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Sustaining Innovation: Digital Live Music Models in a Post-COVID-19 Trinidad and Tobago

Research Article

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Abstract: Joseph (2021) advanced a detailed qualitative portrayal of the impact of the COVID-19 pandemic on the value network of the Trinidad and Tobago (T&T) live music sector. The study culminated by proposing a potential business model for digital live music showcase and monetisation. Supported by a cross-sectional survey with a group of 204 live music fans, this paper pursues an initial quantitative examination of Joseph's study (2021). It follows-up on select aspects of the sustainability and adoption possibilities of the proposed model. The results outline the customer profiles of online concert fans during the COVID-19 lockdown period in T&T, identifying 25–34-year-old fans as constituting a major audience segment, followed by the 35–45-year-old category. Tertiary education is a defining feature of the audience, who are tech savvy lovers of local music. They thrive in online environments, gaining information from social media, and are familiar with making online purchases using credit cards and alternative payment methods. Expanding on payment technology, the data suggest that there is no statistically significant relationship between the method of payment used for online concerts and spending, making the case for multiple payment options for monetisation of online concerts. Conversely, there is a statistically significant relationship between incorporating augmented reality/virtual reality features as well as on-demand business models, with the majority of fans expressing a willingness to spend on the format.

Keywords: *Online Concerts Models • Trinidad and Tobago Music Industry • Post COVID-19 • Livestreaming • Sustaining Innovation*

1. Introduction

1.1. A Glocal Look at COVID-19

The social and economic impacts of the COVID-19 virus on the global economy are well-documented (Dimson and Sharma, 2021; McKinsey and Company, 2021). The pandemic, which resulted in significant disruptions to global economic affairs, also fuelled increased inequality across countries. Early evidence illustrates the unpredictability of recovery, with developing countries needing more time to recover from associated job and income losses (The World Bank, 2022). In developed nations, governments engaged in decisive fiscal, monetary and financial policy responses such as tax breaks for firms and businesses, central bank liquidity and debt moratoria, respectively. These were generally successful in mitigating severe human costs in the short run and created the conditions for faster economic recovery. By the second quarter of 2021, U.S. real GDP exceeded its pre-pandemic level, whereas output growth gained ground in the euro area and Canada in the third quarter of 2021 (Executive Office of the President, 2022).

In the Caribbean region, the situation has been equally concerning (Cox et al., 2022). With the exception of Guyana, major markets such as Jamaica, Barbados, the Bahamas, Suriname and Trinidad and Tobago (T&T) experienced recessions, increases in unemployment and adverse impacts on corporate and household incomes.

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The social impacts of the crisis continued and despite governments' best efforts to buffer the shock to families, enterprises and domestic markets, there is the need for continued and more broad-based stimulus to ensure that economic capital is preserved (Beuermann et al., 2020). In 2022, however, the availability of vaccines led to optimism. Border closures were relaxed, leading to a favourable rebound of global tourism and restrictions on movement were eased as physical work resumed (Chow, 2022).

1.2. Live Music Realities in International Spaces

The positive repositioning of the global business landscape reflected in some elements of the international live music space. Hann (2022) highlighted the fact that artists such as *the Weeknd* and *Harry Styles*, who originally planned to host concerts at arenas, altered their tours to cater for larger crowds at stadiums. Additionally, major acts such as *Dua Lipa* and *Billie Eilish* commenced their delayed tour schedules. These activities provided evidence that operations in the live music sector were engaging with normalcy, but still being impacted by the pandemic (Billboard Staff, 2022). From the independent venue perspective, however, there remained some areas of concern. Although governments in developed countries advanced financial support (Tschmuck, 2021), smaller establishments continued in pursuit of resilience and navigating recovery. This, as they continued to experience higher than normal no-show rates, struggled with rescheduled shows, COVID-related cancellations, rising costs and declines in consumer confidence due to a myriad of social issues such as gun violence (Mims, 2022; Barretta, Tompkins and Apruzzese, 2023).

1.3. Disruptive Potential

Taking an in-depth look at the T&T developments, Joseph (2021) found that live music stakeholders most impacted by the pandemic quickly altered their value propositions by developing new concepts to keep their fans engaged. One such venture was the adoption of livestreamed concerts that provided exposure for artists and entertainment for fans during the stay-at-home period (Lyndersay, 2021).

Joseph (2021) summarised three requirements for live music firms in T&T to leverage online concert models in the post-COVID-19 era. These are the use of web platforms supported by livestream technology to engage fans virtually, the need for improved and custom platforms and unique methods to monetise local live music content through digital means.

The culmination of these suggestions is presented in Figure 1, which portrays a potential model for digital live music showcase and monetisation. The model is a representation of the flow of commercial activities around future live music experiences. At the core is the need for the development of a diverse selection of digital live music experiences, supplied by local content creators and licensed from the relevant collective management organisation (CMO). The emphasis at this stage is on attracting niche audiences to non-traditional areas such as live music content, incorporated into on-demand video platforms, or those integrating augmented reality (AR) and virtual reality (VR) technologies.

The foundation for the digital live music experiences suggested by the model is the supporting digital platforms that are used to host and deliver this content to the fans. The model suggests the scope for branded platforms in the form of progressive web apps (PWAs), which can deliver live online concerts to a wide audience using platform-agnostic means (Thakkar, 2021). Additionally, adoption of the model ideates a move beyond free shows, to the use of multiple and flexible pricing structures that embrace a combination of freemium, pre-roll, mid-roll and display advertising and subscription structures for monetising music via appropriate payment gateways and processing technologies.

Although large concerts returned as a trending attraction on the T&T landscape in 2022, with major physical live concerts featuring in the middle of the year, Telesford (2022), Bruner (2021) and Clarey (2022) posit that concert livestreams will continue to thrive. This is more so as technology companies continue to invest heavily in the format, within an environment of pervasive consolidation (Kraus, 2021; Mulligan, 2021; Ehlinger and Markey, 2022; Kjus, Spilker and Kiberg, 2022). It is in this context that the need exists to develop a more practical and detailed understanding of how digital concert experiences can be packaged for live music fans in the T&T post-pandemic era. This development perspective is important in sustaining the innovations that became prevalent at the onset of the pandemic. It is essential to design future livestreaming business models and develop marketing techniques that innovatively target unique needs and segments of the T&T audience, while contributing to the socio-cultural and economic sustainability of live music stakeholders.

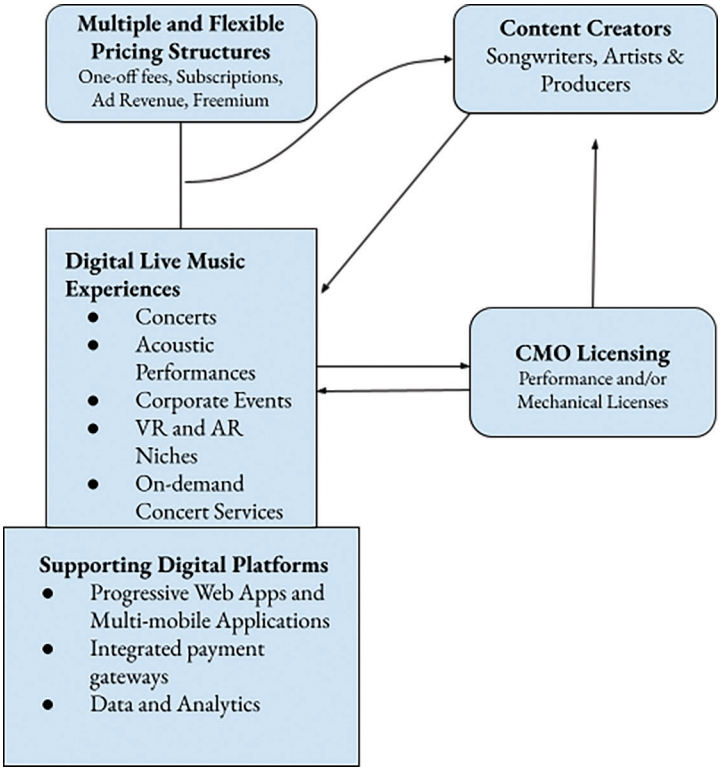


Figure 1. Potential model for digital live music showcase and monetisation.

2. Literature Review

This review pursues a deductive examination of key ideas on the concert livestreaming phenomenon, as it relates to the international space and applies to the T&T live music sector. Its goal is to illuminate the emerging theories and strategies prior to assessing them within the context of a preliminary quantitative study (Burney and Saleem, 2008). It begins with an exploration of concert livestream typologies, before focussing on monetisation techniques. A study of the various legal and structural issues surrounding the format is then offered, which is followed by a discussion of evolving marketing methodologies. Finally, the emerging gaps in the canon of literature are unearthed to set the stage for ideating the research questions and conducting an initial examination of select theories.

2.1. The Platformisation of Live Music

Towse (2020) situates streamed music within the realm of platform economics – a segment of industrial economics concerned with assessing the activities of firms involved in online distribution of products and services. It entails any type of digital platform that uses the internet to connect dispersed networks of individuals to facilitate digital interactions, by establishing relationships between three entities: the platform, the firm (content/supply) and the customer (fan) (Chan et al., 2019). The strength of the platform economy lies in its ability to eliminate trade barriers via enhanced information sharing between diverse players and leveraging data. This in turn creates openness of economic systems and enhanced participation of users. Christensen et al. (2018) illustrate that when leading firms fail to remain dominant in their respective industries, as a result of overlooking important environmental changes such as the impact of COVID-19 on the live music sector, they have fallen victim to disruption. Platformisation has featured prominently in disruptive environments, in some instances serving both as the genesis and response to disruption (Sampere, 2016). To leverage its benefits in disruptive environments, however, there must be a clear delineation and comprehension of the organisation and business models that underpin concert livestream platforms.

2.2. Concert Livestream Typologies

The international trend growing out of the turbulence in the live music sector enabled an explosion of new digital platforms for showcasing and monetising live musical performances (Griggs, 2021; Hu, 2021). In describing the typology of current live streaming offerings, Midem and TheLynk (2021) distinguish between livestreaming, virtual live experiences and audio-visual formats. Livestreaming describes the real time delivery of media presentations across the internet. In the case of concerts, these are experienced by the user as they are delivered (Krings, 2021). The simultaneous nature of a livestream is the dominant feature distinguishing it from live concert footage, which is packaged for on-demand consumption on websites such as YouTube, Netflix or Qello. An example of this format is the *Dead & Company 2022 Summer Tour* in the U.S., comprising *John Mayer*, the *Grateful Dead's Bob Weir*, *Mickey Hart* and *Bill Kreutzmann*, as well as *Oteil Burbridge* and *Jeff Chimenti*. Through *nugs.net* all the shows were professionally livestreamed (Hartzog, 2022). In T&T, the majority of online concerts held during the stay-at-home period were arranged and delivered using this format.

Virtual live experiences, on the other hand, refer to live music experiences that are based on computer-altered reality (XR). These technologies include AR, mixed reality (MR) and VR, which are used to facilitate experiences in the metaverse (Hackl, 2021). Popular instances of this hybrid form of live entertainment were recently seen in video games such as *Fortnite, Minecraft* and *Roblox*. These platforms recently hosted in-game concerts or live experiences such as the *Polar Beat*, Iceland's New Year's Eve mega party (OZ, 2020). A similar venture in T&T was Caesar's Army's virtual world, *Antillea*, which the company tested in early 2021 as a means of assessing the feasibility of hosting further virtual entertainment events (Dowrich-Phillips, 2021).

Finally, livestreaming and virtual live experiences are ultimately audio-visual formats defined by synergy between core elements such as: production, stage design, broadcast quality, interactivity and personalisation. The essence of these new forms of live experience emerges where there is convergence of the three main paradigms: TV, social media and the metaverse (Midem and TheLynk, 2021).

2.3. Livestream Monetisation Techniques

Joseph (2021) identified the monetisation of online live concerts as a critical challenge for stakeholders in the T&T space. Whereas some performers were able to secure performance fees from event promoters during the stay-at-home period, extracting monetary revenue from fans in the online realm proved difficult. The study recommended that monetisation functionality be embedded in any platform selected to showcase local content using creative pricing structures and payment technologies.

One of the most popular methods of livestream monetisation includes advertising-supported shows. These generally take the form of on-screen video graphics that are inserted on the lower third of the concert video as well as pre-, mid- and post-roll infomercials. Another popular method is sponsorships, which involve partnerships between online concert promoters and brands to execute shows. A case in point in T&T was the online concert series held by mobile telecoms company *Digicel* during the onset of COVID-19 (Dowrich-Phillips, 2020). Generally, these brands receive prominent positioning on the livestream productions in exchange for financing some aspects of the show. This revenue is then used to offset production costs, as well as license performance rights from the relevant CMOs.

Apart from these, the tipping model configuration is also popular. Through this technique, fans are provided with open access to the livestream content, but they have the liberty to offer financial support for viewing the content. In T&T, this was the dominant model adopted by *WACK Radio's livestream series*, which used SMS text messaging (SMS) as well as the *FundMe TnT* crowdfunding platform to target and receive contributions prior to hosting shows. These media were also used during the livestreams to receive tips from local music fans who emigrated and constitute the Caribbean diaspora in international jurisdictions (Lyndersay, 2021).

Ticketed livestreams are also popular in international territories, but not so much in T&T. These usually take the form of single-access tickets, which fans purchase prior to being granted viewership access to the online concert (Midem and TheLynk, 2021). In the case of the *Dead and Company Tour*, all livestreams were available in both HD and 4K quality, with professional videography and live editing. The shows were available for access on multiple devices and anyone who purchased one of the shows were also afforded 48 h of access to the on-demand recording for 48 h after the concert. Pricing for virtual tickets ranged from US$29.99 for HD quality to US$44.99 for 4K with subscribers to the host platform benefitting from a 15% discount (Hartzog, 2022).

2.4. Legal Considerations in Livestreaming

Hu (2020) underscores that the financial longevity of livestreaming in the music business is futile without unravelling the role of copyrights and contracts. Depending on the format and structure of the livestream, diverse licenses may be applicable. For instance, a typical concert livestream in T&T would be preceded by recorded music to attract fans and create the mood for the show. Legally this would require master use, performance and sometimes synchronisation licenses, depending on the type of media involved. If the content is archived for future on-demand consumption, mechanical and sometimes synchronisation licenses for audio-visual streams then become applicable. Additionally, since T&T is a signatory to the WIPO Performances and Phonograms Treaty (WPPT), live streamers must also be compliant within the neighbouring rights construct. A final consideration is whether the talent who are subject to the livestream have contractual obligations to any financier. In the music business this refers to whether the artist is signed to a record label. Since the majority of acts in T&T are self-financed, or governed by less formal arrangements (Sound Diplomacy, 2017), contractual obligations that stipulate the prior permission of financiers are less common.

2.5. The Livestream Market Landscape

Beyond delineating the legal and business models surrounding livestreaming, the trends affecting marketing and monetisation have also been topical. In April 2020, 19% of the U.S.' general population had viewed a livestreamed concert, while 35% indicated that there was a chance of them doing so. Although livestreamed concerts were new to many music fans, 28% of people said they would pay to watch them online (MRC, 2021b). Similarly, in Germany, an online panel survey conducted by Denk et al. (2022) in winter 2020/21, found that 34% of respondents had watched a live music stream with an average willingness to pay €7.10. As physical live music experiences re-opened in 2021, however, preliminary data showed declines in online viewership (MRC, 2021a). Hu (2021) attributed this stagnation to music livestream offerings not having innovated as a format; and in the absence of such innovation, according to this study, it is hardly surprising that livestreaming has largely not succeeded in inducing fans to offer continual support in the form of paid patronage. The rise of in-game concerts such as *Arianna Grande's Rift Tour* in *Fortnite* in August 2021 helped stimulate interest in the possibilities linked to investing in new, experimental channels for fan-engagement (Webster, 2021). However, it remains to be seen whether reliance on immersion and interactivity translates into fan-engagement and monetisation (Hu, 2021).

While the opportunities and means for carrying out monetisation of fans' interest in music livestreams present themselves with increasing frequency in the post-COVID era, and while there has been a perceptible rise in the enthusiasm for making use of these, there have also been calls for cautious optimism in gauging the size of the total addressable market (TAM), lamenting a widening gap between fan perceptions of virtual concerts and the quantum of venture capital financing being invested in music livestreaming platforms, and making the point that concert livestream start-ups are fighting for a shrinking share of the market, although simultaneously arguing that the market can be larger if music livestreams are viewed in context as one part of a wider entertainment and fan-engagement ecosystem, encompassing both online and offline channels.

Walraven-Freeling (2021) therefore makes a case for thinking of livestreams not as concerts without physical audiences, but as a new medium with unique affective capabilities – one that requires unique marketing approaches. This perspective situates concert livestreaming as a sustaining innovation: a strategic response to disruption that improves the features of current profitable offerings valued by mainstream customers (Bower and Christensen, 1995). The ease of producing music livestreams has made them ubiquitous, many times with compromises in quality. Hence, they can also be viewed as disruptive innovations that are inferior to physical concert experiences and high production value livestreams at the onset, but appeal to niche market segments (Markman and Waldron, 2014).

2.6. Shifting Marketing Techniques in the Post-COVID-19 Environment

The capacity to adequately respond to changes in consumer demand due to the pandemic, is related to the ability of firms to analyse consumer preferences and employ new marketing methodologies (Conversity, 2020). Balis (2021) examines ways in which the pandemic has challenged conventional marketing, suggesting an updated range of guidelines moving forward. One school of thought is that while traditionally marketing was focussed on knowledge of customers, in the post-pandemic era it requires knowledge of customer segments. In the online concert realm, for instance, it is imperative that firms communicate based on knowledge of local fan segments, targeting specific

fans based on their circumstances and what is most relevant to them. Customer segmentation and personas allow livestream firms to gain deeper insights into media strategies and use creative marketing techniques to inform the overall fan journey and lower acquisition costs (Matsen, 2022).

In addition to segmentation, Balis (2021) makes the point that customers expect firms to deliver the precise product or service they want, delivered through experiences that are relevant and frictionless. Managing such experiences requires emphasis on data and technology, since data improve the relevance of experiences across one or more dimensions of the four Cs – content (such as online live music experiences), commerce (e-commerce gateways and platforms), community (fans on social media) and convenience (coupons, bundles and multi-priced tiers). Hartman (2021) for instance advocates for the bundling of livestreams with other products or experiences that can make the medium easier to understand on the frontend for viewers and facilitate an analysis on the backend for artists and their teams, enabling them to obtain a more holistic picture of fandom. In addition to this, Hartman (2021) recommends bundling multiple livestreams under a more affordable subscription model, whereby fans can subscribe directly to the artist over a longer period of time so as to position the format as a long-term community engagement tool as opposed to a one-off event. Supporting this position, Walraven (2020) calls for the waterfall strategy for paid livestreams. This entails the original concert video being re-packaged for an on-demand release on a different platform with wider reach or an exclusive distribution deal with a subscription video-on-demand service such as Netflix or even with a free ad-supported service. At each stage of this process, livestream companies can provide a destination for existing fans to undergo a reiteration or even rejuvenation of their experience with the artist, and also a means for new fans to discover the artist, together with retaining the existing fan relationships.

To successfully pursue these strategies, companies will need more data and intelligence driven tactics combined with technology to enhance decision-making and improve the relevance of customer interactions. Kotler, Kartajaya and Setiawan (2021) share a similar view, explaining that every customer is unique, and that with technological support, marketing will eventually be one-to-one – powered by customisation and personalisation at an individual level.

The economic and social impacts of COVID-19 on the islands of the Caribbean have been well-documented by Dimson and Sharma (2021) as well as Beuermann et al. (2020). More importantly, Baptiste (2020) helps us to understand the impact of the pandemic on regional musicians, whereas Lyndersay (2021) highlights how T&T music entrepreneurs have responded. Balis (2021) also makes some valuable projections about aspects of marketing methodologies that need to be re-conceptualised to align with the post-pandemic context. Along similar lines, Joseph (2021), in engaging in an exploratory study, advanced a detailed qualitative portrayal of the impact of the pandemic on the value network of the islands' live music sector, and proposed a potential model, whose suggested improvements in the delivery channels used for livestreamed music are expected to result in betterment of the prospects of the online music industry.

While these writers contributed significantly to the conversation on the various impacts of the pandemic on business in general and the preliminary responses of markets, it is important to conduct research that is more practical and applicable to the T&T live music sector. For instance, there is scope for an initial quantitative study with a wider group of live music fans to examine select aspects of the sustainability and adoption possibilities of the Joseph (2021) model. This approach is crucial to enable the development of strategies for moving the online concert sector forward in the post-pandemic period. Specifically, it can be used by music companies and policymakers alike, to develop customer profiles that can inform content and programming strategies, application features, design and development, as well as serve as a blueprint for evaluating monetisation technologies and tactics.

2.7. The Research Questions

This study seeks to determine answers to the following questions:

RQ1: What are the customer profiles for online concerts emerging out of the COVID-19 pandemic in T&T? (Descriptive)

RQ2: Are there differences in spending on online concerts in relation to payment methods? (Associational)

RQ3: How does incorporating AR/VR and on-demand business models influence monetisation of online concerts in T&T? (Associational)

3. Methods

3.1. The Research Approach

This study adopted a quantitative approach, executed through a cross-sectional survey design. Grincheva (2018) points out that the quantitative approach is extremely useful for building the socio-demographic profile of an audience and can provide answers to questions that identify virtual visitors, where they originate and the segments of the population they represent. Similarly, the cross-sectional survey design facilitated a timely and economical quantitative description of trends, attitudes and opinions of live music fans. This enabled an initial examination of associations among variables of the wider population of live music fans, by studying a sample of the population (Creswell and David Creswell, 2017).

3.2. Sampling, Recruitment, Procedures and Ethics

The sample comprised live music fans from T&T, who participated in online concert experiences since the COVID-19 lockdown period, in March 2020, to the time of data collection in May 2021. As a result of the novelty of this topic, there was no readily available sampling frame (Galloway, 2005). For this reason, a non-probability sampling approach was utilised and data collection was facilitated by an unrestricted self-selected online survey instrument (Fricker, 2008). The online medium facilitated access to individuals who were difficult to identify and reach and were so dispersed throughout the country that probability-based sampling was unlikely to reach them in sufficient numbers, especially during the resurgence of COVID-19 when stay-at-home restrictions were reinstated (Lehdonvirta et al., 2021).

The instrument was distributed to fans in local music groups via four social media platforms: WhatsApp, LinkedIn, Instagram and Facebook. Social media is the space in which online concert livestreams are promoted and hosted, and thus it was an ideal environment through which to target fans (Davie, 2020). The data collection process was accompanied by a quota sampling strategy lasting for 1 month, until 253 cases were obtained corresponding to this time-period, ending on 29 May 2021. On Facebook and Instagram, the survey was promoted using sponsored advertisements to improve visibility and reach. Zhang et al. (2020) pointed out that recruiting respondents by using Facebook is effective for survey researchers desirous of making approximations of population-level public opinion. Using Facebook also enabled fan demographics to be specified, thereby enabling the targeting of fans with interest in local, in-person and online concerts.

The conditions programmed into the Facebook and Instagram advertising campaign technology were: persons aged 18–65 years of all genders living in T&T. The specified keywords reflected popular online live music events at that time and included: concerts, live events, worship, gospel music, soca music, reggae, live (band), chutney, carnival, calypso music, online music store and concert (live). Finally, detailed targeting expansion was set to *on*. This allows the algorithms to target fans beyond those selected, when such a function is likely to improve ad performance (Fairbrother, 2019). Once fans who are users of both social platforms met the specified criteria and saw an ad promoting the survey, it was up to them to opt to participate. Participants were further assured that their information would not be sold or used to contact them in any way after participation.

3.3. The Instrument

The final survey instrument was prepared in the form of an electronic questionnaire and distributed using Google Forms. It comprised twenty-nine questions, which were arranged into six sections. The first section explored demographic data, whereas the second through fourth sections sought to develop a picture of the type of offline concerts subjects attended pre-pandemic as well as the nature of virtual concerts they participated in during the lockdowns. In the fifth and sixth sections it then looked at the type of payment technology utilised as well as the ability and willingness of subjects to financially support concert livestreams. Since reliability and validity are independent of the number of scale points used for Likert-type items (Jacoby and Matell, 1971), each item on the questionnaire was measured using a 3-point scale. This supported the online distribution format as it was simple for respondents to complete and easier to score (Preston and Colman, 2000; Dolnicar and Grün, 2007).

3.4. Pilot Testing

The initial survey instrument was pre-tested by distributing it to a group of twenty-five participants as a measure to ensure that the questions were unambiguous and reduce measurement error (Krosnick and Presser, 2010). Hertzog (2008) recommends a sample of at least ten for pilot tests concerned with assessing clarity of instructions or item wording, acceptability of formatting or ease of administration. The selected participants were also members of a WhatsApp group focussed on online concerts happening in the local space during the COVID lockdowns. Responses from the pre-test resulted in a rewording of select questions to develop a more complete picture of how fans were adapting to the online concert trends. Coupled with the early trend in responses to the 'other' option on the survey, additional options were added to some of the closed ended questions. This helped with narrowing the response options.

3.5. Subjects and Statistical Analysis

Two hundred and fifty-three responses were received within the specified time period. This sample size aligns with the suggestion of a sample-to-item ratio of five subjects to one survey item as posited by Heckler and Hatcher (1996) and Gorsuch (2014) and the sample-to-variable ratio as advanced by Hair et al. (2016). The responses were exported from Google Form into the Stata (version 17) software and the categorical variables appropriately re-coded. Prior to analysis, the data were examined for suspicious response patterns, outliers and missing elements (Mooi, Sarstedt and Mooi-Reci, 2017). The main type of suspicious response pattern was inconsistent answers. The survey comprised initial screening questions to ensure that only subjects meeting the prescribed criteria completed the survey. For instance, one of the prerequisites for participation was that subjects ought to have viewed livestream concerts during the period under study; and if a respondent mentioned that they did not participate in one, that case would be removed from the dataset. Outliers were retained and the use of the compulsory question functionality of Google Form served to ensure that only complete cases were collected to minimise item non-response errors (O'Dwyer and Bernauer, 2022).

Table 1 summarises the types of research questions asked and the associated tests applied as well as the questions on the questionnaire that relate to the variables.

Descriptive statistics are used for RQ1 to identify the profile of fans supporting online concerts. This is accompanied by a cross-tabulation that, concomitant with the process of outlining their demographic characteristics, compares the age ranges of the overall sample of fans to their status concerning the question of whether they financially supported livestreams. In RQ2, there was a categorical independent variable and a numerical dependent variable. For this reason, the analysis of variance (ANOVA) technique was used to assess the differences in means after ensuring the data met the prerequisite using Bartlett's test. Finally, a binomial logistic regression model was used to explore how incorporating AR/VR and on-demand business models (independent variables) influence the fans' decision to financially support an online concert (dichotomous dependent variable).

Research question	Tests
RQ1: What are the customer profiles for online concerts emerging out of the COVID-19 pandemic in T&T?	• Descriptive stats • Cross-tabulations
RQ2: Are there differences in spending on online concerts in relation to payment methods?	• Bartlett's test • One-way ANOVA
RQ3: How does incorporating AR, video game features and on-demand business models influence monetisation of online concerts in T&T?	• Binomial logistic regression analysis • LinkTest • Hosmer–Lemeshow test • Spearman's ρ • VIF

AR, augmented reality; ANOVA, analysis of variance; T&T, Trinidad and Tobago; VIF, variance inflation factor.

Table 1. Classification of research questions and analysis techniques

4. Results

This section considers each research question in turn and presents the associated results.

4.1. The Customer Profiles for Online Concerts Emerging Out of the COVID-19 Pandemic in T&T

4.1.1. Demographics

Examining demographics, Table 2 illustrates the 25–34-year-old subjects as the modal age group of livestream viewers. Most online concert fans in this category financially supported livestreams during the period under study. This segment was followed by the 35–44-year-olds and 18–24-year-olds, in that order, within each of which those providing financial support were dominant.

Additionally, 54% ($n = 111$) of the sample responded that they were educated at the tertiary level, having earned either an associate, bachelor, master or doctoral degree as their highest level of education, whereas 12% ($n = 25$) possessed technical and vocational education and training (TVET). Figure 2 shows that viewers were mainly employed in the creative industries (music, film and fashion), followed by education and training, and the third significant segment reported being unemployed.

4.1.2. Technographics

In terms of technographics, Figure 3 shows that the majority of livestream viewers were also subscribers of popular international streaming media content platforms or had access to them via a household member. Additionally, Figure 4 highlights the diversity of devices that viewers used to experience livestream content.

Continuing along the technology line, Table 3 compares the quantum of subjects making financial contributions to online concerts, to the type of payment method employed. The data revealed that 73% ($n = 148$) of the sample financially supported online concerts, with an average maximum expenditure of $200 (T&T dollars; ≈US$30). The majority used bank transfers, credit cards and SMS donations. In terms of credit cards, while 32% ($n = 41$) of those financially supporting a livestream used a credit card to do so, the majority of the sample 89% ($n = 131$) stated that they have access to a personal credit card, whereas 7% had access to the credit card of someone known to them.

4.1.3. Psychographics

As it pertains to the psychographic features of online concert patrons, 84% ($n = 173$) of subjects indicated that they enjoyed attending live in-person music events in the pre-pandemic period. The majority ($n = 139$) reported attending £10 shows/year, with the main types of live in-person music events being: soca fetes, corporate events, gospel concerts, pop/rock concerts, chutney events, jazz events and recitals and showcases.

4.1.4. Behavioural and engagement

From a behavioural and engagement standpoint, 56% ($n = 114$) of participants usually viewed online concerts as a solo activity, whereas the remainder enjoyed the company of friends and family while viewing. Of those viewing by themselves, 55% reported always sharing the stream with their social media followers. In terms of awareness, the main method of learning about an upcoming online concert livestream was from friends on social media, followed by promoter ads on social media and lastly radio advertisements.

4.2. Comparison of Spending on Online Concerts in Relation to Payment Methods

After performing Bartlett's test (Arsham and Lovric, 2011), it was determined that there was insufficient evidence to suggest that the four payment methods have different variances ($B = 5.47$, $p = 0.140$). This satisfied the prerequisite

Age (years)	18–24	25–34	35–44	45–55	55–64	65	Total
Supported financially	17 (8%)	76 (38%)	39 (19%)	9 (4%)	6 (3%)	1 (1%)	148 (73%)
Did not support financially	7 (3%)	21 (10%)	22 (11%)	4 (2%)	2 (1%)	0 (0%)	56 (27%)
Total	24 (11%)	97 (48%)	61 (30%)	13 (6%)	8 (4%)	1 (1%)	204 (100%)

Table 2. Cross-tabulation: fans who financially supported livestreams, classified by age

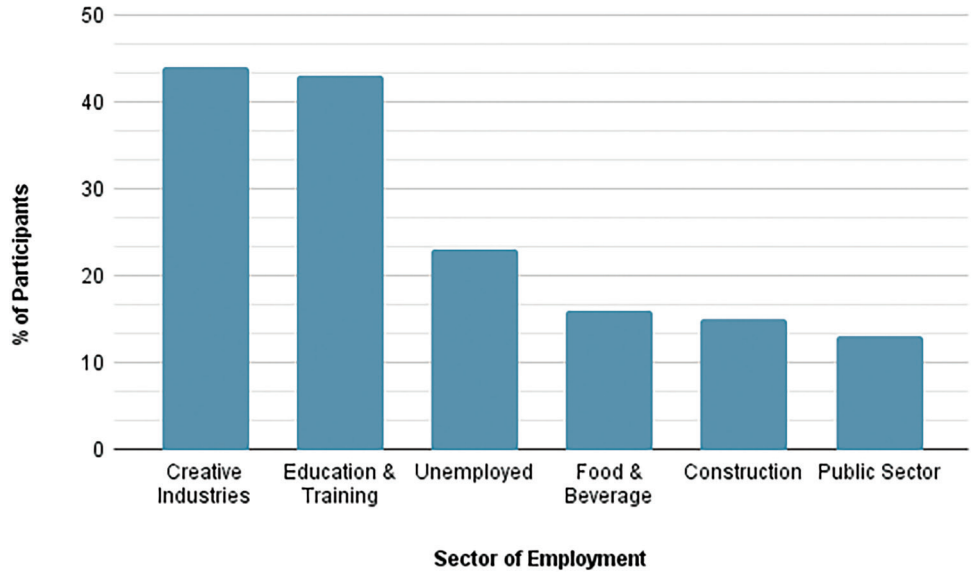


Figure 2. Bar chart: employment sector.

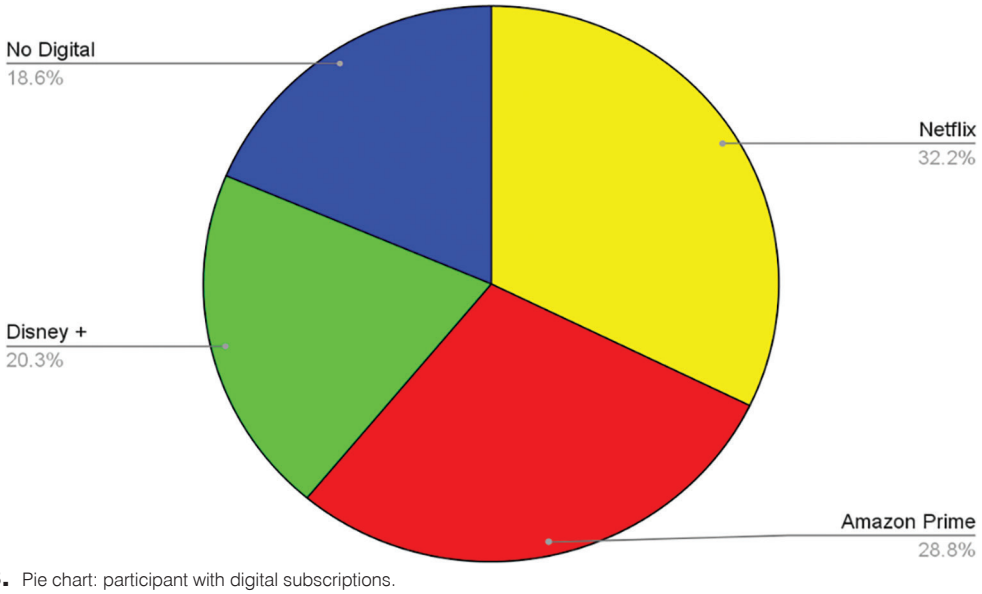


Figure 3. Pie chart: participant with digital subscriptions.

for a one-way ANOVA to be conducted, to determine if there is a difference in mean maximum expenditure among the payment methods used. The following hypotheses applied:

H_0: There is no difference in mean maximum money spent among the categories of payment methods.
H_1: The mean maximum spent among the categories of payment methods are not all equal.

At the significance level ($p < 0.05$), the associated values are $F(3, 144) = 0.81$, $p = 0.489$. We therefore fail to reject the null hypothesis and conclude that there was no statistically significant difference in mean maximum expenditure for the four payment methods. Spending is therefore independent of the type of payment method used.

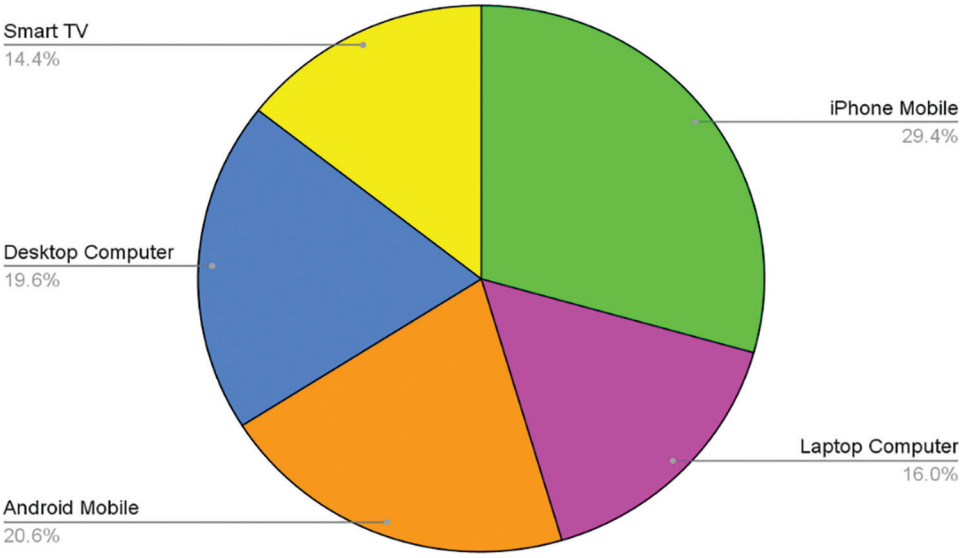


Figure 4. Pie chart: devices used to view livestreams.

Payment method	Made financial contributions
Bank transfer	63 (43%)
Cash	16 (11%)
Credit card	47 (32%)
SMS	22 (15%)
Total	148 (100%)

Table 3. Cross-tabulation: payment method by fans making financial contributions.

4.3. The Influence of Incorporating AR/VR and On-demand Business Models on Monetisation of Online Concerts in T&T

A binomial logistic regression was performed to determine whether the incorporation of immersive features such as AR and VR, as well as on-demand business models, influences the probability of a fan paying for an online concert. The full sample of 204 online concert fans was used in the analysis. Results showed that there was a statistically significant positive relationship between an online concert incorporating AR/VR features and the probability of a fan financially supporting it ($z = 4.20$, $p = 0$). The odds ratio for this independent variable was 5.831, suggesting that those who will view online concerts with AR/VR elements are almost six times more likely to financially support it than those opposed to viewing. Likewise, there was a statistically significant positive relationship between an online concert being packaged in on-demand subscription formats and the probability of a fan financially supporting it ($z = 2.42$, $p = 0.016$). The odds ratio in this case was 3.103, suggesting that fans who are in support of an on-demand online concert platform are thrice more likely to financially support it than those not in support.

The logistic regression model satisfies the underlying assumptions (Peng et al., 2002). For instance, the dependent variable is dichotomous in nature and there are two independent variables, which are measured at the nominal level. In terms of the third assumption, there are 204 independent cases, and independence of observations and the categories of the dichotomous dependent variable and all nominal independent variables are mutually exclusive and exhaustive. Additionally, there are more than fifteen cases per independent variable, satisfying assumption 4. Assumption 5 specifies that there needs to be a linear relationship between the independent variables and the logit transformation of the dependent variable. To study this, the linktest for model specification was used. *_hat* was significant ($z = 2.16$, $p = 0.031$), whereas *_hatsq* was insignificant ($z = 1.28$, $p = 0.201$). The test indicated that no misspecification error exists. There is no need to include or omit variables and the predicted *Yhat* is close to the real Y dependent variable values; hence the model specification is correct. In a similar manner, the *Hosmer–Lemeshow* test was not significant (H-L $\chi^2 = 0.28$, $p = 0.5971$), further suggesting that the model was properly specified.

In testing for multi-collinearity, the *Spearman's* ρ and *variance inflation factor (VIF)* tests were carried out. The *Spearman's* ρ revealed that there is no statistically significant correlation between the two independent variables at $\alpha = 0.05$. The independent variables are therefore independent of each other (*Spearman's* $\rho = 0.0573$, $p = 0.4153$). The mean VIF of the independent variables was 4.19, satisfying the threshold level (<5) and making multi-collinearity less likely in the model. Finally, to assess outliers, the in-sample observations with the lowest predicted probabilities of observing the outcome value that was actually observed were listed. There were no extreme values that were problematic.

5. Discussion

The results depict customer profiles for a group of online concert fans participating in livestreamed shows, during the COVID-19 stay-at-home period in T&T. In addition to outlining the demographic, technographic, psychographic and behavioural features, it followed up on core aspects of the potential model for digital live music showcase and monetisation (Figure 1) as proposed by Joseph (2021). Specifically, the relationship between payment methods and maximum spending for this group was studied, as well as the influence of the incorporation of immersive features such as AR/VR and on-demand business models on the willingness of fans to spend on online concerts employing these technologies and models. The study identified 25–34-year-old fans, led by females as the major audience segment, followed by the 35–45-year-old category led by males. Tertiary education was a defining feature of the audience, who are tech savvy lovers of local music. They thrive in online environments, gaining information from social media, and are familiar with making online purchases using credit cards and alternative payment methods. Expanding on payment technology, the data suggest that there is no statistically significant relationship between the method of payment used for online concerts and spending. Conversely, there is a positive relationship between incorporating immersive features as well as bundling livestreams into on-demand services and the willingness of fans to spend on the online concert format.

The customer profile data provide insights into the genre and format of musical experiences that can be used in the conceptualisation and monetisation of online concerts that align with fan demand. For instance, one emerging segment suggests an affinity on the part of fans in the 35–45-year-old category for concerts featuring soca music performances. The data further show that this segment is inclined to financially support online shows. This may be attributable to their enhanced spending power, due to being employed, as well as their familiarity with online platforms and multiple payment methods and technologies. This tenet positions them as potential subscribers and makes them attractive to start-up tech entrepreneurs and concert promoters who are in pursuit of mechanisms to bundle livestreams with traditional concert offerings. Looking further, the data also draw attention to fans in the 18–24-year-old segment who have similar tastes in event genres. However, due to the limited spending power of this group, the monetisation efforts of online concert promoters should embody a broader strategy that emphasises freemium models – supported by advertising revenue, as well as sponsorships and brand partnerships. These insights are valuable to concert promoters in the process of developing their funding and monetisation strategies. Both fan segments illustrate the application of the perspectives of Balis (2021) and Kotler, Kartajaya and Setiawan (2021), which elucidate the fact that marketing in the post-pandemic era needs to target specific fans based on knowledge of local segments and the circumstances that are most relevant to them.

Similarly, the technographic analysis revealed how familiar local online concert fans are with international streaming media platforms. In the process, attention is drawn to the diversity of devices and platforms that they use to view livestreams and supporting the case for the use of PWAs for delivery of livestream content as theorised by the Joseph (2021) model. This technology allows livestreams to be accessed via web browsers with app-like features to reach the widest possible audience and is more cost-effective than platform specific mobile apps. This is financially advantageous for music technology entrepreneurs in T&T who are desirous of building custom online platforms and establishing start-up companies around local live music. Additionally, it creates the environment for the platformisation of streamed music as asserted by Towse (2020) since it connects music and the fan through the platform (Chan et al., 2019). This serves to improve the reach and awareness of local live music by diminishing barriers to international distribution and can be integral to connecting the diaspora to local live music in an increasingly digital-centric live music sector.

Another point illuminated by the data is that fans financially support online concerts irrespective of the payment options that are available to them. The case in developed nations, which is also advocated for in the Joseph (2021) model, is that payment gateways be integrated into online concert platforms. However, the situation in T&T is that credit card processing for local tech platforms is in embryonic stages. Hinged on this is the fact that at a national level, only 19% of adults have credit cards (Salandy, 2021; Statista, 2022). The data showed that although 89% of participants had credit cards, only 32% of participants used them when financially supporting online concerts. Instead, they opted for online bank transfers and in-person bank deposits, cash delivered directly to the artist or promoter and SMS methods. Hence, creating a seamless monetisation experience for fans is dependent on the extent to which multiple payment methods can be integrated into the ecosystem, to meet the unique payment practices of local fans. Looking further, it must also be considered whether the adoption of credit card monetisation as the dominant payment method by established international livestreaming platforms has resulted in them forgoing revenue from fans in lower income brackets, or those who, hailing from developing economies, might be unbanked.

Conversely, the analysis shows that the integration of AR/VR immersive features as well as the creation of 'Netflix-like' on-demand business models for online concerts are innovations welcomed by the majority of online concert fans. Important to note is the fact that those in support of these features are more likely to financially support online concerts embodying them. In this regard, this attribute presents an interesting parallel with the results of studies conducted on the U.S. market by MRC (2021b) in April 2020, as well as in Germany by Denk et al. (2022) during the winter period of 2020/21, which revealed participation in livestreams, albeit with a limited willingness to financially contribute to them. Considering this, online concert promoters in both T&T and more developed nations can conduct beta tests on a phased basis to see how well fans adapt before engaging in a wider roll-out of these immersive features. This is key in attempting to create variety and overcoming stagnation in moving the format forward. Specifically, it can facilitate the type of fan-engagement called for by Hu (2021) and proposed in the Joseph (2021) model. In terms of the creation of on-demand business models based on livestream content, livestream producers can look at online concerts not merely as a distinct format but one that can be bundled with actual in-person concerts and other digital services. This lends credence to the positions of Walraven-Freeling (2021) and Hartman (2021) that music livestreams should be viewed as a component of a wider entertainment and fan-engagement ecosystem, comprising both online and offline channels. To bring these innovations to market, however, there must be enhanced clarity and seamlessness with respect to the contractual and legislative issues surrounding the format, as encouraged by Hu (2020). All stakeholders must adopt a commercially oriented approach to licensing copyrights and neighbouring rights, to improve transparency and the quantum of royalty collections required to sustainably fuel the ecosystem.

5.1. Limitations

One of the challenges of working during the COVID-19 stay-at-home period was finding creative ways to conduct research on fan behaviour. In T&T there was no available sampling frame of online concert livestream fans, or accessible panel for analysis. For this reason, a non-probability sampling approach aided by a self-selected survey was used. The use of social-media–promoted ads that allowed the specification of demographics was adopted in an attempt to target fans meeting the relevant criteria. Finally, the goal of the research was not to make generalisations about the entire T&T population, but to move beyond the solely qualitative approach, by undertaking an initial exploration of select aspects of the model proposed by Joseph (2021) and some of the other emerging studies in the literature, through conducting a follow-up with a sample of local fans.

5.2. Suggestions for Future Work

It would be interesting to see how the results from the non-probability sample compare with a probability-based sampling approach with a larger sample. Additionally, an expanded focus, with greater use of numerical levels of measurement, is required to determine the financial impact of online concerts on industry stakeholders, as well as predict appropriate pricing models. These would be valuable to the T&T sector and assist with determining policies and frameworks that are essential for the acceleration of long-term growth and development.

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