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THE FINAL MASTER'S THESIS

FAKTORIAI, DARANTYS ĮTAKĄ VARTOTOJŲ SPRENDIMUI PEREITI NUO NEMOKAMŲ („FREEMIUM“) PRIE MOKAMŲ („PREMIUM“) INTERNETINIŲ PASLAUGŲ	**FACTORS INFLUENCING CONSUMERS' DECISION TO SWITCH FROM FREEMIUM TO PREMIUM ONLINE SERVICES**

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INTRODUCTION

The freemium business model, a concept derived from the combination of the terms “free” and “premium”, has become an important paradigm in sectors of the digital economy such as music streaming, gaming and cloud-based services. This model appeals to a wide range of users by offering basic features for free, while charging for advanced services, and generates revenue by converting some of these users into premium subscribers. The freemium model, first described by Wilson (2006), was developed to enable users to access services with low barriers to entry and then attract a certain number of them to premium services. Anderson (2009) states that the main purpose of this model is not only to increase user acquisition, but also to generate revenue through users who derive high value from premium features.

Despite the popularity of the freemium approach, gaps persist in the literature regarding the psychological and behavioral factors that influence a consumer's decision to switch from a free to a premium service. Wagner et al. (2014) argue that the perceived premium fit—how well the premium features align with user expectations—plays a critical role in the conversion process. They suggest that understanding the functional differences between free and premium offerings can help service providers optimize their conversion strategies. However, this aspect remains underexplored in empirical research. For instance, the relationship between user engagement with the free service and their intention to upgrade to the premium version warrants further investigation. Studies indicate that users who experience enjoyment from the free version may be less inclined to pay for premium services, creating a paradox that needs to be addressed (Hamari et al., 2020).

Despite its widespread success, the freemium model poses significant challenges, especially in terms of increasing premiumization rates. It is often reported in the literature that these rates generally range between 1% and 10% (Mäntymäki et al., 2019). While existing studies examine the functional, social and emotional value dimensions that influence user behavior, more research is needed on the behavioral effects of these values in freemium models. In particular, frameworks such as Consumption Value Theory (CVT) (Sheth et al., 1991) suggest that functional, social and emotional values play a critical role in understanding user behavior. For example, functional features of platforms (e.g. Spotify, Netflix) such as 'ubiquity' significantly increase user satisfaction and intentions to switch to premium. However, the psychological and social dynamics of the freemium-to-premium switching process are still poorly understood. Theories such as the Expectation-Confirmation Model (ECM) by

Bhattacherjee (2001) and the Decomposed Theory of Planned Behavior (DTPB) proposed by Taylor & Todd (1995) contextualize user satisfaction, social influences and perceived behavioral control in this process.

In addition, the psychology of the sunk cost effect provides valuable insights into consumer behavior in the context of freemium services. Arkes and Blumer (1985) highlight how prior investments—whether in time, effort, or money—can lead individuals to irrationally continue engaging with a service, even when the decision is not objectively justified. This phenomenon is particularly relevant in the freemium landscape, where users who have invested time in building their profiles or creating playlists may feel compelled to upgrade to a premium subscription to avoid losing their investment. Furthermore, Hamari et al. (2017) emphasize the role of social influence in shaping consumer decisions, suggesting that social norms and peer behavior significantly affect users' willingness to pay for premium features. The interplay between social value and individual user experience, therefore, must be considered when analyzing consumer behavior in freemium models.

Additionally, previous studies have often focused on the economic aspects of freemium models, neglecting the emotional and social implications of user engagement. For instance, Wagner and Hess (2013) highlight that while users may be aware of the benefits associated with premium services, their emotional attachment to the free version can hinder their willingness to pay. This necessitates a deeper exploration of the role that enjoyment and satisfaction derived from free services play in shaping users' decisions to upgrade. Furthermore, the importance of social dynamics cannot be overstated in this context. As noted by Hamari et al. (2017), the social aspect of freemium services—where users derive value not just from the service itself but also from their interactions with others—plays a pivotal role in influencing purchasing behavior. The sense of belonging and social recognition gained from utilizing premium features can be a significant motivator for users, particularly in gaming and social media environments. This thesis will examine how social influences, coupled with individual value perceptions, drive the transition from freemium to premium subscriptions.

Lastly, the unique challenges posed by the freemium model necessitate a comprehensive understanding of the consumer's journey from free to premium. Kato and Dumrongsiri (2022) emphasize that firms must carefully consider their pricing strategies and free usage limitations to effectively capture both market share and user loyalty. By analyzing

these strategic elements in conjunction with user behavior, this study aims to provide actionable insights that can inform the design and implementation of successful freemium offerings.

The problem of the paper:

Which value dimensions (functional, social, emotional, and epistemic) and other psychological factors influence consumers' decisions to transition from freemium to premium services, and how do these elements interact to shape their intention to upgrade?

The aim of the paper:

The aim of this thesis is to systematically analyze the factors influencing the transition from freemium to premium services. This involves:

- Examining the impact of specific value dimensions (functional, social, emotional, and epistemic) on consumer behavior to establish a comprehensive understanding of their role in shaping the intention to upgrade.
- Investigating the mediating role of satisfaction and continued use in the relationship between value dimensions and the intention to upgrade, testing the hypothesis that these mediators strengthen the direct effects of value dimensions.
- Exploring the influence of psychological phenomena such as the sunk cost effect on user behavior in freemium models, particularly how prior investments in free services affect decision-making processes.
- Analyzing the role of social factors, including peer influence, in shaping consumer perceptions and intentions to upgrade to premium services.

Objectives of the research:

- To assess how functional, social, emotional, and epistemic value dimensions influence consumers' satisfaction and continued use within freemium models.
- To investigate how satisfaction and continued use mediate the relationship between value dimensions and the intention to upgrade to premium services.
- To examine the role of psychological factors such as the sunk cost effect in influencing consumer behavior.
- To analyze the social dynamics, including peer influence, that affect user decisions to transition to premium services.

Based on this theoretical foundation, this thesis aims to address gaps in the existing literature by examining the behavioral, psychological and social factors that influence freemium-to-premium switching decisions. Building on the CVT framework developed by Sheth et al. (1991), the study provides a comprehensive analysis integrating functional, social, emotional and epistemic value dimensions. In addition, this research focuses on the intention to switch to premium rather than purchase intention, taking into account the fact that users are already interacting with a free service, a characteristic specific to freemium models. In this context, mediating variables such as satisfaction, continued use and peer influence are also key focal points of the research.

This study uses a number of methods to examine consumer behavior in the freemium business model from both a theoretical and empirical approach. First, using a literature review method, existing theoretical frameworks, in particular the Consumption Value Theory (CVT), were examined in detail. In this process, we focused on functional, social, emotional and epistemic value dimensions. For the empirical analysis, quantitative methods were adopted, and a survey-based data collection approach was used. The collected data were evaluated with regression analysis and path modeling techniques. Thus, the relationships between independent variables and intention and the effect of mediating variables were systematically examined. To ensure the accuracy and validity of the methods used, the reliability of the scales was evaluated with Cronbach Alpha test and relations between variables was examined with SPSS statistical program.

This thesis consists of five main chapters that complement each other. The first chapter sets out the theoretical framework of the study and identifies existing gaps in the literature. The second chapter explains the methodology, data collection tools and analysis techniques in detail. The third section discusses the factors affecting consumer behavior in the freemium business model and presents the empirical findings. The fourth section discusses the results obtained by comparing them with the findings in the literature and presents the theoretical contributions. The fifth and final section summarizes the overall conclusions of the study, discusses the limitations and provides recommendations for future research.

The limitations of the study can be assessed in terms of both methodology and scope. First, the survey methodology used in the data collection process may involve self-reporting biases. Respondents may have tended to give socially acceptable answers. Second, the sample size was below the targeted level, which may limit the generalizability of the findings.

Furthermore, in terms of demographic distribution, there was a clustering in certain age groups, making it difficult to fully examine intergenerational differences. The sectoral scope of the study was limited to content-oriented services (e.g. YouTube, Spotify), limiting generalizability to other freemium models (e.g. gaming or productivity tools).

As a result, while this research makes important contributions to understanding consumer behavior regarding the freemium business model, it also has certain limitations. Future studies can increase the general validity of this model by examining larger sample groups and applications in different sectors.

1. LITERATURE REVIEW OF FREEMIUM BUSINESS MODELS AND FACTORS INFLUENCING CONSUMERS' BEHAVIOR

1.1. Definition and Historical Context of Freemium Business Models

1.1.1. Definition and Applications of Freemium Business Model in Different Industries

The term "freemium" complies with the words "free" and "premium." It stands for a business model where basic services or products are offered for zero price while there are also advanced features or additional products available for an additional payment. The word freemium is first used by Wilson (2006) even though it existed long before its use. This model is used in various industries, especially among the ones that offer services as products such as music and video streaming services, cloud-based storage, and even social media networking. The aim of offering a free service or product is to attract more users and converting them to switch premium, which will be the main source of revenue in the future (Anderson, 2009). Thus, in freemium business models, there are two different types of customers: the one who generates to revenue while the other can take the benefit of using the free version of the service (Kumar, 2014). However, although free users do not generate direct revenue, they can increase service costs. Therefore, successful freemium companies try to reduce these costs by automating customer relationship management and using mass customization methods (Holm & Günzel-Jensen, 2017). The effectiveness of the freemium model is often evaluated through its ability to increase user acquisition. Offering free access lowers barriers to entry, allowing businesses to capture a broader audience. However, the challenge lies in converting free users to paid subscribers, as many users may be content with the free version. Research indicates that conversion rates typically range from 1% to 10%, influenced by factors such as user engagement strategies and the perceived value of premium features (Niemand et al., 2019).

According to Pujol (2010), there are three types of freemium models, all aimed at what Anderson (2009) referred to before: transitioning a user from the free segment of the service to the paid, premium segment. The first type of freemium, known as quantity differentiation, involves providing samples that allow the user to experience a portion of the complete premium product or service for free during a limited trial period. For instance, most of the video streaming platforms such as Netflix, Amazon Prime, and Disney+ utilize this model to build customer retention. Users can fully access the content library for a limited time, encouraging them to upgrade (Pujol, 2010).

Another freemium model generates the demand by granting users access to the core features of the product, with premium functionalities available for purchase. For example, Spotify, which is a music streaming service, allows users to listen to music and podcasts for free, yet with advertisements while there is an ad-free version available with enhanced features like personalized playlists through a monthly subscription fee. (Lehmann-Zschunke, 2024). This model effectively leverages the zero-price effect. According to earlier research, when consumers encounter a "zero price" option, they tend to evaluate it more favorably than they would for alternatives that carry a cost. This preference stems from the notion that any cost, no matter how small, creates a barrier that makes the free option more appealing (Shampanier et al., 2007). In other words, consumers often see the "zero price" as a reference point, leading to a tendency to favor free goods or services because they represent a more attractive deal relative to priced alternatives since it is certain that zero-price will either equal or be less than the reference point which leads to enhancing user engagement, making them more likely to upgrade to premium features (Lehmann-Zschunke, 2024). The zero-price effect highlights that consumers often perceive free offerings as more attractive, which significantly impacts their decision-making process (Pujol, 2010)

The third model is the differentiated distribution. It functions as a license, enabling consumers to use a free version independently. However, it restricts the redistribution, sharing, or commercialization of the service without acquiring the necessary rights. Adobe Acrobat Reader is one of the most famous and successful examples of differentiated distribution. Users can download and use the free version of Adobe Acrobat Reader to view, print, and annotate PDF documents independently. However, the software restricts users from redistributing or sharing the software itself or using it for commercial purposes without purchasing the appropriate licenses, such as Adobe Acrobat Pro, which offers advanced features like PDF editing and conversion.

Various industries, besides the aforementioned, also have successfully implemented the freemium model. For instance, in the software industry, companies like Slack provide basic messaging and collaboration tools for free, while charging for more features such as advanced integrations, larger file uploads, and increased storage capacity.

1.1.2. Historical Context and Evaluation of the Freemium Model

The emergence of freemium models is fundamentally rooted in a series of research efforts aimed at understanding consumer behavior. Initially, traditional direct sales methods dominated the marketplace; however, over time, the growing comprehension of consumer behaviors, coupled with advancements on the internet and the rise of e-commerce, led to the adoption of new sales models. For instance, the subscription model necessitates that users pay a recurring fee for access to all features, as observed in platforms such as Netflix and Amazon Prime. In contrast, the pay-per-use model charges customers based on their actual usage, exemplified by services like Uber (Mishra et al., 2018).

The freemium model, however, aims to attract new customers by offering them tangible experiences of the service. This approach triggers various behavioral responses, such as the sunk cost effect, mental accounting, and loss aversion. The sunk cost effect refers to the tendency of individuals to consider previous investments—time, money, or resources—as cumulative and integral to their decision-making process (Arkes & Blumer, 1985). Within the context of freemium models, where no monetary payment is initially made, this theory is often associated with time investments.

Additionally, according to Soman (2001), the mental accounting of sunk time costs may differ between time and money. Time almost always has a greater impact while doing mental accounting because it cannot be replaced or inventoried, unlike money. Consumers typically tend to align their investments with the returns they receive; however, the perceived significance of their investments can vary considerably. In this regard, it is also important another aspect of the time. While mental accounting for money is a routine activity due to daily transactions, people do not tend to think of time as money, thus, it is an unusual thing to do when purchasing a product. This mental accounting can create a sense of ownership over their time investment, prompting users to pay for premium features that enhance their experience. Moreover, users may experience regret or frustration if they do not capitalize on their time investment by transitioning to a paid subscription, thereby further reinforcing the sunk cost effect.

For example, an individual who begins using a music streaming service may invest time and effort during a trial period—such as creating personalized playlists—resulting in a form of time and experiential investment. Even if this user subsequently finds the service less satisfying, the psychological impetus to justify their earlier investment may compel them to continue using the service (Wagner et al., 2013). In some cases, they may even opt to upgrade to a premium version to enhance their experience, thus reinforcing their prior commitment (Mäntymäki et al., 2019) Consequently, a freemium service must not only attract free users but also provide substantial functional or diverse features that offer significant benefits to the paying premium segment. It is essential to find this balance, as doing so enables the service to attract new users without undermining its existing revenue streams (C. Z. Liu et al., 2014).

At this juncture, the benefits mentioned may not always be purely functional. There are numerous consumption values that can influence user behavior, and these are typically categorized as functional, social, emotional, epistemic, and conditional (Sheth et al., 1991). While these values are thought to have a direct impact on willingness to pay (WTP), subsequent studies have expanded upon this model, incorporating additional mediators.

1.2. Theoretical Frameworks of Freemium Business Model

1.2.1. Consumption Value Theory

The framework established in Richard L. Oliver's (1980) "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions" has significantly advanced our understanding of satisfaction and its relationship with purchase intentions. This cognitive model asserts that consumer satisfaction is influenced by various antecedents, including expectations, perceived quality, and emotional responses, which collectively shape decision-making processes (Oliver, 1980). While this model supports the multidimensional aspects of consumer behavior, it also shows the distinction between satisfaction and perceived value as two separate dimensions.

Perceived value can affect different stages of the purchasing decision process, particularly during the initial research phase, whereas satisfaction is contingent upon the experience of purchasing or using the product or service (Sweeney & Soutar, 2001). This differentiation has prompted research to adopt a multidimensional perspective that categorizes consumption values into functional, social, emotional, epistemic, and conditional values (Sheth et al., 1991). This categorization aligns closely with the antecedents outlined in Oliver's cognitive model, emphasizing how consumer evaluations and subsequent satisfaction are

influenced by a multitude of factors beyond mere product functionality. The study further suggests that each consumption value can independently contribute to consumer choices in various contexts.

Moreover, it would not be wrong to state that these factors are interrelated, which is one of the main aspects of the Consumption Value Theory, according to Sheth et al. (1991). For instance, the tendency to smoke is often directly associated with social acceptance in certain environments, such as gatherings or parties where smoking is prevalent. This social aspect can create a sense of belonging among smokers, reinforcing the behavior. The satisfaction derived from smoking relates both to emotional and functional value. Many smokers also reported that smoking provides them with a sense of relaxation or stress relief, which makes them feel better in certain situations. This can be also connected to conditional value, especially if the person normally does not smoke. This emotional connection is not solely about the act of smoking itself but also about the memories or social interactions associated with it, such as sharing a cigarette with friends during a break. Thus, we can say that all these values have interrelated impact on overall decision of a consumer but it's important to highlight that all these values have effect in a way, both separate and all together.

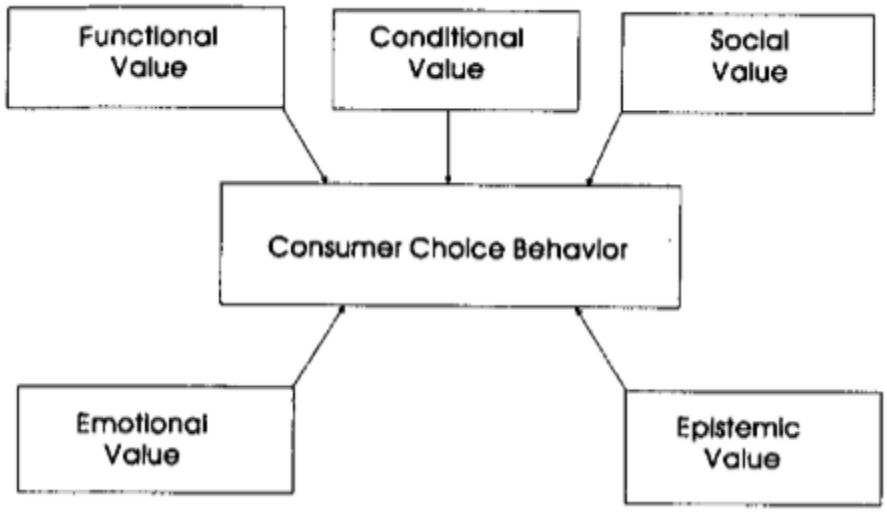


Figure 1. *The values influencing consumer choice (Sheth et al., 1991)*

Functional Value

Functional value is associated with the practical benefits that a product or service provides. It relates to the product's ability to fulfill its intended purpose and encompasses attributes such as reliability and efficiency (Sheth et al., 1991). Research emphasizes that functional value is often a primary factor in consumer decision-making, especially in situations

where consumers purchase a product or service to solve a practical problem or meet a specific need. For instance, a consumer may prefer a computer from a brand known for its durability because they believe the device will be reliable for long-term use.

In the context of freemium models, functional value plays a crucial role in determining user satisfaction and the likelihood of transitioning from free to premium services. If users find that the free version sufficiently meets their needs, they may perceive little incentive to pay for premium features. Conversely, if premium features offer significant enhancements in functionality—such as improved performance or increased convenience—users may be more inclined to upgrade (Kumar, 2014). This highlights the importance of aligning the functional benefits of premium services with user expectations and needs.

For example, a positive relationship has been demonstrated between quality (which is a functional value in this regard) and the intention to use freemium services (Hamari et al., 2020a). This indicates that the quality of the service positively influences users' intentions to continue utilizing it. However, this finding suggests that while the quality of the basic service is essential for satisfying users, it may not be sufficient on its own to encourage the purchase of premium content. To enhance the intention to purchase premium features, it may be necessary to offer additional values or advantages that extend beyond the quality provided by the free service. Strategies employed by successful freemium companies often involve continuous innovation and the development of new products. This approach aims to consistently enhance value for both free and premium users, thereby fostering user loyalty and customer commitment (Holm & Günzel-Jensen, 2017).

Social Value

Social value is another important aspect of Consumption Value Theory (Sheth et al., 1991) and it can be related to not only social acceptance, but also peer influence or status within a community (Sweeney & Soutar, 2001). In the context of services, this aspect becomes even more pronounced, as individuals seek platforms where they can connect over shared interests and enjoy common pleasures, particularly in entertainment sectors such as music, video, and gaming. Within the freemium services, social value is particularly critical, as users often assess their social standing based on their engagement with premium offerings. For example, consumers might opt to pay for premium features to gain social recognition among their peers, thereby enhancing their status within social circles (Sheth et al., 1991). Research indicates that social value significantly influences users' willingness to pay (WTP) for premium services,

especially in social platforms and gaming environments, where users are eager to demonstrate their membership or status (Hamari et al., 2017).

Emotional Value

Emotional value pertains to the feelings and affective states that a product or service can evoke in consumers (Sheth et al., 1991). This dimension of value is particularly significant in contexts where consumer emotions play a crucial role in influencing purchasing decisions. This type of value is especially relevant in scenarios where emotional connections significantly impact purchasing decisions. For instance, a consumer might subscribe to a music streaming service not just for its functional advantages but also for the nostalgia or happiness associated with certain songs or artists (Mäntymäki et al., 2019). A consumer may also choose to subscribe to a music streaming service not solely for its functional benefits but also for the positive emotions or nostalgia associated with specific songs or artists (Mathwick, 2001).

Perceived hedonic value relates to the enjoyment and pleasure derived from using a product or service. In freemium models, where the basic service is free, enjoyment becomes a critical factor in retaining users. However, we need to take into account users who experience high levels of enjoyment from the free service are less inclined to transition to paid services unless they perceive the additional benefits as significantly enhancing their enjoyment, according to that Hamari et al. (2017). This relationship highlights a potential paradox where increased enjoyment of free services may detract from the incentive to upgrade to premium features, leading to lower conversion rates.

Epistemic Value

Epistemic value relates to the perceived utility derived from the novelty or curiosity that a product or service can provide (Sheth et al., 1991). Consumers often seek new experiences or knowledge, and products that can satisfy these desires hold significant appeal. This is particularly salient in the context of freemium models, where users may be drawn to new features or updates that promise to enrich their experience (Sweeney & Soutar, 2001)

For instance, in freemium gaming, players may initially be attracted to a game because of its unique mechanics or storyline, which provides an epistemic incentive to engage. The novelty of the experience may compel users to explore premium features that enhance their understanding or enjoyment of the game. Research suggests that the desire for new experiences can drive purchase intentions, particularly when these features are presented as exclusive or

limited (Hamari et al., 2017). In freemium context, especially services that provide content as a service, epistemic value can be really important. The research shown that M. Mäntymäki et al., (2019) conducted that discovery of new content can be a part of epistemic value, because it provides curiosity and novelty to the user, which can affect their decisions to upgrade to premium service.

Conditional Value

Conditional value refers to the benefits perceived from a product or service under specific circumstances or contexts. This dimension emphasizes the situational factors that can significantly influence consumer decisions (Sheth et al., 1991).

Conditional value is closely tied to situational utility. According to Sweeney and Soutar (2001), the perceived value of smoking can vary depending on the circumstances. For example, during stressful situations or significant life events, individuals may seek out smoking as a coping mechanism. The immediate context, such as a high-pressure work environment or social events that involve drinking, can heighten the perceived need for smoking, thus enhancing its conditional value.

Moreover, the timing of smoking can also affect its conditional value. Certain times of the day or specific events, such as breaks at work or after meals, create habitual smoking contexts that are deeply ingrained in consumers' routines. Mathwick et al. (2001) highlight that the habitual nature of smoking can be amplified by situational cues, leading consumers to associate spesific occasions with the act of smoking. This habitual reinforcement underscores the importance of understanding conditional value as a dynamic aspect of consumer behavior, where the environment and context play crucial roles.

1.2.2. Decomposed Theory of Planned Behavior (DTPB)

Taylor & Todd (1995) compare and extend three theoretical models—Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Decomposed Theory of Planned Behavior (DTPB)—to better understand behavioral intention and IT usage. TAM (Davis, 1987) focuses on perceived ease of use and perceived usefulness as primary determinants of user attitudes and intentions. It emphasizes that individuals are more likely to adopt a technology if they find it useful and easy to use. However, this model's simplicity limits its ability to capture the complexity of external influences and belief structures in decision-making.

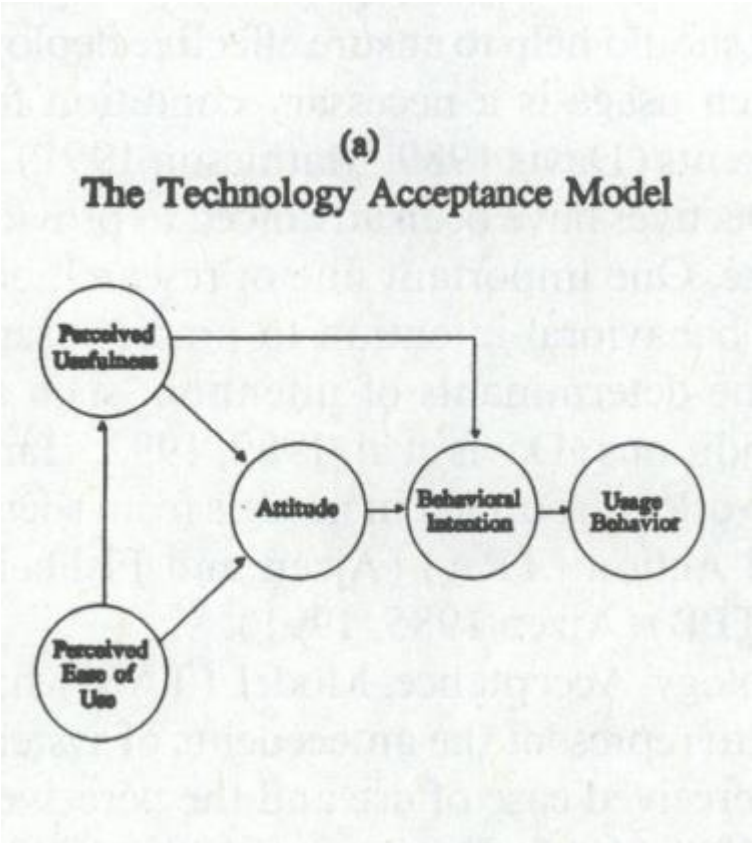


Figure 2. *The Technology Acceptance Model, (Davis, 1987)*

The TPB builds upon the Theory of Reasoned Action (Fishbein, 1975) by incorporating perceived behavioral control alongside attitude and subjective norms. This addition allows the model to account for external and internal constraints that influence behavior. By integrating perceived control as a determinant of both behavioral intention and actual behavior, TPB provides a more comprehensive framework for understanding adoption and usage patterns. However, the generalized nature of TPB's belief structures leaves room for further refinement.

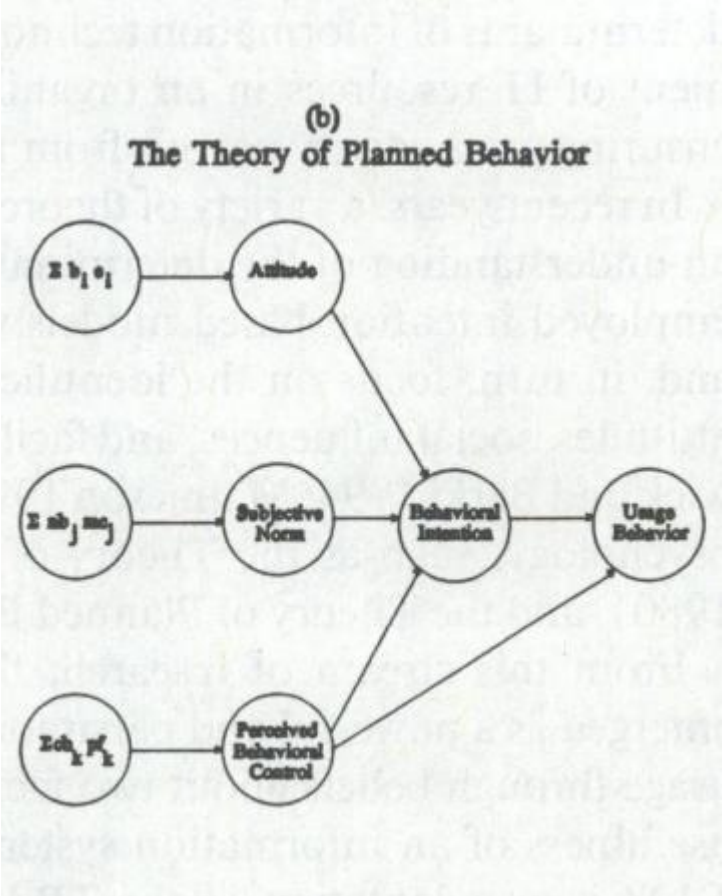


Figure 3. *Theory of Planned Behavior, (Ajzen, 1991)*

To address these limitations, Taylor & Todd introduced the DTPB, which decomposes belief structures into more specific constructs such as peer influence, self-efficacy, and facilitating conditions. This decomposition enhances the model's predictive power by providing detailed insights into the factors influencing attitudes, subjective norms, and perceived behavioral control. The study finds that DTPB slightly outperforms TAM and TPB in explaining behavioral intention and IT usage, particularly because of its ability to capture the nuances of belief structures.

In the context of freemium services, Hamari et al. (2017) adapt elements from TPB and DTPB to analyze user behavior, particularly about upgrading to premium tiers. Social influence, a core component of subjective norms in TPB, plays a pivotal role in freemium services, where peer behavior and community dynamics strongly affect user engagement.

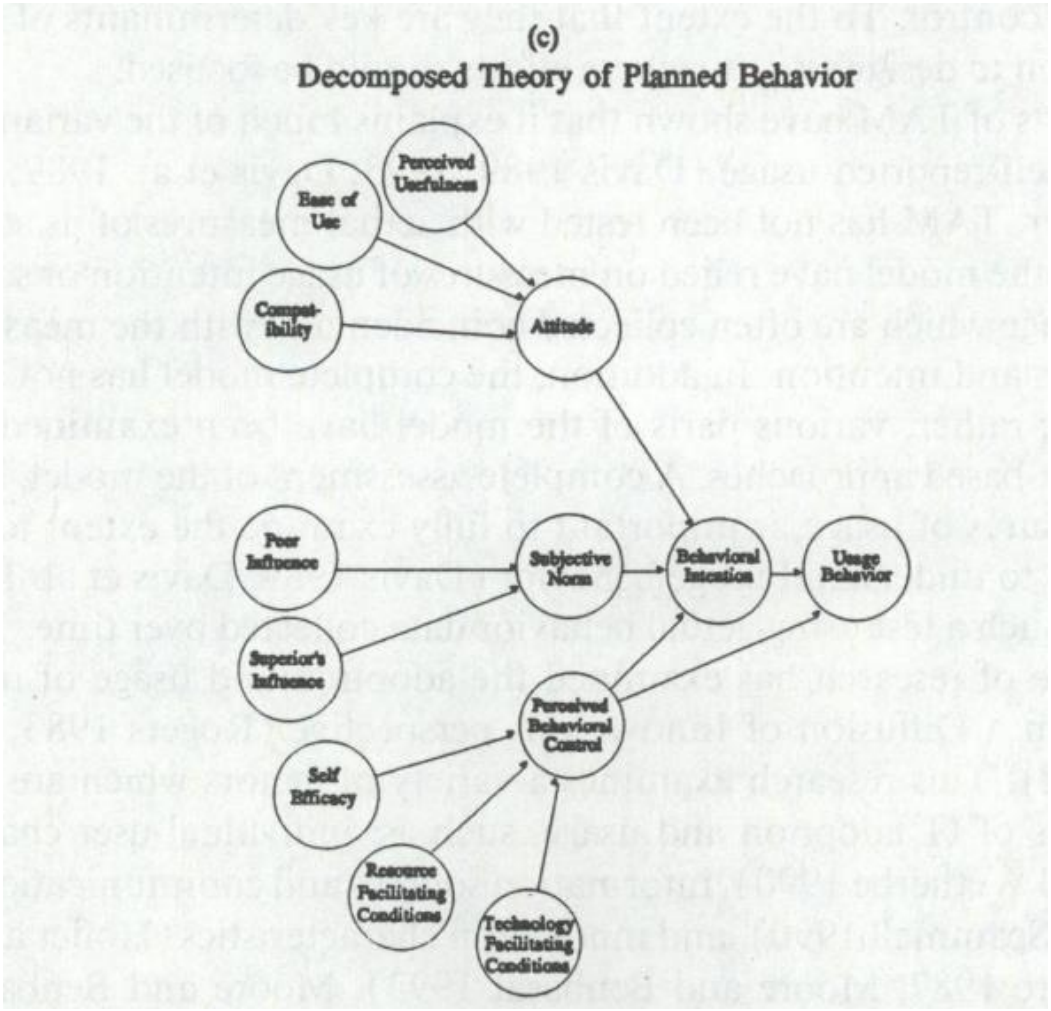


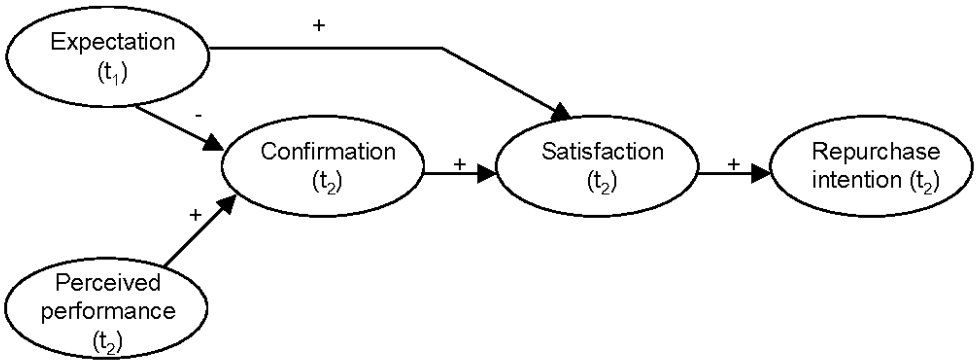
Figure 4. *Decomposed Theory of Planned Behavior,* (Taylor & Todd, 1995)

Furthermore, the study of Hamari et al. also indicates the mediating role of satisfaction, as conceptualized in frameworks like ECM and supported by DTPB, aligns closely with freemium contexts. Hamari et al. (2017) demonstrate that satisfaction not only reinforces user loyalty but also interacts with perceived value dimensions (e.g., functional and social) to drive premium adoption.

1.2.3. Expectation Confirmation Model

The Expectation-Confirmation Model (ECM), developed by Bhattacherjee (2001), provides a theoretical framework for understanding users' continuance intentions in information systems. ECM is an extension of Expectation-Confirmation Theory (ECT) (Oliver, 1980) , which focuses on post-purchase satisfaction in consumer behavior. In ECM, three key constructs determine user satisfaction and their subsequent intentions to continue using a system: confirmation, perceived usefulness, and satisfaction. Confirmation occurs when users perceive that their initial expectations regarding the system’s performance are

met or exceeded. Perceived usefulness reflects the degree to which users believe that the system enhances their productivity or adds value. Satisfaction mediates the relationship between these constructs and the intention to continue using the system, emphasizing the importance of meeting or surpassing user expectations.



Note: t_1 = pre-consumption variable; t_2 = post-consumption variable

Figure 5. *Expectation-Confirmation Theory, (Bhattacherjee, 2001)*

In the context of freemium services, ECM is particularly relevant for explaining user retention as well as their upgrading behavior. Perceived usefulness in freemium services encompasses both the value derived from free features and the anticipated benefits of premium upgrades. For example, services offering personalized recommendations, offline access, or exclusive content are perceived as more useful, increasing user satisfaction. Bhattacherjee (2001) argues that satisfaction, reinforced by perceived usefulness, is a significant determinant of continued use. In freemium services, this dynamic ensures that users who perceive a strong utility from their experience are more inclined to explore and adopt premium options, making perceived usefulness a vital construct in driving monetization.

Hamari et al. (2017) expand on ECM by integrating social and contextual factors that influence user behavior in freemium services. While ECM primarily focuses on intrinsic motivators like satisfaction, Hamari et al. demonstrate the role of social influence in shaping continued use and upgrading decisions. They argue that peer recommendations and community engagement amplify satisfaction by creating a sense of belonging, which fosters long-term engagement. This extension of ECM highlights the interplay between intrinsic satisfaction and extrinsic social factors in sustaining user retention and promoting premium conversions.

In conclusion, ECM serves as a framework for analyzing user behavior in freemium services by linking satisfaction to confirmation and perceived usefulness. Its application is particularly effective in understanding how users transition from initial adoption to long-term

engagement and premium upgrading. By incorporating insights from Hamari et al. (2017), this study further explores the role of contextual factors, providing a comprehensive understanding of the mechanisms driving retention and monetization in freemium models.

1.3. Factors Influencing Consumer Behavior in the Freemium Context

1.3.1. Ubiquity of a Freemium Online Service

Functional value is defined by attributes such as quality, efficiency, and the ability to meet user needs effectively. While the study (Sweeney & Soutar, 2001) does not directly address ubiquity, it emphasizes that functional value plays a central role in consumer decision-making, particularly when the utility provided by a product or service aligns with consumer expectations for convenience and performance. Research indicates that consumers are more willing to pay for premium offerings when they perceive clear enhancements in functionality compared to the free (Tyrväinen & Karjaluoto, 2024). If users find the free version sufficient for their needs, they may not see a compelling reason to pay for premium features. Conversely, when premium features offer substantial enhancements—such as better performance or added convenience—users are more inclined to upgrade. The study by Liu et al. (2021)highlights that low functionality in the free version and high functionality in the premium version significantly increase users' tendency to upgrade to premium. This relationship emphasizes the importance of aligning the functional benefits of premium services with user expectations and needs. Additionally, research by Hamari et al. (2020) shows that a lack of sufficient functional value in the free version can decrease the likelihood of transitioning to premium services. Therefore, the ability of a service to meet functional expectations is a critical determinant of WTP.

In this regard, the concept of ubiquity refers to the availability and accessibility of a service anytime and anywhere (M. Mäntymäki et al., 2019), which can be considered as functional value. It is a fundamental characteristic of digital services, particularly in the context of online platforms, where the seamless availability of features directly impacts user experience and engagement. Ubiquity contributes to perceived convenience, which is another important determinant of purchase intention. In addition to influencing purchase intentions, ubiquity also effects continued use intentions. Hamari et al. (2017) found that users who value the constant availability of a service are more likely to maintain regular usage patterns.

Lehmann-Zschunke (2024), who emphasize that in music streaming services, the ability to access content without disruptions—such as through offline modes or reliable cellular data connections—enhances users' willingness to upgrade to premium tiers. Ubiquity is especially

critical in online services due to the expectations of modern consumers for uninterrupted access to their desired functionalities. The anywhere, anytime accessibility provided by digital platforms not only enhances the perceived value of the service but also fosters habitual usage, which is a key driver of continued use intentions. For instance, in music streaming services, features like offline access or integration with mobile data networks have been shown to positively influence consumer behavior. Mäntymäki et al. (2019) suggest that the ability to use a service regardless of connectivity constraints increases user satisfaction and deepens their engagement with the platform. Similarly, Chang et al. (2023) highlight that in contexts where connectivity may be limited, such as during travel or commutes, the availability of offline features becomes a differentiating factor that encourages users to consider upgrading to premium subscriptions. Services like Netflix and Disney+ rely on ubiquity by enabling downloads for offline viewing. This feature, as discussed by Mäntymäki et al. (2019), enhances user satisfaction and encourages premium upgrades, particularly in regions with inconsistent internet access.

1.3.2. Peer Influence in Freemium Online Services Context

Social influence has an important role in shaping consumer behavior, with factors such as social affiliation (Sheth et al., 1991; Hamari et al., 2017) social norms (Cialdini, 1991) significantly affecting willingness to engage with premium offerings. Because, online communities often form around shared interests, such as gaming, music, or other entertainment platforms (M. Mäntymäki et al., 2019). Same research also highlights that these communities create an environment where users share experiences, recommendations, and insights about premium features. Within such communities, discussions about premium offerings can lead to increased awareness and interest. When community members share positive experiences regarding premium services, it can significantly influence others to consider upgrading. Moreover, the dynamics of community interactions foster a sense of belonging (Hamari et al., 2017), motivating users to invest in premium subscriptions to fully participate in community discussions and activities. Users may perceive premium offerings as essential for engaging with their community fully, leading to an increased WTP for these features (Tyrväinen & Karjaluoto, 2024). This phenomenon illustrates how social context and community engagement can shape consumer decisions within the freemium landscape.

Research shows that users of freemium services are more likely to upgrade to premium versions when they believe doing so will enhance their social standing or facilitate connections

with others. Hamari et al. (2017) found that the desire to demonstrate membership in a particular social group is a strong motivator for users to invest in premium services. In gaming environments, for example, players often seek premium features to showcase their status within the community, driving their willingness to pay (WTP).

Building on this, Mäntymäki et al. (2019) argue that peer influence is a subset of the broader construct of social value but remains distinct in its focus on interpersonal relationships rather than communal or network-wide dynamics. They suggest that peer influence can operate in two primary ways: social comparison and social pressure. In this regard, social comparison refers to increased motivation to upgrade where users evaluate their own behavior, while social pressure refers to relatively the opposite -direct or indirect encouragement from peers can drive people to upgrade. Peer influence operates as a powerful driver in freemium business models, particularly in social and collaborative platforms. This is because such platforms often rely on social dynamics to encourage user engagement and monetization. Wagner et al. (2014) highlight those services offering collaborative or community-driven features. . For instance, Spotify features “friend activity” which you can see what your friends and peers are listening in that moment, or what they recently played. Similarly, Spotify also features shared playlists which you can cultivate with your friends. Peer influence significantly impacts purchase intentions by shaping how users perceive the value of premium features. For instance, Bertholdsson (2015) found that users are more likely to consider upgrading when they observe peers benefitting from premium features. Thus, observing friends using premium features may create a sense of exclusion or inferiority, motivating users to upgrade.

Peer influence also promotes continued use intentions by fostering a sense of belonging and creating habitual engagement with the service. Hamari et al. (2020) note that platforms with strong social components—such as multiplayer gaming or collaborative tools—benefit from network effects, where each new user adds value to the service for existing users. This creates a cycle where peer influence not only drives adoption but also sustains long-term usage. Moreover, Mäntymäki et al. (2019) emphasize that continued engagement with free services is often bolstered by peer-driven recommendations and social interactions. These dynamics, in turn, enhance the likelihood of transitioning to premium tiers. Hsu and Tsai (2017) emphasize the critical role of social influence in freemium SaaS adoption, particularly during the transition from free to premium usage. They highlight that peer interactions, including recommendations and shared experiences, significantly shape users' intentions to upgrade to premium services. This influence is especially pronounced in the initial paying stage, where social norms and peer

encouragement play a pivotal role in motivating users to invest in premium offerings. Platforms like Spotify leverage peer influence through collaborative features such as shared playlists and group listening sessions. Wagner et al. (2014) highlight the role of community engagement in shaping user behavior within freemium services. They emphasize that highly active network users, such as those in online music streaming platforms, are more likely to pay for premium services due to their interaction within the community. Peer influence and social norms within these networks play a critical role, as recommendations and visible behaviors among members often enhance the perceived value of upgrading to premium features. While peer influence is a distinct construct, it is closely related to the broader concept of social value. Hamari et al. (2020) explain that social value encompasses the benefits users derive from social interactions, recognition, and belonging within a community. Peer influence can be seen as one mechanism through which social value is realized, particularly in contexts where interpersonal relationships and shared experiences drive behavior. However, as Mäntymäki et al. (2019) note peer influence is more narrowly focused on direct interpersonal dynamics, whereas social value includes broader considerations such as community engagement and social identity. In this regard, peer influence is closely related the motivation of "close friend reccomendation", while Hamari (2017) suggests it can be both word-of-mouth or online reviews.

1.3.3. Effort Invested in Free Version in An Online Service

Interestingly, participants observed a close association between functional value and hedonic value across both monetization strategies. When a service lacks functionality, the overall enjoyment diminishes, potentially impacting the WTP for a premium version, particularly if the service is inherently hedonic (Tyrväinen & Karjaluoto, 2024)

While this is the case for economic value, these findings can also suggest that the time and effort spent on free version in an online service may also affect the intention to upgrade. As I already mentioned earlier, the sunk cost effect describes individuals' tendency to continue an endeavor once they have invested time, effort, or resources, even when doing so is irrational (Arkes & Blumer, 1985). For example, a consumer who has spent significant time curating playlists in a free music streaming service may be more inclined to upgrade to a premium subscription to safeguard their effort and maintain their enhanced user experience. Because research shows that people tend to demonstrate that prior investments often compel individuals to justify and enhance their commitment. Additionally, the certainty effect within prospect theory (Kahneman, 1979) explains how individuals overvalue certain outcomes. When faced

with the potential loss of their investment, users often prefer to invest further in the hope of future gains. Thus, it may be the case for a user to justify their usage until a certain point by continued use and consequently, upgrade. The psychological weight of effort, as highlighted by Soman (2001), further reinforces this relationship. Time, unlike money, is an irreplaceable resource, and users often develop a sense of ownership over their time investments. This sense of ownership fosters a commitment to the platform, enhancing both satisfaction and upgrade intentions. Additionally, Lehmann-Zschunke (2024) noted that subscription length and prior engagement significantly influence user retention and conversion. Thus, the effort invested in the free version not only increases user attachment but also aligns with the functional and emotional value dimensions, making it a critical determinant of upgrading behavior in freemium models. Soman (2001) highlights the distinct ways individuals perceive, and value time compared to money. Time is considered as a non-renewable resource; thus, it mostly has a greater impact in psychological weight. Users investing time in a freemium service might feel a sense of ownership over their investment, thereby enhancing their commitment to the platform. This is particularly relevant in online services, where time spent personalizing or using the free version can influence satisfaction and upgrade intentions. Time spent on the free version can enhance satisfaction by fostering a sense of accomplishment or familiarity with the service.

Effort expectancy, a construct linked to perceived ease of use, further moderates this relationship. Higher perceived effort in using the free tier can prompt users to transition to premium for a smoother experience (Shu-Chen Chang et al., 2023). Effort encompasses not just time but also the cognitive and emotional energy users dedicate to engaging with the service. Unlike monetary costs, effort investments create a psychological sense of ownership, which can strongly affect decision-making processes. This effect is particularly relevant in freemium models, where users navigate the free version's limitations, often deciding whether to commit further resources to enhance their experience. Moreover, we know from the research (Lehmann-Zschunke, 2024) that subscription length plays a pivotal role in determining the likelihood of retention in freemium business models. The study reveals that users opting for shorter subscription periods, such as six months, are more likely to terminate their subscriptions compared to those who choose longer periods, such as twelve months. Thus, it may be possible, considering also sunk cost theory, that people are drown to upgrading to premium if they already invested time in the free version.

While effort spent in the free version and effort expactancy is two different dimensions, I think there is a nuance we need to make clear. According to research (Venkatesh, 2003), if users perceive the effort required to interact with a platform as minimal and the interface as user-friendly, they are more likely to consider upgrading to premium services. Conversely, when the effort required is perceived as high or disproportionate to the benefits, it creates a barrier to upgrading. User engagement and involvement are identified as critical factors influencing subscription retention in freemium business models. Nevertheless, I think this dimension crosses with sunk cost theory in the opposite way. If the required effort to use a service is perceived as too high, it can deter users from upgrading to premium due to the complexity and additional time investment needed. However, when users have already invested significant effort in the free version—such as creating playlists, customizing profiles, or engaging with the platform—this prior effort can act as a motivator to upgrade. This is explained by the sunk cost effect, where users seek to preserve or enhance their initial investment. Thus, successful freemium strategies should minimize the perceived effort for new features while highlighting how premium options enhance the value of the effort already invested.

1.3.4. Discovery of New Content in Freemium Online Services

The discovery of new content refers to the process where users encounter new material—such as music, videos, or other digital offerings—through curated recommendations, search features, or personalized algorithms within freemium services (M. Mäntymäki et al., 2019). In freemium models, this feature acts as an epistemic value, satisfying users' curiosity and desire for novelty, aligning with the broader consumption value theory as described by Sheth et al. (1991)

Discovery of new content plays a critical role in fostering continued use of freemium services. Mäntymäki et al. (2019) found that premium users benefit significantly from new and exclusive content, strengthening their inclination to continue using premium services. For example, music streaming platforms like Spotify provide personalized playlists and recommendations that enrich the user experience, encouraging sustained engagement. The findings indicate that the discovery of new content contributes more strongly to premium users' retention than to basic users' upgrade intentions, underscoring its importance for long-term service loyalty

Discovery of new content positively correlates with user satisfaction. Satisfaction in freemium services is closely linked to the personalization and discovery of content that aligns with user preferences. Martins et al. (2024) highlight that feature such as accurate recommendations, track similarity, and exposure to new and desirable material significantly enhance perceived satisfaction. These elements contribute to a more engaging user experience, as they not only cater to existing tastes but also introduce users to new content, thereby expanding their preferences. These dynamic fosters a deeper connection between the user and the platform, reinforcing the perception of value provided by the service.

Moreover, according to Martins & Rodrigues, curated content in premium tiers motivates users to swtich from free to premium versions of a service. Users note greater enjoyment and perceived value when premium features, such as exclusive content or enhanced recommendation systems, deliver unique benefits not typically available in free versions. Satisfaction derived from these discoveries strengthens user loyalty and positions premium subscriptions as indispensable for those seeking a more personalized and enriched experience.

The discovery of new content has been empirically shown to influence several behavioral intentions in freemium services: Mäntymäki et al. (2019) highlight that while discovery features are accessible to both free and premium users, premium users get more value from exclusive new releases and advanced recommendation systems. This added value encourages users to retain or upgrade to premium subscriptions The perceived epistemic value Sweeney & Soutar (2001) of discovering new content—such as novelty and increased awareness—drives users' willingness to pay for premium features. Users feel justified in paying for services that consistently introduce fresh and relevant content. Discovery of new content improves user engagement by encouraging frequent usage and exploration within the platform. Features like personalized playlists, artist recommendations, and updates on new releases make users return to the service, creating a habitual usage pattern

Platforms like Spotify and Netflix leverage content discovery mechanisms to enhance user satisfaction, increase continued use, and drive conversions to premium subscriptions. For instance, Spotify's ability to introduce new artists, curated playlists, and exclusive releases creates a strong incentive for users to explore and engage further. Martins et al. (2024) further emphasize that effective recommendation systems can lead to higher satisfaction levels and stronger loyalty among premium users.

1.3.5. Satisfaction Received from Freemium Online Services

According to Suryawirawan et al. (2022)satisfaction is defined as the degree to which a product or service meets customer expectations and needs. Oliver (1980) highlights that satisfaction acts as a reinforcement mechanism, encouraging repeated behavior when expectations are met or exceeded. Satisfaction is seen as a key predictor of whether users will continue to engage with or recommend a product, especially within the context of freemium applications. Yet, Suryawirawan et al. found that while satisfaction directly correlated with continuous usage intention, it does not have a direct effect on purchase intention.

Hamari et al. (2017) highlighted that the alignment of perceived benefits with user expectations significantly enhances satisfaction levels, which in turn influences their engagement and loyalty. This relationship is particularly strong in contexts where freemium models offer premium features that clearly differentiate themselves in terms of added functionality, exclusivity, or improved user experience. Satisfaction derived from perceived value not only reinforces users' intention to continue using the service but also increases their willingness to upgrade to premium tiers as they associate the service with high utility and fulfillment. Satisfaction is not only mediating functional value and switching behavior. Shu-Chen Chang et al. (2020) found that satisfaction derived from free services positively mediates emotional and social values' influence on users' willingness to pay.

Satisfaction derived from the free tier often plays a dual role: High satisfaction may reduce the likelihood of upgrading if users feel content with the free features or conversely, users who are dissatisfied due to limitations in the free version may be motivated to upgrade (Soman, 2001, Hamari et al., 2017).

1.3.6. Continued Use of Freemium Online Services

Bhattacherjee (2001) defines continued use as the sustained engagement of users with a product or service over time, driven by the fulfillment of expectations and the perceived value derived from prior usage. Continued use reflects a user's decision to persist in utilizing a service based on positive experiences, trust, and satisfaction, distinguishing it from initial adoption by emphasizing long-term retention and loyalty.

Soman (2001) highlights the psychological weight of effort as a significant factor driving users to justify their investments by continuing to engage with a service. In the context of freemium platforms, users who invest effort in personalizing or exploring the free tier often

develop a sense of commitment to the platform. This commitment enhances the psychological weight of their prior effort, encouraging continued use. Such investments, whether in creating playlists or curating preferences, act as a behavioral anchor, fostering sustained engagement and loyalty to the service.

The availability of a service anytime and anywhere significantly impacts user behavior, as Mäntymäki et al. (2019) emphasize. Ubiquitous access eliminates traditional barriers, such as time and location constraints, making it easier for users to integrate the service into their daily routines. This integration reinforces continued use by aligning the platform with the user's lifestyle, ensuring seamless engagement regardless of external circumstances.

Social dynamics, including peer influence and community engagement, also play a pivotal role in fostering user retention. Hamari et al., (2017) found that platforms with collaborative or social features encourage continued use by fostering a sense of belonging and shared experiences. When users participate in communities or observe peers benefiting from the platform, they are more likely to maintain their activity, driven by the social connections and validation such interactions provide.

Functional, emotional, and social values collectively shape user perceptions of the service's worth, influencing their continued engagement. According to Sheth et al. (1991) these value dimensions are central to behavioral sustainability, with functional value (e.g., usefulness) and emotional value (e.g., enjoyment) being particularly influential. Users who derive meaningful value from the free tier are more likely to continue using the service, reinforcing the importance of offering a well-designed, value-rich free experience.

Retention in the free version is a cornerstone of freemium platforms, serving as the foundation for potential upgrades and monetization strategies. Hamari et al. (2017) note that continued use ensures a stable user base, which generates indirect revenue through advertisements and referrals. Furthermore, sustained engagement fosters familiarity and dependence, both of which often translate into premium upgrade intentions as users seek to deepen their investment in the platform.

Long-term usage builds trust and perceived value, which are essential for motivating users to explore premium options. Bhattacherjee (2001) argues that extended engagement fosters a sense of reliability and satisfaction, encouraging users to invest further in the

platform. Continued use allows users to evaluate the service's consistency and benefits over time, ultimately solidifying their loyalty and increasing their likelihood of upgrading.

Continued use integrates the service into users' daily routines, transforming it into a habit. Mäntymäki et al. (2019) highlight the role of habitual engagement in sustaining retention and increasing monetization opportunities over time. As users routinely interact with the platform, their dependence on its functionalities grows, making it an indispensable part of their daily activities. This habitual usage not only ensures user retention but also enhances the likelihood of financial conversion through premium offerings.

Lastly, engaged users contribute to the platform's growth through advocacy and organic referrals. Venkatesh (2003) emphasize that continued use drives positive perceptions of the service, encouraging users to recommend it to others. This advocacy, fueled by sustained engagement and satisfaction, amplifies the platform's reach while strengthening user retention, creating a cycle of growth and engagement that benefits the platform in the long term.

1.3.7. Intention to Upgrade in Freemium Context

Previous research has explored constructs such as willingness to pay (WTP) and purchase intention to measure consumer behavior. While valuable in certain contexts, these constructs have limitations when applied to freemium services, where the decision to upgrade is distinct from both theoretical valuation and initial purchase behavior.

Willingness to pay, defined as the maximum amount a consumer is willing to spend for a product or service, has been widely studied as an indicator of perceived value Tyrväinen & Karjaluoto, Hess & Wagner, Berger et al., M. Mäntymäki et al.,Wang et al.). It provides insights into how consumers evaluate products or services, making it a useful tool for pricing strategies and market segmentation. However, in freemium contexts, willingness to pay often reflects a user's hypothetical valuation rather than actionable behavior. As Mäntymäki et al. (2019) noted, users may express high willingness to pay for premium features yet remain hesitant to upgrade due to psychological barriers or satisfaction with the free version. This gap between hypothetical and actual behavior reduces the suitability of willingness to pay as a measure of user transitions in freemium models.

Similarly, purchase intention, commonly used to predict consumer buying behavior, focuses on the likelihood of acquiring a product or service (Bhattacherjee, Suryawirawan et al., Shu-Chen Chang et al.). It has been instrumental in understanding consumer decision-making,

particularly in contexts where users do not already own the product or service. However, freemium models differ in that users are already engaged with the free version of the service. In this context, purchase intention does not fully capture the dynamics of upgrading, as upgrading involves enhancing an existing service rather than acquiring something entirely new. Mäntymäki et al. (2019) highlighted this distinction, arguing that purchase intention fails to address the incremental nature of upgrading within the freemium framework.

Instead, intention to upgrade provides a more contextually appropriate measure of user behavior in freemium models. Conceptualized by M. Mäntymäki et al., intention to upgrade reflects the likelihood of users transitioning from a free to a premium version of a service. Unlike willingness to pay or purchase intention, this construct directly captures the behavioral dynamics specific to freemium services. It considers factors such as satisfaction with the free version, the perceived utility of premium features, and the psychological attachment users develop through their engagement with the service.

The choice to focus on intention to upgrade in this study was influenced by the unique characteristics of the freemium model. While willingness to pay provides insights into how much users might hypothetically spend and purchase intention measures the likelihood of acquiring new products, upgrading involves a different decision-making process. In freemium contexts, users already possess a version of the service, making the transition to premium more about enhancing their current experience than initiating a new one. This distinction is critical, as it aligns with the behavioral and psychological realities of freemium users, where satisfaction, engagement, and perceived value drive upgrading decisions.

Mäntymäki et al. (2019) provided a strong theoretical and empirical foundation for using intention to upgrade as a dependent variable, emphasizing its relevance in capturing the unique dynamics of freemium models. Their findings demonstrated that intention to upgrade is influenced by a combination of functional, emotional, and social values, offering a comprehensive measure of user behavior. Building on this framework, this study extends the application of intention to upgrade to examine its relationships with additional independent and mediating variables, providing a deeper understanding of user behavior in freemium services.

By focusing on intention to upgrade, this study contributes to the literature by addressing a critical gap in how user behavior is measured in freemium models. While willingness to pay and purchase intention have provided valuable insights in other contexts, they fall short of capturing the nuances of upgrading behavior. Intention to upgrade, on the

other hand, directly reflects the motivations and decisions of freemium users, offering a more precise and actionable framework for understanding consumer behavior in this unique context.

2. METHODOLOGY OF THE FACTORS INFLUENCING CONSUMERS' INTENTION TO UPGRADE

2.1. Purpose of the research, model, and hypotheses

This research addresses the critical need to explore consumer behavior in the context of transitioning from freemium to premium services, focusing specifically on **intention to upgrade**. While existing literature extensively examines purchase intention and willingness to pay, relatively few studies delve into the unique factors that drive the transition behavior itself. Intention to upgrade differs fundamentally from purchase intention, as it involves users who are already engaged with a free version of the service and must evaluate the additional value provided by premium features. The gap in understanding these dynamics leaves service providers without clear insights into how to effectively design strategies that target this behavior. By focusing directly on the transition decision, this study aims to provide a nuanced analysis of the psychological, social, and value-based factors influencing consumers' intention to upgrade, contributing to a deeper understanding of freemium model dynamics.

This study adopts a hybrid approach by integrating multiple theoretical frameworks to create a comprehensive model that investigates not only the relationships between independent variables and the dependent variable but also the mediating effects of key factors. Specifically, the model incorporates elements from Consumption Value Theory (CVT) (Sheth et al., 1991) the Expectation-Confirmation Model (ECM) (Bhattacherjee, 2001), and the Decomposed Theory of Planned Behavior (DTPB) (Taylor & Todd, 1995). This integration ensures a robust exploration of both direct and indirect influences on the intention to upgrade from free to premium tiers in freemium services. The independent variables—ubiquity, peer influence, effort invested in free version, and discovery of new content—are grounded in the principles of CVT. Sheth et al. (1991) outline five value dimensions that drive consumer decision-making: functional, social, emotional, epistemic, and conditional values. In this study, the independent variables align primarily with the functional, social, and emotional dimensions:

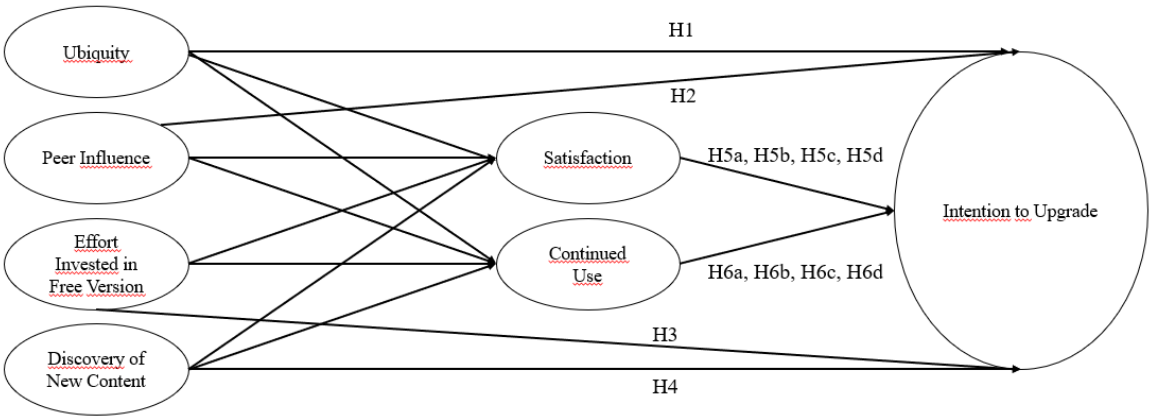
Ubiquity is positioned within the functional value dimension, reflecting the practical benefits of accessing a service anytime and anywhere. Mäntymäki et al. (2019) emphasize that ubiquity reduces barriers to usage, enabling seamless integration into daily routines and fostering sustained engagement.

Peer influence aligns with the social value dimension, capturing the role of community dynamics and social norms in shaping user behavior. Hamari et al. (2017) demonstrate that peer recommendations and visible adoption of premium features enhance social value, encouraging continued use and the intention to upgrade.

Effort invested in free version corresponds to the emotional value dimension, highlighting the psychological weight of prior effort. Soman (2001) explains that users are motivated to justify their investments by continuing to engage with the service, which fosters a sense of commitment and loyalty.

Discovery of new content ties to both emotional value and epistemic value. Emotional value arises from the enjoyment of personalized and curated content, while epistemic value reflects the curiosity and novelty associated with discovering fresh material. Martins & Rodrigues (2024) emphasize that these factors enhance satisfaction and strengthen user retention.

The mediating variables—satisfaction and continued use—are derived from different theoretical frameworks to capture their unique roles in the model. Satisfaction is grounded in the Expectation-Confirmation Model (ECM) (Bhattacherjee, 2001). This model posits that satisfaction arises when a service meets or exceeds initial expectations, reinforcing users' engagement and influencing their behavioral intentions. In this study, satisfaction mediates the relationship between perceived value (functional, social, emotional, epistemic) and the intention to upgrade, consistent with Hamari et al. (2017), who identify satisfaction as a key determinant of user loyalty and upgrading behavior. Continued use, on the other hand, is based on the Decomposed Theory of Planned Behavior (DTPB) developed by Taylor & Todd (1995). DTPB decomposes the factors influencing behavioral intentions into attitudes, social norms,



and perceived behavioral control. In this study, continued use reflects sustained engagement with the platform, influenced by satisfaction and social norms.

Figure 6. *Conceptual model of the research, complied by the author*

By combining these frameworks, this study provides a hybrid and holistic view of the factors driving intention to upgrade in freemium services. The approach allows for a nuanced analysis of how both intrinsic (e.g., satisfaction) and extrinsic (e.g., peer influence) factors interact to shape user behavior. This integration not only extends the application of CVT but also bridges its insights with the dynamic frameworks of ECM and DTPB, ensuring a comprehensive understanding of user decision-making in digital contexts.

2.2. Hypotheses of the research

H1: Ubiquity has a significant and positive effect on the Intention to Upgrade

This hypothesis posits that ubiquity, defined as the ability to access a service anytime and anywhere, significantly influences consumers' intention to upgrade from freemium to premium services. Ubiquity is conceptualized as a component of functional value, which is one of the core dimensions of the Consumption Value Theory (Sheth et al., 1991)

Functional value refers to the practical benefits and utilities derived from using a product or service, particularly those that enhance convenience and efficiency. Previous studies have demonstrated that ubiquity directly impacts user satisfaction and engagement. For example, Sweeney and Soutar (2001) emphasized that ubiquitous access enhances the perceived functional value of a service by reducing barriers to use. Mäntymäki et al. (2019) further assert that in freemium services, ubiquity enhances user retention by facilitating consistent usage across different contexts, making premium offerings more appealing. This suggests that consumers who perceive a higher degree of ubiquity are more likely to view premium features as essential for maintaining the quality and convenience of their experience. The rationale for this hypothesis stems from the increasing consumer expectation for uninterrupted and flexible service access in the digital age. Study suggest that users of freemium services often prioritize accessibility and convenience, which can be the determinants of their overall satisfaction and engagement, and consequently, their upgrading behavior. To be more specific, users who value the ability to access the service anytime and anywhere are expected to perceive premium features as essential for sustaining their convenience and satisfaction. The findings from this hypothesis will provide updated insights

into how functional value dimensions like ubiquity influence consumer decision-making in freemium models, thereby contributing to both theoretical advancements and practical applications.

The existing literature highlights how functional aspects like ubiquity enhance user engagement by providing continuous access to services, thereby fostering loyalty and higher perceived value (Hamari et al. 2020) For instance, Mäntymäki et al. (2019) found that users who perceived greater ubiquity in freemium services were more likely to consider upgrading to premium tiers due to enhanced convenience and usability. These findings align with broader research on functional value, where ease of use and accessibility positively correlate with user satisfaction and willingness to adopt premium features (Pujol, 2010).

By selecting intention to upgrade which complied from the study of M. Mäntymäki et al., as the dependent variable, this study aims to contribute a nuanced understanding of how functional value influences the user journey in freemium models. The expected outcome is a significant and positive relationship between ubiquity and intention to upgrade, as users perceive higher utility and reduced barriers in accessing premium services.

H2: Peer Influence has a significant and positive effect on the Intention to Upgrade

Peer influence, as a component of social value within the Consumption Value Theory (Sheth et al., 1991) refers to the impact of an individual's social connections—such as friends, colleagues, or broader peer groups—on their behaviors and decision-making processes. Social value encompasses benefits derived from social interactions, recognition, and a sense of belonging, and peer influence is a specific mechanism through which these social benefits are realized. Unlike broader social values, peer influence is narrowly focused on interpersonal dynamics, such as social comparison and social pressure.

In this regard, Hamari et al. (2017) demonstrated that peer recommendations, whether through word-of-mouth or online reviews, significantly shape perceptions of value and influence users' decisions to adopt premium features. Their findings suggest that individuals are more likely to upgrade to premium tiers when they perceive such decisions as socially endorsed or beneficial for their social standing.

While social acceptance pertains to the broader desire for inclusion within a community, peer influence specifically involves the direct or indirect pressure exerted by close social connections, making it a more targeted factor in decision-making (M. Mäntymäki et al., 2019)

This distinction is crucial in the freemium context, where users often interact in collaborative or community-driven environments such as gaming or music platforms. Wagner et al. (2014) also emphasized that collaborative features, such as shared playlists on Spotify, heighten the salience of peer influence by fostering a sense of shared experience and encouraging social comparisons.

Two primary mechanisms were chosen to understand consumers' perspective on social value: social comparison and social pressure (Mäntymäki et al., 2019). Thus, attendants were asked if they feel pressure when their peers are using the premium version of a free service or if they are more drawn to it. These dynamics are particularly relevant in services with strong social components, such as multiplayer games or team-based software tools, where peer-driven recommendations and interactions significantly enhance user engagement (Hamari et al., 2020) The literature also highlights the unique role of peer influence in shaping perceptions of value. Unlike other social values that may focus on communal or network-wide interactions, peer influence operates at an interpersonal level, making it a more immediate and tangible factor in consumer decisions (Hamari et al., 2017). This makes peer influence particularly effective in promoting behavioral changes, such as transitioning from free to premium services, by leveraging users' close social connections.

This hypothesis predicts a significant and positive relationship between peer influence and intention to upgrade. Specifically, users who experience strong peer-driven encouragement or social comparisons are expected to perceive premium features as more valuable and essential, thereby increasing their likelihood of upgrading. The findings are anticipated to validate the role of peer influence as a critical driver of upgrading behavior in freemium models, contributing to both theoretical advancements and practical strategies for user conversion.

H3: Effort Invested in the free version has a significant and positive effect on the Intention to Upgrade

Effort invested in the free version, a variable conceptualized in this study, represents the time, energy, and resources users dedicate to engaging with the free tier of a service. This construct draws from multiple theoretical underpinnings, including the Sunk Cost Effect (Arkes & Blumer, 1985) Mental Accounting Theory (Soman, 2001), and Effort Expectancy (Venkatesh, 2003). While not strictly categorized as either emotional or conditional

value(Sheth et al., 1991), it embodies aspects of both, forming a hybrid construct that reflects users' psychological and situational engagement with the free version of a service.

In the freemium context, users may invest effort in personalizing the service, creating playlists, or building in-game progress. This investment creates a psychological sense of ownership, motivating users to maintain their engagement and upgrade to premium to avoid losing their prior investments (Arkes & Blumer, 1985, Hamari et al., 2020). Moreover, time has a greater impact in terms of effort since it's not replaceable or renewable (Soman, 2001). This creates a compelling rationale for transitioning to premium tiers, as users perceive upgrades as a way to preserve or enhance the value of their effort.

In the freemium context, effort expectancy influences users' satisfaction and their intention to upgrade, particularly when premium features promise reduced effort or enhanced functionality (Shu-Chen Chang et al., 2023) For instance, users who experience frustration due to limitations in the free version may view premium subscriptions as a solution to optimize their experience, aligning with the sunk cost rationale. The creation of effort invested in the free version as a variable is driven by its potential to capture nuanced aspects of user behavior that are not fully addressed by existing constructs. This variable acknowledges the dual role of effort as both a cost and a value generator in the user journey. From an emotional value (Sheth et al., 1991) perspective, the effort spent personalizing or engaging with the service fosters a sense of attachment and accomplishment. Users are likely to perceive premium upgrades as a logical next step to optimize and preserve their invested effort (Hamari et al., 2017) Additionally, this hypothesis aligns with previous findings that highlight the role of effort in shaping user satisfaction and loyalty. Research by Hamari et al., (2020) indicates that effort-driven engagement increases the likelihood of continued use and premium adoption. Similarly, Mishra et al. (2018) emphasize that users are more willing to upgrade when they perceive their effort as contributing to a meaningful or enjoyable outcome, reinforcing the sunk cost effect.

The expected outcome is a significant and positive relationship between effort invested in the free version and intention to upgrade. Users who have dedicated considerable effort to the free version are anticipated to view premium subscriptions as a way to maximize their investment and avoid potential losses. This hypothesis also suggests that effort investment creates a psychological bridge between free and premium tiers, fostering a sense of progression and loyalty that encourages upgrading behavior.

H4: Discovery of New Content has a significant and positive effect on the Intention to Upgrade

Discovery of new content plays a pivotal role in user engagement, particularly in content-driven platforms like music streaming services, gaming, and video platforms. Mäntymäki et al. (2019) explored the relationship between discovery features and **intention to upgrade**, arguing that epistemic value enhances the perceived utility of premium features by offering users access to novel and exclusive content. This aligns with earlier research by Sheth et al. (1991) which emphasized that epistemic value drives consumer decisions by fulfilling the need for novelty and exploration. In this regard, Spotify offers personalized playlists, concert news all around the world while Netflix also has a similar approach with a lot of content only available for Netflix premium users. This dynamic discovery process creates a sense of excitement and satisfaction, making premium features like curated playlists or early access to new releases more appealing (Hamari et al., 2020).

This hypothesis predicts a significant and positive relationship between discovery of new content and intention to upgrade. Users who value the novelty and exclusivity provided by premium tiers are expected to perceive upgrades as essential for maximizing their experience.

H5: Satisfaction mediates the relationship between Ubiquity and Intention to Upgrade

While functional values (such as ubiquity and quality) reduce dissatisfaction, they do not directly enhance satisfaction (Shu-Chen Chang et al., 2023). This distinction highlights the different roles that motivating and hygiene factors play in influencing user behavior. However, The research emphasizes the importance of aligning perceived value with user expectations, as satisfaction derived from fulfilling these expectations significantly impacts the likelihood of upgrading.

Satisfaction, as a psychological construct, plays a critical role in mediating consumer behavior, particularly in the context of freemium business models. Within the framework of **Consumption Value Theory** (Sheth et al., 1991) satisfaction can be seen as a reflection of the fulfillment of functional, emotional, and conditional values, all of which influence users' behavioral intentions. This hypothesis posits that **ubiquity**, a dimension of functional value, indirectly affects **intention to upgrade** through its impact on satisfaction.

Ubiquity, defined as the seamless accessibility of a service across devices and locations, enhances the functional value perceived by users (Sweeney & Soutar, 2001). It reduces barriers to use, increases convenience, and ensures reliability, all of which contribute to higher satisfaction levels (Hamari et al., 2020). Additionally, Chang et al. (2023) explored how satisfaction mediates the impact of accessibility features on purchase intention in digital platforms. They found that users derive satisfaction from the convenience and reliability of ubiquitous services, which positively influences their likelihood of purchasing premium features. This suggests that the accessibility provided by ubiquity not only directly impacts intention to upgrade but also indirectly shapes this behavior by enhancing satisfaction.

The expected outcome is that satisfaction will mediate the relationship between ubiquity and intention to upgrade, such that users who derive satisfaction from the seamless accessibility of the service will be more likely to upgrade to premium tiers.

H6: Satisfaction mediates the relationship between Peer Influence and Intention to Upgrade

Hamari et al. (2017) highlight that peer recommendations and interactions enhance satisfaction by creating a sense of trust and shared engagement in a service. Peer influence drives satisfaction by fostering positive social experiences and validation. For example, users who receive positive feedback or recommendations from their peers are more likely to feel satisfied with their choices, as these interactions reinforce the perceived value of their decisions. Mäntymäki et al. (2019) further demonstrated that social interactions within freemium services—such as shared playlists or multiplayer game collaborations—enhance user satisfaction, which, in turn, increases their likelihood of upgrading to premium tiers. Wagner et al. (2014) found that users influenced by peers who express high satisfaction with a service are more likely to develop positive expectations about premium features, thus increasing their WTP. Similarly, study (Shu-Chen Chang et al., 2023) confirms that satisfaction acts as a mediator between social and emotional values and the intention to pay. Specifically, social and emotional values positively influence satisfaction, which in turn enhances users' willingness to upgrade to premium services. Satisfaction strengthens the perceived value of these factors, making users more likely to invest in premium features. These findings suggest that peer influence not only directly affects consumer behavior but also indirectly shapes it by enhancing satisfaction.

The expected outcome is that satisfaction will mediate the relationship between peer influence and intention to upgrade. Users who derive satisfaction from peer-driven interactions are anticipated to perceive premium features as valuable extensions of their social experiences, increasing their likelihood of upgrading. This hypothesis not only builds on existing literature but also contributes a nuanced understanding of how social dynamics operate within the freemium business model.

H7: Satisfaction mediates the relationship between Effort Invested in the Free Version and Intention to Upgrade

Satisfaction mediates this relationship by providing emotional reinforcement for the effort expended. Soman (2001) emphasized that users evaluate their time investments differently from monetary investments, with a stronger emotional attachment to time spent. This attachment creates satisfaction, which motivates users to perceive upgrading as a logical step to maximize their return on investment. Chang et al. (2020) found that satisfaction with a service's functional and emotional aspects directly impacts purchase intention, highlighting its role as a mediator in the decision-making process. Moreover, satisfaction serves as a psychological reward for effort investment, reinforcing user loyalty and attachment. Mishra et al. (2018) demonstrated that users who perceive their effort as valuable are more likely to experience satisfaction, which subsequently influences their willingness to pay for premium services.

The expected outcome is that satisfaction will mediate the relationship between effort invested in the free version and intention to upgrade. Users who derive satisfaction from their psychological investment in the service are anticipated to view upgrading as a way to preserve and enhance their efforts.

H8: Satisfaction mediates the relationship between the Discovery of New Content and Intention to Upgrade

Epistemic value (in this regard, discovery of new content will provide this perceived value) has been widely recognized as a driver of satisfaction, particularly in services where users actively seek new and personalized experiences (Sweeney & Soutar, 2001). Discovery of new content plays a crucial role in fostering satisfaction by addressing users' need for novelty and intellectual stimulation. Sheth et al. (1991) described epistemic value as the utility derived from learning, curiosity, and new experiences. In digital services, discovery mechanisms such as personalized recommendations, curated playlists, or exclusive access to new features

enhance the epistemic value, creating a satisfying user experience (Hamari et al., 2020). This relationship is particularly strong in freemium models, where users are incentivized to explore and engage with the platform. As Mishra et al. (2018) noted, users who experience satisfaction from novel content are more likely to view premium tiers as essential for maintaining their positive experiences. These dynamic underscores the importance of satisfaction as a psychological bridge between epistemic value and intention to upgrade.

The mediating role of satisfaction can also be explained through the psychological reinforcement it provides. Mishra et al., (2018) argued that users derive emotional fulfillment from discovering new content, which enhances their satisfaction and motivates them to upgrade. This suggests a clear pathway from discovery to satisfaction and subsequently to behavioral outcomes like intention to upgrade.

The expected outcome is that satisfaction will mediate the relationship between discovery of new content and intention to upgrade. Users who derive satisfaction from the novelty and intellectual stimulation provided by discovery features are anticipated to perceive premium services as valuable and essential for maximizing their experience. This hypothesis not only builds on existing research but also provides a contemporary perspective on how epistemic value operates in the freemium business model. By examining satisfaction as a mediator, this study contributes to a deeper understanding of the indirect effects of discovery on user behavior.

H9: Continued Use mediates the relationship between Ubiquity and Intention to Upgrade

Mäntymäki et al. (2019) argued that freemium services with ubiquitous features are more likely to retain users over time, as these attributes align with their expectations for a seamless and efficient experience. Chang et al. (2023) found that sustained engagement with a service fosters a sense of familiarity and attachment, which increases users' likelihood of upgrading to premium tiers. Similarly, Mishra et al. (2018) emphasized that continued use reinforces the perceived value of a service, creating a pathway from functional benefits to behavioral intentions. The relationship between continued use and intention to upgrade can also be understood through the lens of user loyalty. Mäntymäki et al. (2019) highlighted that users who frequently interact with a service are more likely to perceive premium features as essential for maintaining their experience, thereby increasing their intention to upgrade. This

suggests that ubiquity indirectly impacts upgrading behaviors by facilitating continued use, which strengthens users' attachment to the service.

As discussed before in this study, ubiquity as a feature reduces barriers to engagement by providing uninterrupted access, which encourages users to integrate the service into their daily routines. Thus, expected outcome is highly related. If ubiquity is high, continued use will occur, and this will cause an intention to upgrade.

H10: Continued Use mediates the relationship between Peer Influence and Intention to Upgrade

Bhattacherjee (2001) defines continued use as the sustained engagement of users with a product or service over time, driven by the fulfillment of expectations and the perceived value derived from prior usage. In this case, peer influence represents the perceived social value which can be a cause of retention. Hamari et al. (2017) demonstrated that peer-driven interactions, enhance user engagement by creating a sense of community and trust. This engagement can manifest as sustained usage, because consumers will be more motivated to retain their involvement with the service through a community.

In the light of these information, results are expected is that peer influence acts as a catalyst for continued use, which in turn drives upgrading behaviors.

H11: Continued Use mediates the relationship between Effort Invested in the Free Version and Intention to Upgrade

The **Sunk Cost Effect** posits that individuals are more likely to persist in a behavior when they have already invested significant effort, even if continuing is not entirely rational Arkes & Blumer (1985). The concept of **mental accounting** (Soman, 2001) further supports the connection between effort and continued use. Study argued that individuals evaluate their time investments differently from monetary investments, perceiving time as a non-renewable resource. This perception heightens the emotional and psychological weight of effort, motivating users to continue engaging with the service to justify their initial investment. In this regard, perceived value needs to be taken into account, especially in terms of price value of the service(M. Mäntymäki et al., 2019). Hamari et al. (2017) highlighted that this effort fosters loyalty and attachment, which encourage sustained usage.

Practically, the mediating role of continued use highlights the dynamic interplay between effort and engagement. Users who invest effort in the free version are not only

motivated to continue using the service but also more likely to upgrade as they perceive premium features as a way to maximize their investment. This dynamic is particularly relevant in freemium models, where effort often translates into a deeper sense of ownership and progression. The expected outcome is that continued use will mediate the relationship between effort invested in the free version and intention to upgrade. Users who invest significant effort in the free version are anticipated to engage with the service more consistently, fostering a sense of loyalty and attachment that encourages upgrading.

H12: Continued Use mediates the relationship between the Discovery of New Content and Intention to Upgrade

Discovery of new content has been consistently linked to user engagement and satisfaction, both of which play critical roles in promoting continued use. Sheth et al. (1991) described epistemic value as the utility derived from novelty, exploration, and the acquisition of new knowledge. In digital service s, discovery features—such as personalized recommendations, exclusive access to new content, or algorithm-driven suggestions—enhance epistemic value, encouraging users to explore and engage more frequently (Hamari et al., 2020). Shu-Chen Chang et al. (2023) found that sustained engagement with novel content fosters familiarity and attachment.

The expected outcome is that continued use will mediate the relationship between discovery of new content and intention to upgrade. Users who are consistently exposed to novel and stimulating content are anticipated to engage with the service more frequently, fostering a sense of loyalty and attachment that encourages upgrading. Users would be more likely to consistently engage with a service that provides fresh and personalized content, as this novelty fulfills their intellectual and emotional needs. Continued use amplifies this engagement by creating a habit loop, where users return to the service to access additional novel experiences.

2.3.**Methods and procedures for data collection**

This study adopts a quantitative research method, utilizing an online survey approach. Quantitative methods were selected because previous studies investigating similar topics (Hamari et al., 2020; Hussain et al., 2023; Niemand et al., 2015; M. Mäntymäki et al., 2019) have largely relied on numerical data gathered through structured surveys.

Given the author's Turkish background, it was anticipated that a significant portion of respondents would be from Turkey. Thus, the survey designed in **two languages—English and**

Turkish. This bilingual approach was chosen to ensure accessibility for a diverse audience. Research was conducted through Google Forms for ease of use and familiarity and participants were explicitly informed that the survey would be used for academic purposes, and all responses would remain confidential. Moreover, thanks to feature of Google Forms, one person could fill the survey only one time, which prevented the harm could be done by manipulation of results. Also, participants were obligated to fill all questions before finishing the questionnaire, otherwise Google Forms didn't allow them to submit their answers. In this regard, no data was lost.

The initial survey was developed to measure the relationships between the independent variables (e.g., ubiquity, peer influence, effort invested in the free version, and discovery of new content), mediating variables (satisfaction and continued use), and the dependent variable (intention to upgrade). However, after conducting preliminary reliability tests, including Cronbach's Alpha and Item-Total Correlation analyses, certain issues in the structure of the questionnaire were identified. These issues necessitated revisions to improve the reliability and internal consistency of specific constructs. For instance, initial testing revealed that negatively worded statements caused confusion among respondents, even when reverse-coded in statistical software. Therefore, the survey included only positively worded statements for clarity.

Initial Cronbach's Alpha Results

The first Cronbach's Alpha analysis provided insights into the internal consistency of each construct:

- **Ubiquity:** 0.842
- **Peer Influence:** 0.786
- **Effort Invested in Free Version:** 0.347
- **Discovery of New Content:** 0.607
- **Satisfaction:** -0.852
- **Continued Use:** 0.740

The results indicated that while most constructs had acceptable or strong internal consistency, **effort invested in the free version** and **satisfaction** required significant revision. Satisfaction, in particular, presented a negative Cronbach's Alpha, suggesting the presence of

problematic items that conflicted with the overall construct. To pinpoint problematic survey items, an Item-Total Correlation analysis was conducted. This test revealed specific items with weak or negative correlations with their respective constructs:

- **Effort Invested in Free Version:**
    - Q1: 0.230 (Weak positive correlation)
    - Q2: 0.294 (Weak positive correlation)
    - Q3: -0.000 (Negative and negligible correlation)
    - Q4: 0.277 (Weak positive correlation)
- **Satisfaction:**
    - Q1: -0.421 (Moderate negative correlation)
    - Q2: -0.337 (Weak negative correlation)
    - Q3: -0.105 (Very weak negative correlation)
    - Q4: 0.000 (Neutral correlation)

The low and negative correlations indicated that certain items failed to align with the intended constructs. Specifically, Q3 in the **Effort** construct and Q1 and Q2 in **Satisfaction** required modification to better capture the intended dimensions of these variables.

Based on the reliability analyses, the following changes were implemented:

- **Effort Invested in Free Version:**
    - Original Q3: *"If I stopped using the service, I would feel that my effort would be wasted."*
        - Revised to: *"I feel my effort on the free version would be justified if I upgrade to premium."*

The original item focused on effort waste rather than its justification, which misaligned with the construct. The revised item emphasizes effort justification, improving alignment with the theoretical framework.

- Original Q4: *"My effort to customize or engage with the free version increases my intention to upgrade."*

        - Revised to: *"The effort I put into personalizing the free version increases my willingness to explore premium features."*

The revised item broadens the scope to include willingness to explore premium features, aligning more closely with user behavior in freemium services.

- **Satisfaction:**
    - Original Q1: *"If I am satisfied with the free version, I feel less inclined to upgrade to premium."*
        - Revised to: *"If I were satisfied with a free version of a service, I would consider upgrading to premium for enhanced satisfaction."*

The original item suggested a reverse relationship between satisfaction and upgrading, conflicting with the theoretical framework. The revised item clarifies the relationship between satisfaction with the free version and upgrading.

    - Original Q2: *"If the free version does not meet my expectations, I am more likely to upgrade."*
        - Revised to: *"If the premium version better meets my expectations, I am more likely to upgrade."*

The revised item shifts focus to the premium version's ability to meet expectations, providing a more direct link to upgrading behavior.

Revised Cronbach's Alpha Results

After implementing these changes, a second Cronbach's Alpha analysis was conducted, yielding improved results:

- **Effort Invested in Free Version:** 0.667 (Moderate internal consistency)
- **Satisfaction:** 0.853 (Strong internal consistency)

These results confirmed that the adjustments successfully addressed the reliability issues, aligning the constructs more closely with their intended theoretical dimensions.

The revised survey reflects a more robust and reliable measurement framework, addressing the weaknesses identified in the initial reliability analyses. The current version of

the survey captures the constructs effectively, ensuring consistency and validity in the data collection process. The full revised questionnaire is provided in the appendix for reference.

Variable Measured	Survey Question	Variable Type
Demographics	What is your age?	Categorical
	Which country do you currently reside in?	Categorical
Usage Frequency	How often do you use online services (e.g., music, video streaming)?	Ordinal
Service Preferences	Could you please specify which online services you use?	Multiple Choice
Ubiquity	If the premium version of a service provides access anytime and anywhere, I am more likely to upgrade.	5-point Likert scale
	The ability to access the premium version across all my devices increases my intention to upgrade.	
	If the free version has limitations in access, but the premium version does not, I would consider upgrading.	
	I would upgrade to premium if it ensures uninterrupted and reliable access to the service.	

Peer Influence	If my friends recommend the premium version of a service, I am more likely to upgrade.	5-point Likert scale
	If people around me benefit from the premium version, it motivates me to upgrade as well.	
	Knowing that my peers use the premium version makes me consider upgrading.	
	I would feel left out if my friends used premium features, I do not have access to.	
Effort Invested in Free Version	If I have spent significant time and effort using the free version, I feel more inclined to upgrade to premium.	5-point Likert scale
	I would consider upgrading to premium to better utilize the effort I have already invested.	
	I feel my effort on the free version would be justified if I upgrade to premium.	
	The effort I put into personalizing the free version increases my willingness to explore premium features.	

Discovery of New Content	If the premium version of a service provides access to exclusive or new content, I am more likely to upgrade.	5-point Likert scale
	I would upgrade to premium if it enhances my ability to discover relevant and valuable content.	
	Knowing that premium users access new content earlier motivates me to upgrade.	
	Discovering new content through a service increases my likelihood of continuing to use it.	
Satisfaction	If I were satisfied with a free version of a service, I would consider upgrading to premium for enhanced satisfaction.	5-point Likert scale
	If the premium version better meets my expectations, I am more likely to upgrade.	
	My satisfaction with the free version encourages me to explore premium features.	
	If upgrading improves my satisfaction with the service, I would strongly consider it.	

Continued Use	If I use a service regularly, I am more likely to upgrade to premium.	5-point Likert scale
	The more I use a service, the more I consider upgrading to premium.	
	If upgrading to premium ensures I can continue using the service without limitations, I would consider it.	
	My continued use of a service increases my intention to pay for its premium version.	
Intention to Upgrade	I am considering upgrading to the premium version of an online service in the near future.	5-point Likert scale
	If I find the premium version of a service beneficial, I am likely to upgrade soon.	
	I plan to upgrade to the premium version of a service I currently use within the next month.	
	I feel motivated to switch to the premium version of an online service I use.	

Table 1. *Online survey questionnaire, complied by the author*

An average participant count was determined by calculating the mean number of participants across 10 studies, and the survey remained open between December 19 and

December 31, 2024. Despite the calculated average participant count being 416, only 321 participants were successfully reached.

Author(s)	Year	Article Title	Participant Count
Thomas M. Wagner, Alexander Benlian, Thomas Hess	2014	"Converting Freemium Customers from Free to Premium—the Role of the Perceived Premium Fit in the Case of Music as a Service"	317
Sebastian Bertholdsson, Jonas Dahir	2015	"Consumers Perception of Freemium Services: Factors Influencing Consumers Choice of Premium or Free Services"	325
Thomas Niemand, Sebastian Tischer, Tina Fritzsche, Sascha Kraus	2015	"The Freemium Effect: Why Consumers Perceive More Value with Free than with Premium Offers"	158
Yi-Cheng Ku, Yi-An Lin, Zhijun Yan	2017	"Factors Driving Mobile App Users to Pay for Freemium Services"	399
Pei-Fang Hsu, Wei-Chih Tsai	2017	"From Free to Pay: A Three-Stage Freemium Strategy"	573

Juho Hamari, Nicolai Hanner, Jonna Koivisto	2017	"Service Quality Explains Why People Use Freemium Services but Not If They Go Premium"	869
Matti Mäntymäki, A.K.M. Najmul Islam, Izak Benbasat	2019	"What Drives Subscribing to Premium in Freemium Services? A Consumer Value-Based View of Differences Between Upgrading to and Staying With Premium"	436
Okto Aditya Suryawirawan, Suhermin, Wiwiek Srikandi Shabrie	2022	"Service Quality, Satisfaction, Continuous Usage Intention, and Purchase Intention Toward Freemium Applications"	258
Jie (Kevin) Yan, Robin Wakefield	2018	"The Freemium (Two-Tiered) Model for Individual Cloud Services: Factors Bridging the Free Tier and the Paying Tier"	270
Shu-Chen Chang, Yi-Feng Lin, Yu-Ping Chiu	2023	"From Freemium to Premium App Services: The	552

		Expectation Confirmation Model and Two-Factor Theory"	

Table 2. *Average participant count, complied by author*

Average=10317+325+158+399+573+869+436+258+270+552 ≈ 415.7

2.4.Results

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Unstandardized Residual	317	100.0%	0	0.0%	317	100.0%
Standardized Residual	317	100.0%	0	0.0%	317	100.0%

A total of **321 responses** were collected, but **4 were excluded** during the data validation process. These excluded responses showed uniform answering patterns (e.g., all answers marked as "222" or "444"), which undermined their reliability. Consequently, the analysis was conducted using **317 valid responses**.

In this study, normality tests were applied to assess whether the data met the normality assumption. Both Kolmogorov-Smirnov and Shapiro-Wilk tests were performed and the results were obtained as follows:

Figure 7. *Normality Test Results-1*

Figure 8. *Normality Test Results-2*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.031	317	.200*	.992	317	.096
Standardized Residual	.031	317	.200*	.992	317	.096

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 9. *Normality Test Results-3*

In normality tests, the null hypothesis is not rejected when the p-value (Sig.) is greater than 0.05. This implies that the residuals are normally distributed. In both Kolmogorov-Smirnov and Shapiro-Wilk tests, the significance levels (p-values) are greater than 0.05.

Descriptives

			Statistic	Std. Error
Unstandardized Residual	Mean		.0000000	.07888920
	95% Confidence Interval for Mean	Lower Bound	-.1552145	
		Upper Bound	.1552145	
	5% Trimmed Mean		-.0262639	
	Median		-.0488467	
	Variance		1.973	
	Std. Deviation		1.40458231	
	Minimum		-3.71160	
	Maximum		5.79892	
	Range		9.51052	
	Interquartile Range		1.83683	
	Skewness		.334	.137
	Kurtosis		.636	.273
Standardized Residual	Mean		.0000000	.05580899
	95% Confidence Interval for Mean	Lower Bound	-.1098042	
		Upper Bound	.1098042	
	5% Trimmed Mean		-.0185800	
	Median		-.0345559	
	Variance		.987	
	Std. Deviation		.99365073	
	Minimum		-2.62572	
	Maximum		4.10236	
	Range		6.72807	
	Interquartile Range		1.29944	
	Skewness		.334	.137
	Kurtosis		.636	.273

Therefore, it is concluded that the residuals conform to the normal distribution.

In addition, descriptive statistics also support the assumption of normality:

Skewness: 0.334

Kurtosis: 0.636

Skewness and kurtosis values are within acceptable limits (-1 to +1 for skewness and -2 to +2 for kurtosis). These values indicate that the residuals are symmetrically distributed and conform to normality. In conclusion, both statistical tests and descriptive statistics support that the residuals conform to a normal distribution. This shows that the normality assumption is valid in the data analysis.

2.4.1. Demographics of Participants

Age Group	Number of Participants
15-17 years	36
18-24 years	43
25-34 years	86
35-44 years	86
45-54 years	57
55+ years	13

Table 3. *Age distribution of the participants, complied by the author*

The age distribution reveals that the majority of participants are aged between 25-44, which accounts for over half of the sample. Younger and older age groups are represented to a lesser extent.

Place of Residence

Country	Number of Participants
Turkey	267
Lithuania	30
Other	20

Table 4. *Place of residence of the participants, complied by the author*

The majority of participants reside in Turkey, reflecting the author's background and focus. Other responses predominantly come from Lithuania and a small number from various other countries.

Usage Frequency of Online Services

Usage Frequency	Number of Participants
Daily usage	276
Several times a week	32

Weekly usage	3
Monthly or less	5
Rarely or never	1

Table 5. *Usage frequency of online freemium services of the participants, complied by the author*

Daily usage is overwhelmingly common among participants, with nearly 90% using online services every day. Weekly or less frequent usage is rare within this sample.

Freemium services used by the participants

Online Service	Number of Mentions
YouTube	295
Spotify	185
Netlix	170
Amazon Prime Video	65
Disney	33

Table 6. *Freemium online services used by the participants, complied by the author*

YouTube is the most frequently used service by a significant margin, followed by Spotify and Netflix. Other services like Amazon Prime Video and Disney+ have a smaller but notable user base among participants. Participants also mentioned other services, such as Apple Music, HBO Max, and educational platforms like Udemy, though these were less frequently cited.

2.4.2. Direct Relations Between Variables

In order to measure the effect of each of the independent variables on the dependent variable separately, a simple regression analysis was performed in the SPSS program and it was evaluated whether the hypotheses were accepted or not in line with the data obtained.

H1: Ubiquity has a significant and positive effect on the Intention to Upgrade

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.755[a]	.570	.569	2.27128	.570	418.002	1	315	<.001

a. Predictors: (Constant), U

Figure 10. *Regression test results for ubiquity and intention to upgrade*

The analysis indicates a strong positive impact of ubiquity on the intention to upgrade,

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2156.359	1	2156.359	418.002	<.001[b]
	Residual	1624.998	315	5.159		

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.300	.464		9.266	<.001	3.387	5.213
	U	.605	.030	.755	20.445	<.001	.547	.663

a. Dependent Variable: I2U

with an R^2 value of 0.570 and a standardized beta coefficient (β) of 0.755. Ubiquity, defined as the availability and accessibility of a service anytime and anywhere (Mäntymäki et al., 2019), is a fundamental characteristic of digital platforms that directly influences user engagement and loyalty. This aligns with the functional value framework proposed by Sweeney and Soutar (2001), which emphasizes the importance of convenience and efficiency in driving consumer decisions.

In freemium services, ubiquity enhances user satisfaction by providing seamless access to desired functionalities, as highlighted by Hamari et al. (2017). This is particularly evident in platforms like Spotify and Netflix, where features such as offline access and mobile compatibility eliminate traditional barriers to usage. Chang et al. (2023) further emphasized the role of offline features in encouraging premium upgrades, especially in contexts where internet connectivity is limited. By integrating ubiquity into their value propositions, freemium platforms not only meet functional expectations but also foster habitual usage, which is a key driver of continued engagement and upgrading intentions. Thus, ubiquity is not just a functional attribute but a strategic enabler of user satisfaction and monetization in the freemium landscape.

H2: Peer influence has a significant and positive effect on the intention to upgrade.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.682[a]	.465	.463	2.53376	.465	274.000	1	315	<.001

a. Predictors: (Constant), PI

Figure 11. *Regression test results for peer influence and intention to upgrade*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1759.069	1	1759.069	274.000	<.001[b]
	Residual	2022.288	315	6.420		

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	6.803	.424		16.028	<.001	5.968	7.638
	PI	.571	.035	.682	16.553	<.001	.503	.639

a. Dependent Variable: I2U

The analysis demonstrates a moderately strong positive effect of peer influence on the intention to upgrade, with an R^2 value of 0.465 and a standardized beta coefficient (β) of 0.682. This indicates that peer influence accounts for 46.5% of the variance in the intention to upgrade, underscoring the importance of social dynamics in shaping consumer behavior. These findings are consistent with the concept of social value as defined by Sheth et al. (1991) and further explored by Hamari et al. (2017), who argued that peer influence significantly impacts users' willingness to pay (WTP) for premium features. In collaborative and social platforms, peer recommendations, shared experiences, and visible behaviors often create a sense of belonging, motivating users to invest in premium services.

This relationship can be attributed to the dual mechanisms of social comparison and social pressure, as described by Mäntymäki et al. (2019). Social comparison occurs when users evaluate their own behavior relative to their peers, leading to increased motivation to upgrade. Conversely, social pressure arises from direct or indirect encouragement by peers, which can also drive purchase intentions. Platforms like Spotify capitalize on these dynamics through features such as shared playlists and friend activity, which enhance social connectivity and reinforce the perceived value of premium offerings. Thus, peer influence is not merely a subset of social value but a distinct driver of user engagement and monetization within freemium models.

H3: Effort invested in the free version has a significant and positive effect on the intention to upgrade.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.778[a]	.605	.604	2.17764	.605	482.397	1	315	<.001

a. Predictors: (Constant), E

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2287.587	1	2287.587	482.397	<.001[b]
	Residual	1493.769	315	4.742		
	Total	3781.356	316			

a. Dependent Variable: I2U

b. Predictors: (Constant), E

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.501	.424		10.609	<.001	3.666	5.335
	E	.639	.029	.778	21.964	<.001	.582	.696

a. Dependent Variable: I2U

Figure 12. *Regression test results for effort invested in free version and intention to upgrade*

The results show a strong positive relationship between the effort invested in the free version and the intention to upgrade, with an R^2 value of 0.605 and a standardized beta coefficient (β) of 0.778. These findings emphasize the significance of the sunk cost effect, as originally proposed by Arkes and Blumer (1985), wherein prior investments in time and effort compel individuals to justify their engagement by upgrading. In the context of freemium services, this phenomenon is particularly relevant, as users who have invested significant effort—such as creating playlists or customizing profiles—are more likely to perceive upgrading as a means of preserving their investment.

The psychological weight of effort, as highlighted by Soman (2001), further reinforces this relationship. Time, unlike money, is an irreplaceable resource, and users often develop a sense of ownership over their time investments. This sense of ownership fosters a commitment to the platform, enhancing both satisfaction and upgrade intentions. Additionally, Lehmann-Zschunke (2024) noted that subscription length and prior engagement significantly influence

user retention and conversion. Thus, the effort invested in the free version not only increases user attachment but also aligns with the functional and emotional value dimensions, making it a critical determinant of upgrading behavior in freemium models.

H4: Discovery of new content has a significant and positive effect on the intention to upgrade.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.778[a]	.605	.603	2.17887	.605	481.501	1	315	<.001

a. Predictors: (Constant), D

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2285.906	1	2285.906	481.501	<.001[b]
	Residual	1495.450	315	4.747		
	Total	3781.356	316			

a. Dependent Variable: I2U

b. Predictors: (Constant), D

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.866	.452		8.546	<.001	2.976	4.756
	D	.635	.029	.778	21.943	<.001	.578	.692

a. Dependent Variable: I2U

Figure 13. *Regression test results for discovery of new content and intention to upgrade*

The regression analysis reveals a strong positive relationship between the discovery of new content and the intention to upgrade, as evidenced by an R^2 value of 0.605 and a standardized beta coefficient (β) of 0.778. This suggests that discovery of new content explains a substantial 60.5% of the variance in the intention to upgrade, indicating its critical role in freemium services. These findings align with the epistemic value dimension described by Sheth et al. (1991), which emphasizes the utility derived from novelty and curiosity. Mäntymäki et al. (2019) also highlighted that discovery features, such as curated recommendations or exclusive content, significantly enhance user satisfaction and perceived value, particularly among premium users. This effect is not merely limited to satisfaction but extends to behavioral

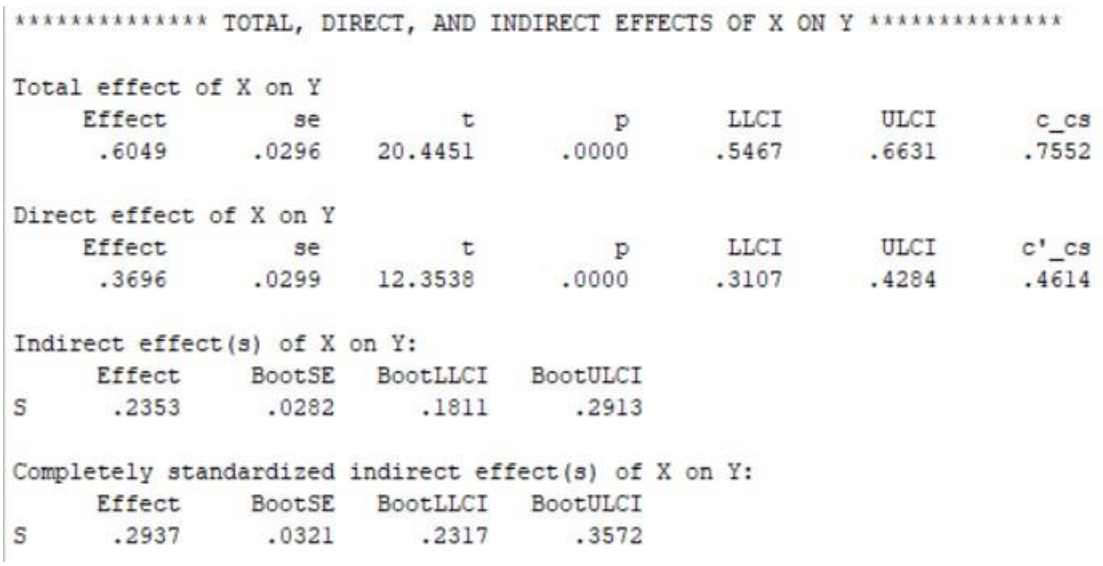
intentions, as users who are consistently exposed to new and desirable content are more likely to perceive upgrading as a worthwhile investment.

Furthermore, the personalization of discovery features plays a pivotal role in strengthening this relationship. According to Martins et al. (2024), accurate recommendations and exposure to novel material enhance user engagement, creating a deeper connection between the user and the platform. This engagement, fostered by continuous discovery, positions premium subscriptions as indispensable for users seeking enriched experiences. Platforms like Spotify and Netflix exemplify this dynamic, leveraging personalized playlists and exclusive releases to encourage user loyalty and premium upgrades. Therefore, the discovery of new content is not merely a functional feature but an integral driver of user behavior, as it fulfills both epistemic and emotional value dimensions, ultimately compelling users to transition from free to premium tiers.

2.4.3. Mediating Relations Between Variables

In order to measure the effect of mediating factors, the PROCESS plug-in developed by Andrew Hayes and widely used in the literature was used. PROCESS is a tool that stands out with its accuracy and reliability, especially in regression-based mediation and interaction analyses (Hayes, 2017) These analyses were conducted based on Model 4 and procedures were carefully implemented to increase the validity of the findings.

H5a: Satisfaction mediates the relationship between ubiquity and intention to upgrade.



```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6049      .0296    20.4451      .0000      .5467      .6631      .7552

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3696      .0299    12.3538      .0000      .3107      .4284      .4614

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2353      .0282      .1811      .2913

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2937      .0321      .2317      .3572
```

Figure 14. *Mediating test results for satisfaction, ubiquity and intention to upgrade*

The mediation analysis reveals that ubiquity significantly influences intention to upgrade both directly (β = 0.3696, p < 0.001) and indirectly through satisfaction (β = 0.2353, p < 0.001) 【185†source】. This underscores the functional value of ubiquity, as it enhances user satisfaction by ensuring seamless access to services, a key determinant of continued engagement and premium upgrades. According to Hamari et al. (2017), ubiquity's role in eliminating traditional access barriers aligns with consumer expectations for modern digital services. By fostering satisfaction through uninterrupted availability, platforms like Spotify and Netflix create habitual user engagement, which in turn amplifies the perceived value of premium subscriptions (Mäntymäki et al., 2019). The mediating role of satisfaction indicates that functional value must align with user expectations to drive both immediate and sustained behavioral outcomes.

H5b: Satisfaction mediates the relationship between peer influence and intention to upgrade.

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .5711      .0345    16.5529      .0000      .5032      .6390      .6821

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3507      .0279    12.5464      .0000      .2957      .4056      .4188

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2205      .0312      .1609      .2834

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2633      .0322      .2002      .3251
```

Figure 15. *Mediating test results for satisfaction, peer influence and intention to upgrade*

Peer influence demonstrates a significant direct effect (β = 0.3507, p < 0.001) and an indirect effect through satisfaction (β = 0.2205, p < 0.001) on intention to upgrade【183†source】. This relationship highlights the interplay between social value and satisfaction, where social interactions and community validation enhance the perceived quality of the user experience. Platforms leveraging peer-driven features, such as Spotify's collaborative playlists, create opportunities for social engagement that bolster satisfaction (Hamari et al., 2017).

Satisfaction, in turn, acts as a psychological reinforcer, translating social dynamics into actionable decisions to upgrade. This aligns with Sheth et al.'s (1991) Consumption Value Theory, which posits that social value and satisfaction are integral to consumer decision-making, particularly in freemium environments.

H5c: Satisfaction mediates the relationship between effort invested in the free version and intention to upgrade.

```
*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6389      .0291    21.9635      .0000      .5816      .6961      .7778

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3924      .0344    11.4022      .0000      .3247      .4601      .4777

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2465      .0313      .1856      .3102

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .3000      .0359      .2297      .3721
```

Figure 16. *Mediating test results for satisfaction, effor invested in free version and intention to upgrade*

The results indicate that effort invested in the free version affects intention to upgrade both directly ($\beta = 0.3696$, $p < 0.001$) and indirectly via satisfaction ($\beta = 0.2205$, $p < 0.001$) 【184†source】. This dynamic reflects the sunk cost effect (Arkes & Blumer, 1985), where prior investments in time and effort generate a sense of psychological ownership, leading to higher satisfaction. Satisfaction derived from the free tier reinforces the perceived value of transitioning to premium services. Soman (2001) emphasizes that the psychological weight of time magnifies the value of prior effort, prompting users to align their satisfaction with continued engagement. Freemium platforms can leverage this by ensuring that premium features enhance the benefits accrued from prior investments, thereby facilitating conversions.

H5d: Satisfaction mediates the relationship between the discovery of new content and the intention to upgrade.

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6348      .0289    21.9431      .0000      .5779      .6918      .7775

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3870      .0353    10.9550      .0000      .3175      .4565      .4740

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2478      .0306      .1879      .3086

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .3035      .0354      .2317      .3718
```

Figure 17. *Mediating test results for satisfaction, discovery of new content and intention to upgrade*

Discovery of new content significantly impacts intention to upgrade directly (β = 0.3870, $p < 0.001$) and indirectly through satisfaction (β = 0.2478, $p < 0.001$)【182†source】. This finding highlights the epistemic value of novelty and its role in fostering satisfaction. Platforms that deliver curated and personalized content, such as Spotify's algorithm-driven recommendations, enhance satisfaction by catering to user preferences (Sweeney & Soutar, 2001). Satisfaction mediates the relationship between discovery and upgrading intentions by reinforcing the emotional connection users establish with the platform's unique offerings. As noted by Mäntymäki et al. (2019), the discovery of relevant and engaging content deepens user loyalty, positioning premium subscriptions as indispensable for an enriched experience.

The mediation analyses underscore satisfaction's pivotal role in translating functional, social, emotional, and epistemic values into actionable user behaviors. By enhancing satisfaction through ubiquity, peer influence, effort invested, and discovery of new content, platforms can effectively bridge the gap between user engagement and premium conversions. These findings provide actionable insights for designing freemium strategies that prioritize user satisfaction to foster long-term loyalty and financial sustainability.

H6a: Continued use mediates the relationship between ubiquity and intention to upgrade.

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6049      .0296    20.4451      .0000      .5467      .6631      .7552

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .4183      .0335    12.4986      .0000      .3525      .4842      .5223

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .1865      .0321      .1275      .2536

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .2329      .0394      .1602      .3140
```

Figure 18. *Mediating test results for continued use, ubiquity and intention to upgrade*

The mediation analysis demonstrates that ubiquity has a significant direct effect on intention to upgrade ($\beta = 0.4183$, $p < 0.001$) and a strong indirect effect through continued use ($\beta = 0.1865$, $p < 0.001$), contributing to a total effect of $\beta = 0.6049$ ($R^2 = 0.5703$) 【200†source】. Ubiquity's influence reflects its role in enhancing functional value by ensuring seamless accessibility. Continued use acts as a behavioral anchor, embedding the service into users' routines, as supported by Hamari et al. (2017). Platforms such as Netflix leverage ubiquity by offering offline access and cross-device synchronization, increasing user reliance and satisfaction. This habitual engagement strengthens the perceived necessity of premium services, highlighting the importance of aligning functional benefits with user expectations.

H6b: Continued use mediates the relationship between peer influence and intention to upgrade.

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .5711      .0345    16.5529      .0000      .5032      .6390      .6821

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3934      .0299    13.1409      .0000      .3345      .4523      .4698

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .1777      .0308      .1192      .2405

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .2123      .0333      .1469      .2785
```

Figure 19. *Mediating test results for continued use, peer influence and intention to upgrade*

Peer influence significantly impacts intention to upgrade both directly ($\beta = 0.3934$, $p < 0.001$) and indirectly through continued use ($\beta = 0.1777$, $p < 0.001$), with a total effect of $\beta = 0.5711$ ($R^2 = 0.4652$) 【199†source】. Social dynamics play a crucial role in fostering satisfaction and retention. Continued use mediates this relationship by reinforcing the social connections established through peer interactions. Collaborative features, such as Spotify's shared playlists, amplify social engagement, creating a cycle of interaction that motivates users to upgrade. This aligns with the Consumption Value Theory (Sheth et al., 1991), which posits that social value drives user satisfaction and long-term engagement.

H6c: Continued use mediates the relationship between effort invested in the free version and intention to upgrade.

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6389      .0291    21.9635     .0000      .5816      .6961      .7778

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .4625      .0377    12.2809     .0000      .3884      .5366      .5631

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
CU      .1763      .0369      .1055      .2501

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
CU      .2147      .0449      .1275      .3031
```

Figure 20. *Mediating test results for continued use, effort invested in free version and intention to upgrade*

Effort invested in the free version strongly predicts intention to upgrade both directly ($\beta = 0.4625$, $p < 0.001$) and through continued use ($\beta = 0.1763$, $p < 0.001$), contributing to a total effect of $\beta = 0.6389$ ($R^2 = 0.6050$) 【198†source】. This reflects the sunk cost effect (Arkes & Blumer, 1985), where users' investments in time and effort create a psychological commitment. Continued use mediates this pathway by fostering a habitual reliance on the platform. Soman (2001) highlights the psychological weight of time investments, prompting users to upgrade to maximize their perceived returns. By enhancing the benefits of effort through premium features, platforms can effectively convert user commitment into sustained engagement.

H6d: Continued use mediates the relationship between the discovery of new content and the intention to upgrade.

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6348      .0289    21.9431      .0000      .5779      .6918      .7775

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .4598      .0377    12.1911      .0000      .3856      .5340      .5632

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .1750      .0370      .1048      .2496

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .2144      .0456      .1281      .3059
```

Figure 21. *Mediating test results for continued use, discovery of new content and intention to upgrade*

Discovery of new content significantly impacts intention to upgrade directly ($\beta = 0.4598$, $p < 0.001$) and indirectly through continued use ($\beta = 0.1750$, $p < 0.001$), with a total effect of $\beta = 0.6348$ ($R^2 = 0.6045$) 【197†source】. Epistemic value, derived from novelty and personalized recommendations, enhances satisfaction and retention. Continued use mediates this relationship by reinforcing the user's engagement with dynamic and tailored content. Platforms like Spotify and Netflix use curated playlists and exclusive releases to deepen user reliance, as noted by Mäntymäki et al. (2019). This strategy underscores the importance of integrating novelty and habitual engagement to foster long-term loyalty and drive premium conversions.

The analyses reveal that continued use significantly mediates the relationships between the independent variables (Ubiquity, Peer Influence, Effort Invested, and Discovery of New Content) and intention to upgrade. By fostering habitual engagement and aligning functional, social, and epistemic values with user behavior, continued use serves as a critical mechanism for enhancing retention and promoting premium subscriptions. These findings highlight the need for freemium strategies that prioritize user retention and habitual engagement to optimize long-term conversions.

3. CONCLUSIONS

3.1.Findings

This study comprehensively examined the key factors that influence users' decisions to switch to premium services in a freemium business model and explored in detail the relationships between independent variables, mediator effects and consumer behavior. The findings provide valuable insights, both theoretical and practical, into how freemium strategies shape user behavior. The findings show that the independent variables in the model - ubiquity, peer influence, effort invested in free version and discovery of new content - have direct effects on the intention to switch to premium services. The strength of these effects was further enhanced by the mediating role of satisfaction and continued use.

The results show that ubiquity significantly affects users' intention to switch to premium services. Anytime and anywhere availability of the service increases users' loyalty and increases the attractiveness of premium features. This finding supports the influence of functional values on user decisions emphasized in studies such as Sweeney and Soutar (2001) and Mäntymäki et al. (2019). Similarly, the peer influence variable was observed to shape users' intention to switch to premium services through social interactions and incentives from peers. This influence of social norms and interactions on consumer behavior is in line with studies such as Hamari et al. (2017) and Mäntymäki et al. (2019).

The variable Effort invested in free version reveals that users' time and effort investments in the free version are a determining factor in their decision to switch to premium services. This is consistent with the sunk cost effect proposed by Arkes and Blumer (1985). Since users tend to protect their past investments, they prefer to make these investments meaningful by switching to premium features. Discovery of new content variable, on the other hand, supports users' decision to switch to premium services by increasing their interest in new and interesting content. This finding that epistemic values influence user behavior is in line with studies such as Sheth et al. (1991) and Mäntymäki et al. (2019).

The mediator role of satisfaction and continued use variables was also extensively examined. The findings revealed that satisfaction significantly amplified the effects of the independent variables on intention to upgrade. For example, ubiquity and peer influence variables increased the intention to upgrade to premium services through satisfaction. These findings are in line with the Expectation-Confirmation Model (ECM) framework developed by Bhattacherjee (2001) and once again confirm that satisfaction plays a critical role in consumer

decisions. Similarly, the continued use variable significantly amplified the effects of the independent variables on switching to premium services. In particular, ubiquity and discovery of new content strengthened users' commitment to the service and encouraged the intention to switch to premium features. This is in line with the effect of continued use on user loyalty as suggested by Mäntymäki et al. (2019).

All 12 hypotheses tested in the study were supported and these findings are largely consistent with previous studies in the literature. For example, Hamari et al. (2017) and Mäntymäki et al. (2019) emphasized the importance of social interactions and functional values on consumer behavior, and similar results were obtained in this study. In addition, Sheth et al. (1991) discussed the impact of epistemic values on user behavior, and the findings of this study confirm this relationship through the discovery of new content variable.

In conclusion, this research has supported and extended the theoretical frameworks in this area by comprehensively analyzing the factors that influence consumer behavior in the freemium business model. The findings not only provide valuable contributions to the literature, but also offer important practical implications for businesses in optimizing their freemium strategies. It is once again demonstrated that user experience needs to be addressed in all dimensions in order to increase the transition to premium services, and that it is critical to support satisfaction and continued usage in this process.

Hypothesis	Result
H1: Ubiquity has a significant and positive effect on the intention to upgrade.	Confirmed
H2: Peer influence has a significant and positive effect on the intention to upgrade.	Confirmed
H3: Effort invested in the free version has a significant and positive effect on the intention to upgrade.	Confirmed
H4: Discovery of new content has a significant and positive effect on the intention to upgrade.	Confirmed
H5a: Satisfaction mediates the relationship between ubiquity and intention to upgrade.	Confirmed

H5b: Satisfaction mediates the relationship between peer influence and intention to upgrade.	Confirmed
H5c: Satisfaction mediates the relationship between effort invested in the free version and intention to upgrade.	Confirmed
H5d: Satisfaction mediates the relationship between the discovery of new content and the intention to upgrade.	Confirmed
H6a: Continued use mediates the relationship between ubiquity and intention to upgrade.	Confirmed
H6b: Continued use mediates the relationship between peer influence and intention to upgrade.	Confirmed
H6c: Continued use mediates the relationship between effort invested in the free version and intention to upgrade.	Confirmed
H6d: Continued use mediates the relationship between the discovery of new content and the intention to upgrade.	Confirmed

Table 7. *Results of hypotheses*

3.2.Limitations and Suggestions

While this study has provided important insights into the factors that influence the decision to switch from a freemium business model to premium services, it has certain limitations. These limitations may affect the scope of the findings and provide opportunities for future research. Limitations can be addressed in terms of sample size and demographic distribution, scope of the study, variables used, and methodological limitations.

First, the sample size collected in this study was lower than targeted. Considering similar studies, the study aimed to collect data from 416 participants, whereas 317 valid responses were obtained. This insufficient sample size may limit the generalizability of the findings. A larger dataset may better reflect different consumer behaviors and preferences,

which could make the results more reliable. In particular, a larger sample size may strengthen the validity of the theoretical frameworks used in studies testing behavioral models.

Secondly, the demographic distribution of the participants showed a clustering in certain age groups. Most of the data was collected from respondents between the ages of 25-44. This clustering prevented a full analysis of the intergenerational differences affecting the decision to switch from freemium to premium services. Especially in the context of the Technology Acceptance Model (TAM) (Davis, 1987) , it is well known that variables such as perceived ease of use and utility differ across age groups. The differences between younger and older generations' access to and acceptance of technology are not adequately represented in this study. Therefore, a more balanced age distribution is necessary to fully understand generational behavioral dynamics.

Another limitation of the study is that it focuses only on content-oriented services (e.g. YouTube and Spotify). While variables such as discovery of new content and effort invested in the free version are highly relevant for such services, their generalizability to other types of freemium services is limited. For example, different freemium models, such as gaming platforms or productivity tools, may have completely different motivations that influence user decisions. This makes it difficult to apply the results of the study across the industry.

Methodologically, this study relied on data collected through self-reporting. Self-reporting methods carry the risk of not reflecting the actual attitudes and behaviors of participants, such as social desirability bias. Participants may give answers that they think will be socially acceptable and this may affect the accuracy of the results. Furthermore, the use of Likert-scale questions, while making the data suitable for quantitative analysis, limited the ability to fully capture the depth and complexity of respondents' views. In particular, users' emotional responses and more complex motivations may not have been captured with this type of scale.

Conceptually, while the variables considered in this study are highly effective in understanding premium switching in content-focused freemium services, they may not be sufficient to explain user behavior in other sectors. While the variables discovery of new content and effort invested in the free version show a strong association with platforms that offer personalized content, other services such as games or productivity tools may have different priorities. This suggests that the study is strong in a limited context, but its applicability in broader contexts is limited.

For future research, addressing and overcoming these limitations may provide stronger and more comprehensive findings. By using a larger and more diverse sample, it would be possible to examine generational differences across age groups. Particularly within the TAM framework, the effects of perceived ease of use and social influence across different age groups could be explored in depth. Furthermore, by adding variables such as frequency and duration of use, users' level of interaction with the service can be analyzed in more detail. Cross-sectoral analyses can be conducted to understand user behavior across different service categories. The addition of qualitative research methods, such as focus groups or in-depth interviews, to such studies can provide a better understanding of users' motivations and emotional responses.

In conclusion, while this study provides important insights into the freemium business model, a broader understanding can be gained by addressing limitations in the future. The proposed improvements will be valuable not only academically, but also for businesses to optimize their freemium strategies.

FACTORS INFLUENCING CONSUMERS' DECISION TO SWITCH FROM FREEMIUM TO PREMIUM ONLINE SERVICES

Ceren UGRAS

Master Thesis

Digital Marketing

Vilnius University, Business School

Supervisor prof. dr. Dikčius Vytautas

Vilnius, 2025

SUMMARY (In English)

71 page, 22 figures, 14 tables, 187 citations.
Problem formulation: The factors influencing consumer transitions from freemium to premium services in the context of digital business models are explored to provide a comprehensive understanding of consumer behavior using theoretical frameworks such as the Consumption Value Theory (CVT).
Aim of this research: To analyze how functional, social, emotional, and epistemic value dimensions, as well as mediating variables like satisfaction and continued use, affect the intention to upgrade from freemium to premium services.

The current research is divided into three major parts: literature analysis, research methods, and the analysis of research results. The literature review provided an overview of the freemium business model and the theoretical foundations relevant to understanding consumer behavior in this context. This part introduced the variables influencing the intention to upgrade, including functional value (e.g., ubiquity), social value (e.g., peer influence), emotional value (e.g., enjoyment), and epistemic value. The literature analysis also highlighted the mediating roles of satisfaction and continued use, as well as psychological phenomena such as the sunk cost effect, in shaping user decisions.

Following the literature analysis, the research aimed to investigate the relationships between these value dimensions, mediating variables, and intention to upgrade. A quantitative

online survey was chosen as the data collection method. The survey consisted of 30 questions, including 24 designed to measure the theoretical model's variables and 6 demographic questions to better understand the respondent profiles. In total, 317 valid responses were collected, providing insights into user behavior in freemium models, particularly within content-driven services like YouTube and Spotify.

The findings confirm that functional value (e.g., ubiquity) significantly influences satisfaction and intention to upgrade, while social value (e.g., peer influence) plays a critical role in driving premium transitions. Emotional factors like enjoyment from free services and psychological effects such as the sunk cost effect also contribute to user decisions. The mediating roles of satisfaction and continued use were found to be significant, aligning with theoretical expectations and offering actionable insights for businesses.

The study acknowledges limitations, such as the relatively small sample size and the focus on content-driven services, which may limit the generalizability of the findings. Nonetheless, this research contributes to the understanding of consumer behavior in freemium models and provides practical recommendations for optimizing user acquisition and conversion strategies.

FAKTORIAI, DARANTYS ĮTAKĄ VARTOTOJŲ SPRENDIMUI PEREITI NUO NEMOKAMŲ („FREEMIUM“) PRIE MOKAMŲ („PREMIUM“) INTERNETINIŲ PASLAUGŲ

Ceren UGRAS

Master Thesis

Digital Marketing

Magistro darbas Rinkodaros ir integruotos komunikacijos programa

Vilniaus Universitetas, Verslo Mokykla

Supervisor prof. dr. Dikčius Vytautas, Vilnius, 2025

1 puslapis, 22 paveikslai, 14 lentelių, 187 citatos.

Problemos formulavimas: Šiame darbe nagrinėjami veiksniai, darantys įtaką vartotojų perėjimui nuo nemokamų („freemium“) prie mokamų („premium“) paslaugų, remiantis vartotojų elgsenos teorinėmis schemomis, tokiomis kaip Vartojimo vertės teorija (Consumption Value Theory - CVT).

Tyrimo tikslas: Analizuoti, kaip funkcinės, socialinės, emocinės ir epistemologinės vertės dimensijos, taip pat tarpiniai kintamieji, tokie kaip pasitenkinimas ir tęstinis naudojimas, daro įtaką sprendimui pereiti nuo nemokamų prie mokamų paslaugų.

Šis tyrimas susideda iš trijų pagrindinių dalių: literatūros analizės, tyrimo metodų ir tyrimo rezultatų analizės. Literatūros analizėje apžvelgiamas freemium verslo modelis ir teoriniai pagrindai, padedantys suprasti vartotojų elgseną šioje srityje. Šioje dalyje aptariami kintamieji, darantys įtaką sprendimui pereiti prie mokamų paslaugų, įskaitant funkcines vertes (pvz., pasiekiamumą – „ubiquity“), socialines vertes (pvz., bendraamžių įtaką), emocines vertes (pvz., malonumą) ir epistemologines vertes. Taip pat pabrėžiami tarpiniai veiksniai, tokie kaip pasitenkinimas ir tęstinis naudojimas, bei psichologiniai reiškiniai, tokie kaip prarastų kaštų efektas („sunk cost effect“), kurie formuoja vartotojų sprendimus.

Atliekant literatūros analizę, tyrimas siekė nustatyti ryšius tarp šių vertės dimensijų, tarpininkaujančių veiksnių ir sprendimo pereiti prie mokamų paslaugų. Duomenų rinkimo metodui pasirinkta kiekybinė internetinė apklausa. Apklausą sudarė 30 klausimų: 24 klausimai

buvo skirti teoriniam modeliui įvertinti, o 6 – demografinėms respondentų charakteristikoms suprasti. Iš viso buvo surinkti 317 galiojantys atsakymai, kurie suteikė įžvalgų apie vartotojų elgseną freemium modeliuose, ypač turinio paslaugų, tokių kaip „YouTube“ ir „Spotify“, kontekste.

Rezultatai patvirtino, kad funkcinė vertė (pvz., pasiekiamumas) reikšmingai veikia pasitenkinimą ir sprendimą pereiti prie mokamų paslaugų, o socialinė vertė (pvz., bendraamžių įtaka) atlieka svarbų vaidmenį skatinant vartotojų sprendimus. Emociniai veiksniai, tokie kaip malonumas naudojantis nemokamomis paslaugomis, ir psichologiniai reiškiniai, pvz., prarastų kaštų efektas, taip pat prisideda prie vartotojų sprendimų. Pasitenkinimo ir tęstinio naudojimo tarpininkavimo vaidmuo buvo reikšmingas, atitinkantis teorines prognozes ir suteikiantis praktinių įžvalgų verslui.

Tyrimas pripažįsta tam tikrus apribojimus, tokius kaip palyginti nedidelė imtis ir dėmesys tik turinio paslaugoms, kas gali riboti rezultatų pritaikomumą platesniam kontekstui. Nepaisant to, šis darbas prisideda prie freemium modelių vartotojų elgsenos supratimo ir pateikia praktinių rekomendacijų, kaip optimizuoti vartotojų pritraukimo ir konversijos strategijas.

REFERENCES

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179-211.

Anderson, C. (2009). *The Future of a Radical Price*.

Arkes, H. R., & Blumer, C. (1985). The Psychology of Sunk Cost. In *BEHAVIOR AND HUMAN DECISION PROCESSES* (Vol. 35).

Berger, B., Matt, C., Steininger, D. M., & Hess, T. (2015). It Is Not Just about Competition with "free": Differences between Content Formats in Consumer Preferences and Willingness to Pay. *Journal of Management Information Systems*, *32*(3), 105–128. https://doi.org/10.1080/07421222.2015.1095038

Bhattacherjee, A. (2001). Understanding Information Systems Continuance: An Expectation-Confirmation. *MIS Quarterly*, *25*, 351–370.

Cialdini, R. B. , R. R. R. , & K. C. A. (1991). A focus theory of normative conduct: recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, *58*(6), 1015–1026.

Dahir, J., & Bertholdson, S. (2015). *Consumers' perception of freemium services: Factors influencing consumers' choice of premium or free services*.

Davis, F. (1987). *User acceptance of information systems : the technology acceptance model (TAM).* https://www.researchgate.net/publication/30838394

Fishbein, M. , & A. I. (1975). Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. *Reading, MA: Addison-Wesley.*

Hamari, J., Hanner, N., & Koivisto, J. (2017). Service quality explains why people use freemium services but not if they go premium: An empirical study in free-to-play games. *International Journal of Information Management*, *37*(1), 1449–1459. https://doi.org/10.1016/j.ijinfomgt.2016.09.004

Hamari, J., Hanner, N., & Koivisto, J. (2020a). "Why pay premium in freemium services?" A study on perceived value, continued use and purchase intentions in free-to-play games. *International Journal of Information Management*, *51*. https://doi.org/10.1016/j.ijinfomgt.2019.102040

Hamari, J., Hanner, N., & Koivisto, J. (2020b). “Why pay premium in freemium services?” A study on perceived value, continued use and purchase intentions in free-to-play games. *International Journal of Information Management*, *51*. https://doi.org/10.1016/j.ijinfomgt.2019.102040

Hayes, A. F. (2017). Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. . *Guilford Press, New York.*

Hess, T., & Wagner, T. M. (2013). *What drives users to pay for freemium services? Examining people's willingness to pay for music services* (Issue 1). https://www.researchgate.net/publication/288772342

Holm, A. B., & Günzel-Jensen, F. (2017). Succeeding with freemium: strategies for implementation. *Journal of Business Strategy*, *38*(2), 16–24. https://doi.org/10.1108/JBS-09-2016-0096

Hsu, P.-F., & Tsai, W.-C. (2017). *From Free to Pay: A Three-Stage Freemium Strategy*. http://aisel.aisnet.org/icis2017http://aisel.aisnet.org/icis2017/HumanBehavior/Presentations/20

Hussain, A., Ting, D. H., & Mazhar, M. (2023). Why Purchase Premium in Freemium Online Games: The Self Determination Theory Perspective. *KnE Social Sciences*. https://doi.org/10.18502/kss.v8i20.14604

Kahneman, D. , & T. A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, *47*(2), 263–291.

Kumar, V. (2014). Making “Freemium” Work. *Hardard Business Review*.

Lehmann-Zschunke, N. (2024). What factors influence termination behaviour on freemium platforms? An empirical analysis of the termination probability among paying users. *Journal of Consumer Behaviour*. https://doi.org/10.1002/cb.2363

Liu, C. Z., Au, Y. A., & Choi, H. S. (2014). Effects of Freemium Strategy in the Mobile App Market: An Empirical Study of Google Play. *Journal of Management Information Systems*, *31*(3), 326–354. https://doi.org/10.1080/07421222.2014.995564

Liu, Z., (Chris) Zhao, Y., Chen, S., Song, S., Hansen, P., & Zhu, Q. (2021). Exploring askers' switching from free to paid social Q&A services: A perspective on the push-pull-mooring

framework. *Information Processing & Management*, *58*(1), 102396. https://doi.org/10.1016/J.IPM.2020.102396

Mäntymäki, M. , B. A. , & K. J. (2019). Social interaction and user experience in social media: An exploratory study. *Journal of Business Research*, *94*, 237–246.

Mäntymäki, M., Islam, A. K. M. N., & Benbasat, I. (2019). What drives subscribing to premium in freemium services? A consumer value-based view of differences between upgrading to and staying with premium. *Information Systems Journal*, *30*(2), 295–333. https://doi.org/10.1111/isj.12262

Martins, J., & Rodrigues, R. (2024). Motivations in the adoption and conversion of freemium services: insights for digital entrepreneurship. *Review of Managerial Science*. https://doi.org/10.1007/s11846-024-00754-0

Mathwick, C. , M. N. , & R. E. (2001). The effect of dynamic retail experiences on the satisfaction of consumers. *Journal of Retailing*, *77*(3), 377–392.

Mishra, N., Najafi Sajjad, Asadolahi Sami Najafi, & Tsay Andy. (2018). *How Freemium Gets Consumers to Pay a Premium The Role of Loss-Aversion*. https://doi.org/https://dx.doi.org/10.2139/ssrn.2961548

Niemand, T., Mai, R., & Kraus, S. (2019). The zero-price effect in freemium business models: The moderating effects of free mentality and price–quality inference. *Psychology and Marketing*, *36*(8), 773–790. https://doi.org/10.1002/mar.21211

Niemand, T., Tischer, S., Fritzsche, T., & Kraus, S. (2015). *The Freemium Effect: Why Consumers Perceive More Value with Free than with Premium Offers*.

Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, *17(4)*, 460–469.

Pujol, N. (2010). *Freemium: attributes of an emerging business model Origins and types of freemium An umbrella term for new and old commercial practices*. http://ssrn.com/abstract=1718663

Shampanier, K., Mazar, N., & Ariely, D. (2007). Zero as a special price: The true value of free products. *Marketing Science*, *26*(6), 742–757. https://doi.org/10.1287/mksc.1060.0254

Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). Why we buy what we buy: A theory of consumption values. *Journal of Business Research*, *22*(2), 159–170. https://doi.org/10.1016/0148-2963(91)90050-8

Shu-Chen Chang, Yi-Feng Lin, & Yu-Ping Chiu. (2023). From Freemium to Premium App Services: The Expectation Confirmation Model and Two-Factor Theory. *International Journal of Marketing, Communication and New Media*, *11*(21). https://doi.org/10.54663/2182-9306.2023.v11.n21.112-131

Soman, D. (2001). The mental accounting of sunk time costs: Why time is not like money. *Journal of Behavioral Decision Making*, *14*(3), 169–185. https://doi.org/10.1002/bdm.370

Suryawirawan, O. A., Suhermin, S., & Shabrie, W. S. (2022). SERVICE QUALITY, SATISFACTION, CONTINUOUS USAGE INTENTION, AND PURCHASE INTENTION TOWARD FREEMIUM APPLICATIONS: THE MODERATING EFFECT OF PERCEIVED VALUE. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, *11*(3), 383. https://doi.org/10.26418/jebik.v11i3.57483

Sweeney, J. C., & Soutar, G. N. (2001). *Consumer perceived value: The development of a multiple item scale*.

Taylor, S., & Todd, P. A. (1995). Understanding Information Technology Usage: A Test of Competing Models. In *Research* (Vol. 6, Issue 2). https://www.jstor.org/stable/23011007

Tyrväinen, O., & Karjaluoto, H. (2024). Willingness to pay for freemium services: Addressing the differences between monetization strategies. *International Journal of Information Management*, *77*. https://doi.org/10.1016/j.ijinfomgt.2024.102787

Venkatesh, V. & M. M. & D. G. & D. Fred. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*, 425–478.

Wagner, T. M., Benlian, A., & Hess, T. (2013). The advertising effect of free - Do free basic versions promote premium versions within the freemium business model of music services? *Proceedings of the Annual Hawaii International Conference on System Sciences*, 2928–2935. https://doi.org/10.1109/HICSS.2013.21

Wagner, T. M., Benlian, A., & Hess, T. (2014). Converting freemium customers from free to premium—the role of the perceived premium fit in the case of music as a service. *Electronic Markets*, *24*(4), 259–268. https://doi.org/10.1007/s12525-014-0168-4

Wang, L., Gao, Y., Yan, J., & Qin, J. (2021). From freemium to premium: the roles of consumption values and game affordance. *Information Technology and People*, *34*(1), 297–317. https://doi.org/10.1108/ITP-10-2019-0527

Wilson, F. (2006). *A freemium business model.*

LIST OF APPENDICES

Appendix 1. English Survey

Dear Participant,

Thank you for taking part in this survey. This research aims to explore the factors influencing users' decisions to upgrade from freemium to premium online services. Your responses will contribute to understanding user behavior and preferences in digital services.

The survey will take approximately 7-10 minutes to complete.
All responses are strictly anonymous and will be used solely for academic purposes.
No personally identifiable information will be collected or shared in this study.
Only aggregated demographic data (e.g., age, gender) and responses will be analyzed to derive research findings.

Your participation is entirely voluntary, and you can choose to stop the survey at any time. By continuing, you consent to the use of your responses for research purposes.

In this survey, the terms **"freemium"** and **"premium"** are defined as follows:

- **Freemium/Free:** The version of a service that provides basic features for free.
- **Premium:** The version of a service that offers additional features, ad-free usage, or enhanced access for a fee.

  Please use the following scale to evaluate the statements in this survey:

1 - **Strongly Disagree**
2 - **Disagree**
3 - **Neutral**
4 - **Agree**
5 - **Strongly Agree**

For example, if you select **3**, it means you are **neutral** about the statement.

Please keep these definitions in mind when answering the questions.

Thank you for your valuable contribution!

What is your age?

- 15-17
- 18-24
- 25-34
- 45-54
- 55+

Which country do you currently reside in?

- Türkiye
- Lithuania
- Other (please specify)

How often do you use online services (e.g., music, video streaming)?

- Every day
- Several times a week
- Once a week
- A few times in a month
- Never

Could you please specify which online services you use? (You can select more than one)

- Spotify
- Netflix
- YouTube
- Amazon Prime Video
- Apple Music
- Disney+
- HBO Max
- Other (please specify)

Ubiquity questionnaire	1	2	3	4	5
If the premium version of a service provides access anytime and anywhere, I am more likely to upgrade.					

The ability to access the premium version across all my devices increases my intention to upgrade.					
If the free version has limitations in access, but the premium version does not, I would consider upgrading.					
I would upgrade to premium if it ensures uninterrupted and reliable access to the service.					

Peer Influence questionnaire	1	2	3	4	5
If my friends recommend the premium version of a service, I am more likely to upgrade.					
If people around me benefit from the premium version, it motivates me to upgrade as well.					
Knowing that my peers use the premium version makes me consider upgrading.					
I would feel left out if my friends used premium features, I do not have access to.					

Effort Invested in Free Version questionnaire	1	2	3	4	5
If I have spent significant time and effort using the free version, I feel more inclined to upgrade to premium.					
I would consider upgrading to premium to better utilize the effort I have already invested.					
I feel my effort on the free version would be justified if I upgrade to premium.					
The effort I put into personalizing the free version increases my willingness to explore premium features.					

Discovery of New Content questionnaire	1	2	3	4	5
If the premium version of a service provides access to exclusive or new content, I am more likely to upgrade.					
I would upgrade to premium if it enhances my ability to discover relevant and valuable content.					

Knowing that premium users access new content earlier motivates me to upgrade.					
Discovering new content through a service increases my likelihood of continuing to use it.					

Satisfaction questionnaire	1	2	3	4	5
If I were satisfied with a free version of a service, I would consider upgrading to premium for enhanced satisfaction.					
If the premium version better meets my expectations, I am more likely to upgrade.					
My satisfaction with the free version encourages me to explore premium features.					
If upgrading improves my satisfaction with the service, I would strongly consider it.					

Continued Use questionnaire	1	2	3	4	5
If I use a service regularly, I am more likely to upgrade to premium.					
The more I use a service, the more I consider upgrading to premium.					
If upgrading to premium ensures I can continue using the service without limitations, I would consider it.					
My continued use of a service increases my intention to pay for its premium version.					

Intention to Upgrade questionnaire	1	2	3	4	5
I am considering upgrading to the premium version of an online service in the near future.					
If I find the premium version of a service beneficial, I am likely to upgrade soon.					
I plan to upgrade to the premium version of a service I currently use within the next month.					
I feel motivated to switch to the premium version of an online service I use.					

Appendix 2. Turkish Survey

Değerli Katılımcı,

Bu ankete katıldığınız için teşekkür ederiz. Bu araştırma, kullanıcıların ücretsiz (freemium) hizmetlerden ücretli (premium) hizmetlere geçiş kararlarını etkileyen faktörleri incelemeyi amaçlamaktadır. Yanıtlarınız, dijital hizmetlerdeki kullanıcı davranışlarını ve tercihlerini anlamamıza yardımcı olacaktır.

- Anketin tamamlanması yaklaşık **7-10 dakika** sürecektir.
- Tüm yanıtlar **tamamen anonim** kalacak olup yalnızca akademik amaçlarla kullanılacaktır.
- Araştırma kapsamında kimliği belirleyici hiçbir kişisel bilgi toplanmayacak veya paylaşılmayacaktır.
- Sadece toplu demografik bilgiler (örneğin yaş, cinsiyet) ve yanıtlar analiz edilerek araştırma sonuçlarına katkı sağlayacaktır.

Bu ankette "ücretsiz" ve "premium" kavramları şu şekilde tanımlanmaktadır:

Ücretsiz (Freemium): Bir hizmetin temel özelliklerine hiçbir ücret ödemeden erişebildiğiniz versiyonudur.

Premium: Ek özellikler, reklamsız kullanım veya daha kapsamlı erişim sunan, belirli bir ücret karşılığında kullanılan versiyondur.

Bu ankette verilen ifadeleri değerlendirirken aşağıdaki ölçeği kullanınız:

1 - Kesinlikle Katılmıyorum

2 - Katılmıyorum

3 - Kararsızım (Neutral)

4 - Katılıyorum

5 - Kesinlikle Katılıyorum

Örneğin 3 işaretlerseniz, bu ifade hakkında kararsız olduğunuz anlamına gelir.

Lütfen bu tanımları göz önünde bulundurarak soruları yanıtlayınız.

Katılımınız tamamen gönüllüdür ve anketi dilediğiniz zaman sonlandırabilirsiniz. Devam ederek, yanıtlarınızın araştırma amaçları doğrultusunda kullanılmasına onay vermiş olursunuz.

Değerli katkınız için teşekkür ederiz!

Kaç yaşındasınız?

- 15-17
- 18-24
- 25-34
- 45-54
- 55+

Şu anda hangi ülkede ikamet ediyorsunuz?

- Türkiye
- Lithuania
- Diğer (lütfen belirtiniz)

Çevrimiçi hizmetleri (örneğin, müzik veya video izleme) ne sıklıkla kullanıyorsunuz?

- Her gün
- Haftada birkaç kez
- Haftada bir
- Ayda birkaç kez
- Hiçbir zaman

Hangi çevrimiçi hizmetleri kullandığınızı belirtebilir misiniz? (Birden fazla seçenek işaretleyebilirsiniz)

- Spotify
- Netflix
- YouTube
- Amazon Prime Video
- Apple Music
- Disney+
- HBO Max

- Diğer (lütfen belirtiniz)

Ubiquity quesstionnaire	1	2	3	4	5
Bir hizmetin premium versiyonu her zaman ve her yerde erişim sağlarsa, premiuma geçme olasılığım artar.					
Premium versiyona tüm cihazlarımdan erişebilme imkânı, yükseltme niyetimi artırır.					
Ücretsiz versiyon erişimde kısıtlamalar getirirken premium versiyon böyle değilse, yükseltmeyi düşünürüm.					
Premium versiyon kesintisiz ve güvenilir erişim sağlarsa, premiuma geçmeyi düşünürüm.					

Peer Influence quesstionnaire	1	2	3	4	5
Arkadaşlarım bir hizmetin premium versiyonunu önerirse, premiuma geçme olasılığım artar.					
Çevremdeki insanların premium versiyondan faydalandığını görmek, beni premiuma geçmeye motive eder.					
Akranlarımın premium versiyonu kullanıyor olduğunu bilmek, premiuma geçmeyi düşünmemi sağlar.					
Arkadaşlarımın benim erişemediğim premium özellikleri kullanması, kendimi dışlanmış hissetmeme neden olur.					

Effort Invested in Free Version quesstionnaire	1	2	3	4	5
Ücretsiz versiyonu kullanmak için önemli ölçüde zaman ve efor harcadıysam, premiuma geçme eğilimim artar.					
Premiuma geçmem durumunda, ücretsiz versiyonda harcadığım eforun anlam kazanacağını düşünüyorum.					
Ücretsiz versiyonda harcadığım eforun değerini artırıyorsa, premiuma geçme olasılığım daha yüksek.					
Ücretsiz versiyonu kişiselleştirmek veya kullanmak için harcadığım efor, premiuma geçme niyetimi artırır.					

Discovery of New Content quesstionnaire	1	2	3	4	5
Premium versiyon, yeni veya özel içeriklere erişim sağlarsa, premiuma geçme olasılığım artar.					
Premium versiyon, değerli ve bana uygun içerikleri keşfetmemi kolaylaştırırsa, yükseltmeyi düşünürüm.					
Premium kullanıcılarının yeni içeriklere daha erken erişebildiğini bilmek, premiuma geçme isteğimi artırır.					
Bir hizmette yeni içerikler keşfetmek, onu kullanmaya devam etme olasılığımı artırır.					

Satisfaction quesstionnaire	1	2	3	4	5
Bir hizmetin ücretsiz versiyonundan memnun kalırsam, daha fazla tatmin için premiuma geçmeyi düşünebilirim.					
Premium versiyon beklentilerimi daha iyi karşılıyorsa, premiuma geçme olasılığım daha yüksek.					
Ücretsiz versiyondan memnuniyetim, premium özellikleri keşfetmeye teşvik ediyor.					
Premiuma geçmek, hizmetten aldığım memnuniyeti artıracaksa, bunu ciddi şekilde düşünürüm.					

Continued Use quesstionnaire	1	2	3	4	5
Bir hizmeti düzenli olarak kullanıyorsam, premiuma geçme olasılığım artar.					
Bir hizmeti kullandıkça, premiuma geçmeyi daha fazla düşünürüm.					
Premiuma geçmek, hizmeti sınırlamalar olmadan kullanmamı sağlarsa, bunu düşünürüm.					
Bir hizmeti sürekli kullanmam, premium versiyonuna ödeme yapma niyetimi artırır.					

Intention to Upgrade quesstionnaire	1	2	3	4	5
Yakın gelecekte bir çevrimiçi hizmetin premium versiyonuna geçmeyi düşünüyorum.					

Eğer bir hizmetin premium versiyonunu faydalı bulursam, yakında geçiş yapma olasılığım yüksek.					
Hâlihazırda kullandığım bir hizmetin premium versiyonuna önümüzdeki ay içinde geçmeyi planlıyorum.					
Kullandığım bir çevrimiçi hizmetin premium versiyonuna geçiş yapmak için motive hissediyorum.					

Appendix 3. Normality Test Results

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Unstandardized Residual	317	100.0%	0	0.0%	317	100.0%
Standardized Residual	317	100.0%	0	0.0%	317	100.0%

Descriptives

			Statistic	Std. Error
Unstandardized Residual	Mean		.0000000	.07888920
	95% Confidence Interval for Mean	Lower Bound	-.1552145	
		Upper Bound	.1552145	
	5% Trimmed Mean		-.0262639	
	Median		-.0488467	
	Variance		1.973	
	Std. Deviation		1.40458231	
	Minimum		-3.71160	
	Maximum		5.79892	
	Range		9.51052	
	Interquartile Range		1.83683	
	Skewness		.334	.137
	Kurtosis		.636	.273
Standardized Residual	Mean		.0000000	.05580899
	95% Confidence Interval for Mean	Lower Bound	-.1098042	
		Upper Bound	.1098042	
	5% Trimmed Mean		-.0185800	
	Median		-.0345559	
	Variance		.987	
	Std. Deviation		.99365073	
	Minimum		-2.62572	
	Maximum		4.10236	
	Range		6.72807	
	Interquartile Range		1.29944	
	Skewness		.334	.137
	Kurtosis		.636	.273

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.031	317	.200*	.992	317	.096
Standardized Residual	.031	317	.200*	.992	317	.096

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendix 4. Regression analysis results for ubiquity and intention to upgrade

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.682[a]	.465	.463	2.53376	.465	274.000	1	315	<.001

a. Predictors: (Constant), PI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2156.359	1	2156.359	418.002	<.001[b]
	Residual	1624.998	315	5.159		
	Total	3781.356	316			

a. Dependent Variable: I2U

b. Predictors: (Constant), U

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.300	.464		9.266	<.001	3.387	5.213
	U	.605	.030	.755	20.445	<.001	.547	.663

a. Dependent Variable: I2U

Appendix 5. Regression analysis results for peer influence and intention to upgrade

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.755[a]	.570	.569	2.27128	.570	418.002	1	315	<.001

a. Predictors: (Constant), U

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2287.587	1	2287.587	482.397	<.001[b]
	Residual	1493.769	315	4.742		
	Total	3781.356	316			

a. Dependent Variable: I2U

b. Predictors: (Constant), E

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	6.803	.424		16.028	<.001	5.968	7.638
	PI	.571	.035	.682	16.553	<.001	.503	.639

a. Dependent Variable: I2U

Appendix 6. Regression analysis results for effort invested in free version and intention to upgrade

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.778[a]	.605	.604	2.17764	.605	482.397	1	315	<.001

a. Predictors: (Constant), E

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1759.069	1	1759.069	274.000	<.001[b]
	Residual	2022.288	315	6.420		
	Total	3781.356	316			

a. Dependent Variable: I2U

b. Predictors: (Constant), PI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.501	.424		10.609	<.001	3.666	5.335
	E	.639	.029	.778	21.964	<.001	.582	.696

a. Dependent Variable: I2U

Appendix 7. Regression analysis results for discovery of new content and intention to upgrade

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.778[a]	.605	.603	2.17887	.605	481.501	1	315	<.001

a. Predictors: (Constant), D

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2285.906	1	2285.906	481.501	<.001[b]
	Residual	1495.450	315	4.747		
	Total	3781.356	316			

a. Dependent Variable: I2U

b. Predictors: (Constant), D

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.866	.452		8.546	<.001	2.976	4.756
	D	.635	.029	.778	21.943	<.001	.578	.692

a. Dependent Variable: I2U

Appendix 8. Impact of satisfaction on ubiquity and intention to upgrade

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6049      .0296    20.4451     .0000      .5467      .6631      .7552

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3696      .0299    12.3538     .0000      .3107      .4284      .4614

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2353      .0282      .1811      .2913

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2937      .0321      .2317      .3572
```

Appendix 9. Impact of satisfaction on peer influence and intention to upgrade

```
*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .5711      .0345    16.5529      .0000      .5032      .6390      .6821

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3507      .0279    12.5464      .0000      .2957      .4056      .4188

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2205      .0312      .1609      .2834

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2633      .0322      .2002      .3251
```

Appendix 10. Impact of satisfaction on effort invested in free version and intention to upgrade

```
*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6389      .0291    21.9635      .0000      .5816      .6961      .7778

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3924      .0344    11.4022      .0000      .3247      .4601      .4777

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2465      .0313      .1856      .3102

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .3000      .0359      .2297      .3721
```

Appendix 11. Impact of satisfaction on discovery of new content and intention to upgrade

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6348      .0289    21.9431     .0000     .5779     .6918     .7775

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3870      .0353    10.9550     .0000     .3175     .4565     .4740

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .2478      .0306      .1879      .3086

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
S      .3035      .0354      .2317      .3718
```

Appendix 12. Impact of continued use on ubiquity and intention to upgrade

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6049      .0296    20.4451     .0000     .5467     .6631     .7552

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .4183      .0335    12.4986     .0000     .3525     .4842     .5223

Indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
CU     .1865      .0321      .1275      .2536

Completely standardized indirect effect(s) of X on Y:
      Effect     BootSE   BootLLCI   BootULCI
CU     .2329      .0394      .1602      .3140
```

Appendix 13. Impact of continued use on peer influence and intention to upgrade

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .5711      .0345    16.5529      .0000      .5032      .6390      .6821

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .3934      .0299    13.1409      .0000      .3345      .4523      .4698

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .1777      .0308      .1192      .2405

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .2123      .0333      .1469      .2785
```

Appendix 14. Impact of continued use on effort invested in free version and intention to upgrade

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6389      .0291    21.9635      .0000      .5816      .6961      .7778

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .4625      .0377    12.2809      .0000      .3884      .5366      .5631

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .1763      .0369      .1055      .2501

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .2147      .0449      .1275      .3031
```

Appendix 15. Impact of continued use on discovery of new content and intention to upgrade

```
*************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ***************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_cs
      .6348      .0289    21.9431      .0000      .5779      .6918      .7775

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_cs
      .4598      .0377    12.1911      .0000      .3856      .5340      .5632

Indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .1750      .0370      .1048      .2496

Completely standardized indirect effect(s) of X on Y:
       Effect     BootSE   BootLLCI   BootULCI
CU      .2144      .0456      .1281      .3059
```