Special Section Article

Understanding Consumer Perception Toward Usage of Music Apps During COVID-19: A Study in West Bengal State

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Abstract

The astounding proliferation of mobile internet and technological innovations is one of the revelations of the 21st-century modern world. Electronic gadgets such as smartphones and tablets possess bewildering and alluring features which when blended with internet gives the modus vivendi of the consumers a completely different meaning. It has been observed that consumers have shown a strong penchant toward such technological vantages and innovative gadgets. In this context, the rise in the usage of music apps has been driven largely by the skyrocketing in the production and use of smartphones, coupled with the landscape of fast-paced internet. There are large number of consumers who have been adopting and using music apps, especially during the boring and monotonous period of COVID-19. The current research study is attempted at examining and analyzing the attitudes and behavior of the consumers toward the use of such music apps. For this purpose, a survey has been conducted in selected districts of West Bengal on the basis of "technology acceptance model". The results reveal that consumers of West Bengal have positive perception toward music apps.

Keywords

COVID-19 pandemic, mobile commerce, music apps, attitudes and behavior, technology acceptance model (TAM)

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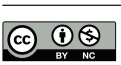

JEL Classification: M31, O33, O31

Background Reflections

The growth and upsurge in the milieu of technological applications has been largely triggered by the dramatic escalation in the usage of internet, smartphones, and persistent percolation of technologies in the ambit of e-commerce. The eye-twitching technologies coupled with the consumers' proclivity toward a more luxurious modus operandi has been a nifty driving force for the emergence of such alluring transitions in the landscape of consumers' modus vivendi. In the past few years in a developing country like India, the spontaneous proliferation in the domain of e-commerce and mobile commerce has facilitated a plethora of hassle-free online applications such as mobile apps, food apps, shopping apps, taxi hailing apps, and so on that has been embraced by a huge proportion of Indian customers, thereby, bringing a change in their behavioral trajectories. The implementation of 4G network, low data cost, the juggernaut of technological innovations, the splendid metamorphosis in the features of latest smartphones, blended with penchant of Indian consumers in the quest for a more luxurious lifestyle has propelled the demand in the usage of various music apps such as Gaana, Wynk, JioSaavn, Spotify, Google Play Music, and so on. With the advent of music apps, a major clod of Indian consumers have been instantaneously willing to use such expedient services that are offered at free or minimal cost. The objective of current research endeavor is to investigate the intrinsic motivations, perceptions, and adoption mechanisms of users of music apps in the era of COVID-19.

Introductory Observations

Greater access to internet during COVID-19 has been an opportunistic tenet, increasing the consumers' reliance of digital platforms. By capitalizing on the latest technological vantage points in the context of music apps, consumers are enjoying the benefits of high-quality audio streaming services at no cost. It can be safely asserted that consumers are done with the traditional modes of listening to music in the form of CDs, cassettes, and MP3 player which came with substantial cost and durability issues. The present age of digital revolution has created an impeccable aura which the consumers are quick to respond and usher into. Moreover, music apps serve the twin purpose of a low storage space and easy access to audio streaming which includes innumerable number and variety of songs which otherwise would have been impossible to store in a smartphone or tablet given the storage capacity of the devices, thus, proving to be a win-win situation. Thus, with such prolific amelioration in technology, customers are unshackled of the traditional stranglehold of music listening. According to the data published by Statista Research Department on April 23, 2021, there are five biggest players of music streaming app in India's audio streaming market: Gaana, JioSaavn, Wynk, Spotify, and Google Play Music, followed by others. Gaana was perched with a whopping proportion of 30% in the country's audio streaming market share, followed by JioSaavn which accounted for 24% while Wynk and

Spotify reserved 15% each. Google Play was at the fourth place with 10% and the rest making up for the available 6%. Truth to be told, the Indian online audio streaming sector is said to be growing in leaps and bounds in the forthcoming years. However, music is unmonetized in India and thus, there lies a chink in the armor for all such music streaming companies to experiment with advertisement supported as well as paid streaming options (Srivastava, 2020). In 2020, Gaana showed that 85% of its users listened to Indian pop music while Spotify showed that even a bigger chunk of listeners stream international acts (Pavez, 2021).

One of the arduous tasks for any academic researcher exists in augmenting the current cognizant level of multiple factors which influences the adoption and usage of music apps, in light of "technology acceptance model" (TAM), where the crux objective is to probe into the motivations, preferences, attitudes, and behavioral intentions (BIs) of consumers toward such technology or apps. In the current research study, TAM has been modified to rejig the domains of "subjective norm" (SN) and "COVID-19 exigency." Albeit few researches that have shown the blending of key components like "attitude–intention–behavior," here in the present research study, the emphasis should be on conventional TAM with minor modifications.

Objectives of the Study

1. To develop an integrated framework of user acceptance and intention toward music apps pillared on traditional TAM constructs and contemporaneous components.
2. To examine and analyze the attitudes and behavior of consumers toward music apps amidst COVID-19 pandemic.

Review of Associated Literature

Research in the domain of technology and consumer behavior is not new, but probing into the perceptions of consumers toward music apps in the context of 'new normal' is a novel endeavor. Over the years, there have been massive pioneering and development of myriad theories and models for the purpose of explaining and prognosticating the behavior toward technologically driven acts. TAM is considered to be among the most influential models of technological acceptance, "an extension of the theory of reasoned action (TRA)."

Here, in the current research study, we are attempting to measure the attitudes and behavior of consumers in the state of West Bengal toward adoption and usage of music apps and hence it is almost imperative to discuss about TAM and use it for bolstering the worth of the study. "TAM is one of the most influential extensions of Theory of Reasoned Action (TRA)," which was brought into existence by Ajzen and Fishbein (1980). TAM is an amelioration over TRA since it was pillared on independent variables such as "perceived usefulness" (PU) and "perceived ease of use" (PEOU) as well as dependent variables like "attitude toward usage" (ATU).

Fred Davis first coined the term "perceived usefulness" which refers to the extent of a belief held by a person that the usage of a particular system would

result in the enhancement of his/her job performance. Davis (1989) also defined the term "perceived ease of use" as the extent of a belief held by a person regarding the usage of a system which would be effortless. In further addition to the existing theory, Davis (1993) opined that the usage of the actual information system was a determination of a concept called "behavioral intention" which was a result of the combined force of ATU and PU. He defined it as "the subjective probability that an individual will perform a specified behavior." ATU is a crux dependent variable in the TAM, and, in the words of Ajzen and Fishbein (2000), ATU is the evaluative effect of positive and negative emotions among individuals toward the usage of a particular system.

TAM is being continuously studied and expanded. Luam and Lin (2004) emphasized on the application of TAM, where their crux objective was the corroboration of the influence of mobile trust, PU and PEOU on services over wireless devices categorizing these crux components as independent variables having an inexorable impact on the customer adoption of SMS technology. It is noteworthy that the traditional model of TAM has also proven to be quite flexible to include independent constructs, most notably SN, as first introduced by Taylor and Todd (1995), who defined it as "the influence gained from social circle on whether or not to use a particular system." The two crux upgrades include TAM2 (Venkatesh & Davis, 2000) and "unified theory of acceptance and use of technology" (Venkatesh et al., 2003). There has also been a proposition of TAM3 in the ambit of e-commerce, inclusive of trust effects and perceived risk on system usage (Venkatesh & Bala, 2008).

Roy (2017), in his study, incorporated a similar model blending the domain of SN with keywords of PU, PEOU, ATU and BI. The study focused on the consumer acceptance and adoption toward the use of taxi-hailing apps.

The motivation for developing a similar research model for the present study has been largely taken from Davis et al. (1989) and Roy (2017).

Any exigencies or unforeseen emergencies triggers abnormal behavior among consumers. The attitude and behavior of consumers also change in times of exigencies, and COVID-19 is no exception. The attitudinal display witnessed by the consumers during the time of this ongoing pandemic is quite astounding where consumers have become more cost conscious and alert toward health and safety. In this light, they are currently restricting their outdoor activities and trying to stay at home to the best possible extent, thus, adhering to the norms of COVID-19 protocols. However, the harsh isolations at home and traditional methods of music listening has become a burden on the consumers which they are looking forward to unshackle. As a result, consumers are seen adopting and using music apps and listening to variety of songs, even international songs, after a comfy and hassle-free access. This phenomenon is also having a prodigious impact on the attitudes and behavior of the consumers.

Albeit, past researches that have been conducted taking into consideration the concept of SN in the context of TAM are very rare. In addition to this, we find it extremely arduous to come across the domain of COVID-19 exigency used as a construct in TAM, by further introspection of existent literature. This in fact is the essence of our present research study.

Research Gap

An intricate analysis of further literature would reveal that there are hardly any research papers that emphasize to measure the perception of consumers toward the adoption and usage of music apps. Past few researches have rather focused on consumer behavior toward online music services, and, as a result, there lies an extensive domain of unexplored research that could be undertaken to examine and analyze the consumer preferences and attitudes toward music apps.

Theoretical Framework

The existent literature in the domain of consumer behavior and TAM is vast. But a major innovation in contributing to the existing associated literature would be to blend the keywords of SN and "exigency" (COVID-19). The present research study is a novel effort, where the grueling task involved has been blending such key constructs to unfurl the underlying motivations, attitudes, BIs, and perception of consumers, which is the very essence of our purported endeavor.

The current research study is an endeavor, attempted in developing a conceptual framework of the user adoption and usage of music apps, pillared on marginally modified TAM. The below model is a re-modified TAM. The constructs namely SN and "exigencies" (COVID-19)" have been incorporated to cater to the influence of peer groups and urgent unforeseen needs, respectively. Therefore, our research model comprises of 6 constructs, which have been developed and presented below. For this purpose, the following hypotheses have been developed and substantiated through the research model represented above.

H_1: PU has a positive influence on ATU.
H_2: PU has a positive influence on BI of consumers.

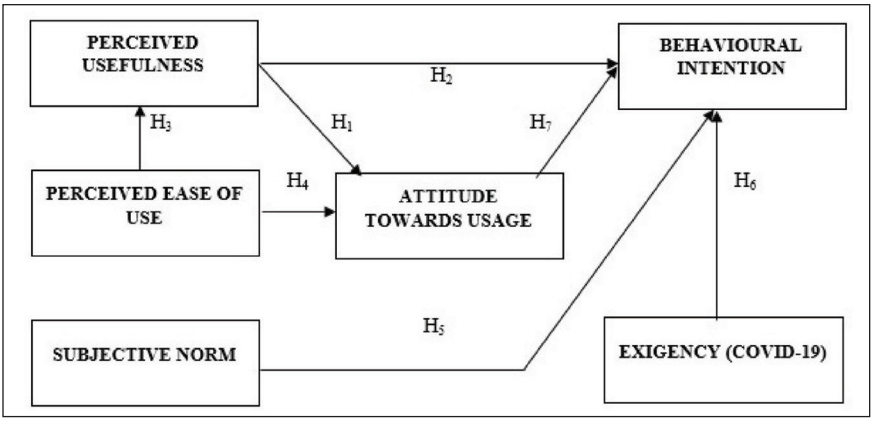

Figure 1. Research Model

Source: The authors.

H_3: PEOU has a positive influence on PU.
H_4: PEOU has a positive influence on ATU.
H_5: SN has a positive influence on BI of consumers.
H_6: Exigency (COVID-19) has a positive influence on BI of consumers.
H_7: ATU has a positive influence on BI of consumers.

Data and Methodology

A rigorous research was conducted including both primary and secondary data. Secondary data was used to create a robust foundation of conceptual framework of the present research study. For this purpose, several research papers have been acquired from various authentic and reliable e-resource websites such as SAGE, JSTOR, BASE, Google Scholar, and so on. The process of primary data collection includes a survey which has been conducted on a total sample size of 500 respondents in different districts of West Bengal such as Kolkata, Howrah, Hooghly, Burdwan, and Birbhum, belonging to the age group of 18–55 years, engaged in various occupations, all of them using music apps. To this end, a close-ended questionnaire was developed. Most of the questionnaires were mailed while others were randomly doled out to the respondents. The questions in the questionnaire were mostly self-developed albeit few questions have been adopted from previous researches. The questionnaire contained 23 questions under 6 segments, namely, PU, PEOU, SN, "exigencies" (COVID-19), ATU, and BI. A five-point Likert scale (5 = strongly agree and 1 = strongly disagree) has been used to measure the concepts. There were few responses that were erroneous and some were not returned, hence, those responses had to be rejected. After the rejection of such responses, the final valid responses stood at 462.

As observed in Table 1, the number of male respondents (n = 244) exceeds the female respondents (n = 218). Most of the respondents belong to a young age group in the category of 26–35 years and 36–45 years. Majority of the respondents are either students or servicemen. We also see that most of the respondents having a moderately strong level of income perched in the range of 25.1K–50K.

Reliability Analysis

For the purpose of testing whether the variables are consistent or not a Cronbach's Alpha has been run which would help to examine the scale reliability of the constructs. All the "Cronbach's Alpha" values as evidenced in the above table exceed the ideal value of 0.7, while "Correlations of Corrected Items" are all above the ideal value of 0.5 (see Table 2).

Convergent and Divergent Validity Test

A convergent validity test has been conducted to check for the convergence of items. According to Fornell and Larcker (1981), "The convergent validity of scale items are determined by their respective factor loadings, composite reliability and

Table 1. Representation of Descriptive Statistics

Demographic Construct	Classification	Population Statistics	Percentage
Gender	Male	244	0.53
	Female	218	0.47
	Total	462	1.00
Age	18–25	189	0.41
	26–35	192	0.42
	36–45	56	0.12
	46–55	25	0.05
	Total	462	1.00
Current occupation	Student	166	0.36
	Service	151	0.33
	Business	108	0.23
	Others	37	0.08
	Total	462	1.00
Monthly income	Less than 10,000	12	0.03
	10,001–25,000	124	0.27
	25,001–50,000	182	0.39
	50,001–100,000	105	0.23
	Above 100,000	39	0.08
	TOTAL	462	1.00

Source: The authors.

average variance extracted." The loadings of "confirmatory factor analysis" (CFA) and composite reliabilities of all factors report figures of above required level of 0.7, while average variance explained (AVE) report figures above required level of 0.5 (see Table 3).

The usage of "square root of ACE" and the "correlation coefficient matrix" is important for testing the divergent validity of constructs. As per Fornell and Larcker (1981), "Discriminant validity was obtained by comparing the shared variance between factors with the AVE from the individual factors." The below matrix shows that maximum shared variance and average shared variance between factors are less compared to AVE and also the square root of AVE is higher compared to the correlations of inter-constructs, hence, satisfying the discriminant validity test (see Table 4).

Test for Structural Equation Modelling

Structural equation modelling (SEM) has been performed to delve into the relationships existing between 6 variables, namely, PEU, PU, ATU, SN, BI, and EXC. The rationality exist in testing the fit between the model and the obtained data. The first stage of making inference about the results of SEM encompasses a review of "fit indices." All the fit indices when juxtaposed with their corresponded values which has been suggested will give a good model fit "ratio of chi-square to its degrees of freedom" ($\chi 2/df$) = 1.977, "goodness-of-fit index" (GFI) = 0.958, "Adjusted GFI"

Table 2. Reliability Statistics

Construct	Cronbach's Alpha	Items	Total Correlation Value of Corrected Item	Cronbach's Alpha When Item Removed
Total	0.994	23	—	—
PEOU	0.988	PEU1	0.987	0.982
		PEU2	0.985	0.980
		PEU3	0.985	0.978
PU	0.989	PU1	0.975	0.986
		PU2	0.974	0.985
		PU3	0.978	0.985
		PU4	0.979	0.985
		PU5	0.977	0.985
		PU6	0.917	0.983
ATU	0.990	ATU1	0.980	0.985
		ATU2	0.978	0.986
		ATU3	0.971	0.988
		ATU4	0.969	0.988
SN	0.962	SN1	0.872	0.957
		SN2	0.935	0.943
		SN3	0.950	0.940
		SN4	0.938	0.945
BI	0.981	BI1	0.977	0.961
		BI2	0.941	0.984
		BI3	0.974	0.962
Exigency (COVID-19)	0.975	EXC1	0.972	0.989
		EXC2	0.930	0.912
		EXC3	0.974	0.962

Source: The authors.

(AGFI) = 0.936, "relative fit index" (RFI) = 0.967, "comparative fit index" (CFI) = 0.983 and "Root Mean Square Error of Approximation" (RMSEA) = 0.042 (see Table 5).

To this end, the results of hypothesis testing have been obtained. The Table 6 clearly represents the validation of all the hypotheses through the path analysis. It can be concluded that PU and PEOU favorably impact attitudes toward usage with each reporting figures of ($\beta = 0.192$, $p < .05$) and ($\beta = 0.402$, $p < .05$), respectively, thereby supporting H_1 and H_4. The same could be safely asserted for the relationship between PU, SN, ATU, and exigency (COVID-19), which are all significantly associated with BI of consumers toward music apps, with each reporting figures of $\beta = 0.198$, $p < .05$; $\beta = 0.405$, $p < .05$; $\beta = 0.443$, $p < .05$; and $\beta = 0.402$, $p < .05$ respectively substantiating H_2, H_5, H_6 and H_7. The relationship between PEOU and PU is also linked with figure reporting ($\beta = 0.609$, $p < .05$), thus, substantiating H_2.

Deliberation of Research Findings

The present research study was a pioneering effort in delving into the consumer attitude and behavior toward music apps by applying TAM. On the basis of our

Table 3. Convergent Validity Results

Construct	Items	Factor Loading	AVE	C.R.
PEOU	PEU1	0.972	0.977	0.968
	PEU2	0.972		
	PEU3	0.977		
PU	PU1	0.978	0.947	0.992
	PU2	0.977		
	PU3	0.980		
	PU4	0.981		
	PU5	0.980		
	PU6	0.942		
ATU	ATU1	0.978	0.961	0.991
		0.977		
	ATU3	0.979		
	ATU4	0.977		
SN	SN1	0.925	0.885	0.990
	SN2	0.846		
	SN3	0.889		
	SN4	0.857		
BI	BI1	0.979	0.960	0.986
	BI2	0.977		
	BI3	0.976		
Exigency (COVID-19)	EXC1	0.980	0.947	0.992
	EXC2	0.942		
	EXC3	0.978		

Source: The authors.

Table 4. Divergent Validity Results

	Inter-construct Correlations					
Construct	PEU	PU	ATU	SN	BI	EXC
PEU	0.989					
PU	0.985	0.973				
ATU	0.982	0.954	0.980			
SN	0.805	0.827	0.817	0.941		
BI	0.963	0.969	0.974	0.934	0.942	
EXC	0.975	0.982	0.989	0.958	0.966	0.980

Source: The authors.

proposed research model, we explored the liaisons among the traditional TAM components and contemporaneous components such as SN and exigency (COVID-19). The findings of the data analysis of the survey have been examined and proved to have positive and significant relationships with each other as per the hypothetical statements. The current research study is highly relevant in the context of recent proliferation in the milieu of technological innovations and advancements, resulting in the upsurge of e-commerce, m-commerce, smartphones, online audio streaming services, and music apps. According to the first hypothesis, PU had a positive relationship with ATU as the extent to which the importance

Table 5. Indices for Measure of "Goodness-of-Fit"

Goodness of Fit Measure	Recommended Value	Actual Value of Measures	Result of Model Fit
CMIN/DF	≤ 3.00	1.977	Good
GFI	≥ 0.90	0.958	Good
AGFI	≥ 0.90	0.936	Good
RFI	≥ 0.90	0.967	Good
CFI	≥ 0.90	0.983	Good
RMSEA	≤ 0.05	0.042	Good

Source: The authors.

Table 6. Results of Path Validation (Hypothesis Testing)

Hypotheses	Path	Coefficient	Direction	Results
H_1	PU⟶ATU	0.192	Positive	Supported
H_2	PU⟶BI	0.198	Positive	Supported
H_3	PEU⟶PU	0.609	Positive	Supported
H_4	PEU⟶ATU	0.408	Positive	Supported
H_5	SN⟶BI	0.405	Positive	Supported
H_6	ATU⟶BI	0.443	Positive	Supported
H_7	EXC⟶BI	0.402	Positive	Supported

Source: The authors.

of usefulness will be psychologically casted would have a bearing on the attitude of the consumers. As per the second hypothesis, it was also observed that PU was related to BI. An explanation for this would be that the consumers are always in the quest for using a beneficial application which would make their lives more convenient. We evidence, in the third hypothesis testing, that PU was strongly influenced by PEOU. This hints that providing appropriate user training is essential for bolstering the consumers' perception of the usefulness of a technology. Besides, PEOU was also positively related to ATU, validating our fourth hypothesis. The fifth hypothesis was attempted at examining the relationship between SN and BIs. The impact cast by social circle had a significant impact on the BI of consumers toward adoption and usage of music apps. This is a crucial finding as local clubs, colleagues, or opinion leaders shape the perceptions and attitudes of people toward a technology. As observed by the sixth hypothesis, we have comprehended that the attitude of consumers toward music apps has been instrumental in shaping the BI of such consumers, as both mental as well as physical faculties are a nifty driving force in developing the perceived likelihood of consumers. Finally, the seventh hypothesis analyzed the relationship between exigency (COVID-19) and BIs. Any unforeseen exigencies would trigger an abnormal behavior among people. An example would be any war which can bring a stunning change in the consumption trajectories of the consumers as they would hoard food grains, spend less on luxury items, cut costs, focus on health and safety, and so on. The current situation of this ongoing COVID-19 pandemic is also similar, where people are relinquishing old ways of doing things for the ravishing new ones. The adoption and usage of

music apps during COVID-19 has also been easy and convenient largely due to the skyrocketing of internet usage and penetration. Such prolonged attitudes observed among the consumers during this "new normal" has brought a bewildering change in their behavior as well.

Research Limitations

1. Albeit the study emphasizes on West Bengal, sample has been collected from five selected districts of West Bengal only.
2. Owing to the paucity of time and ongoing COVID-19 situations, the sample size has been restricted to only 462 respondents.

Conclusive Statements

The breathtaking metamorphosis in the landscape of technology has triggered a bewildering growth in e-commerce and m-commerce. The smartphones and tablets of today exhibit qualities like never, hence, making the modus operandi of people rather luxurious. The modern technologies have pulled off a stunning heist by intriguing the customers' frame of mind. Taking into consideration the proclivity of consumers in the contemporaneous panorama, these amelioration in the circa of technology, particularly e-commerce and m-commerce, was a much-needed tonic. The current research study highlighted certain crux elements under TAM constructs which shall be highly relevant in guiding future researches. People in West Bengal prodigiously valuing the services of online audio streaming especially during these times of pandemic is a manifestation in the sudden escalation in the adoption and usage of music apps and other sources of online audio streaming. Truth to be told, the framework of TAM has been criticized because of its debatable heuristic value, constrained explanatory, and predictive power and triviality. Despite such shortcomings, it is by far, the most popular theoretical model used in academia. The present research study is robust enough to provide valuable conclusions concerning consumer behavior displayed toward adoption and usage of music apps.

Declaration of Conflicting Interests

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