

Understanding motivations to use online streaming services: integrating the technology acceptance model (TAM) and the uses and gratifications theory (UGT)

Comprendiendo las motivaciones para usar los servicios de streaming en línea: Integrando el modelo de aceptación de la tecnología y la teoría de usos y gratificaciones

理解使用在线流媒体服务的动机:综合 技术接受模型(TAM)和使用与满 足理论(UGT)

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Abstract

Purpose – The outbreak of the Coronavirus (COVID-19) pandemic and its preventative social distancing measures have led to a dramatic increase in subscriptions to paid streaming services. Online users are increasingly accessing live broadcasts, as well as recorded video content and digital music services through internet and mobile devices. In this context, this study aims to explore the individuals' uses and gratifications from online streaming technologies during COVID-19.

Design/methodology/approach – This research has adapted key measures from the “technology acceptance model” (TAM) and from the “uses and gratifications theory” (UGT) to better understand the individuals' intentions to use online streaming technologies. A structural equations partial least squares' confirmatory composite approach was used to analyze the gathered data.

Findings – The individuals' perceived usefulness and ease of use of online streaming services were significant antecedents of their intentions to use the mentioned technologies. Moreover, this study suggests that the research participants sought emotional gratifications from online streaming technologies, as they allowed them to distract themselves into a better mood and to relax in their leisure time. Evidently, they were using them to satisfy their needs for information and entertainment.

Research limitations/implications – This study contributes to the academic literature by generating new knowledge about the individuals' perceptions, motivations and intentions to use online streaming technologies to watch recorded movies, series and live broadcasts.

Practical implications – The findings imply that there is scope for the providers of online streaming services to improve their customer-centric marketing by refining the quality and content of their recorded programs and through regular interactions with subscribers and personalized recommender systems.

Originality/value – This study integrates the TAM and UGT frameworks to better understand the effects of the users' perceptions, ritualized and instrumental motivations on their intentions to continue watching movies, series and broadcasts through online streaming technologies, during COVID-19.

Keywords Uses and gratifications theory, TAM, Technology acceptance model, COVID-19, UGT, Online streaming, Broadcast media, SEM-PLS, Streaming video, COVID-19

Paper type Research paper

Resumen

Propósito – El distanciamiento social durante la pandemia del coronavirus (COVID-19) ha llevado a un aumento dramático en las suscripciones a los servicios de transmisión de pago. Los usuarios en línea acceden cada vez más a transmisiones en vivo, así como a contenido de video grabado y servicios de música digital. En este contexto, este estudio explora los usos y las gratificaciones buscadas por las personas con las tecnologías de transmisión en línea durante la COVID-19.

Diseño/ Metodología/ Enfoque – En la operacionalización de las variables se utilizaron las medidas del “Modelo de Aceptación de Tecnología” (TAM) y la “Teoría de Usos y Gratificaciones” (UGT). Además, se utilizó SEM-PLS 3 para analizar los datos recopilados de las encuestas.

Hallazgos – La utilidad percibida y la facilidad de uso de los servicios de transmisión en línea son antecedentes significativos de la intención de utilizarlos. Además, las personas buscan gratificaciones emocionales de tales tecnologías, ya que les permiten distraerse, estar de mejor humor y relajarse en su tiempo libre. Además, las utilizan para obtener información y entretenimiento.

Implicaciones teóricas – Este estudio contribuye a la literatura académica generando nuevos conocimientos sobre las percepciones, motivaciones e intenciones de los individuos de utilizar tecnologías de transmisión en línea para ver películas grabadas, series y transmisiones en vivo.

Implicaciones prácticas – Los hallazgos implican que hay margen para que los proveedores de servicios de transmisión en línea mejoren su marketing centrado en el cliente reforzando la calidad y el contenido de sus programas grabados y la publicidad intermitente.

Originalidad/Valor – Este estudio integra las teorías TAM y UGT para comprender mejor el creciente uso de las tecnologías de transmisión para ver películas grabadas, series y transmisiones en vivo.

Palabras clave – Online streaming, Modelo de aceptación tecnológica (TAM), Teoría de usos y gratificaciones (UGT), COVID-19

Tipo de artículo – Trabajo de investigación

摘要

目的 – 新型冠状病毒(COVID-19)大流行的爆发及其预防性的社会隔离措施, 导致付费流媒体服务订阅量大幅增加。越来越多的在线用户通过互联网和移动设备访问直播、录制视频内容和数字音乐服务。在此背景下, 本研究旨在探讨COVID-19疫情期间个人对在线流媒体技术的使用和满意度。

研究设计/研究方法 – 为了更好地理解个体使用在线流媒体技术的意图, 本研究采用了“技术接受模型”(TAM)和“使用与满足理论”(UGT)的主要测量方法。另外, 作者采用了结构方程偏最小二乘验证组合方法对采集的数据进行分析。

研究结果 – 个人对在线流媒体服务的感知有用性和易用性是他们使用上述技术的意图的重要先行因素。此外, 这项研究表明, 研究中的参与者从在线流媒体技术中寻求情感满足, 让自己得到一个好心情, 并在闲暇时间放松。显然, 他们是在用手机来满足他们对信息和娱乐的需求。

研究局限性/意义 – 本研究对个人使用在线流媒体技术观看电影、电视剧和直播的认知、动机和意图产生了新的认识, 对学术文献的贡献。

实际意义 – 研究结果表明, 在线流媒体服务提供商可以通过改进其录制节目的质量和内容、定期与订阅者互动以及个性化推荐系统来改善其以客户为中心的营销。

本文独创性/价值 – 本研究整合了TAM和UGT框架, 以更好地了解COVID-19期间用户的认知、仪式化和工具动机对他们通过在线流媒体技术继续观看电影、电视剧和广播的意图的影响。

关键词 – UGT, 使用与满足理论, TAM, 技术接受模型, COVID-19, 在线流媒体, 广播媒体, SEM-PLS, 视频流

1. Introduction

Relevant academic literature suggests that new media technologies are changing the way how individuals consume television (Tefertiller, 2018; Aldea and Vidales, 2012; Hirsjärvi and Tayie, 2011). Today, several media companies are offering video streaming services that feature high-quality, original content that can be accessed through digital and mobile technologies (Kostyrka-Allchorne *et al.*, 2017; Groshek and Krongard, 2016). Video streaming technologies have disrupted the way how individuals consume broadcast media. Consumers are shifting from linear formats such as real-time television (TV) services that are accessible through satellite/or cable and subscribing to online streaming services (Spilker *et al.*, 2020; Sørensen, 2016; Flavián and Gurrea, 2007). Online users are accessing broadcast services through the home internet and/or via mobile devices (Lim *et al.*, 2015; Simpson and Greenfield, 2012). This is particularly conspicuous among the youngest demographics, who are increasingly subscribing to online TV channels and video streaming services (Panda and Pandey, 2017).

One cannot generalize that all young individuals would follow similar consumption patterns. Therefore, media and entertainment businesses may consider other variables when they explore their viewers' profiles and their consumption behaviors. For instance, online streaming companies such as Amazon Prime Video, Apple TV, Disney+, HBO, Hulu, Netflix and Roku are continuously investing in new programs, as they are operating in an increasingly competitive environment (WSJ, 2019; Jenner, 2016). Hence, their subscribers can access a library of movies, series, shows and sports programs, etc. Very often, these media companies are also using mobile applications (apps) and integrating personalized recommender systems to enhance their customers' experiences. This way, they improve their brand equity and service quality to retain existent consumers and attract new ones.

This research explores the consumers' perceptions toward online streaming technologies and sheds light on their motivations to use them. It presumes that individuals seek emotional and instrumental gratifications from watching recorded videos and/or live broadcasts through digital and mobile devices. Therefore, this contribution builds on the technology acceptance model (TAM) (Scherer *et al.*, 2019; Munoz-Leiva *et al.*, 2017; Rauniar *et al.*, 2014; Wallace and Sheetz,

2014; Davis *et al.*, 1989; Davis, 1989) and on the uses and gratifications theory (UGT) (Kaur *et al.*, 2020; Dhir *et al.*, 2017a, 2017b; Joo and Sang, 2013; Smock *et al.*, 2011; Stafford *et al.*, 2004; Katz *et al.*, 1973) to investigate the consumers' ease of use and usefulness of these technologies, as well as their ritualized and instrumental motivations that would ultimately have a positive and significant effect on their behavioral intentions to use them. Hence, this study relied on TAM's and UGT's key measures to capture the data for this empirical investigation. These two theoretical frameworks were purposely chosen as they comprise valid and reliable measures that were frequently tried and tested in academia, in various contexts.

Specifically, the underlying research questions are: what are the individuals' motivations for watching online streaming through their digital and mobile devices? Are the streaming technologies useful and easy to use? Are they willing to continue using them to watch online TV channels or recorded video content? To the best of our knowledge, there are no other studies that have integrated TAM's and UGT's key constructs to shed light on the individuals' motivations for ritualized use and instrumental use of online streaming technologies, and to reveal their perceived usefulness and ease of use. Therefore, this research addresses this gap in academic knowledge. In sum, this contribution suggests that the individuals' motivations to use online streaming technologies to watch live TV channels and/or recorded videos would have a positive and significant effect on their acceptance of these technologies, and on their intentions to continue using them.

This article is structured as follows: the following section provides a critical review of key theories that were drawn from relevant marketing and technology literature. It presents the conceptual framework and formulates the hypotheses for this research. Afterward, the methodology section describes the method that was used to gather the data from the respondents. It sheds light on the measures that were used in this quantitative study. Hence, the results section features an analysis and interpretation of the findings. In conclusion, this contribution outlines its theoretical and its practical implications. The authors identify their research limitations and outline their future research avenues to academia.

2. The technology acceptance of online streaming services

Individuals are increasingly consuming the broadcast media through digital and mobile technologies. Very often, they are watching TV channels, movies, series, shows, etc. through online streaming services that are readily available through ubiquitous technologies, including smartphones or tablets. eMarketer (2019) reported that 70.1% surfed the internet while watching their favorite movies and shows. Moreover, according to the latest Global Web Index Trend Report, the individuals who were between 16–24 years, spent 7 ¼ h per day online or on their smartphones or tablets. The individuals from this demographic segment devoted over 2.5 h a day to social networking and were watching more than an hour of online TV per day (GWI, 2019). The individuals hailing from the 25–34 age segment have switched from linear TV to online streaming to watch live TV and/or recorded videos. They subscribed to online services through digital and high-speed mobile devices, including smartphones and tablets to stream live channels and recorded video content from anywhere, at any time (eMarketer, 2019; GWI, 2019). Evidently, they were accessing online streaming through virtual private networks to watch TV programs, movies, entertainment, sporting events and the like (GWI, 2019). Hence, media and entertainment businesses are continuously investing on the programming of new content, including those produced in-house to satisfy their online subscribers. In this light, this study explores the individuals' perceptions toward online streaming technologies and their motivations to use them to watch recorded videos and/or live broadcasts. The researchers relied on TAM's (Nagy, 2018; Munoz-Leiva *et al.*, 2017; Cha, 2013; Davis, 1989) and UGT's key constructs (Kaur *et al.*, 2020; Dhir *et al.*, 2017a, 2017b) to capture the data from their respondents.

2.1 *The perceived usefulness and ease of use of the technology*

TAM has often been used by various researchers to explore the individuals' perceptions toward the use of different technologies. The model comprises core constructs that measure the users' motivations to engage with a certain technology, namely, their "perceived ease of use," "perceived usefulness" and "attitudes." The outcome variables are the behavioral intentions and technology usage (Scherer *et al.*, 2019). Therefore, TAM seeks to explain why people decide to accept or reject a technology (Davis, 1989; Lee *et al.*, 2010). The individuals' perceived usefulness and their perceived ease of use are considered as key variables that directly or indirectly explain the mentioned outcomes (Marangunić and Granić, 2015; Rauniar *et al.*, 2014). Davis (1989) defined the perceived ease of use as the degree to which a person believes that using a particular system would be free from effort. The perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). In other words, this construct determines whether individuals would perceive the technology to be useful for what they want to do.

Various researchers reported that there is a positive relationship between the perceived ease of use and the perceived usefulness (Nagy, 2018; Munoz-Leiva *et al.*, 2017; Niehaves and Plattfaut, 2014; Wallace and Sheetz, 2014; Joo and Sang, 2013; Liu *et al.*, 2010; Park, 2010; Davis *et al.*, 1989). Relevant research on the topic of this study reported that the perceived advantages of online streaming media were also influenced by the perceived ease of use of the technology (Tefertiller, 2020; Yang and Lee, 2018; Cha, 2013). Previously, Rogers (2003) contended that individuals would use certain innovations if they believe that they provide advantages over extant technologies. These theoretical underpinning indicated that individuals may be intrigued to use certain technologies (including online streaming services) if they are easy to use. Conversely, if the technologies are complex, complicated or difficult to use, they would not perceive their usefulness. Hence, this research hypothesizes:

- H1.* The individuals' perceived ease of use of the online streaming technologies will have a positive and significant effect on their perceived usefulness.

The individuals' perceived ease of use and their perceived usefulness of the technologies precede their intentions to use them (Venkatesh *et al.*, 2003; Venkatesh, 2000). Other studies indicated that both the individuals' perceived ease of use and their perceived usefulness of certain technologies were found to have a positive and significant effect on their intention to use them (Joo and Sang, 2013; Jung *et al.*, 2011; Venkatesh, 2000). Yang and Lee's (2018) study reported that the individuals' perceived usefulness of streaming media devices was positively associated with their behavioral intention to use them. This argumentation leads to the following hypotheses:

- H2.* The individuals' perceived ease of use of online streaming technologies will have a positive and significant effect on their intentions to use them.
- H2a.* The individuals perceived usefulness of online streaming technologies is mediating the relationship between perceived ease of use and intention to use them.
- H3.* The individuals' perceived usefulness of online streaming technologies will have a positive and significant effect on their intentions to use them.

TAM has been adapted and expanded by various scholars (Venkatesh and Davis, 2000; Venkatesh, 2000). Many researchers argued that this model has limited predictive power and its parsimony is one of its key constraint (Venkatesh *et al.*, 2003; Venkatesh, 2000). Benbasat and Barki (2007) held that TAM ignores the social processes of information systems. Other researchers, including Legris *et al.* (2003) recommended that additional

variables from the innovation model ought to be integrated into TAM. Venkatesh and Davis (2000) extended the original TAM model. They sought to clarify the notions of perceived usefulness and usage intentions in terms of social influences and cognitive instrumental processes. Their revised model was referred to as TAM2. Afterward, Venkatesh *et al.* (2003) refined TAM as they included new constructs, including facilitating conditions, social influences, as well as demographic variables in their unified theory of acceptance and use of technology (or UTAUT). Eventually, Venkatesh and Bala (2008) proposed TAM3. This model incorporated the effects of trust and perceived risk in the context of e-commerce technologies. However, these TAM constructs appeared to be more applicable to using technology for utilitarian motives rather than for hedonic purposes or intrinsic motivations (Camilleri, 2019; Nikou and Economides, 2017; Vijayarathy, 2004; Venkatesh, 2000).

2.2 *The uses and gratifications of the technology*

The individuals' technology acceptance is influenced by their extrinsic motivations, including their perceived usefulness (Joo *et al.*, 2018; Davis *et al.*, 1989; Venkatesh and Davis, 2000). However, TAM did not include a construct that measured the individuals' intrinsic motivations. Hence, Venkatesh *et al.* (2012) extended the UTAUT as they included hedonic motivation (along with price value), in addition to Venkatesh *et al.*'s (2003) constructs. The authors contended that many individuals seek intrinsic gratifications when they use certain technologies. The users' non-utilitarian gratifications, including enjoyment and entertainment, can influence their behavioral intentions to continue using technologies, such as mobile devices (Camilleri and Camilleri, 2019; Nikou and Economides, 2017).

UGT assumes that individuals use media technologies to enhance their gratifications. This theory is positivistic in its approach and holds heuristic value (Katz *et al.*, 1973). It seeks to explain why and how individuals are intrigued to use innovative technologies to satisfy their specific needs and wants (Dhir *et al.*, 2017a; Chen, 2011; Katz *et al.*, 1973). Thus, UGT has been widely used to explore the uses of various media, and to better understand the consumers' motivations for using them. Of course, individuals would have different motivations for using identical media, and may also exhibit divergent levels of gratifications.

In the past, UGT was considered as an extension of the needs and motivations theory (Ray *et al.*, 2019; Nikou, and Economides, 2017; Katz *et al.*, 1973). Its measures were often used to explore the individuals' intentions to watch specific programs on television (Stafford *et al.*, 2004; Harwood, 1999) or to investigate their engagement with digital media, including internet technologies (Kaur *et al.*, 2020; Shao, 2009; Flavián and Gurrea, 2008) and social media (Dhir *et al.*, 2017a; Mäntymäki and Riemer, 2014; Smock *et al.*, 2011). For example, Sanz-Blas *et al.* (2019), as well as Mäntymäki and Islam (2016) have used UGT to shed light on the adverse effects of social media on teenagers. Other researchers relied on this model to examine the individuals' gratifications from mobile instant messaging (Kaur *et al.*, 2020), food delivery apps (Ray *et al.*, 2019) and digital photo sharing with other social media subscribers (Malik *et al.*, 2016), among other contemporary topics.

Various studies suggested that individuals are using technologies for different reasons, including to satisfy their own social and psychological needs (Dhir *et al.*, 2016). Online users use digital media technologies to access information or to share it with their followers (Troise and Camilleri, 2020). Others use technologies to buy products (Talwar *et al.*, 2020; Kaur *et al.*, 2020; Ray *et al.*, 2019) or for entertainment purposes (Kuoppamäki *et al.*, 2017; Dhir and Torsheim, 2016). Alternately, they use them to communicate, build relationships or seek affection (Malik *et al.*, 2016; Leung, 2015, 2013; Whiting and Williams, 2013).

Some researchers have focused on instant messaging (Ku *et al.*, 2013; Lo and Leung, 2009), on blogging (Hollenbaugh, 2011; Shao, 2009) and on the creation of user generated

content (Herrero and San Martín, 2017; Ye *et al.*, 2011; Van Dijck, 2009). Very often, their studies shed light on how and why individuals hailing from various demographics and backgrounds in society (in terms of different genders, age groups and educational levels) were using these technologies. For instance, individuals may use their mobile devices to access content (instrumentality) when they are out and about (mobility). Mobile technologies provide immediate access to a wide array of online information including written content, images and videos (e.g. via YouTube) (Khan, 2017). Smartphones and tablets allow their users to entertain themselves by playing games and/or to socialize with other individuals through social media (Calvo-Porrall and Otero-Prada, 2020; Camilleri, 2020; Hajarian *et al.*, 2020; Calvo-Porrall and Nieto-Mengotti, 2019; Dolan *et al.*, 2019; Balakrishnan and Raj, 2012). Individuals are increasingly subscribing to social media as they offer them different gratifications (Dolan *et al.*, 2019; Dhir *et al.*, 2017a; Khan, 2017).

Relevant theoretical underpinnings indicated that the internet provides three types of gratifications, including content gratification, process gratification and social gratification (Li *et al.*, 2017; Stafford *et al.*, 2004). Individuals can use the internet to search for specific information. In the meantime, they may enjoy the browsing process during their online searches (Perks and Turner, 2019; Huang, 2008). Alternately, they may use the internet for socializing purposes, as it enables them to connect with family, friends and acquaintances. Several empirical studies have examined the internet's positive (gratifications) and its negative outcomes. For example, LaRose and Eastin (2004) relied on Bandura's (1991) social-cognitive approach to investigate the internet users' self-efficacy and their self-disparagement.

Other research investigated the individuals' gratifications from social networking services (SNS) including Facebook, Instagram, Twitter and LinkedIn, as well as blogs and review websites (Bevan-Dye, 2020; Capriotti *et al.*, 2020; Belanche *et al.*, 2019; Sanz-Blas *et al.*, 2019; Leung, 2013; Park *et al.*, 2009). Many authors have used UGT to explore the gratifications of social media subscribers as more individuals are becoming devoted, engaged and highly motivated to upload content in specific SNS services (Rios Marques *et al.*, 2020; Malik *et al.*, 2016). They are also listening to music and watching videos (Khan, 2017; Krause *et al.*, 2014), sharing links (Baek *et al.*, 2011), participating in groups (Karnik *et al.*, 2013; Park *et al.*, 2009), sharing news (Lee and Ma, 2012) and photos (Malik *et al.*, 2016) through social media.

Online users are engaging with other individuals through social media to fulfill their socio-cognitive needs or simply to express their feelings. They have different motivations to use them, including for narcissistic, socialization, recognition (status) and/or for entertainment purposes. It goes without saying that individuals also seek emotional gratifications from traditional media, including television and cinemas (Li, 2017; Bartsch, 2012). They engage with different media to distract themselves into a better mood (Zillmann, 2000). Lonsdale and North (2011) reported that adolescents tend to regulate their moods by listening to music. Other authors went on to suggest that media entertainment provide efficient stimuli to individuals to adjust their moods (Smock *et al.*, 2011; Park *et al.*, 2009; Bumgarner, 2007; Knobloch, 2003) or to escape from emotional difficulties (Greenwood and Long, 2011; Greenwood, 2008). Hence, individuals use specific media to satisfy their needs for information and for entertainment purposes (Lee *et al.*, 2010; Quan-Haase and Young, 2010; Bumgarner, 2007). They may use media technologies, including mobile devices on a habitual basis and/or when they have time to spare (Smock *et al.*, 2011).

In this light, this research explores the effect of the individuals' "ritualized use" and of their "instrumental use" of online streaming technologies (Leung, 2015; Joo and Sang, 2013; Cooper and Tang, 2009). This study has adapted Joo and Sang's (2013) theoretical framework that they used to explore the usage of smartphone devices. In this case, this empirical investigation is focused on the individuals' consumption behaviors of online streaming technologies through digital and

mobile devices. UGT was used to explore the individuals' motivations toward online streaming services that can be accessed through smart TVs, smartphones and tablets. This study hypothesizes that:

- H4.* The individuals' motivations to use online streaming technologies for ritual purposes, will have a positive and significant effect on their intentions to use the mentioned technologies.
- H5.* The individuals' motivation to use online streaming technologies for instrumental purposes, will have a positive and significant effect on their intention to use of the mentioned technologies.

Our approach assumes that our respondents:

- used smart TVs, smartphones and/or tablets;
- were experienced with the use of these technologies (this helped them make “motivated choices”); and
- were using online streaming services to watch live broadcasts and/or recorded videos. [Figure 1](#) illustrates the hypothesized relationships of this research.

3. Methodology

The data was gathered via an online survey questionnaire that was disseminated among higher education students in a Southern European university. A stratified sampling approach was used to select the survey sample. There were more than 10,000 students who were pursuing full time and part time courses in this institution, who had voluntarily given their consent to receive requests to participate in academic studies. The targeted research participants received an email from the university registrar that comprised a hyperlink to this study's survey questionnaire. There were 491 respondents who have completed their questionnaire.

This study complied with the research ethic policies of this institution and with the EU's general data protection regulation. The research participants indicated the extent

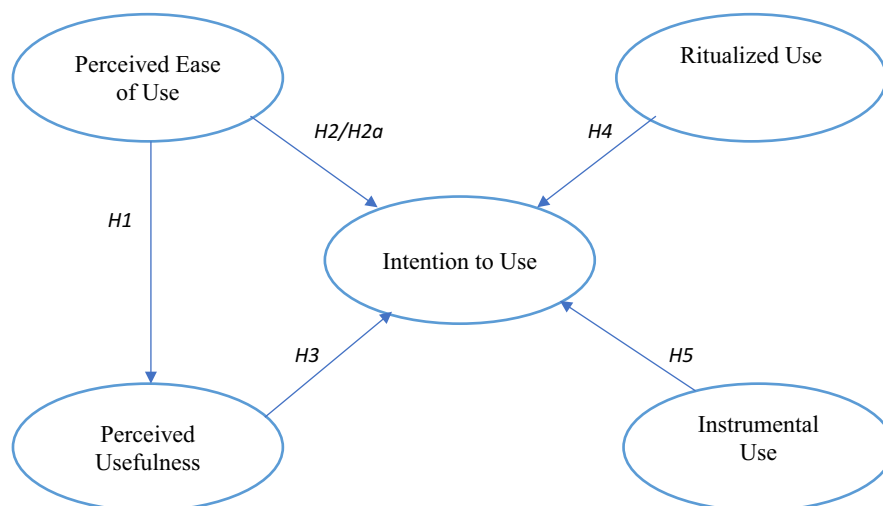


Figure 1.
The conceptual
model and the
formulation of
hypotheses

of their agreement with the survey items in a five-point Likert scale. The responses ranged from 1 “strongly disagree” to 5 = “strongly agree” and 3 signaled an indecision. In the latter part of the questionnaire, the participants were expected to disclose their age by choosing one of five age groups. They indicated their gender that were coded by using the 1 or 0 dummy variable, where 1 represented the women. The questionnaire was pilot tested among a small group of postgraduate students (who were not included in the survey results) to reduce the plausibility of the common method bias, as per MacKenzie and Podsakoff’s (2012) recommendations.

3.1 *The measures*

The survey instrument has adapted measuring items from Davis’ (1989) TAM and from Katz et al. (1973) UGT. The participants were expected to indicate their level of agreement on the survey items that explored their motivations and perceptions toward the use of online streaming programs. The constructs included “motivation for ritualized use,” “motivation for instrumental use,” “perceived usefulness,” “perceived ease of use” and “intention to use online streaming technologies.” These constructs were tried and tested in several other studies, and in other contexts (Tefertiller, 2020; Yang and Lee, 2018; Nagy, 2018; Munoz-Leiva et al., 2017; Kaur, Dhir, Chen, Malibari and Almotairi, 2020; Dhir et al., 2017a, 2017b; Joo and Sang, 2013). The measuring items that were used in this study are presented in Table 1.

3.2 *The demographic profile of the respondents*

The participants provided their socio-demographic details about their “gender,” “age” and indicated the “course” that they were studying in the latter part of the survey questionnaire.

Motivation for ritualized use

- RU1 I watch online streaming services to break the routine
- RU2 I watch online streaming services in my free time
- RU3 Watching online streaming services is a form of entertainment

Motivation for instrumental use

- IU1 I watch informative programs, including news and talk shows through online streaming services
- IU2 I watch entertainment programs, including movies and series through online streaming services
- IU3 I watch online streaming services as they offer advertising options, e.g. no advertising, limited advertising or all advertising will be presented in free viewing mode

Perceived ease of use

- PEOU1 It is an easy task for me to access the online streaming services of live or recorded programs
- PEOU2 I find it easy to access online streaming services through digital and mobile devices, including smart TVs, smartphones and tablets

Perceived usefulness

- PU1 The online streaming services allow me to view what I want in a faster way than traditional TV subscriber services
- PU2 The online streaming services enhance my experience of watching informative or entertainment programs
- PU3 I can watch online streaming services in any place I like if there is a good Wi-Fi or network connection

Intention to use

- INT1 I will continue using digital and mobile devices, including smart TVs, smartphones and tablets to watch online streaming
- INT2 I shall spend more money on digital and mobile devices to access informative and entertainment programs through online streaming services

Table 1.
The measuring items

Their identity remained anonymous and their responses were kept confidential. Only aggregate information was used during the analysis of the data. More than two-thirds of the respondents were women. The sample consisted of 339 women (69%) and 152 men (31%). There were two individuals who did not indicate their gender. Most of the respondents ($n = 226$, 46%) were between 18 and 21 years of age. The second largest group ($n = 114$, 23%) were between 22 and 25 years old. The majority of respondents were pursuing courses in the faculties of arts (14%), economics, management and accountancy (13%) and applied sciences (12%). However, the sample included respondents from all areas of studies.

4. Results

4.1 Descriptive statistics

The respondents agreed with the survey items in the model, as the mean scores (M) were above the mid-point of 3. The highest mean scores were reported for IU2 (M = 4.273), PU1 (M = 4.184) and PEoU (M = 4.167). Whilst INT2 reported the lowest mean score (M = 3.462). The standard deviations (SD) ranged indicated that there was a narrow spread around the mean. The values of the SD ranged from 0.696 (for IU2) to 1.112 (for INT1).

4.2 Confirmatory composite analysis

This study relied on a structural equation modeling (SEM) approach to explore the measurement quality of this research model (Ringle *et al.*, 2014). SEM-partial least squares (PLS) 3 confirmatory composite analysis' algorithm revealed the results of the reflective measurement model (Hair *et al.*, 2020).

The values of the standardized loadings were higher than the recommended threshold of 0.7 (Hair *et al.*, 2020) and had an associated t -statistic above ± 1.96 . The composite reliability values were between 0.821 and 0.929. The values of average variance extracted (AVE) confirmed the constructs' convergent validities as it explained more than 50 % of the variance of their items. In other words, the values for AVE were higher than 0.5 (Hair *et al.*, 2011). There was evidence of discriminant

Construct	Items	Outer Loadings	CR	AVE	1	2	3	4	5
1 Instrumental use	IU1	0.831	0.821	0.607					
	IU2	0.822			0.779	0.442	0.737	0.402	0.609
	IU3	0.676							
2 Intention	Int1	0.938	0.929	0.868	0.338	0.932	0.485	0.808	0.703
	Int2	0.926							
3 Perceived ease of use	PEoU1	0.92	0.925	0.861	0.572	0.411	0.928	0.507	0.555
	PEoU2	0.936							
4 Perceived usefulness	PU1	0.83	0.894	0.737	0.303	0.676	0.424	0.859	0.686
	PU2	0.88							
	PU3	0.865							
5 Ritualized use	RU1	0.863	0.852	0.659	0.44	0.555	0.438	0.533	0.812
	RU2	0.85							
	RU3	0.714							

Table 2.
A correlation analysis and an assessment of the composite reliability, convergent validity and discriminant validity

Notes: The discriminant validity was calculated by using the Fornell-Larcker criterion. The values of square root of the AVE were presented in bold font. The AVEs for each construct were greater than the correlations among the constructs. The shaded area features the results from the HTMT criterion (Henseler *et al.*, 2015)

Table 3.
Testing of the
hypotheses

Path coefficient	Original Sample	Sample Mean	Confidence Intervals Bias corrected	f square	t-value	p	Decision
H1 Perceived ease of use → perceived usefulness	0.424	0.422	[0.345, 0.497]	0.219	10.086	0.000	Supported
H2 Perceived ease of use → intention to use streaming technologies	0.069	0.068	[-0.009, 0.158]	0.006	1.695	0.091	Not supported
H3 Perceived usefulness → intention to use streaming technologies	0.509	0.508	[0.434, 0.577]	0.360	13.480	0.000	Supported
H4 Ritualized use → intention to use streaming technologies	0.236	0.235	[0.152, 0.322]	0.072	5.678	0.000	Supported
H5 Instrumental use → intention to use streaming technologies	0.041	0.044	[-0.037, 0.136]	0.002	0.940	0.348	Not supported

Path coefficient	Direct effect	Indirect effect	Total effect	Confidence Intervals Bias corrected	t-value	p	Decision
H2 Perceived ease of use → intention	0.069*						
H2a Perceived ease of use → perceived usefulness → intention		0.216	0.285	[0.162, 0.277]	7.396	0.000	Supported (full mediation)

Table 4.
Mediating effects

Notes: *The direct effect was not significant, $p = 0.091$. The total effect (including the effect from the mediating construct) was very significant, where $p < 0.001$

validity as the square root value of AVE was greater than the correlation values among the latent variables (Fornell and Larcker, 1981). This study also examined heterotrait-monotrait (HTMT) ratio of the correlations, thus it re-confirmed the presence of discriminant validity across the constructs. The HTMT values were lower than 0.9 (Henseler et al., 2015) as shown in Table 2.

4.3 Structural model assessment

The assessment criteria involved an examination of the collinearity among the constructs. The results indicated that there were no collinearity issues as the variance inflation factors have exceeded the recommended threshold of 3.3 (Hair et al., 2020). The PLS algorithm revealed the model’s predictive power, in terms of the coefficient of determination (R^2) of the endogenous latent variables. It also shed light on the effect ($\hat{\delta}f^2$) of each exogenous construct on the endogenous constructs.

Afterward, a bootstrapping procedure was used to explore the statistical significance and relevance of the path coefficients. The significance of the hypothesized path coefficients in the inner model were evaluated by using a two-tailed t -test at the 5% level (Hair, Ringle and Sarstedt, 2011). Table 3 presents the results of the hypotheses of this study. It tabulates

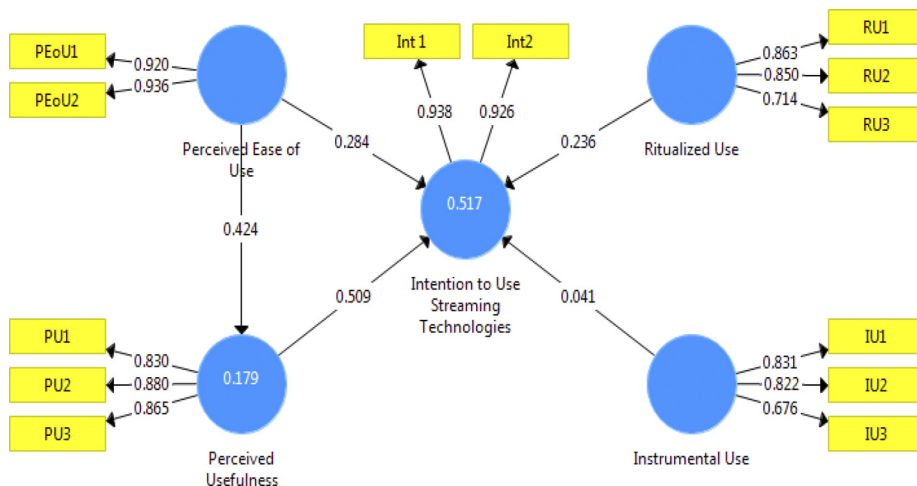


Figure 2.
A graphical illustration of the results

the findings of the standardized beta coefficients (original sample and sample mean), the confidence intervals, δf^2 , t -values and the significance values (p). Table 4 features the results of the mediating relationship.

H1: This study reported that there was a positive and significant effect between the individuals' perceived ease of use and the perceived usefulness of the streaming technologies, where $\beta = 0.424$, $t = 10.086$ and $p < 0.001$. This result validates the TAM. The findings suggest that the individuals who perceived the ease of use of these online technologies will probably perceive their usefulness as well. *H2* revealed that there was no direct relationship between the individuals' perceived ease of use of the streaming technologies and their intention to use them. However, there was an indirect effect of perceived usefulness on perceived ease of use – intentions link. The mediating analysis reported that there was full mediation from the perceived usefulness construct on this relationship as $\beta = 0.285$, $t = 7.396$ and $p < 0.001$. *H3* indicated there was a positive and direct relationship between the respondents' perceived usefulness of the streaming technologies and their intentions to use them, where $\beta = 0.509$, $t = 13.48$ and $p < 0.001$. *H4*: The findings suggest that the participants' motivations for the ritualized use of the streaming technologies (to watch entertaining programs such as movies and/or recorded TV series) was a significant antecedent of their intentions to use the mentioned technologies, where $\beta = 0.236$, $t = 5.678$ and $p < 0.001$. In conclusion, the findings from *H5* show that the students' instrumental motivations to use live streaming technologies (e.g. to watch the news and/or informative programs) was not a significant precursor of their intentions to use them.

The results indicated that there were significant f^2 values between perceived usefulness and intention $f^2 = 0.360$ and between perceived ease of use and perceived usefulness ($f^2 = 0.219$). Figure 2 sheds light on the explanatory power of this research model. It illustrates the total effects, outer loadings and the coefficient of determination (R^2) values of the constructs. The students' indicated that they were committed to continue using the online streaming technologies ($R^2 = 0.517$) as they perceived its usefulness ($R^2 = 0.179$).

5. Conclusions

5.1 Theoretical implications

This contribution explored the individuals' motivations to use streaming technologies to watch live broadcast programs and/or recorded content (Tefertiller, 2020, 2018; Steiner and Xu, 2018; Panda and Pandey, 2017; Sørensen, 2016; Groshek and Krongard, 2016). It differentiated itself from other research, as it integrated valid measures that were drawn from TAM (Nagy, 2018; Munoz-Leiva *et al.*, 2017; Niehaves and Plattfaut, 2014; Cha, 2013; Davis, 1989) and UGT (Steiner and Xu, 2018; Riddle *et al.*, 2018; Joo and Sang, 2013; Bondad-Brown *et al.*, 2012; Katz *et al.*, 1973).

The critical review of the relevant literature reported that both theories were widely used (and cited) in academia to investigate the individuals' behavioral intentions to adopt new technologies, in different contexts (Manis and Choi, 2019; Liu *et al.*, 2010; Benbasat and Barki, 2007). In essence, TAM suggests that the individuals' perceptions about the ease of use and the usefulness of certain technologies would predict their intentions to use them again in the future (Scherer *et al.*, 2019; Munoz-Leiva *et al.*, 2017; Rauniar *et al.*, 2014; Wallace and Sheetz, 2014; Davis *et al.*, 1989; Davis, 1989). Moreover, UGT assumes that individuals seek to gratify their intrinsic and extrinsic needs through habitual consumptions of media technologies (Kaur *et al.*, 2020; Perks and Turner, 2019; Ray *et al.*, 2019; Li *et al.*, 2017; Joo and Sang, 2013; Bartsch, 2012; Chen, 2011; Smock *et al.*, 2011; Stafford *et al.*, 2004; Katz *et al.*, 1973).

The findings from this research indicated that the research participants perceived the ease of use and the usefulness of the streaming technologies. The results confirmed that they found it easy and straightforward to use their smart TVs, smartphones or tablets to access online streaming services. The respondents believed that the streaming technologies allowed them to view TV programs and/or recorded videos in a faster way than traditional TV subscriber services or satellite TV. They perceived the usefulness of online TV and/or video streaming services, as they enhanced their experience of watching informative and/or entertainment programs, particularly when they used their mobile devices (Nikou and Economides, 2017; Balakrishnan and Raj, 2012). Hence, the research participants were committed to continue using their smart devices to access their favorite online programs through streaming technologies. The regression analysis revealed that there were highly significant correlations between TAM's core constructs including the perceived ease of use and the perceived usefulness of online streaming services. Both of these constructs were also significant antecedents of the individuals' intentions to continue using the mentioned technologies.

The individuals' ritualized motivations to use the streaming technologies were found to have a very significant effect on their intention to use them. The respondents were using online streaming technologies on a habitual basis, to break the routine. These findings are consistent with the relevant literature concerning UGT, where the researchers concluded that many often, individuals consider the media technologies as a form of entertainment (Dhir *et al.*, 2017b; Li, 2017; Bartsch, 2012; Smock *et al.*, 2011) as individuals. In this case, the research participants sought emotional gratifications from the streaming technologies. Probably, they allowed them to relax in their free time. Other theoretical underpinnings reported that individuals use certain technologies to distract themselves into a better mood (Lonsdale and North, 2011; Park *et al.*, 2009; Knobloch, 2003; Zillmann, 2000). Most of the respondents indicated that they were using these technologies to satisfy their needs for information and entertainment. These findings are consistent with previous studies (Lee *et al.*, 2010; Quan-Haase and Young, 2010; Bumgarner, 2007).

The survey respondents revealed that they used online streaming technologies for instrumental purposes to watch informative programs, including news and talk shows, as well as entertainment programs, including movies and series through online streaming services. Other researchers also reported that there were many instances where individuals

benefited of their smartphones and tablets' instrumentality and mobility, as they enabled them to access online content, including recorded videos, live streams and/or intermittent marketing content, when they were out and about.

The participants indicated their agreement with the survey item about the advertising options of online streaming services. This research suggests that they were aware that subscribed users of online streaming technologies can limit or block intrusive and/or repetitive advertisements they receive whilst using online streaming technologies (Belanche *et al.*, 2019). Previous studies also reported that online users were increasingly applying ad blockers (Redondo and Aznar, 2018; Lim *et al.*, 2015). The practitioners who are using digital marketing platforms, including online streaming websites to promote their products and/or services, ought to refine the quality and content of their customer centric marketing. Their underlying objective is to engage their audiences with relevant, helpful information that complements, rather than detracts from their overall online experience.

5.2 Practical implications

This research postulates that the respondents are consuming free-tier and/or paid streaming services through different digital media including mobile devices such as smartphones and tablets. It confirmed that online streaming technologies can improve the consumers' experiences of watching live broadcasts and/or recorded programs. The research participants perceived their ease of use and their usefulness as they can be accessed in any place, at any time, through decent Wi-Fi and/or network connections. The findings are consistent with the U&G theory as the participants indicated that the media technologies were entertaining. Hence, they were committed to continue using them. They indicated that they would continue using them in the foreseeable future. On the other hand, this study revealed that the respondents' instrumental motivations to use online streaming services did not predict their intentions to use them (even though these technologies allowed their subscribers to limit or block online advertisements).

Most probably, the respondents were accessing on-demand streaming services in the comfort of their home, rather than from mobile technologies, when they were out and about. The reason for this behavior could be that they prefer watching online programs through big screens as opposed to watching them through their mobile devices' smaller screens. The latest TVs may offer quality, high resolution images and better sound than smartphones and tablets. Thus, smart TVs (that are using Apple and/or Android systems, etc.) may be considered more appropriate to watch recorded movies and/or TV series. It is very likely that the participants would also perceive the ease of use and the usefulness of these technologies for other purposes, including digital gaming, video conferencing, et cetera.

Recently, the unprecedented outbreak of the Coronavirus pandemic and its preventative social distancing measures has led to a considerable increase in the use of digital media (Camilleri, 2020). There was also a surge in the subscriptions to paid streaming services (Marketwatch, 2020). As a result, more digital advertisements (ads) were featured in online streaming services. They are usually presented to free tier consumers as skippable or non-skippable streaming or static ads that appear before, during or after they access online broadcasts and/or recorded programs. Alternately, online users may decide to subscribe to the streaming services, if they want to block the marketing messages they receive (Tefertiller, 2020; Kim *et al.*, 2017). This way, they could have more control over their online experience.

There are several media companies in the market that are offering competitive streaming packages. Very often, they are producing new programs, including movies, series, et cetera. Consumers may be intrigued to upgrade their services to benefit of secure, reliable, low latency streaming infrastructures and to gain access to more exclusive content in an ad-free, interactive environment. They may also appreciate if the service providers would increase their engagement

with them by using customer-centric recommender systems. Consumers may be informed about their favorite programs through regular notifications to their mobile apps (if they subscribe to them). These alerts ought to be related to their personal preferences. As a result, the consumers would continue entertaining themselves with online streaming technologies as they perceive their instrumentality, ease of use and the usefulness of their services.

6. Limitations and future research avenues

This research investigated the individuals' attitudes and perceptions toward online streaming of recorded movies, series or lives television programs, including news, entertainment shows, quizzes, et cetera. This contribution did not specify whether they were accessing free or paid online streaming. Therefore, further research can distinguish among different service providers of online streaming, and those that are operating in different settings. This research was carried out among university students, who were mostly young women. The respondents attended a higher education institution from a Southern European context. The researchers decided not to tweak the data to correct for age or gender imbalance.

Future studies may consider different constructs from other theoretical models to explore the individuals' acceptance and motivations to use online streaming technology. Although there are many researchers who have appraised and used TAM's and UGT's measures, others have indicated that their measures have inherent limitations, as reported within the literature review section of this paper. Perhaps, further research may involve interpretative studies to investigate the individuals' in-depth opinions and beliefs on the latest developments in broadcast media. Inductive studies can reveal other important factors about the individuals' consumption behaviors, and may probably shed more light on why, where, when and how they are using online streaming technologies. This way, service providers of recorded video content and/or live broadcasts will be in a better position to understand their audiences' expectations.

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