

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

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**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 explores 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' (SEM-PLS 3) 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 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:** broadcast media; technology acceptance; uses and gratifications; SEM-PLS; streaming video; COVID-19.

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## **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**

### **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.

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

## **1. Introduction**

Relevant academic literature suggests that new media technologies are changing the way how individuals consume television (Tefertiller, 2018; Aldea and Vidales, 2012; Hirsjarvi and Tayie, 2011). Today, there are several media companies that are offering video streaming services that feature high-quality, original content, that can be accessed through digital and mobile technologies (Kostyrka-Allchorne, Cooper and Simpson, 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 TV services that are accessible through satellite / or cable, and subscribing to online streaming services (Spilker, Ask and Hansen, 2020; Sørensen, 2016; Flavián and Gurrea, 2007). Online users are accessing broadcast services through home Internet and/or via mobile devices (Lim, Ri, Egan and Biocca, 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 like Amazon Prime Video, Apple TV, Disney+, HBO, Hulu, Netflix and Roku, among others, 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, among others. 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, Siddiq and Tondeur, 2019; Munoz-Leiva, Climent-Climent and Liébana-Cabanillas, 2017; Rauniar, Rawski, Yang and Johnson, 2014; Wallace and Sheetz, 2014; Davis Warshaw and Bagozzi, 1989; Davis, 1989) and on the uses and gratifications theory (UGT) (Kaur, Dhir, Chen, Malibari and Almotairi, 2020; Dhir, Chen and Nieminen, 2017a; Dhir, Khalil, Lonka, and Tsai, 2017b; Joo and Sang, 2013; Smock, Ellison, Lampe and Wohn, 2011; Stafford, Stafford and Schkade, 2004; Katz, Blumler and Gurevitch, 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. Afterwards, 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 as well as 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 smart phones 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 <sup>3</sup>/<sub>4</sub> hours per day online or on their smart phones or tablets. The individuals from this demographic segment devoted over 2.5 hours 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, Climent-Climent and Liébana-Cabanillas, 2017; Cha, 2013; Davis, 1989) and UGT's key constructs (Kaur, Dhir, Chen, Malibari and Almotairi, 2020; Dhir, Chen and Nieminen, 2017a; Dhir, Khalil, Lonka, and Tsai, 2017b) to capture the data from their respondents.

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

TAM has often been utilized 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 as well as 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, Climent-Climent and Liébana-Cabanillas, 2017; Niehaves and Plattfaut, 2014; Wallace and Sheetz, 2014; Joo and Sang, 2013; Liu, Chen, Sun, Wible and Kuo, 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, Morris, Davis, and Davis, 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, Chan-Olmsted, Park and Kim, 2011; Venkatesh, 2000). Yang and Lee's study (2018) 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, Ingham and Collette (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. Afterwards, 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; Vijayasarathy, 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, So and Kim, 2018; Davis et al. 1989, Venkatesh and Davis 2000). However, TAM did not include a construct that measured the individuals' intrinsic motivations. Hence, Venkatesh, Thong and Xu (2012) extended the unified theory of acceptance and use of technology (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, like 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; Roy, 2009; Katz et al., 1999). 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, Dhir, Bala, and Kaur, 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; Roy, 2009; 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, Buzova, and Miquel-Romero (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, Dhir and Nieminen, 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, Chen and Nieminen, 2017). Online users utilize digital media technologies to access information or to share it with their followers (Troise & Camilleri, 2020). Others use technologies to buy products (Talwar, Dhir, Kaur and Mäntymäki, 2020; Kaur et al., 2020; Ray et al., 2019) or for entertainment purposes (Kuoppamäki, Taipale and Wilska, 2017; Dhir and Torsheim, 2016). Alternatively, they use them

to communicate, build relationships, or seek affection (Malik et al., 2016; Leung, 2015; 2013; Cheng et al., 2014, Whiting and Williams, 2013).

Some researchers have focused on instant messaging (Ku, Chu and Tseng, 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, Law, Gu and Chen, 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, educational levels) were employing these technologies. For instance, individuals may utilize 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; Hajarjian, Camilleri, Díaz, and Aedo, 2020; Calvo-Porrall and Nieto-Mengotti, 2019; Dolan, Conduit, Frethey-Bentham, Fahy and Goodman, 2019; Balakrishnan and Raj, 2012). Individuals are increasingly subscribing to social media as they offer them different gratifications (Dolan et al., 2020; 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, Guo and Bai, 2017; Stafford, Stafford and Schkade, 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). Alternatively, they may utilize 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) as well as its negative outcomes. For example, LaRose, Mastro and Eastin (2001) relied on Bandura's (1991)

social-cognitive approach to investigate the Internet users' self-efficacy as well as 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, Zeler and Camilleri, 2020; Belanche, Cenjor, and Pérez-Rueda, 2019; Sanz-Blas, Buzova et al., 2019; Leung, 2013; Park, Kerk, and Valenzuela, 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, Casais and Camilleri, 2020; Malik et al., 2016). They are also listening to music and watching videos (Khan, 2017; Krause, North and Heritage, 2014), sharing links (Baek, Holton, Harp and Yaschur, 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 fulfil 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 utilize specific media to satisfy their needs for information as well as for entertainment purposes (Lee, Kim, Ryu and Lee, 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).

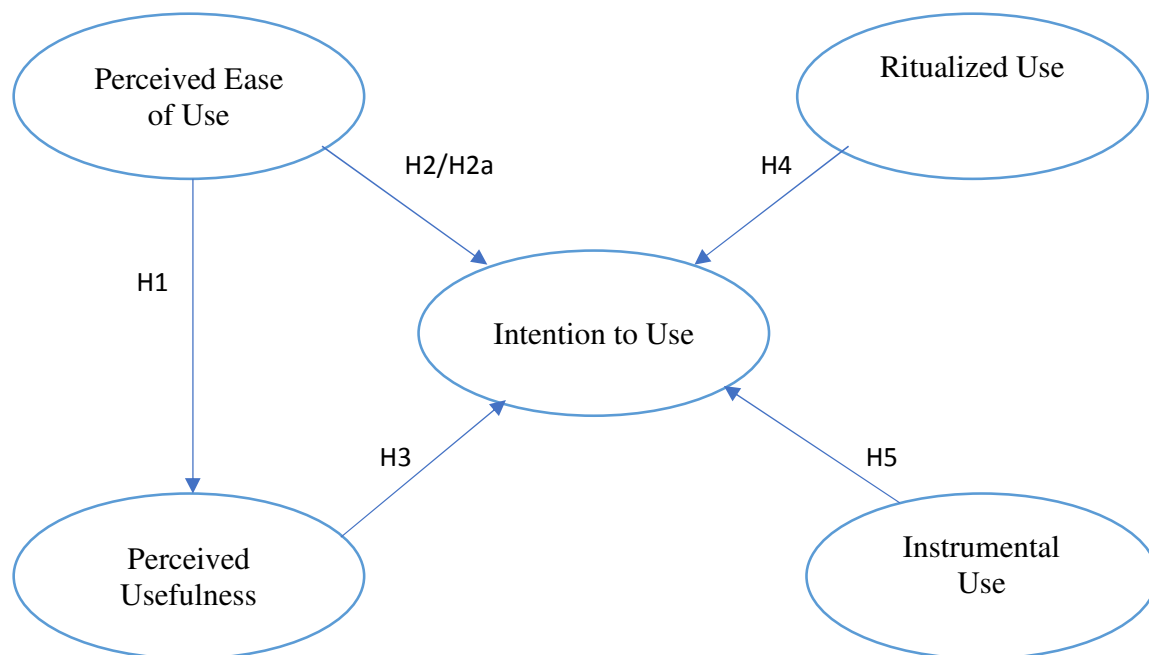
In this light, this research explores the effect of the individuals' 'ritualized use' and of their 'instrumental use' of online streaming technologies (Leung, 2015; Joo and Sang, 2013; Cooper and Tang, 2009). This study has adapted Joo and Sang's (2013) theoretical framework that they used to explore 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, smart phones 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 (i) utilized smart TVs, smart phones and/or tablets, (ii) were experienced with the use of these technologies (this helped them make 'motivated choices'), (iii) were using them to watch live broadcasts and/or recorded videos. Figure 1 illustrates the hypothesized relationships of this research.

**Figure 1. The conceptual model and the formulation of hypotheses**



### **3. Methodology**

The data was gathered via an online survey questionnaire that was disseminated amongst 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 (GDPR). The research participants indicated the extent 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 females. The questionnaire was pilot tested among a small group of post graduate 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 towards 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, Climent-Climent and Liébana-Cabanillas, 2017; Kaur, Dhir, Chen, Malibari and Almotairi, 2020; Dhir, Chen and Nieminen, 2017a; Dhir, Khalil, Lonka and Tsai, 2017b; Dhir, Chen and Chen, 2017c; Joo and Sang, 2013). The measuring items that were used in this study are presented in Table 1.

**Table 1. The measuring items**

<b>Motivation for ritualized use</b>	
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.

<b>Motivation for instrumental use</b>	
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.

<b>Perceived ease of use</b>	
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, smart phones and tablets.

<b>Perceived usefulness</b>	
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.

<b>Intention to use</b>	
INT1	I will continue using digital and mobile devices, including smart TVs, smart phones 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

### **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. 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 females. The sample consisted of 339 females (69%) and 152 males (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 modelling approach to explore the measurement quality of this research model (Ringle, Wende & Becker, 2014). SEM-PLS 3 confirmatory composite analysis' algorithm revealed the results of the reflective measurement model (Hair, Howard, Nitzl, 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  $\pm 1.96$ . 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 per cent 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 validity as the square root value of AVE was greater than the correlation



values among the latent variables (Fornell & 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, Ringle & Sarstedt, 2015) as shown in Table 2.

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

Construct	Items	Outer		CR	AVE	1	2	3	4	5
		Loadings								
1	Instrumental use	IU1	0.831	0.821	0.607	<b>0.779</b>	0.442	0.737	0.402	0.609
		IU2	0.822							
		IU3	0.676							
2	Intention	Int1	0.938	0.929	0.868	0.338	<b>0.932</b>	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	<b>0.928</b>	0.507	0.555
		PEoU2	0.936							
4	Perceived usefulness	PU1	0.83	0.894	0.737	0.303	0.676	0.424	<b>0.859</b>	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	<b>0.812</b>
		RU2	0.85							
		RU3	0.714							

Note: 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, Ringle & Sarstedt, 2015).

### 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 (VIFs) 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 ( $f^2$ ) of each exogenous construct on the endogenous constructs.

Afterwards, 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 & Sarstedt, 2011). Table 3 presents the results of the hypotheses of this study. It tabulates the findings of the standardized beta coefficients (original sample and sample mean), the confidence intervals,  $f^2$ ,  $t$ -values and the significance values ( $p$ ). Table 4 features the results of the mediating relationship.

**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

**Table 4. Mediating effects**

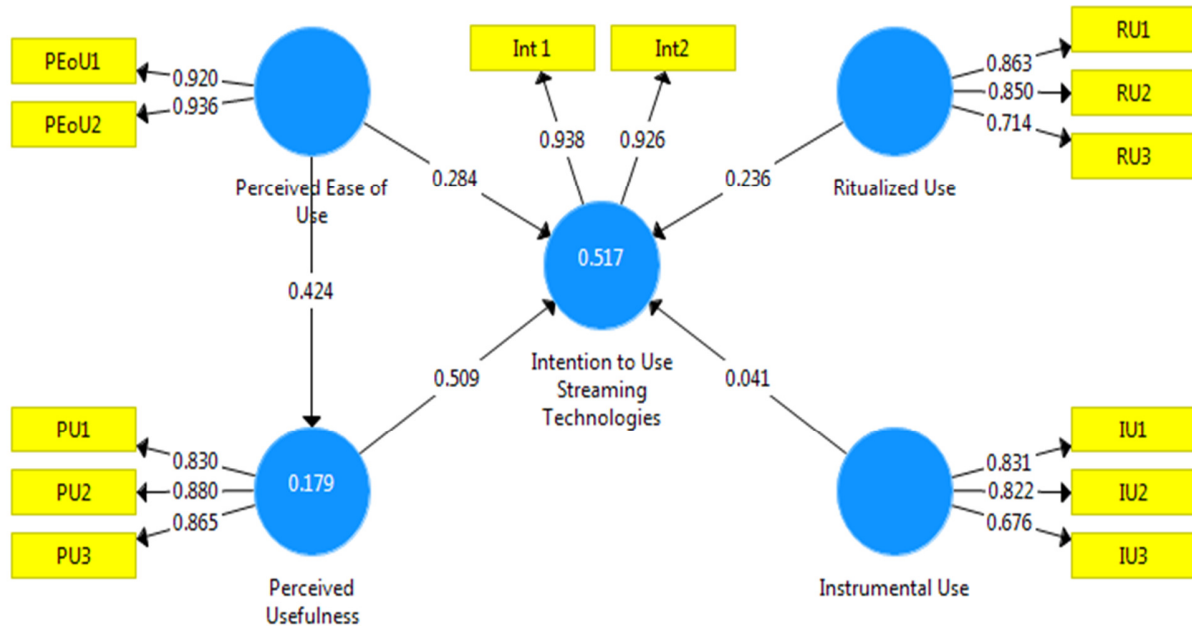
		Direct Effect	Indirect Effect	Total Effect	Confidence Intervals Bias Corrected	t-value	<i>p</i>	Decision
H2	Perceived Ease of Use -> Intention	0.069*						
H2a	Perceived Ease of Use -> Perceived Usefulness -> Intention		0.216	0.285	[0.162, 0.277]	7.396	0.000	Supported (Full Mediation)

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

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 technology acceptance model. 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 like 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 squared) 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 ( $R^2=0.179$ ).

**Figure 2. A graphical illustration of the results**



## 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 as well as the usefulness of the streaming technologies. The results confirmed that they found it easy and straightforward to use their smart TVs, smart phones 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; Lee et al., 2020). 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 was 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, 2017c; 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 smart phones 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 like smart phones 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 smart phones and tablets. Thus, smart TVs (that are using Apple and/or Android systems, among others) 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 (COVID-19) 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. Alternatively, online users may decide to subscribe to the streaming services, if they want to block the marketing messages they receive (Tefertiller, 2020; Kim, Nam and Ryu, 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 females. 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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