

Personal Media Network and Preferred Contemporary Technologies of Music Listeners: A Study in Assam in North East India



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ABSTRACT: Personal Media Network (PMN), in the music industry, refers to a listener's frequency of exposure, average time spent, and time of exposure to various types of media in a day. Appropriate study of PMN is critical for the success of the Assamese music industry (in North East India). The methodology included personal interviews with a few prominent artists of Assam and a survey of 390 music listeners with a schedule. The results highlighted that most of the respondents' duration of listening to music was between 1 to 3 hours a day. Most of these respondents' frequencies of exposure to the various media for listening to music were more than twice in a day. The most preferred time of exposure in the case of television was from 8 PM to 10 PM, radio from 7 AM to 10 AM, internet after 11 PM, and mobile phones from 8 PM to 10 PM, respectively. It was found that respondent listeners having a frequency of exposure twice in a day preferred listening/viewing songs/videos on PCs/laptops, mobile phones/tablets, streaming on online music/radio apps, streaming songs/videos on social networking apps (like WhatsApp, etc.), and social networking sites (like Facebook). Similarly, in the case of collecting music-related videos or albums, respondents with exposure once in a day and twice in a day preferred to do so via downloading from online sites to listen offline and via Bluetooth, Infrared, Xender, etc., respectively. Likewise, different contemporary technologies and media for listening/viewing songs/music videos (CTMLVSV) and contemporary modes of collecting music-related audio/video songs (CMCMVA) based on time of exposure and time spent on media were also identified. The findings of this study may immensely help the music marketers to selectively target the audience as per their preferred time, frequency, and duration of exposure to various media.

KEYWORDS: Contemporary Listening Media, Contemporary Music Collecting Modes, Music Listening Habits, Personal Media Network, Frequency of Exposure, Music Listening Duration, Time of Exposure.

1. INTRODUCTION

It is always important for the marketers to know the media habits of the target market so that they can reach their target market at the right time, at the right place, and in the best receptive mind. This calls for an emphasis on setting the right media mix, which includes appropriate reach and the number of frequencies needed. In this regard, Personal Media Network (PMN) is an important determinant of how much funding should be allocated to such media and the point of time for such allocation (Shah & D'Souza, 2009). In fact, the frequency of an individual's exposure to a media, the duration, and the point of time of such exposure in a day comprise his/her PMN (Shah & D'Souza, 2009; Stein, 1997).

The emergence of internet and the transition of sound from analogue to digital form led to greater availability (and control) of music on more platforms, apart from regular platforms like radio broadcasts, live performances, and physical recordings (Krause, North & Hewitt, 2015; North, Hargreaves & Hargreaves, 2004). Meler and Skoro (2013) highlighted the availability of music in automobiles, mobile phones, computers, CD players, iPods, cameras, and even in key chains. Albums and individual songs can be either purchased in digital formats or downloaded onto digital devices. From there, it can be transferred onto a Universal Serial Bus (USB) stick, CD-Rewritable, iPod, mobile phones, etc. Proper understanding of PMN of the target segment enables media planners to identify platforms for reaching their listeners, media forms they should utilise, and day-wise timing for scheduling their contents for promoting any music (Shah & D'Souza, 2009).

2. LITERATURE REVIEW

Satellite, cable, and digital technologies took the global music industry at its peak in and around 1990 (Bridge, 2019). The digital technology and innovation have drastically changed the process of creation, distribution, and consumption of music (Avdeef, 2012). The playback technologies to listen to music were also diverse due to technological changes ranging from radios, computers, iPods, walkmans or discmans, CD players, MP3 players (not iPods), mobile phones, etc. (Holstein & Gubrium, 1997; Avdeef, 2012). Music collection technologies included downloading music from legal and illegal sources, finding new music on internet sites like Myspace or LastFM, and downloading music from single tracks (Gaffney & Rafferty, 2009; Preston & Rogers, 2011; Hutchison, 2013). Ogden, Ogden, and Long (2011) highlighted the changes in the music industry due to technological advances. In this regard, Avdeef (2012) mentioned iPod and YouTube as a primary source of musical engagement. Spinelli (2015) too stated that desktops and laptops were highly preferred listening devices for music. YouTube, Spotify, iTunes, Beat Music, Sound Cloud, and Pandora were the most popular music streaming services (Spinelli, 2015; Lee, Wishkoski, Aase, Meas, & Hubbles, 2017). Hearing music from a computer-based cloud source, from one's own collection on a computer or from an MP3 player, gives more choices (Fouce, 2010). Dewan and Ramaprasad (2014) emphasised the relationship between old (traditional media) media, new (social media) media, and the sale of music. Krause et al. (2015) stated that younger music listeners tend to rely more on modern technologies, particularly on individually controlled devices. Akuno (2018) primarily mentioned two forms of media and technology for listening and learning music, namely, indigenous (traditional) media and contemporary technology/media (i.e., electronic media and technology available on social platforms, mass communication media, and websites like YouTube). Kanuri, Chen, and Sridhar (2018) opined that for optimum "scheduling of social media posts" and "targeted content advertising" (TCA), content-based platforms should determine what and when to post, and when, whether, and how much to spend on TCA for profit maximisation. They also highlighted how content-based platforms (e.g., newspapers, magazines) should consider appropriate scheduling of content while daily posting their several stories on dedicated social media pages.

Stein (1997) has emphasised on the various media options available for advertisers, like radio, magazines, television, cable, and billboards. He has also stated how Personal Media Network (PMN) can be used to decide on the media combinations. Headen, Klommaker, and Teel (1976) have highlighted that knowledge of exposure patterns allows media planners to plan a successful advertising campaign. Bhatnagar and Ghose (2004) stated that the profitability of a website depends upon the time spent by visitors and the frequency of their visits to it. Miquel-Romero and Montoro-Pons (2017) measured PMN of music listeners in terms of frequency of listening to music on 5 parameters, i.e., every day, almost every day, 3-4 times per week, 1-2 times per week, and less frequently. They also emphasised on the other PMN habit, i.e., the time of the day for listening to music on 5 parameters, namely, throughout the day, morning to early afternoon, late afternoon to evening, and night. The study also measured listening habits on various devices, including Hi-fi, TV/DVD Player, MP3 Player, Smartphone, Computer, and Tablet. Similar listening habits were also measured on online platforms for listening to music, which included YouTube, Spotify (Free), Spotify (Subscription), iTunes, and Free Downloads (Miquel-Romero & Montoro-Pons, 2017). North, Hargreaves and Hargreaves (2004) also measured likelihood of listening music in different time of the day by sending messages every hour of the day. They identified that music listening incidences were more during leisure periods, (i.e. evening 5 PM to 11 PM when most people have leisure time), rather than during the working day, (i.e. 8 AM to 4:59 PM i.e., the working day for most people) and on weekends rather than weekdays.

As per Shah and D'Souza (2009) and the above discussion, it can be summarised that PMN comprises the frequency of exposure, average time spent (duration), and time of exposure concerning various media in a day.

3. NEED OF THE STUDY

The Assamese music industry, like the global music industry, has witnessed different phases, from LP Records to Cassettes to audio CDs to MP3s to online retailing to free Streaming Apps. This is evident from the views of Dharmani and Chakravarti (1993), Dowerah (2007-2008), and Tschmuck (2003). A few eminent singers of Assam have also shared the same opinion (L. Goswami, personal communication, November 26, 2024; Papon, personal communication, November 27, 2024). Digitalisation and technological upgradation bring many changes in the preference of listening media and listening habits of the music listeners over the years. The greatest challenges for music producers and marketers are to find out ways to reach the music listeners. Hence, considering this need, this paper attempted to measure the Personal Media Network (PMN) of music listeners as explained in the earlier section to reach the music listeners in their most receptive mind concerning to their listening habits.

4. OBJECTIVES

The main objective of this study is to find out the preferred Personal Media Network (PMN) of different listeners/viewers of music audio/videos. The study also attempted to find out the preferred contemporary technologies and media used to listen/view songs and music videos (CTMLVSV) and the contemporary mode of collecting music-related video/audio songs (CMCMVA) of the respondents, considering their regular personal media network (PMN). For this purpose, the following hypothesis (H) was formulated.

H_A: There are significant differences among the means of respondent music listeners' preference levels of CTMLVSV across the means of preferred personal media network (i.e. frequency of exposure, average time spent on media in a day, preferred time of exposure to media).

H_B: There are significant differences among the means of respondent music listeners' preference levels of CMCMVA across the means of preference levels of personal media networks (i.e., frequency of exposure, average time spent on media in a day, preferred time of exposure to media).

For testing the above hypotheses (**H_A**, **H_B**), the following null and alternate hypotheses (denoted by H_0 and H_1 , respectively) have been formulated.

H_{A0}: There are no significant differences among the means of respondent music listeners' preference levels of CTMLVSV across the means of preferred personal media network.

H_{A1}: There are significant differences among the means of respondent music listeners' preference levels of CTMLVSV across the means of preference levels of personal media network.

H_{B0}: There are no significant differences among the means of respondent music listeners' preference levels of CTMLVSV across the means of preference levels of personal media network.

H_{B1}: There are significant differences among the means of respondent music listeners' preference levels of CTMLVSV across the means of preference levels of personal media network.

5. RESEARCH METHODOLOGY

The required data for this study was collected from both secondary and primary data sources. Secondary sources included relevant books, journals, websites, etc. Thereafter, requisite data was collected from primary sources, which included a few singers of Assam through personal interviews. Through the above processes, eight different contemporary technologies and media used to listen/view songs and music videos, respectively (CTMLVSV), were identified after due verification. These have been listed in Table 1 below. The remaining primary data was obtained from 390 respondent listeners (and viewers) of songs and music videos through a structured schedule. These sample respondents were selected from the study population through snow ball (for interviews) and convenience sampling techniques (for schedule data collection). The aforementioned schedule was finalised through an initial pilot survey. This indicated that the preferred media for music listeners/viewers included television, radio, internet, and mobile phones.

Respondent listeners' perception regarding their levels of preference for CTMLVSV and contemporary modes of collecting music-related videos or albums (CMCMVA) was measured using a 6-point scale, i.e., "high," "above average," "average," "below average," "least," and "not at all". The most to least preferred CTMLVSV and CMCMVA were measured using Mean Score (MS). The following formula for Mean Score was used in Goswami (2014), and in Goswami and Sarma, (2014). Mean Score (MS) = $\{(5 \times NH) + (4 \times NAA) + (3 \times NA) + (2 \times NBA) + (1 \times NL) + (0 \times NNAA)\} \div (\text{Total no. of respondents})$.

Where NH, NAA, NA, NBA, NL, and NNAA indicate the number of respondents who experienced "high preference," "above average preference," "average preference," "below average preference," "least," and "not at all," respectively, for the above-mentioned CTMLVSV and CMCMVA.

As mentioned earlier, the preferred Personal Media Network (PMN) of different listeners/viewers of music audios/videos was measured based on frequency of exposure, average time spent, and time of exposure to various media in a day (for listening to music).

Next, it was tried to find out respondents' preference levels of CTMLVSV and CMCMVA relative to their PMN. Here, One-way Analysis of Variance (ANOVA) was used at a significance level (α) of 5% (0.05). One-way ANOVA was used to examine the presence of significant differences among the means of the dependent variables (listeners' preference levels of CTMLVSV) with respect to various groups of the independent variable (frequency of exposure to various types of media in a day) (Aaker, Kumar, Leone & Day, 2016; Cooper, Schindler & Sharma, 2019; Malhotra & Dash, 2019). Firstly, CTMLVSV, which corresponded to the presence of significant differences among the above means (p -value less than $\alpha=0.05$ (5%)) was identified. Then, from descriptive data, the

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corresponding CTMLVSV with the highest mean value (indicating highest preference) was identified. It required higher attention from stakeholders of the music industry for formulating appropriate marketing strategies for their songs/music videos. Similarly, One-way ANOVA was used to find out the specific group of respondents (based on time of exposure to various specific media in a day and average time spent on media) who need higher focus from the above stakeholders for reasons mentioned earlier. By these means, it was tried to empirically fulfil the above study objective.

6. RESULTS AND DISCUSSIONS

6.1 Respondent's preferred contemporary technologies and media used to listen/view songs and music videos (CTMLVSV)

Concerning CTMLVSV, eight different media and technologies were identified (refer to Table 1). Of these, listening and watching songs/videos on YouTube was the most preferred CTMLVSV with the highest Mean Score of 4.69, followed by mobile phones/tablets (Mean Score = 4.67), and streaming on online music/radio apps (Mean Score = 4.43), respectively.

Table 1: Respondents' Preference Levels for Different Types of CTMLVSV

Sr. No.	Contemporary Technologies and Media for Listening & viewing songs/videos through	Preference Levels												MEAN SCORE	
		High		Above Average		Average		Below Average		Least		Not at all			
		F	%	F	%	F	%	F	%	F	%	F	%		
1	iPod	54	13.80	102	26.20	90	23.10	54	13.80	60	15.40	30	7.70	2.86	
2	PCs/Laptops	162	41.50	135	34.60	57	14.60	27	6.90	6	1.50	3	0.80	4.05	
3	Mobile phones/Tablets	306	78.50	51	13.10	27	6.90	3	0.80	0	0.00	3	0.80	4.67	
4	YouTube	315	80.80	48	12.30	15	3.80	9	2.30	0	0.00	3	0.80	4.69	
5	Streaming on online music/radio apps	240	61.50	102	26.20	30	7.70	12	3.10	6	1.50	0	0.00	4.43	
6	Streaming on offline music/radio apps	165	42.30	117	30.00	69	17.70	21	5.40	9	2.30	9	2.30	3.98	
7	Streaming on social networking apps (like WhatsApp)	135	34.60	126	32.30	69	17.70	45	11.50	3	0.80	12	3.10	3.79	
8	Streaming on social networking sites (like Facebook)	117	30.00	129	33.10	78	20.00	39	10.00	9	2.30	18	4.60	3.65	

Note: F stands for "Frequency" and % stands for "Percent"

6.2 Respondent's preferred contemporary modes of collecting music related videos or albums (CMCMVA)

Again, in terms of contemporary modes of collecting music related video/audio songs (CMCMVA), eight different modes were identified and surveyed (refer to Table 2). Of these, streaming music on online music apps was the most preferred mode of collecting music among most respondents, indicated by the highest Mean Score of 4.50. It was followed by collecting music through offline music apps and downloading and creating songlists on YouTube to listen offline with Mean Score of 4.12 and 4.08, respectively.

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Table 2: Respondents' Preference Levels for Different Types of CMCMA

Sr. No.	Contemporary mode of collecting music audios/videos through	Preference Levels												MEAN SCORE
		High		Above Average		Average		Below Average		Least		Not at all		
		F	%	F	%	F	%	F	%	F	%	F	%	
1	Recording from live broadcasting on Mobile, STB etc.	54	13.80	69	17.70	138	35.40	63	16.20	36	9.20	30	7.70	2.88
2	Downloading from music sites to listen offline	165	42.30	126	32.30	66	16.90	27	6.90	3	0.80	3	0.80	4.06
3	Downloading and creating songlists in YouTube to listen offline	171	43.80	126	32.30	60	15.40	21	5.40	12	3.10	0	0.00	4.08
4	Bluetooth, Infrared, Xender etc.	111	28.50	120	30.80	102	26.20	33	8.50	18	4.60	6	1.50	3.65
5	Via USB ports from other laptops, PC, mobiles etc.	141	36.20	117	30.00	75	19.20	39	10.00	9	2.30	9	2.30	3.81
6	Storing on memory cards	129	33.10	123	31.50	78	20.00	39	10.00	18	4.60	3	0.80	3.76
7	Streaming on online music apps	252	64.60	93	23.80	36	9.20	6	1.50	3	0.80	0	0.00	4.50
8	Streaming on offline music apps	186	47.70	111	28.50	66	16.90	12	3.10	9	2.30	6	1.50	4.12

Note: F stands for "Frequency" and % stands for "Percent"

6.3 Respondent's preferred Personal Media Network (PMN):

The media habits or PMN of respondents' were measured across four important media, namely television, radio, internet and mobile phones. As regards PMN, it was noticed that most respondents (30.77%) were having exposure to various media more than twice in a day (refer to Table 3). Again, for most of them (49.23%), the duration (time) of listening to music was "between 1 hour to 3 hours a day".

Table 3: Respondents' Duration of Listening to Music and Frequency of Exposure to Media in a day

Time of Listening Music	Frequency	Percent	Frequency of Exposure to Media in a day	Frequency	Percent
Less than 1 hour a day	141	36.15	Once in a day	111	28.46
Between 1 hour to 3 hours a day	192	49.23	Twice in a day	72	18.46
Between 3 hours to 5 hours a day	42	10.77	More than twice in a day	120	30.77
More than 5 hours a day	15	3.85	Do Not Remember	87	22.31
Total	390	100.00	Total	390	100.00

In case of average time spent by the respondents on media, the majority of them (i.e., 42.30% and 62.30%) spent less than 1 hour a day on television and radio, respectively (refer to Table 4). Interestingly, 37.70% and 40.80% of respondents spent 3 to 5

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hours a day on the internet, and more than 5 hours on mobile phones in a single day. It is to be noted that the following abbreviations are used for indicating daily average time spent on various media in Table 4 and throughout this article: <1- Less than 1 hour a day, 1-3- 1 to 3 hours a day, 3-5- 3 to 5 hours a day, >5- More than 5 hours a day, DNR- Do not remember.

Table 4: Respondents' Average time spent on Various Media in a day

Sr. No.	Media	Daily Average time spent on Various Media									
		<1		1-3		3-5		>5		DNR	
		F	%	F	%	F	%	F	%	F	%
1	Television	165	42.30	159	40.80	24	6.20	3	0.80	39	10.00
2	Radio	243	62.30	72	18.50	12	3.10	6	1.50	57	14.60
3	Internet	27	6.90	99	25.40	147	37.70	108	27.70	9	2.30
4	Mobile Phone	39	10.00	75	19.20	108	27.70	159	40.80	9	2.30

The preferred time of exposure among most respondents (46.20%, 23.80%, and 23.10%) was found to be from 8 PM to 11 PM for televisions and mobile phone, and after 11 PM for internet, respectively (refer to Table 5). In the case of radio, 16.20% of respondents' preferred time of exposure was found to be in the morning from 7 AM to 10 AM, but most of them (23.80%) do not exactly remember such time of exposures. It is to be noted that following abbreviations are used for indicating the time of exposure to various media in Table 5 and throughout this article:

EM- Early Morning (Before 7 AM), **M**- Morning (7 AM to 10 AM),

BN- Before Noon (10 AM to 12 Noon), **AN**- Afternoon (12 Noon to 4 PM),

E- Evening (4 PM to 8 PM), **N**- Night (8 PM to 11 PM), **LN**- Late Night (After 11 PM),

DNR- Do not remember.

Table 5: Respondents' Preferred Time of Exposure to Various Media

Sr. No.	Media	Different Times of Exposure															
		EM		M		BN		A		E		N		LN		DNR	
		F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	Television	6	1.50	39	10.00	30	7.70	24	6.20	4	10.80	18	46.2	1	4.60	51	13.10
2	Radio	9	2.30	63	16.20	36	9.20	51	13.10	5	13.10	39	10.0	4	12.30	93	23.80
3	Internet	45	11.50	33	8.50	42	10.80	33	8.50	2	6.90	81	20.8	9	23.10	39	10.00
4	Mobile Phone	51	13.10	59	17.70	30	7.70	27	6.90	3	7.70	93	23.8	6	16.20	27	6.90

Note: F stands for "Frequency" and % stands for "Percent"

6.4 CTMLVSV, CMCMA, and Frequency of Exposure to Various Media in a day:

The results of the One-way ANOVA indicated that the null hypothesis that there exist no significant differences among the means of respondent music listeners' current preference for listening/viewing songs/videos on PCs/laptops with respect to their frequency of exposure to media in a day can be rejected (p -value less than $\alpha = 0.05$). This implied presence of significant differences among the aforesaid means. Likewise, from descriptive statistics, it was found that respondent listeners having a frequency of exposure twice in a day preferred listening/viewing songs/videos on PCs/laptops, mobile phones/tablets, streaming on online music/radio apps, streaming songs/videos on social networking apps (like WhatsApp, etc.), and social networking sites (like Facebook, etc.) (refer to Table 6). So, it is implied that a music listener's preference to listen/view music audio/videos is impacted by his/her habit of getting exposure twice in a day to the media under study and vice versa. Similarly, respondents with exposure once in a day prefer to listen music through mobile phones/tablets and YouTube mostly. Also, in case of collecting music related videos or albums, respondents with exposure once in a day and twice in a day preferred to do so via downloading from online sites to listen offline and via Bluetooth, Infrared, Xender etc., respectively.

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Table 6: ANOVA- CTMLVSV, CMCMA and Frequency of Exposure to Media in a day

ANOVA- CTMLVSV and Frequency of Exposure to Media in a day									
Sr. No .	Listening and viewing songs and music videos respectively through	Frequency of exposure						p- value	Status of H ₀
		Once in a day		Twice in a day		More than twice in a day			
		N	Mean	N	Mean	N	Mean		
1	PCs/Laptops	111	2.16	72	2.33	120	1.58	0.000	rejected
2	Mobile phones/tablets	111	1.46	72	1.46	120	1.23	0.047	rejected
3	YouTube	111	1.49	72	1.42	120	1.10	0.000	rejected
4	Streaming on online music/radio apps	111	1.59	72	1.83	120	1.48	0.028	rejected
5	Streaming on social networking apps (WhatsApp)	111	2.22	72	2.54	120	2.05	0.028	rejected
6	Streaming on social networking sites (Facebook)	111	2.24	72	2.71	120	2.18	0.011	rejected
ANOVA- CMCMA and Frequency of Exposure to Media in a day									
Sr. No .	Collecting music related videos or albums via	Once in a day		Twice in a day		More than twice in a day		p- value	Status of H ₀
		N	Mean	N	Mean	N	Mean		
1	Downloading from online sites to listen offline	111	2.00	72	1.63	120	1.90	0.035	rejected
2	Bluetooth, Infrared, Xender etc.	111	2.27	72	2.67	120	2.15	0.013	rejected
Note: Social networking apps like WhatsApp etc., Social networking sites like Facebook etc.									

6.5 CTMLVSV, CMCMA and Time of Exposure to Various Media in a day:

The results of the One-way ANOVA indicated that the null hypothesis that there exist no significant differences among the means of respondent music listeners' current preference for listening/viewing songs/videos on PCs/laptops with respect to their time of exposure to various media (Such media included television, radio, internet, and mobile phones) in a day can be rejected (p -value less than $\alpha = 0.05$). This implied presence of significant differences among the aforesaid means. ANOVA results indicated that respondents who watched television in the morning (from 7 AM to 10 PM) preferred listening/viewing songs/videos through iPods and streaming on offline music/radio apps (refer to Table 7). Those who watched television in the late night (after 11PM) preferred to listen music through PCs/laptops, mobile phones/tablets, and YouTube. Respondents who watched television in the evening (from 4 PM to 8 PM), preferred collecting music through recording from live broadcasting on mobile, Set Top Box (STB), etc., and streaming on offline music apps (refer to Table 7). Again, respondents' who watched television in the morning (from 7 AM to 10 AM) preferred to collect music through USB ports from other laptops, PC, mobiles etc. Those who watched television at night (from 8 PM to 11 PM) preferred to collect music via storing it on memory cards.

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Table 7: ANOVA- CTMLVSV, CMCMVA and Time of exposure to Television in a day

ANOVA- CTMLVSV and Time of exposure																	
S r. N o .	Listening and viewing songs and music videos respectively through	Time of exposure														p- valu e	Status of H ₀
		EM		M		BN		AN		E		N		LN			
		N	Me an	N	Me an	N	Me an	N	Me an	N	Me an	N	Me an	N	Me an		
1	iPod	6	2.00	3 9	3.3 8	3 0	2.5 0	2 4	2.5 0	4 2	3.3 6	1 8 0	3.2 5	1 8	3.17	0.01 1	rejecte d
2	PCs/Laptops	6	1.50	3 9	1.4 6	3 0	1.3 0	2 4	1.7 5	4 2	2.0 7	1 8 0	2.0 5	1 8	2.5 0	0.00 0	rejecte d
3	Mobile phones/tablets	6	2.00	3 9	1.3 1	3 0	1.3 0	2 4	1.2 5	4 2	1.3 6	1 8 0	1.2 7	1 8	1.8 3	0.02 6	rejecte d
4	YouTube	6	2.50	3 9	1.3 1	3 0	1.5 0	2 4	1.3 8	4 2	1.1 4	1 8 0	1.2 2	1 8	2.0 0	0.00 0	rejecte d
5	Streaming on offline music/radio apps	6	1.50	3 9	2.7 7	3 0	1.9 0	2 4	1.7 5	4 2	2.0 7	1 8 0	1.9 7	1 8	2.50	0.00 2	rejecte d
ANOVA- CMCMVA and Time of exposure																	
S r. N o .	Collecting music related videos or albums via	EM		M		BN		AN		E		N		LN		p- valu e	Status of H ₀
		N	Me an	N	Me an	N	Me an	N	Me an	N	Me an	N	Me an	N	Me an		
1	Recording from live broadcasting on mobile, STB etc.	6	3.50	3 9	2.2 3	3 0	2.8 0	2 4	3.1 3	4 2	3.4 3	1 8 0	3.2 5	1 8	2.83	0.00 1	rejecte d
2	Via USB ports from other laptops, PC, mobiles etc.	6	3.50	3 9	2.3 8	3 0	1.4 0	2 4	1.8 8	4 2	2.1 4	1 8 0	2.1 2	1 8	2.33	0.00 0	rejecte d
3	Storing on memory cards	6	3.00	3 9	2.3 1	3 0	1.7 0	2 4	1.7 5	4 2	1.9 3	1 8 0	2.3 2	1 8	2.00	0.01 2	rejecte d
4	Streaming on offline music apps	6	3.50	3 9	1.7 7	3 0	1.7 0	2 4	1.5 0	4 2	2.2 1	1 8 0	2.0 0	1 8	1.67	0.00 1	rejecte d

ANOVA results indicated that respondents who listened to the radio in the morning (from 7AM to 10AM), preferred listening/viewing songs/videos through iPods, PCs/laptops, and streaming on offline music/radio apps (refer to Table 8). Again, respondents preferred listening to the radio before noon (from 10AM to 12 Noon) and in the afternoon (from 12 Noon to 4PM), preferred to listen to music through streaming on online music/radio apps and on YouTube, respectively. Again respondents who listened to radio in the morning (from 7AM to 10AM) preferred to collect music related videos or albums through recording from live broadcasting on mobile, STB etc.; sharing through Bluetooth, Infrared, Xender etc.; and streaming through offline music apps.

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Finally, respondents who listen to radio before noon (from 10AM to 12 noon) preferred collecting music related videos/albums through downloading from music sites to listen offline, and through streaming on online music/radio apps (refer to Table 8).

Table 8: ANOVA- CTMLVSV, CMCMA and Time of exposure to Radio in a day

ANOVA- CTMLVSV and Time of exposure																	
Sr. No.	Listening and viewing songs and music videos respectively through	Time of exposure														p-value	Stat us of H ₀
		EM		M		BN		AN		E		N		LN			
		N	Me an	N	M ea n	N	M ea n	N	M ea n	N	M ea n	N	M ea n	N	Me an		
1	iPod	9	3.00	63	3.86	36	2.83	51	2.88	51	2.53	39	3.08	48	3.25	0.000	rejec ted
2	PCs/Laptops	9	2.67	63	2.29	36	1.83	51	1.82	51	1.47	39	1.92	48	2.00	0.002	rejec ted
3	YouTube	9	1.00	63	1.43	36	1.33	51	1.47	51	1.06	39	1.15	48	1.19	0.035	rejec ted
4	Streaming on online music/radio apps	9	1.33	63	1.52	36	1.67	51	1.65	51	1.18	39	1.31	48	1.63	0.010	rejec ted
5	Streaming on offline music/radio apps	9	1.33	63	2.52	36	1.83	51	1.71	51	1.82	39	1.69	48	2.13	0.000	rejec ted
ANOVA- CMCMA and Time of exposure																	
Sr. No.	Collecting music related videos or albums via	Time of exposure														p-value	Stat us of H ₀
		EM		M		BN		AN		E		N		LN			
		N	Me an	N	M ea n	N	M ea n	N	M ea n	N	M ea n	N	M ea n	N	Me an		
1	Recording from live broadcasting on Mobile, STB etc.	9	2.67	63	3.62	36	3.25	51	2.65	51	2.82	39	3.46	48	2.81	0.002	rejec ted
2	Downloading from music sites to listen offline	9	1.67	63	2.10	36	2.17	51	1.76	51	1.65	39	2.00	48	1.50	0.003	rejec ted
3	Bluetooth, Infrared, Xender etc.	9	1.67	63	2.52	36	2.50	51	2.00	51	1.88	39	2.46	48	2.13	0.002	rejec ted
4	Streaming on online music apps	9	1.33	63	1.52	36	1.75	51	1.65	51	1.18	39	1.46	48	1.25	0.001	rejec ted
5	Streaming on offline music apps	9	1.33	63	2.29	36	1.92	51	1.94	51	1.65	39	1.69	48	1.81	0.035	rejec ted

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Respondents who browsed internet at late night (after 11PM) in a day preferred to listen/view songs/videos through streaming on offline music/radio apps (refer to Table 9). Again, in case of collecting music related videos or albums respondents who browsed internet at night time (from 8PM to 11PM) and late night (after 11PM), mostly preferred collecting songs/videos through downloading from music sites to listen offline, and by downloading and creating song lists in YouTube to listen offline, respectively. Respondents who browsed internet before noon (from 10AM to 12PM), preferred collecting music through USB ports from other laptops, PC, mobiles etc., and by storing on memory cards. Finally, respondents who browsed internet in the early morning (before 7AM) preferred collecting music through streaming on offline music apps (refer to Table 9).

Table 9: ANOVA- CTMLVSV, CMCMA and Time of exposure to Internet in a day

ANOVA- CTMLVSV and Time of exposure																	
S r. N o .	Listening and viewing songs and music videos respectively through	Time of exposure														p- valu e	Status of H ₀
		EM		M		BN		AN		E		N		LN			
		N	Me an	N	M ea n	N	Me an	N	Me an	N	Me an	N	Me an	N	Me an		
1	Streaming on offline music/radio apps	4 5	1.80	3 3	2.0 9	4 2	1.7 9	3 3	2.0 9	2 7	1.7 8	8 1	1.8 5	9 0	2.3 7	0.01 9	rejecte d

ANOVA- CMCMA and Time of exposure																	
S r. N o .	Collecting music related videos or albums via	EM		M		BN		AN		E		N		LN		p- valu e	Status of H ₀
		N	Me an	N	M ea n	N	Me an	N	Me an	N	Me an	N	Me an	N	Me an		
		1	Downloading from music sites to listen offline	4 5	1.73	3 3	1.7 3	4 2	1.7 9	3 3	2.0 9	2 7	1.4 4	8 1	2.2 2		
2	Downloading and creating songlists in YouTube to listen offline	4 5	1.72	3 3	2.0 0	4 2	2.0 7	3 3	2.0 9	2 7	1.5 6	8 1	1.6 3	9 0	2.1 7	0.00 3	rejecte d
3	Via USB ports from other laptops, PC, mobiles etc.	4 5	2.13	3 3	2.0 9	4 2	2.7 9	3 3	2.0 0	2 7	2.0 0	8 1	1.8 9	9 0	2.2 3	0.00 6	rejecte d
4	Storing on memory cards	4 5	2.53	3 3	2.1 8	4 2	2.6 4	3 3	2.0 9	2 7	1.7 8	8 1	2.1 1	9 0	2.2 3	0.04 1	rejecte d
5	Streaming on offline music apps	4 5	2.2 7	3 3	1.6 4	4 2	1.9 3	3 3	2.0 9	2 7	1.5 6	8 1	1.7 4	9 0	2.1 0	0.02 5	rejecte d

Respondents who used mobile phones in the morning (from 7AM to 10AM), preferred to listen and view music through PCs/laptops (refer to Table 10). Those who used mobile phones before noon (10AM to 12 Noon) preferred to do so via iPod. Again, respondents who used mobile in the late night (after 11PM), preferred listening music through mobile phones/tablets, YouTube,

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streaming on online and offline music/radio apps. Finally, those who used mobile phone in the afternoon (from 12 noon to 4PM) preferred listening music through streaming songs/videos on social networking apps (like WhatsApp, etc.) and on social networking sites (like Facebook, etc.) (refer to Table 10).

Besides, in terms of collecting songs/videos, respondents who used mobile phone after noon (from 12 noon to 4PM) preferred collecting songs/videos through recording from live broadcasting on mobile, STB, etc. (refer to Table 10). Respondents who used mobile before noon (10AM to 12 Noon) also preferred collecting via USB ports from other laptops, PC, mobiles, etc. Similarly, respondents who used mobiles at night (from 8PM to 11PM) mostly preferred collecting through downloading from music sites to listen offline and through streaming on online music apps, etc. Respondents who used mobile in the late night (after 11PM) preferred listening via downloading and creating song lists on YouTube to listen offline; sharing through Bluetooth, Infrared, Xender, etc.; and through streaming on offline music apps, etc. Finally, those users who used mobile in the morning (from 7AM to 10AM) preferred collecting music via storing on memory cards (refer to Table 10).

Table 10: ANOVA- CTMLVSV, CMCMVA and Time of exposure to Mobile Phone in a day

ANOVA- CTMLVSV and Time of exposure																	
S r. N o.	Listening and viewing songs and music videos respectively through	Time of exposure														p- valu e	Status of H ₀
		EM		M		BN		AN		E		N		LN			
		N	Me	N	Me an	N	Me an	N	Mean	N	Me	N	Me	N	Me		
1	iPod	5 1	2.94	6 9	3.0 9	3 0	4.00	2 7	2.78	3 0	3.50	9 3	3.1 6	6 3	3.14	0.02 9	rejecte d
2	PCs/Laptops	5 1	1.88	6 9	2.2 2	3 0	2.10	2 7	1.67	3 0	1.40	9 3	1.8 4	6 3	2.19	0.00 3	rejecte d
3	Mobile phones/tablets	5 1	1.47	6 9	1.4 8	3 0	1.00	2 7	1.22	3 0	1.20	9 3	1.1 6	6 3	1.57	0.00 1	rejecte d
4	YouTube	5 1	1.35	6 9	1.4 3	3 0	1.20	2 7	1.11	3 0	1.00	9 3	1.2 3	6 3	1.48	0.02 8	rejecte d
5	Streaming on online music/radio apps	5 1	1.24	6 9	1.6 5	3 0	1.10	2 7	1.11	3 0	1.40	9 3	1.7 4	6 3	1.95	0.00 0	rejecte d
6	Streaming on offline music/radio apps	5 1	1.47	6 9	2.3 0	3 0	1.30	2 7	1.56	3 0	1.50	9 3	2.1 6	6 3	2.71	0.00 0	rejecte d
7	Streaming on social networking apps	5 1	1.59	6 9	2.3 9	3 0	1.90	2 7	2.78	3 0	2.10	9 3	2.2 9	6 3	2.38	0.00 0	rejecte d
8	Streaming on social networking sites	5 1	1.88	6 9	2.4 3	3 0	2.10	2 7	3.00	3 0	1.90	9 3	2.3 5	6 3	2.67	0.00 1	rejecte d
Note: Social networking apps like WhatsApp etc., Social networking sites like Facebook etc.																	
ANOVA- CMCMVA and Time of exposure																	
S r. N	Collecting music related videos or albums via	EM		M		BN		AN		E		N		LN		p- valu e	Status of H ₀
		N	Me	N	Me an	N	Me an	N	Mean	N	Me	N	Me	N	Me		
1	Recording from live broadcasting on mobile, STB etc.	5 1	2.47	6 9	3.2 2	3 0	3.40	2 7	3.78	3 0	3.40	9 3	3.1 6	6 3	3.10	0.00 3	rejecte d
2	Downloading from music sites to listen offline	5 1	1.53	6 9	1.7 8	3 0	2.10	2 7	2.11	3 0	1.40	9 3	2.2 3	6 3	2.19	0.00 0	rejecte d
3	Downloading and creating songlists in YouTube to listen offline	5 1	1.47	6 9	1.9 1	3 0	2.20	2 7	1.89	3 0	1.80	9 3	1.8 4	6 3	2.29	0.00 1	rejecte d
4	Bluetooth, Infrared, Xender etc.	5 1	1.94	6 9	2.4 8	3 0	2.00	2 7	2.44	3 0	1.60	9 3	2.3 9	6 3	2.81	0.00 0	rejecte d
5	Via USB ports from other laptops, PC, mobiles etc.	5 1	1.94	6 9	2.4 3	3 0	2.70	2 7	1.89	3 0	1.60	9 3	1.9 4	6 3	2.43	0.00 0	rejecte d
6	Storing on memory cards	5 1	2.06	6 9	2.5 7	3 0	2.40	2 7	1.78	3 0	1.70	9 3	2.2 3	6 3	2.43	0.00 4	rejecte d
7	Streaming on online music apps	5 1	1.41	6 9	1.4 8	3 0	1.40	2 7	1.11	3 0	1.70	9 3	1.7 7	6 3	1.43	0.00 2	rejecte d
8	Streaming on offline music apps	5 1	1.94	6 9	1.7 8	3 0	1.70	2 7	1.56	3 0	1.70	9 3	1.9 0	6 3	2.52	0.00 0	rejecte d

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6.7 CTMLSV, CMCMA and Average Time Spent on a Media in a day:

The third important aspect of PMN is the amount of time spent by respondent music listeners on various media (Such media included television, radio, internet, and mobile phones). ANOVA results indicated the impact of time spent on various media and respondent music listeners' preferred contemporary media to listen/view songs/videos through them and preferred mode of collecting music. Table 11 shows that respondents who spent time on average "less than 1 hour a day" on television, preferred to listen music on PCs/Laptops, mobile phones/tablets and streaming songs/videos on social networking apps (like WhatsApp). Again, respondents who spent "3 to 5 hours a day" on television preferred listening music via iPod, YouTube, through streaming on offline music/radio apps and via streaming songs/videos on social networking sites (like Facebook). For collecting music related videos or albums, respondents who spent "3 to 5 hours a day" on television preferred to collect them through recording from live broadcasting on mobile, STB etc., and through streaming on offline music apps (refer to Table 11).

Table 11: ANOVA- CTMLSV, CMCMA and Average Time Spent on Television in a day

ANOVA- CTMLVSV and Average Time Spent in a day											
Sr. N o.	Listening and viewing songs and music videos respectively through	Average Time Spent								p- value	Status of H ₀
		<1		1-3		3-5		>5			
		N	Mea	N	Mean	N	Mean	N	Mea		
1	iPod	165	3.24	159	2.92	24	3.50	3	1.00	0.008	rejecte d
2	PCs/Laptops	165	2.04	159	1.89	24	1.13	3	1.00	0.000	rejecte d
3	Mobile phones/tablets	165	1.53	159	1.13	24	1.50	3	1.00	0.000	rejecte d
4	YouTube	165	1.45	159	1.13	24	1.75	3	1.00	0.000	rejecte d
5	Streaming on offline music/radio apps	165	2.15	159	1.89	24	3.00	3	1.00	0.000	rejecte d
6	Streaming social networking apps (like WhatsApp etc.)	165	2.58	159	1.85	24	2.38	3	1.00	0.000	rejecte d
7	Streaming on social networking sites (like Facebook etc.)	165	2.71	159	1.92	24	2.88	3	1.00	0.000	rejecte d
ANOVA- CMCMVA and Average Time Spent in a day											
Sr. N o.	Collecting music related videos or albums via	<1		1-3		3-5		>5		p- value	Status of H ₀
		N	Mea	N	Mean	N	Mean	N	Mea		
1	Recording from live broadcasting on mobile, STB etc.	165	3.22	159	2.96	24	3.25	3	1.00	0.022	rejecte d
2	Streaming on offline music apps	165	2.02	159	1.79	24	2.63	3	2.00	0.006	rejecte d

Respondents who spent "3 to 5 hours a day" on radio, preferred to listen/view songs/video on mobile phones/tablets, YouTube and through streaming on online music/radio apps (refer to Table 12). Respondents who spent "less than 1 hour a day" on radio preferred listening music via streaming songs/videos on social networking apps (like WhatsApp). For collecting music related videos and albums radio listeners who spent "less than 1 hour a day" on radio preferred collecting them through recording from live broadcasting on mobile, STB etc., through USB ports from other laptops, PC, mobiles etc., and storing on memory cards. Again, radio listeners spent "3 to 5 hours a day" on radio, preferred collecting music through streaming on online and offline music apps (refer to Table 12).

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Table 12: ANOVA- CTMLVSV and Average Time Spent on Radio in a day

ANOVA- CTMLVSV and Average Time Spent in a day											
Sr. No .	Listening and viewing songs and music videos respectively through	Average Time Spent								p-value	Status of H ₀
		<1		1-3		3-5		>5			
		N	Mea	N	Mean	N	Mean	N	Mean		
1	Mobile phones/tablets	243	1.33	72	1.25	12	1.75	6	2.50	0.000	rejected
2	YouTube	243	1.35	72	1.13	12	2.00	6	2.50	0.000	rejected
3	Streaming on online music/radio apps	243	1.62	72	1.38	12	2.25	6	1.00	0.003	rejected
4	Streaming on social networking apps (like WhatsApp etc.)	243	2.33	72	1.92	12	2.00	6	1.50	0.039	rejected

ANOVA- CMCMA and Average Time Spent in a day											
Sr. No .	Collecting music related videos or albums via	<1		1-3		3-5		>5		p-value	Status of H ₀
		N	Mea	N	Mean	N	Mean	N	Mean		
1	Recording from live broadcasting on mobile, STB etc.	243	3.20	72	2.96	12	2.50	6	1.50	0.008	rejected
2	USB ports from other laptops, PC, mobiles etc.	243	2.17	72	1.83	12	2.00	6	3.50	0.002	rejected
3	Storing on memory cards	243	2.27	72	1.88	12	2.00	6	3.50	0.002	rejected
4	Streaming on online music apps	243	1.57	72	1.17	12	2.00	6	1.50	0.000	rejected
5	Streaming on offline music apps	243	1.96	72	1.50	12	2.00	6	3.50	0.000	rejected

Interestingly, respondents who spent “less than 1 hour a day” on internet preferred to listen/watch songs/videos on YouTube, streaming songs/videos on social networking apps (like WhatsApp etc.) and on social networking sites (like Facebook) (refer to Table 13). Again, respondents browsed internet “more than 1 hour to 3 hours a day,” preferred to do so on mobile phones/tablets and streaming on offline music/radio apps. For collecting music related videos or albums, respondents who browsed internet for “less than 1 hour a day” and “3 to 5 hours a day,” preferred collecting through streaming on offline music apps etc. and via storing on memory cards, respectively (refer to Table 13).

Table 13: ANOVA- CTMLVSV and Average Time Spent on Internet in a day

ANOVA- CTMLVSV and Average Time Spent in a day											
Sr. No.	Listening and viewing songs and music videos respectively through	Average Time Spent								p-value	Status of H ₀
		<1		1-3		3-5		>5			
		N	Mean	N	Mean	N	Mean	N	Mean		
1	Mobile phones/tablets	27	1.44	99	1.52	147	1.24	108	1.28	0.030	rejecte
2	YouTube	27	1.89	99	1.39	147	1.27	108	1.17	0.000	rejecte

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3	Streaming on offline music/radio apps	27	2.11	99	2.36	147	1.82	108	2.06	0.005	rejecte
4	Streaming on social networking apps (WhatsApp)	27	3.11	99	2.33	147	2.04	108	2.17	0.000	rejecte d
5	Streaming on social networking sites (Facebook)	27	3.44	99	2.55	147	2.04	108	2.39	0.000	rejecte d
ANOVA- CMCMA and Average Time Spent in a day											
Sr. No.	Collecting music related videos or albums via	<1		1-3		3-5		>5		p- value	Status of H ₀
		N	Mean	N	Mean	N	Mean	N	Mean		
1	Storing on memory cards	27	2.33	99	2.00	147	2.45	108	2.19	0.033	rejecte
2	Streaming on offline music apps	27	2.56	99	2.06	147	1.78	108	1.75	0.001	rejecte

Respondents who spent “3 to 5 hours a day” on mobile phone preferred to listen/watch songs/videos on PCs/Laptops. Again, respondents who spent “less than 1 hour in a day” on mobile phones preferred listening music via Mobile phones/tablets, YouTube, streaming on offline music/radio apps, streaming songs/videos on social networking apps (like WhatsApp etc.) and on social networking sites (like Facebook) (refer to Table 14). Respondent listeners who spent “less than 1 hour a day” on mobile phones, preferred collecting music videos or albums through downloading and creating song lists in YouTube to listen offline, via sharing on Bluetooth, Infrared, Xender etc., through USB ports from other laptops, PC, mobiles etc., via storing on memory cards and finally through streaming on offline music apps etc. (refer to Table 14).

Table 14: ANOVA- CTMLSV and Average Time Spent on Mobile Phone in a day

ANOVA- CTMLSV and Average Time Spent in a day											
Sr. No.	Listening and viewing songs and music videos respectively through	Average Time Spent								p- valu e	Status of H ₀
		<1		1-3		3-5		>5			
		N	Mean	N	Mean	N	Mean	N	Mean		
1	PCs/Laptops	39	2.08	75	1.92	108	2.19	159	1.77	0.011	rejected
2	Mobile phones/tablets	39	2.00	75	1.24	108	1.39	159	1.19	0.000	rejected
3	YouTube	39	2.15	75	1.16	108	1.42	159	1.11	0.000	rejected
4	Streaming on offline music/radio apps	39	2.62	75	1.84	108	2.14	159	1.94	0.004	rejected
5	Streaming on social networking apps (WhatsApp)	39	2.77	75	2.16	108	2.36	159	2.04	0.004	rejected
6	Streaming on social networking sites (Facebook)	39	3.08	75	2.32	108	2.22	159	2.32	0.005	rejected
ANOVA- CMCMA and Average Time Spent in a day											
Sr. No.	Collecting music related videos or albums via	<1		1-3		3-5		>5		P- valu e	Status of H ₀
		N	Mean	N	Mean	N	Mean	N	Mean		
1	Downloading and creating songlists in YouTube to listen offline	39	2.46	75	1.72	108	1.94	159	1.89	0.004	rejected
2	Bluetooth, Infrared, Xender etc.	39	2.69	75	1.88	108	2.53	159	2.42	0.000	rejected
3	USB ports from other laptops, PC, mobiles etc.	39	2.54	75	1.76	108	2.22	159	2.25	0.003	rejected
4	Storing on memory cards	39	2.54	75	1.68	108	2.53	159	2.26	0.000	rejected
5	Streaming on offline music apps	39	2.85	75	1.68	108	2.00	159	1.70	0.000	rejected

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Based on the above findings, stakeholders of the Assamese music industry can plan out different marketing strategies to enhance the penetration of their music related products.

7. CONCLUSION

With the passage of time, people are getting more engaged in diverse activities. Hence, their timing, frequency, and duration of exposure to the various media have changed over the years. On the one hand, new avenues of reaching the audience through the various media have emerged, and on the other hand increasing exposure to the audiences, competing with too many competitors has posed numerous challenges. This study has indicated that various music marketers and media houses can plan to reach a bigger section of the society through mobile phones. The above findings also indicated that such media houses and music marketers, considering the media type, could formulate different strategies to reach their audience when they are in a more receptive mood. The contemporary technologies also provide the media houses and marketers many opportunities to market their musical content. As such, the above research work will help the music marketers to negotiate with the media houses to time the broadcasting of the musical contents at the right time to get the maximum result.

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