24% of individuals at the low socio-economic level have done so. Similarly, 37.84% of the low socio-economic group heard of the technology but didn't utilize it compared to 20.47% of the moderate socio-economic level and 25% of the high socio-economic level. Lastly, 18.92% of the low socio-economic group heard of or utilized Metaverse technology, but the same percentage goes down to 11.81% and 11.11% among individuals from the moderate and high socio-economic levels, respectively.

Table 6: The Means used for Experiencing Metaverse Technology and the Demographic data of the Study Sample.

Demographic data		Headset		VR headset		Mobile		Laptop		Total	
		No	%	No	%	No	%	No	%	No	%
Gender	Male	4	9.09	26	59.09	8	18.18	6	13.64	44	100
	Female	21	25.93	30	37.04	20	24.69	10	12.35	81	100
Age	18 : 25	22	25.58	40	46.51	18	20.93	6	6.98	86	100
	26 : 30	3	15.79	10	52.63	4	21.05	2	10.53	19	100
	31 : 35	0	0.00	4	40.00	2	20.00	4	40.00	10	100
	36 : 40	0	0.00	2	20.00	4	40.00	4	40.00	10	100
Education level	Mass media	3	14.29	4	19.05	8	38.10	6	28.57	21	100
	Not mass media	20	27.78	34	47.22	16	22.22	2	2.78	72	100
	Postgraduate	2	6.25	18	56.25	4	12.50	8	25.00	32	100
Socio-economic level	Low	6	25.00	8	33.33	6	25.00	4	16.67	24	100
	Moderate	7	9.86	34	47.89	18	25.35	12	16.90	71	100
	High	12	40.00	14	46.67	4	13.33	0	0.00	30	100

Table 6 depicts the means of experiencing Metaverse technology and demographic details on the study sample.

Gender: Use of VR headsets as a means of experiencing Metaverse technology is 59.09% for males of the study sample compared to 37.04% for females.

Age: Usage of VR headsets as a means of consuming Metaverse technology is highest among the age groups 18-25 and 26-30 years with rates of 46.51% and 52.63%, respectively. On the contrary, usage of laptops through apps like "Tutera" or "Spatial" is lowest among these age groups with rates of 6.98% and 10.53%, respectively. No one in the age groups 31-35 and 36-40 years utilizes device headsets as a means of experiencing Metaverse technology.

Education Level: Of mass media experts, 38.1% use mobile devices as a means of experiencing Metaverse technology, while 47.2% of non-mass media experts use VR headsets. Additionally, 56.25% of postgraduate degree holders use VR headsets as a means of experiencing Metaverse technology.

Socio-economic Level: Among the population at low socio-economic level, 33.33% utilize the use of VR headsets and 25% utilize mobile phones as a means of accessing Metaverse technology. At moderate socio-economic level, 47.89% utilize the use of VR headsets compared to only 9.86% that utilize the use of device sets. For the socio-economic high level, 46.67% use VR headsets and 40% use device sets, while only 13% use mobile devices, and no one from this segment uses laptops as a method of experiencing Metaverse technology.

Table 7: Opinions of the Study Sample upon the Future of the Metaverse Technology according to their Demographic Data.

Opinions of the study sample upon the future of the Metaverse technology											
Demographic data		Agree		Neutral		Disagree		Total			
		No	%	No	%	No	%	No	%	No	%
Gender	Male	42	72.41	10	17.24	6	10.34	58	72.41		
	Female	94	66.20	41	28.87	7	4.93	142	66.20		
Age	18 : 25	82	68.91	29	24.37	8	6.72	119	68.91		
	26 : 30	18	62.07	10	34.48	1	3.45	29	62.07		
	31 : 35	24	80.00	6	20.00	0	0.00	30	80.00		
	36 : 40	12	54.55	6	27.27	4	18.18	22	54.55		
Education level	Mass media	70	73.68	21	22.11	4	4.21	95	73.68		
	Not mass media	26	60.47	12	27.91	5	11.63	43	60.47		

	Postgraduate	40	64.52	18	29.03	4	6.45	62	64.52
Socio-economic level	Low	16	43.24	17	45.95	4	10.81	37	43.24
	Moderate	90	70.87	30	23.62	7	5.51	127	70.87
	High	30	83.33	4	11.11	2	5.56	36	83.33

Table 7 shows the opinions of the sample survey concerning the future of Metaverse technology based on their demographic data.

Gender: 72.41% of the sample males agree that Metaverse technology will find its place in all industries in the future, while only 10.34% do not agree. In the case of females, 66.2% agree with this point, while only 4.93% do not.

Age: Agreement with the notion that Metaverse technology will be an element of all fields in the future is highest among all age groups at 68.91%, 62.07%, 80%, and 54.55%, respectively. The percentages of people who disagree with this notion among these age groups are 6.72%, 3.45%, 0%, and 18.18%, respectively.

Educational Level: 73.68% of mass media specialized professionals agree that Metaverse technology will be incorporated across all fields in the future, compared to 60.47% of those who are not specialized in mass media and 64.52% who have postgraduate degrees.

Socio-economic Level: 43.24% of the respondents from the low socio-economic level feel that Metaverse technology will be a component of all sectors in the future, while the percentage increases to 70.87% of respondents from the moderate socio-economic level and further increases to 83.33% of respondents from the high socio-economic level.

Table 8: Stances on Dealing with Metaverse Technology of the Study Sample according to their Demographic Data.

		Stances on dealing with Metaverse technologies					
		Interested		Not interested		Total	
		No	%	No	%	No	%
Gender	Male	46	79.31	12	20.69	58	100
	Female	120	84.51	22	15.49	142	100
Age	18 : 25	99	83.19	20	16.81	119	100
	26 : 30	25	86.21	4	13.79	29	100
	31 : 35	24	80.00	6	20.00	30	100
	36 : 40	18	81.82	4	18.18	22	100
Education level	Mass media	81	85.26	14	14.74	95	100
	Not mass media	39	90.70	4	9.30	43	100
	Postgraduate	46	74.19	16	25.81	62	100
Socio-economic level	Low	29	78.38	8	21.62	37	100
	Moderate	105	82.68	22	17.32	127	100
	High	32	88.89	4	11.11	36	100

Table 8 shows the attitudes of the study sample regarding dealing with Metaverse technology according to their demographic data.

Gender: 79.31% of the males in the study sample are interested in Metaverse technology, while 20.69% of them are not interested. Yet, 84.51% of the females are interested, while 15.49% of them are not interested.

Age: The interest in Metaverse technology in various age groups is distributed as follows: 83.19% for the 18-25 age group, 86.21% for the 26-30 age group, 80% for the 31-35 age group, and 81.82% for the 36-40 age group.

Educational Level: In the case of those specialized in mass media, 85.26% of them are interested in Metaverse technology. Conversely, 90.7% of those not specialized in mass media are interested, whereas 74.19% of postgraduates are interested.

Socio-Economic Level: The percentage of individuals interested in Metaverse technology is 78.38% among individuals of low socio-economic status, to 82.68% among individuals of moderate socio-economic status, and to 88.89% among individuals of high socio-economic status.

Table 9: Gratifications that can be Achieved in the Field of Mass Media through the use of Metaverse Technology among the Study Sample.

Gratifications that can be achieved in the field of Mass media							
		Agree	Neutral	Disagree	Mean	SD	
1	It can cover events that humans cannot cover.	No. 130	38	6	2.71	0.52	

		%	74.71	21.84	3.45		
2	It will increase the opportunities for covering current events quickly and effectively.	No.	131	37	6	2.72	0.52
		%	75.29	21.26	3.45		
3	It can ensure media objectivity	No.	96	59	19	2.44	0.68
		%	55.17	33.91	10.92		
4	It can be adjusted to meet various media work requirements and eliminate human bias.	No.	96	65	13	2.48	0.63
		%	55.17	37.36	7.47		
5	It can manage crises in the media field quickly and effectively.	No.	101	63	10	2.52	0.61
		%	58.05	36.21	5.75		
6	It provides unique digital content executed using artificial intelligence.	No.	127	37	10	2.67	0.58
		%	72.99	21.26	5.75		
7	Metaverse technologies can integrate to enhance the capabilities of media professionals.	No.	117	45	12	2.60	0.62
		%	67.24	25.86	6.9		
8	It can replace media professionals in the future.	No.	83	47	44	2.22	0.83
		%	47.7	27.01	25.29		
9	Through the Metaverse, interviews can be conducted with deceased individuals.	No.	73	41	60	2.07	0.87
		%	41.95	23.56	34.48		
Total		No.	954	432	180	2.49	0.65
		%	60.92	27.59	11.49		

Table 9 illustrates the gratifications that can be gained in the field of mass media using Metaverse technology among the study sample. The percentages of agreement on various achievements in mass media range between 41.95% for the sentence "With the Metaverse, one can carry out interviews with individuals who have died" and 75.29% for "It will increase the potential for covering current events quickly and effectively." On average, 60.92% of the sample agreed on all achievements in the field of mass media, and only 11.49% disagreed. The means for these gratifications range from 2.07 (standard deviation 0.87) for "Through the Metaverse, interviews can be conducted with dead people" to 2.72 (standard deviation 0.52) for "It will enhance the possibilities for reporting current events effectively and speedily." The grand mean for all gratifications in mass media is 2.49 (standard deviation 0.65).

Table 10: Gratifications that can be Achieved in the Field of E-Commerce through using Metaverse Technologies among the Study Sample.

Gratifications that can be achieved in the field of E-commerce							
			Agree	Neutral	Disagree	Mean	SD
1	It can be relied upon for e-commerce operations for both wholesale and retail.	No.	133	33	8	2.72	0.54
		%	76.44	18.97	4.60		
2	It can provide an opportunity for users to preview goods.	No.	119	47	8	2.64	0.57
		%	68.39	27.01	4.60		
3	Relying on Metaverse technologies will open promising horizons in digital marketing.	No.	131	39	4	2.73	0.49
		%	75.29	22.41	2.30		
4	Metaverse technologies can offer more attractive deals to users.	No.	136	32	6	2.75	0.51
		%	78.16	18.39	3.45		
5	Unique advertisements can be presented by relying on Metaverse technologies.	No.	137	29	8	2.74	0.53
		%	78.74	16.67	4.60		

6	It can replace real marketers.	No.	96	56	22	2.43	0.71
		%	55.17	32.18	12.64		
7	It can contribute to deceiving users.	No.	117	39	18	2.57	0.67
		%	67.24	22.41	10.34		
Total		No.	869	275	74	2.65	0.58
		%	71.35	22.58	6.08		

Table 10 outlines the gratifications achievable in the field of E-commerce through the use of Metaverse technology. Agreement rates of various accomplishments in E-commerce range between 55.17% for "It can replace real marketers" and 78.74% for "Unique advertisements can be presented by relying on Metaverse technologies." Overall, 71.35% of the sample agreed to all accomplishments in E-commerce, with only 6.08% in disagreement. The means for these gratifications range from 2.43 (standard deviation 0.71) for "It can replace actual marketers" to 2.75 (standard deviation 0.51) for "More attractive offers can be given to users by Metaverse technologies." The mean for all gratifications in E-commerce is 2.65 (standard deviation 0.58).

Table 11: Gratifications that can be Achieved in the Field of Education through using Metaverse Technologies among the Study Sample.

Gratifications that can be achieved in the field of education							
		Agree	Neutral	Disagree	Mean	SD	
1	Learning through realistic methods instead of traditional educational methods	No.	118	44	12	2.61	0.61
		%	67.82	25.29	6.90		
2	The ability to undertake dangerous experiments without being exposed to harm	No.	119	43	12	2.61	0.61
		%	68.39	24.71	6.90		
3	The possibility of exchanging experiences among students around the world	No.	136	32	6	2.75	0.51
		%	78.16	18.39	3.45		
4	Creating a state of decentralization in the field of education	No.	111	55	8	2.59	0.58
		%	63.79	31.61	4.60		
5	Visiting places and historical landmarks through virtual tours	No.	143	21	10	2.76	0.54
		%	82.18	12.07	5.75		
6	The possibility of employing it in learning surgical procedures and medical matters	No.	110	37	27	2.48	0.75
		%	63.22	21.26	15.52		
7	It can contribute to diagnosing medical diseases	No.	106	42	26	2.46	0.74
		%	60.92	24.14	14.94		
8	Damaging the level of scientific research due to excessive reliance on it	No.	104	54	16	2.51	0.66
		%	59.77	31.03	9.20		
Total		No.	947	328	117	2.60	0.63
		%	68.03	23.56	8.41		

Table 11 illustrates the gratifications that can be derived in the educational field through the use of Metaverse technology. The percentages of agreements of various achievements range from 59.77% for "Damaging the level of scientific research due to over-reliance on it" to 82.18% for "Visiting places and historical sites via virtual tours." Overall, 68.03% of the sample agreed on all achievements in education, while only 8.41% disagreed. The averages of these gratifications range from 2.46 (standard deviation 0.74) for "It can contribute to diagnosing medical diseases" to 2.76 (standard deviation 0.54) for "Visiting places and historical landmarks through virtual tours." The total average of all gratifications in education is 2.6 (standard deviation 0.63).

Table 12: Potential Risks of the Metaverse technology among the Study Sample.

Potential risks of the Metaverse technology							
		Agree	Neutral	Disagree	Mean	SD	
1	Manipulation of avatars (distortion or making them unethical)	No.	125	35	14	2.64	0.63
		%	71.84	20.11	8.05		
2	Increased rates of cyberbullying	No.	103	57	14	2.51	0.64
		%	59.20	32.76	8.05		
3	Increased rates of user harm (data theft, or cyber extortion)	No.	129	31	14	2.66	0.62
		%	74.14	17.82	8.05		
4	Causing real isolation for users	No.	135	29	10	2.72	0.56
		%	77.59	16.67	5.75		
5	Audience suffering from psychological and nervous crises, especially among youth and teenagers	No.	109	53	12	2.56	0.62
		%	62.64	30.46	6.90		
6		No.	117	39	18	2.57	0.67

	Simulation of realistic things that may not be beneficial	%	67.24	22.41	10.34		
7	Possibility of engaging in unethical activities	No.	123	35	16	2.61	0.65
		%	70.69	20.11	9.20		
8	Health problems resulting from lack of movement and excessive use	No.	133	29	12	2.70	0.59
		%	76.44	16.67	6.90		
9	Learning illegal activities, which are difficult to detect due to reliance on virtual identity	No.	121	43	10	2.64	0.59
		%	69.54	24.71	5.75		
10	Difficulty for parents to monitor their children in this virtual environment	No.	133	35	6	2.73	0.52
		%	76.44	20.11	3.45		
11	Possibility of manipulating the minds of youth and teenagers and instilling unethical beliefs	No.	127	33	14	2.65	0.63
		%	72.99	18.97	8.05		
12	Possibility of manipulating the attitudes of youth and teenagers	No.	123	29	22	2.58	0.71
		%	70.69	16.67	12.64		
13	Could provide a fertile environment for training on terrorist activities	No.	129	33	12	2.67	0.60
		%	74.14	18.97	6.90		
Total		No.	1607	481	174	2.63	0.62
		%	71.04	21.26	7.69		

Table 12 illustrates the potential risks of Metaverse technologies among the study sample. The percentages of agreement for the potential risks range between 59.2% for "Higher rates of cyberbullying" and 77.59% for "Leading to actual isolation for users." In general, 71.04% of the sample agreed to all potential risks, while only 7.69% disagreed. The means of the perceived risks range from 2.51 (standard deviation 0.64) for "Higher rates of cyberbullying" to 2.72 (standard deviation 0.56) for "Leading to actual isolation for users." The total mean of all the perceived risks is 2.63 (standard deviation 0.62).

Table 13: Obstacles to Implementing Metaverse Technology among the Study Sample.

Obstacles to implementing metaverse technology in Egypt							
			Agree	Neutral	Disagree	Mean	SD
1	Insufficiency of technological infrastructure.	No.	139	27	8	2.75	0.53
		%	79.89	15.52	4.60		
2	Lack of awareness about technology among many.	No.	115	50	9	2.61	0.59
		%	66.09	28.74	5.17		
3	Ease of intellectual property rights infringement due to the absence of laws governing the metaverse.	No.	124	40	10	2.66	0.59
		%	71.26	22.99	5.75		
4	Electronic attacks threatening the metaverse technology.	No.	117	50	7	2.63	0.56
		%	67.24	28.74	4.02		
5	The need to provide a large number of specialists in the field of the metaverse.	No.	121	45	8	2.65	0.57
		%	69.54	25.86	4.60		
6	The cost associated with devices.	No.	121	39	14	2.61	0.63
		%	69.54	22.41	8.05		
Total		No.	737	251	56	2.65	0.58
		%	70.59	24.04	5.36		

Table 13 illustrates the barriers to the adoption of Metaverse technology among the study sample. The percentages of agreement for various barriers range from 66.09% for "Lack of awareness of technology among many" to 79.89% for "Shortage of technological infrastructure." Overall, 70.59% of the sample agreed with all the barriers to adopting Metaverse technologies, while only 5.36% disagreed. The means of these barriers range from 2.61 (standard deviation 0.59) for "Limited knowledge of technology among many" to 2.75 (standard deviation 0.53) for "Shortage of technological infrastructure." The mean of all the barriers to the adoption of Metaverse technology is 2.65 (standard deviation 0.58).

Hypotheses:

RH(1): There is a significant positive correlation between the level of technological awareness and the level of achievements realized in (Mass media, E-Commerce, education).

Table 14: Correlation between the Level of Technological Awareness and the Level of Achievements Realized in (Media, E-Commerce, Education).

Level of Achievements Realized In				
	Media	E-Commerce	Education	Total
	r	R	r	r
Technological awareness	0.122	0.222	-0.024	0.119

Table 14 shows that there is a statistically significant weak positive correlation between the level of technological awareness and success attained in media ($r = 0.122$) with a very small P-value. There is also a statistically significant weak positive correlation between the level of technological awareness and success attained in E-commerce ($r = 0.222$) with a very small P-value. Conversely, there is a statistically significant very weak negative correlation between the level of technological awareness and the achievement attained in education ($r = -0.027$) with a very small P-value. There is also a statistically significant weak positive correlation between the level of technological awareness and the overall achievement attained in media, E-commerce, and education ($r = 0.119$) with a very small P-value.

RH(2): There is a significant positive correlation between the level of technological awareness and the level of perceived risks arising from the metaverse.

Table 15: Correlation between the Level of Technological Awareness and the Level of Perceived Risks Arising from the Metaverse.

Potential risks arising from Metaverse technology		
		r
1	Manipulation of avatars (distortion or making them unethical)	0.005
2	Increased rates of cyberbullying	-0.003
3	Increased rates of user harm (data theft, or cyber extortion)	-0.005
4	Causing real isolation for users	-0.008
5	Audience suffering from psychological and nervous crises, especially among youth and teenagers	-0.010
6	Simulation of realistic things that may not be beneficial	-0.013
7	Possibility of engaging in unethical activities	-0.008
8	Health problems resulting from lack of movement and excessive use	-0.004
9	Learning illegal activities, which are difficult to detect due to reliance on virtual identity	-0.006
10	Difficulty for parents to monitor their children in this virtual environment	-0.002
11	Possibility of manipulating the minds of youth and teenagers and instilling unethical beliefs	-0.005
12	Possibility of manipulating the attitudes of youth and teenagers	0.000
13	Could provide a fertile environment for training on terrorist activities	-0.002
Total		0.076

Table 15 displays the relationship between the level of technological awareness and the perceived risks of the Metaverse. Very weak correlations exist between the level of technological awareness and all potential risks of Metaverse technology. To be precise, there is a very weak positive correlation ($r = 0.076$), which is not statistically significant ($p = 0.32$), greater than 0.05.

RH(3): There are statistically significant differences between researchers relying on different technologies and the achievements realized in the fields of (mass media, E-commerce, education).

Table 16: Different Technologies of using Metaverse Technologies and the Achievements Realized in the Fields of (Media, E-Commerce, Education).

Achievements		Metaverse technology			
		Headset	VR Headset	Mobile	Laptop
Media	Mean	2.57	2.63	2.53	2.3
	SD	0.42	0.37	0.36	0.47
	F	10.2			
E-commerce	Mean	2.73	2.69	2.6	2.5
	SD	0.41	0.31	0.33	0.37
	F	18.6			
Education	Mean	2.62	2.66	2.53	2.35
	SD	0.35	0.3	0.35	0.43

	F	13			
Total	Mean	1.98	2.4	2.73	3.03
	SD	0.21	0.18	0.19	0.24
	F	4.9			

Table 16 provides the various technologies utilized in the Metaverse and the corresponding achievements in the media, E-commerce, and education sectors. The media for utilizing various technologies in the media industry range from 2.3 (standard deviation 0.47) for laptops to 2.63 (standard deviation 0.37) for VR headsets. There is a statistically significant difference between the means of use of different Metaverse technologies and achievement in media, F-test statistic 10.2, and P-value < 0.05.

In E-commerce, the manner of using different technologies ranges from 2.5 (standard deviation 0.37) for laptops to 2.73 (standard deviation 0.41) for headsets. Yet again, there is no statistically significant difference between the means of using different Metaverse technologies and success in E-commerce, where the F-test value is 18.6 and the P-value is less than 0.05.

For education, the means range from 2.35 (standard deviation 0.43) for laptops to 2.66 (standard deviation 0.30) for VR headsets. No statistically significant difference exists between the means of the usage of different Metaverse technologies and success in education, with an F-test statistic of 13 and a P-value of less than 0.05.

Overall, there is a significant difference between the use of different Metaverse technologies and success attained in the three dimensions, since the F-test value equals 4.9 and the P-value is less than 0.05.

RH(4): The direction of researchers' perceptions of barriers to implementing the metaverse varies according to demographic variables.

Table 17: Perceptions of Barriers to Implement Metaverse and Demographic Data among the Study Sample.

Perceptions of barriers to implement Metaverse						
Demographic data		No.	Mean	SD	T/F	P
Gender	Male	46	2.64	0.36	0.31	0.38
	Female	128	2.66	0.4		
Age	18 : 25	99	2.64	0.41	0.18	0.91
	26 : 30	27	2.64	0.37		
	31 : 35	30	2.69	0.38		
	36 : 40	18	2.69	0.3		
Education	Mass media	85	2.68	0.34	0.5	0.61
	Not mass media	37	2.63	0.43		
	Postgraduate	52	2.62	0.35		
Level	Low	27	2.68	0.28	0.96	0.38
	Moderate	111	2.62	0.42		
	High	36	2.72	0.34		
Total						

Table 17 presents Metaverse implementation barrier perceptions and demographic data for the study sample.

Gender: The average perception of barriers for males is 2.64 (standard deviation 0.36), while that for females is 2.66 (standard deviation 0.40). There is no significant difference in barrier perceptions by gender, as the t-test value is 0.31 (less than the t-critical value of 1.66) and the P-value is 0.38 (greater than 0.05).

Age: Mean perceptions of barriers to adopting the Metaverse range between 2.64 for the age groups 18-25 and 26-30, and 2.69 for the age groups 31-35 and 36-40. Differences in perceptions across age groups are not statistically significant because the F-test value is 0.18 (lower than the F-critical value of 2.66) and the P-value is 0.91 (higher than 0.05).

Education: Perceptions of barriers differ on average between 2.62 for postgraduate degree holders and 2.68 for those educated through mass media. Differences in perceptions by education are statistically not significant, as the F-test statistic is 0.5 (lower than the F-critical value of 3.04) and the P-value is 0.61 (higher than 0.05).

Socio-economic Level: Perceptions of barriers range from 2.62 among those at a moderate socio-economic level to 2.72 among those at a high socio-economic level. Differences in perceptions by socio-economic level are not statistically significant since the F-test value is 0.96 (lower than the F-critical value of 3.04) and the P-value is 0.38 (higher than 0.05).

RH(5): The direction of researchers' attitudes toward using the metaverse varies depending on demographic characteristics.

Table 18: Attitudes toward using the Metaverse Technologies and Demographic Data among the Study Sample.

Direction of researchers' attitudes toward using the metaverse					
Demographic data		No.	Mean	SD	T-test/ F-test
Gender	Male	58	2.21	0.45	2.19 Sig
	Female	142	2.37	0.45	
Age	18 : 25	119	2.31	0.42	1.93 Not
	26 : 30	29	2.50	0.44	
	31 : 35	30	2.27	0.49	
	36 : 40	22	2.25	0.57	
Education	Mass media	95	2.33	0.44	2.16 Not
	Not mass media	43	2.42	0.35	
	Postgraduate	62	2.24	0.53	
Socio-economic level	Low	37	2.17	0.39	4.25 Sig
	Moderate	127	2.32	0.44	
	High	36	2.48	0.51	

Table 18 presents attitudes towards the use of Metaverse technologies and demographic data in the study sample.

Gender: The average male attitude towards the use of Metaverse technologies is 2.21 (standard deviation 0.45), while that of females is 2.37 (standard deviation 0.45). There is a statistically significant difference in attitudes based on gender, t-test value 2.19 (higher than the t-critical value), and P-value 0.015 (lower than 0.05).

Age: The mean attitudes towards the usage of Metaverse technologies range from 2.25 among the 36-40 age group to 2.5 among the 26-30 age group. However, attitudes differ insignificantly across age groups, as shown by an F-test statistic of 1.93 (lower than the F-critical statistic of 2.65) and a P-value of 1.93 (higher than 0.05).

Education: The mean attitudes range from 2.24 among the postgraduate degree holders to 2.42 among the not educated in mass media. Attitudes do not differ statistically by education since the F-test value of 2.16 is lower than the F-critical value of 3.04 and the P-value of 0.12 is higher than 0.05.

Socio-Economic Level: Attitudes vary from a mean of 2.17 for participants at a low socio-economic level to 2.48 for those at a high socio-economic level. Attitude variation by socio-economic level is statistically significant, with an F-test statistic of 4.25 (higher than the F-critical value of 3.04) and a P-value of 0.02 (lower than 0.05).

CONCLUSION

The study explored the multifaceted engagement of Egyptian youth with Metaverse technology, analyzing their awareness, exposure, derived gratifications, perceived risks, and implementation obstacles. Grounded in the "Uses and Grats 2.0 Model" (Sundar & Limperos, 2013), which posits that media technology's "affordances" actively shape user needs and generate distinctive gratifications, the findings offer nuanced insights into emergent media adoption.

The high rates of Metaverse technology awareness (70.42% of females, 51.72% of males) and exposure, particularly for the 18-25 years age group (69.75% exposed), underscore a digitally literate and reactive youth population. This is in agreement with regional studies suggesting growing digital literacy and embracing of novel paradigms of technology among MENA youth (Methlouthi, 2025; Youssef et al., 2024). The widespread agreement (an average of 68.91% across age groups) that the metaverse will become integral to various future fields further reinforces this openness. This collective anticipation for future integration resonates with the "active audience" concept within the Uses and Gratifications (U&G) paradigm, where users actively seek media to fulfill specific needs (Katz et al., 1973; Rubin, 2009).

The study identified distinct gratifications derived from Metaverse technology across media, e-commerce, and education, confirming that users perceive concrete benefits. In media, a high percentage of the sample (75.29%) agreed that the Metaverse would "increase the opportunities for covering current events quickly and effectively". For e-commerce, "unique advertisements can be presented" (78.74%) and "users can preview goods" (68.39%) were highly agreed upon gratifications. In education, "visiting places and historical landmarks through virtual tours" was the most highly valued gratification (82.18%). These findings strongly support the U&G 2.0 framework, which advocates for "increased specificity" in examining new media gratifications and posits that new media affordances can generate "new and distinctive gratifications" beyond broad categories like entertainment or information-seeking. The gratification of "visiting places and historical landmarks through virtual tours" directly exemplifies a modality-based gratification like "being there," which is a direct outcome of the immersive capabilities of Metaverse technology (Sundar & Limperos, 2013). This also agrees with emerging research identifying immersion and learning

experiences as key metaverse use motivations (Patil et al., 2025; Onu et al., 2024; Prakash et al., 2023), and the application in e-commerce for novel consumer experiences (Büchel & Spinler, 2024; Song et al., 2024). The overall high agreement on these gratifications (60.92% for media, 71.35% for e-commerce, 68.03% for education) aligns with findings that users are drawn to the metaverse for communication, visiting new worlds, self-expression, and financial gain (Jo et al., 2025; Sharma et al., 2025).

Regarding the means of access, VR headsets (46.51% for 18-25 years) and mobile devices (38.1% for mass media specialists) were prominent. However, Hypothesis (3) found no statistically significant differences in the achievements realized across the fields of media, e-commerce, and education when users relied on different Metaverse technologies (headset, VR headset, mobile, laptop). This is an intriguing finding in light of U&G 2.0's emphasis that different technological affordances can lead to distinct gratifications (Sundar & Limperos, 2013). It suggests that for the types of achievements measured, the overarching Metaverse experience might be more salient than the specific hardware used to access it, or perhaps the measured gratifications, while specific, are still broadly achievable across various platforms.

The study also thoroughly assessed perceived risks and implementation obstacles. Concerns such as "causing real isolation for users" (77.59%), "health problems resulting from lack of movement" (76.44%), and "data theft" (74.14%) were widely agreed upon. These concerns echo existing literature on new threats like privacy, digital well-being, and cybersecurity in the metaverse (Buana, 2023; Saracoglu, 2023; Liu, 2024; Reed & Joseff, 2023). The primary implementation issues were "insufficiency of technological infrastructure" (79.89%) and "low awareness about technology among many" (66.09%). The above findings are consistent with previous research citing technical infrastructure and digital capability as the most significant metaverse adoption hindrances (Chen et al., 2024; Gupta et al., 2024).

Hypothesis (2) found a very weak and statistically insignificant correlation between awareness and perceived risk ($r=0.076$, $p=0.32$). This is an indication that awareness does not necessarily translate to increased or more sensitive perception of allied danger. Also, Hypothesis (4) found no statistically significant differences between perceptions of implementation barriers by demographic variables. However, Hypothesis (5) registered statistically significant attitude differences for Metaverse use across gender (more positive for women, mean=2.37 vs. 2.21 for men) and socio-economic status (high SES more positive, mean=2.48 vs. 2.17 for low SES). This is in accord with the focus of U&G on psychological and social variables at the individual level that determine selection and consumption of media (Rubin, 2009; Haridakis, 2002).

RECOMMENDATIONS

Based on these findings, policymakers and developers are recommended to leverage the gratifications identified for driving Metaverse adoption among Egyptian youth. Content creation should be based on experience that leverages the strong "being there" preference in media and learning settings, such as virtual museum tours and live event coverage. In online commerce, focus should be placed on creating creative virtual commercials and interactive product previews to meet user needs for new interaction.

Concurrently, positive action has to be taken to address perceived threats. This would include developing and disseminating safe data privacy and security protocols, championing responsible usage guidelines to counteract issues like isolation and potential health concerns arising from overuse, and implementing education campaigns to educate children on cyber threats and online wellness. Overcoming implementation problems involves heavy capital investment in infrastructure technology along with targeted awareness campaigns for closing knowledge gaps in society. Future studies must explore qualitatively the constructs of the poor awareness-perceived risks relationship, possibly employing longitudinal designs for monitoring evolving user requirements and long-term consequences of Metaverse use, particularly modality-specific gratifications across the devices.

LIMITATIONS

The research employed a deliberately selected sample of 200 Egyptian young people who knew about Metaverse technology, making the findings only applicable to this group. Being cross-sectional, it provides a snapshot and does not change patterns of use. Self-reported findings may also pose response biases.

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