What Motivates Introverted Streamers? A Study from twitch.tv

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Abstract

Live streaming is driven by the motivation of individuals to get their content out into the world. It is notable how individuals who usually do not enjoy the company of large groups of people overcome this inherent conflict and nonetheless do it. Given the different personalities of streamers, one big question is the role that needs play in the motivation of streamers. To address this issue and determine the types of needs that affect motivation at work, this study uses the self-determination theory and personality types (introverts and extroverts) to analyze the data collected from 392 Twitch.tv streamer responses. The results show that there is a significant relationship between needs and motivation in live streaming and that personality type does have a moderating effect on this relationship. Even though this study could not establish support for all hypothesized relationships, it still provides good reference material for future studies to be used as a baseline for deeper research.

Keywords: Live Streaming, Motivation, Needs, Personality Types, twitch.tv.

1. Introduction

Live streaming pertains to the action of broadcasting real-time video content via the internet. The audience can access the content on various devices such as desktop computers, laptops, smartphones, tablets, etc. Live streaming started to become popular a few years ago thanks to the development of and easy access to new and affordable live-streaming technology (Bouchard, 2017; Murray, 2017). The first reference to live streaming appeared with live sports such as The Olympics and the Football World Cup. (vLink Live, 2012) The difficulty to attend these live events from different parts of the world was the prime reason for the rise of interest in live streaming. Subsequent technological developments made it possible to access live events with the convenience of sitting at one's computer instead of depending on a TV subscription (Tomaselli, 2010). Such ease of access accounts for the popularity of live streaming. Streaming services can be accessed through many platforms at once, unlike a TV subscription which usually restricts usage to two or three devices maximum (Patel, 2018). Live streaming is also winning market share over TV because it provides more mobility, generating excitement and the ability to multitask (Leibovich, 2018). Lastly, a live stream video can be stored for future viewing in the event an audience cannot tune in live. This is a huge plus over usual TV programs where the inability to watch at a particular time means missing the program altogether (Burroughs, 2015). Although reruns for TV programs are still available they are restricted due to their broadcast times, which can cause viewer frustration (Hampton, 2017; Patel, 2018). Due to such technology advancements, live streaming is a trend on social media around the world (Dave, 2018; Shaikh, 2019; Stout, 2019). People are sharing their activities with the world, and with individuals who are interested, more commonly known as their "viewers." The interaction between broadcaster and viewer is almost instant, and the participation and ability to talk to the broadcaster in real time, is one

of key aspects of why people enjoy it so much. Studies suggest that streaming will more than double growth by 2021 (Patel, 2018). Live Streaming is also very interesting to users because they can create their own content and go live at any time (Israele, 2017). However, being a streamer entails interaction with many unknown people who come to your site. From a personality traits perspective, this type of situation may be comfortable for extroverted people, but not so for introverts. Getting a lot of people on one's space, i.e., exposing oneself on camera (not required, but expected most of the time), talking both on and off stream, being interactive (some speakers choose not to speak at all or talk less, but it is usually not good for the stream since interaction and engagement are one of the important factors for live streaming) (Cortez, 2018), can be overwhelming for some personality types (Neris Analytics, 2011).

Like all other jobs, live streaming also requires motivation to work on the part of streamers. Live streaming shares similarities with other job positions and tasks and can be considered as a real job either full-time, part-time, or even freelancing or just as an additional source of income. Live streaming itself is considered an "art" (Wynans, 2016) and is thus no different than a career path in the entertainment business. Despite the obvious similarity between a streamer job and other jobs, live streaming has a unique job profile as certain aspects are different from normal media-related jobs (Lu, Xia, Heo, & Wigdor, 2018; Sjoblom & Hamari, 2016). Differences between streaming jobs and other jobs override their commonalities and suggest a direction for future research in terms of focus on what motivates streamers toward achieving success. Several previous studies have already shed light on this topic (e.g. Friedländer, 2017; Hilver-Bruce, Neill, Sjoblom, & Hamari, 2018). Within the gamut of factors affecting the motivation to do live streaming, each personality differs in stimulation and motivation (Bencsik, Machova, & Hevesi, 2016). To complete a task in opposition to the personality disposition, individuals need some motivation or positive stimulation.

As is known, introverts and extroverts are stimulated by different environments (Neris Analytics, 2011). Different stimuli motivate individuals, and "pushing the right buttons" has to be considered to increase an individual's will and effort to persist until his/her goals are reached (Latham & Ernst, 2006). When the objective is to provide motivation or a reason to do things, providing the wrong stimulation or motivation will have the opposite result. Individuals will start feeling too pressured or burned out, which can lead them to giving up on the end goal. This is the key element of how individuals will react in the workplace or anywhere else (Lemons, 2017). According to Gall et al. (2005) and Chen, Wu, and Chen (2010), disposition is the aspect that affects an individuals' ability to initiate and maintain action toward achieving goals. This shows that each individual will require different motivation techniques to maintain his/her efforts.

Based on all the above background information, the objective of this research is thus to compare streamers on the twitch.tv streaming platform (focusing on introverted and extroverted streamers) and the factors that motivate them, including some tasks that streaming entails which are opposed to their own personality. The study has several implications. Streamers themselves can use this research for information on how to better understand themselves, learn about various types of motivations from other streamers, or for a clearer view on whether this is something they want to pursue. For businesses within the streaming industry, the website managers can use the research findings to understand what factors motivate streamers with differing personality characteristics, what they want, and what business can they develop to support them. This will help them understand their users

and also encourage them to apply the recommendations made in this study for managing their users and customers, which can apply to the viewers as well.

2. Literature Review

This section discusses the operative concepts in this study, which include live streaming, personality types, and motivation theories. It also considers the dynamics of live streaming as a workplace and articulates the hypotheses developed as a result.

- Live Streaming

Live steaming is a very recent technological development in the field of broadcasting and social media. Live streaming can be separated into many categories, for example, Vlogging, reviewing food, and sports. However, the category of concerns for this study is "gaming." The rise of e-sports around the world caused its popularity among gamers as this is where they can show their skills to people around the world (Sharma, 2014). Live streaming thus enables them to create their own social groups and find somewhere to belong (Fortney, 2018; Herrman, 2018). Currently, gaming content is one of fastest growing markets around the world; it has larger audiences than HBO, Netflix, ESPN and Hulu combined (Nielsen, 2018; Statista, 2018; WePC, 2018). Among the many platforms supporting live streaming, the one which this research focuses on is twitch.tv.

- Motivation and the Role of Personality Types

Each person has his/her own characteristics. The combination of the various traits of each person makes everyone unique (Ryan & Deci, 2000). There are many theories explaining personality traits, but the one trait on which this study focuses is a social trait: introverted and extroverted personalities. Introverts usually are quieter and more reserved, but that does not mean they are anti-social; "introverts just need time to recharge their social battery." (Dossey, 2016, p.151) Common traits of introversion are self-awareness, thoughtfulness, being detail-oriented, and emotionally private, quiet, reserved in unfamiliar or large groups of people, and observant (Ryan & Deci, 2000). Extroverted personality types also have major traits that have been identified in many theories. Contrary to introverts, extroverts are interested in engaging with the environment. Active and social, often labeled "the life of the party," extroverts are energized by an open crowd (Holland, 2018). Common traits of extroversion include enjoying socializing, not liking to stay alone, loving to talk, friends with many people, and very open (Ryan & Deci, 2000).

Over the years, a multitude of motivation theories have explained the dynamics of the antecedents and outcomes of motivation; three in particular: need-based theories, process theories, and reinforcement theories. They seek to account for the ways in which individuals experience and express the factors affecting motivation. For this study, the process-based theory, called Self Determination Theory (hereafter referred to as "SD") will be adopted to explain the motivation of live streamers and the effect of their personalities in this equation (Deci & Ryan, 1985; Ryan & Deci, 2000).

- Motivation at Work

Motivation at work is a significant concern for all organizations. The term 'Motivation' comes from the word *motive*, which refers to when an individual has an appropriate reason to perform an activity. The same is true for any work activity. However, there are other factors that affect motivation at work (Calk & Patrick, 2017). One such factor is the personality of the individual. Several previous studies (Salgado, 2017; Taris & Schaufeli, 2015) suggest a significant relationship between personality type and motivation to work. Whereas motivation has been a stable phenomenon at work, the dynamics of work itself have changed over the years (Fishwick & Curran, 2016). This change is also attributable to the introduction

of technological advancements resulting in more diverse workplaces (Mullan & Wajcman, 2017). Live streaming offers such a diverse workspace, distinct from those previously held.

- *Live Streaming as a Workspace*

While live streaming may look similar to the job of TV hosts such as news reporters, a number of factors make live streaming a different and unique profession. First, live streaming is a mixed media (Sjoblom & Hamari, 2016), which means it involves two directions of communication, unlike TV, which is only one-sided communication. Live streamers have to be on point and focused, not only on their own content, but on their community as well. The community consists of the audience that is involved in the chat or in watching the stream. The community evolves over time into a stronger, more cohesive group, interacting through chats in real time. This means that, through such interactions, the content can be altered during the stream, depending on the interests of the community, ensuring that the community is involved with the streamer. Second, the difference between live streaming and TV hosting is also apparent at the level of the persona of the live streamer. Live streamers are not similar to TV hosts who are just doing their jobs; streamers usually develop their persona to flavor the content they create (Lau, 2017; Lu et al., 2018). It is notable that previous personality-related studies have shown how different personalities work differently (Lambert, n.d.; Paycor, 2018). Studies suggest that it is not a good idea to put introverts into front-stage tasks, such as sales, or extroverts into back-stage tasks, such as programming. These tasks are opposite to their core dispositions. These opposite personalities will not perform well because they are forced to do tasks for which they are not suited. Matching individuals with their tasks according to personality type increases the satisfaction from performing those tasks and thus improves job performance (Yahaya et al., 2012).

To realize effective outcomes, the right person in the right job along with the right personality is very important (Sulivan, 2001; Talent Intelligence Report, 2018). Previous live streaming-related studies (e.g., Raes, 2015; Sjoblom & Hamari, 2016) suggest several factors that affect the motivation of viewers of live streaming. The studies analyze consumption rates and why viewers pursue the content. However, these aforementioned studies focus on the viewers' perspective, not the streamers'. This highlights the issue of what motivates the streamers to provide quality content and deliver streams to viewers to keep them engaged. If streamers do not feel motivated to create or deliver quality content, then the streaming business platforms will suffer as well (Lau, 2017). With the changes in the modern workplace and the increasing significance of well-being at work (Tov & Chan, 2012), the current study attempts to explore live streaming from the streamer perspective. Specifically, as previously mentioned, the current study aims to analyze the factors affecting the motivations of live streamers with a special emphasis on personality type. The accepted concepts highlighted in previous studies point out that there is a difference in the factors related to personality, motivation, and behavior. Also, several studies suggest that these factors influence the performance of each individual. The current study uses this review as a baseline. A review of the literature indicates that no research exists on live streaming, in a business context, especially on exploring the motivation of different personalities. This illustrates the relationship between personality type, needs and motivation. However, there are few notable studies articulating the factors related to different personalities. Some of them confirm that motives are affected by other factors and that they differentiate their actions (e.g., Friedländer, 2017; Hilver-Bruce et al., 2018; Lau, 2017; Sjoblom & Hamari, 2016). Importantly, as previously stated, most of the studies on Twitch are from a viewers' perspective (e.g., Hilver-Bruce et al., 2018; Raes, 2015; Sjoblom & Hamari, 2016). The current study conducts

research from a streamers' perspective in a business context and seeks to show that different personalities require specific motivations.

- Conceptual Model and Hypotheses

This study attempts to explore the role of personality as a moderator in the relationship between factors leading to motivation and work performance. Based on the research premise, the following conceptual framework was devised:
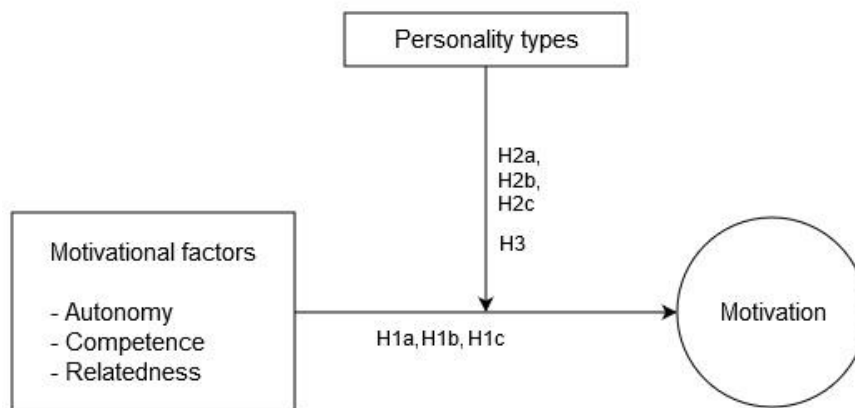

Figure 1: Conceptual Model

The hypotheses for this study are as follows:

H1

H1a: Autonomy needs are significantly related to motivation for live streaming.

H1b: Competence needs are significantly related to motivation for live streaming.

H1c: Relatedness needs are significantly related to motivation for live streaming.

H2

H2a: Personality moderates the relationship between Autonomy needs and motivation.

H2b: Personality moderates the relationship between Competence needs and motivation.

H2c: Personality moderates the relationship between Relatedness needs and motivation.

H3

H3: There is a significant difference between the need-based motivation of extroverts and introverts.

3. Methodology

The main objective of this study is to map the effect of personality types (different personality streamers) on work motivation (streaming), and the factors that motivate them to do live streaming considering their opposite personality types.

- Measurement Scales

Table 1 provides the measurement instruments used for the survey

Table 1: Measurement Scales Used in this Study

Variable Name	Name of the scale	Source of the scale	Cronbach's alpha
Dependent variable: Motivation	SIMS	Guay, Vallerand, & Blanchard, 2000	0.8
Independent variable: Factors affecting motivation (Needs)	Work related basic need satisfaction scale	Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens 2010	0.71
Moderating variable: Personality assessment scale	The I-E scale	Grove, 1995	0.6

- Data Sources and Collection

The survey was prepared in two versions, English and Thai. The method of translation from English to Thai followed Beaton et al. (2000) guidelines. The target population for this study consisted of people using the Twitch platform around the world. In this study, since the research studied the streamers' perspective, respondents from the entire population were limited only to streamers. Screening questions were used for this purpose. One of the researchers asked his fellow streamer friends to be the respondents and used their references to distribute more questionnaires to other streamers. Going by the calculation based on the number of items on the questionnaire survey, there were a total of 44 questions, and following the rule of thumb, 10 respondents for each item took the sample size to 440.

4. Data Analysis and Findings

Pearson's correlation coefficient was used to analyze correlations among the study variables. From the analysis, it is clear that there is no multicollinearity and autocorrelation between independent variables and dependent variables occurring in the model. None of the variable pairs have $r > 0.7$ or $r < -0.7$, and a correlation of 1 and -1 as shown in Table 2.

Table 2: Correlation Analysis

		Mean	SD	1	2	3	4
	Correlations						
1	Autonomy	4.80	0.76				
2	Competence	3.99	1.05	0.42**			
3	Relatedness	4.60	0.89	0.51**	0.40**		
4	P Type Scale	2.52	4.45	0.19**	0.01	0.06	
5	Motivation	3.64	0.50	-0.04	0.18**	0.02	-0.06
	** Correlation is significant at the 0.01 level (2-tailed). n=392						

For inferential statistics, a hierarchical linear regression analysis was conducted to first identify the relationship between motivation and needs (Autonomy, Competence, and Relatedness), and see how this relationship is being moderated by personality type (Introverted and Extroverted). Table 3 presents the findings of this analysis.

Table 3: Results of the Regression Analysis

Model 1: Needs	
Variables	**β**
Autonomy	-0.14**
Competence	0.24**
Relatedness	-0.01
R^2	0.05
ΔR^2	0.05
F (*df*)	6.43 (3, 388)
Sig F-change	0**
Model 2: Personality Types	
Autonomy	-0.13**
Competence	0.24**
Relatedness	-0.01
Personality type scale	-0.04
R^2	0.049
ΔR^2	0.001
F (*df*)	4.97 (4, 387)
Sig F-change	0.44
Model 3: Moderation	
Autonomy	-0.09
Competence	-0.56
Relatedness	0.16
Personality type scale	0.12
Autonomy x Introverts (Moderator 1)	-0.06
Competence x Introverts (Moderator 2)	0.21
Relatedness x Introverts (Moderator 3)	0.03
Autonomy x Extroverts (Moderator 4)	0.13
Competence x Extroverts (Moderator 5)	0.74**
Relatedness x Extroverts (Moderator 6)	-0.25
R^2	0.22
ΔR^2	0.17
F (*df*)	10.58 (10, 381)
Sig F-change	0**
Durbin-Watson	1.879

The regression analysis suggests that needs statistically significantly predict motivation, $F_{(4, 387)} = 4.97$, $p < 0.05$, $R^2 = 0.05$. Only Autonomy and Competence added statistically significantly to this relationship, with a $p < 0.05$. From the model, a 5% variation in motivation was accurately accounted for by the predictor variables (in this case Autonomy and Competence). But the F-change of the model before the inclusion of moderators was not significant, meaning that personality type did not explain any additional variance in motivation by itself. However, this relationship was further observed to be moderated by the inclusion of personality type (Introverts and Extroverts). This was confirmed by the improvement in the predictive power of the model and a change in R^2 of 16.9%, by which the model showed a 21.7% variation in motivation against the initial 5%: $F_{(10, 381)} = 10.58$, $p < 0.05$. This improvement was found significant with an F-change. With the moderating effect of personality type, the moderation of interacting terms between Competence and Extroverts was also found significant. In summary, Competence needs were found important for extroverted people to boost their motivation while no other significant needs were found to

motivate the introverted type. The moderation effect proved to be significant because the F-change in model three was significant after the introduction of moderators. However, only Competence needs were significantly moderated by Extrovert personality traits while the effect on the other pairs appears insignificant. Overall, out of the stated hypothesized relationships, hypothesis 1a and 1b found support with the data where the stated needs are significantly related to live streaming motivation while hypothesis 1c is not significantly related to live streaming motivation. Hypothesis 2b has a partial significance backed by the data that it is only significant to extroverted streamers while hypothesis 2a and 2c are insignificant. Lastly, hypothesis 3 received support from the data where it supported by hypothesis 1 and 2 that introverted and extroverted streamers do have difference in which needs are having an effect on their motivation.

5. Discussion

From the collected data, the study was able to find the relationships between elements of motivation and needs in live streaming. Firstly, Competence needs were found to be significant in the regression model, including the model before and after moderation. This suggests that competence is important to keep streamers motivated (in this case, only extroverted ones). Competence is defined as the need for challenge and need for feelings of love and affection with the immediate environment (Deci, 1975; Ryan & Deci, 2000). Competence allows individuals to cope with challenging and complex circumstances. Like other needs pointed out by the self-determination theory, competence needs to be associated with increased interest and enjoyment, and inherent motivation as desirable outcomes. (Tamborini et al., 2010). Previous studies (e.g., Hassenzahl, Diefenbach, & Goritz, 2010; Reinecke, et al., 2012; Van den Broeck, et al., 2010) support this relationship between competence needs and positive individual and organizational outcomes. In line with these previous studies, the current study also found that competence needs significantly affect the motivation for live streaming. Contradictory to the supportive findings, the study by Raes (2015) though suggested that competence is the most important need to keep streamers motivated because the interaction between communities improves the feeling of affection. This indicates some overlap with Relatedness needs rather than Competence. Nevertheless, the results of this study help translate the support for streamer competence whereby practices such as knowledge management and communities of streamers can be introduced to fulfill the needs of competence and increase the intrinsic motivation of live streamers.

Secondly, none of the needs were significantly related to motivation for introverts in the current sample. This result contradicts previous studies on the topic of motivation at work. Nevertheless, this insignificant result paves the way for further studies by encouraging researchers to use more factors to reveal the intentions behind these actions. Notably, results of the regression analysis show that in most cases personalities are not significantly motivated by their needs, which is in keeping the study of Harbaugh (2010), who concluded that relationships between personality and behaviors do exist but are not very significant, and that introverts and extroverts have similar levels of enjoyment for online interactions. Displaying a commonality with Hodas and Butner (2016), the current study also registers the significance of personality in motivation research; however, contrary to their study results, the current study could not obtain statistically significant results. Nienaber, Bussin, and Henn (2011) suggest that there are relationships between personality types and reward preferences. One of the recommendations is for future research to factor in reward preferences as another independent variable to analyze what actually motivates introverts to do live streaming.

Lastly, this study found that different personalities have different needs to keep them going. There are indeed differences between the needs of introverts and extroverts to keep them doing live streaming. The results of the moderation analysis during regression suggest that moderation explains some additional variances. This indicates that certain changes in the motivation of live streamers can be explained by personality type. Notably, this result aligns with studies from Chen, Wu, and Chen (2010), Holland (2018), and Youshan and Hassan (2015), which point out that different personalities will require different motivation techniques or needs to promote their motivations.

6. Conclusion, Implications and Future Research Directions

This study investigated the relationship between needs and motivation in live streaming and analyzed the moderating effects of different personality types. The questionnaire survey comprised 392 Twitch.tv streamers from around the world as respondents. The relationships between needs and motivation, including personality type as a moderator, were identified and analyzed. The results suggest that each personality requires different needs to keep them motivated. Similar to prior research by Sjöblom et al. (2019), this study is not only limited to Twitch.tv and live streaming. It helps us understand the basic nature of needs in a social media driven world. Everyone nowadays can be a content creator. One example is being a live streamer on social media platform, where Twitch.tv is only one of them. The significant findings in the study point towards the role of needs in motivation and the impact of different personality types. The study confirmed that introverts and extroverts have different needs to keep them motivated. Hence, different methods to increase motivation need to be implemented for them to maximize the outcomes. Even if this study could not find a support for all hypothesized relationships, it lays a good foundation for future researchers as a reference to go deeper using more variables to determine what motivates the live streamers. The findings of this study can be treated as references leading to a deeper understanding and the results could also be applied to other types of content creation and social media engagement on different platforms.

- *Theoretical Implications*

The findings of this study offer new knowledge into the world of live streaming. This study can act as a reference for future researchers to dig deeper into the details under this topic. Since R^2 is low in the regression analysis, further research is recommended to include more independent variables such as rewards, achievements, etc.

- *Managerial Implications*

For influencer marketing and the media industry, the findings indicate the commonly shared demands in needs – to help further in understanding the needs driving live streamers. This could be used to provide or develop more elements to determine how their returns could be re-imagined (without knowing the personality of the influencer). Importantly, for streaming service providers, the findings of this study could be used to modify their services or rules to create more support and build customer loyalty toward retaining streamers and higher satisfaction levels with the platform. As mentioned in the findings, the most important need is Competence for extroverted streamers, where tweaking, modifying or creating regulations could enable extroverted streamers to enhance their capabilities rather than limiting their actions, and thus improve their motivation. The ratio of introverted and extroverted streamers gathered indicates that 22.4% of the samples were introverted. This shows that the ratio of introverted streamers is relatively high to maximize the potential of the platform and gain bigger markets. Future studies for introverts in greater detail would assist platforms such as Twitch.tv to better manage their work and motivate their streamers.

- *Limitations*

The aim to survey as many regions as possible was to get a broad variety of data since each region has a different culture which might influence the survey responses (Dolnicar & Grün, 2007; Yang et al., 2011). However, no restriction on a particular geographic location might generate availability bias in terms of exclusion of the effects of culture on personality and motivation (Funder, 2015; Kim, 2017). This study used the "non-probability sampling" method, which can result in biased findings due to the limited group of respondents (Mercer, 2017). It did not consider attitude, only the behavioral motivation component. Some other variables were not covered, such as other personality traits among personality types, which include conscientiousness, emotional stability, and agreeableness. In addition, streaming tools available to individual streamers over and above the basic, required tools were excluded from the study. This might have restricted the generalizability of the findings. Lastly, since Twitch.tv keeps on updating their streaming services, the findings of this study will not be generalizable for the long term and will need to be replicated in future studies with the most up-to-date service combinations to ensure continued applicability.

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